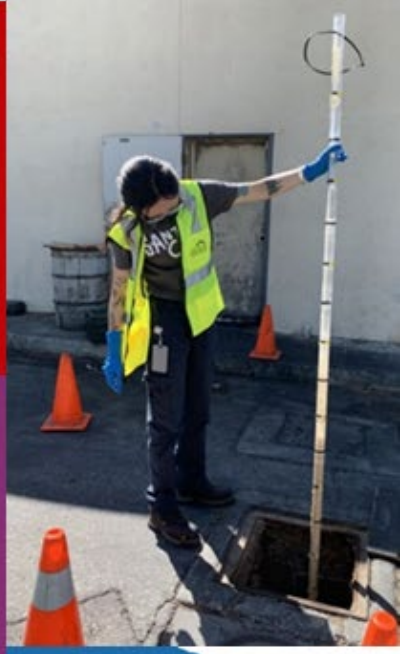

San José-Santa Clara Regional Wastewater Facility

Annual Pollution Prevention Report

San José-Santa Clara
Regional Wastewater Facility

700 Los Esteros Road
San José, CA 95134
www.sanjoseca.gov/esd

San José-Santa Clara Regional Wastewater Facility

2023 Pollution Prevention Annual Report

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

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Acknowledgements

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Executive Summary

This report summarizes the past year of Pollution Prevention (P2) activities within the San José – Santa Clara Regional Wastewater Facility (SJ-SC RWF) service area. A description of the facility, its service area, and the process for selecting pollutants of concern is provided. Subsequent sections summarize activities, accomplishments, and outreach efforts over the past year that were aimed at minimizing those pollutants. Pollutants of concern include mercury, polychlorinated biphenyls (PCBs), copper, cyanide, pesticides, fats, oils, & grease (FOG), and emerging contaminants.

FIGURE 1. POLLUTION PREVENTION INFOGRAPHIC

Throughout 2023, City of San José (City) staff conducted various forms of in-person outreach and engagement, as well as physical and digital advertising efforts to promote P2 messages. The City was able to continue many plans for outreach campaigns and messages that had been placed on hold through the first years of the COVID-19 pandemic. Health and safety protocols remain in place for all City operations. Despite adding extra protocols to day-to-day operations and incidental COVID-19 cases on site, the SJ-SC RWF continued to treat 100% of wastewater received and met 100% of effluent water quality requirements.

In 2023, the SJ-SC RWF continued to see reductions or no significant change in wastewater loads for pollutants of concern. Outreach efforts continue to expand, increase, and adapt to SJ-SC RWF employees and the public, including the reintroduction of physical outreach as in-person events and services resume. The SJ-SC RWF continues to participate in several regional partnerships and activities, allowing staff to monitor and evaluate the risks of emerging contaminants at this facility.

Regulatory Requirement

The Annual Pollutant Minimization Report (P2 Report) for the SJ-SC RWF is prepared in accordance with National Pollutant Discharge Elimination System (NPDES) Permit Number CA0037842, Order Number R2-2020-0001.

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, 2023, to December 31, 2023.

Description of treatment plant

Service Area Description

The SJ-SC RWF services a 300-square mile area (Figure 2) encompassing the cities of San José and Santa Clara along with the territories of eight cities and unincorporated areas (referred to as Tributary Agencies). The SJ-SC RWF is permitted to clean up to 167 million gallons per day in the dry season and has a permitted wet weather peak capacity of 261 million gallons per day. Of the total wastewater flow to the SJ-SC RWF, 77 percent is estimated to come from the residential sector, 5 percent from the industrial sector, and 18 percent from commercial businesses.

SJ-SC RWF

The SJ-SC RWF is located at 700 Los Esteros Road, in San José. In 2023, an average of approximately 105 million gallons per day of sewage flowed in and received 8 to 10 hours of advanced treatment. Some treated wastewater is recycled. The majority flows out into Artesian Slough and Lower Coyote Creek.

The SJ-SC RWF began service to the cities of San José and Santa Clara in 1956. Through the 1960s and 1970s additional cities and county sanitation districts connected to the SJ-SC RWF and the service area 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. Recent and ongoing studies of fish, phytoplankton, and invertebrates indicate that the waters immediately downstream of the SJ-SC RWF support abundant, highly diverse communities of fish and estuarine invertebrates. The SJ-SC RWF receives wastewater from roughly 1.5 million residents and more than 17,000 commercial and industrial facilities, including 191 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 (Campbell, Los Gatos, Monte Sereno, and Saratoga).

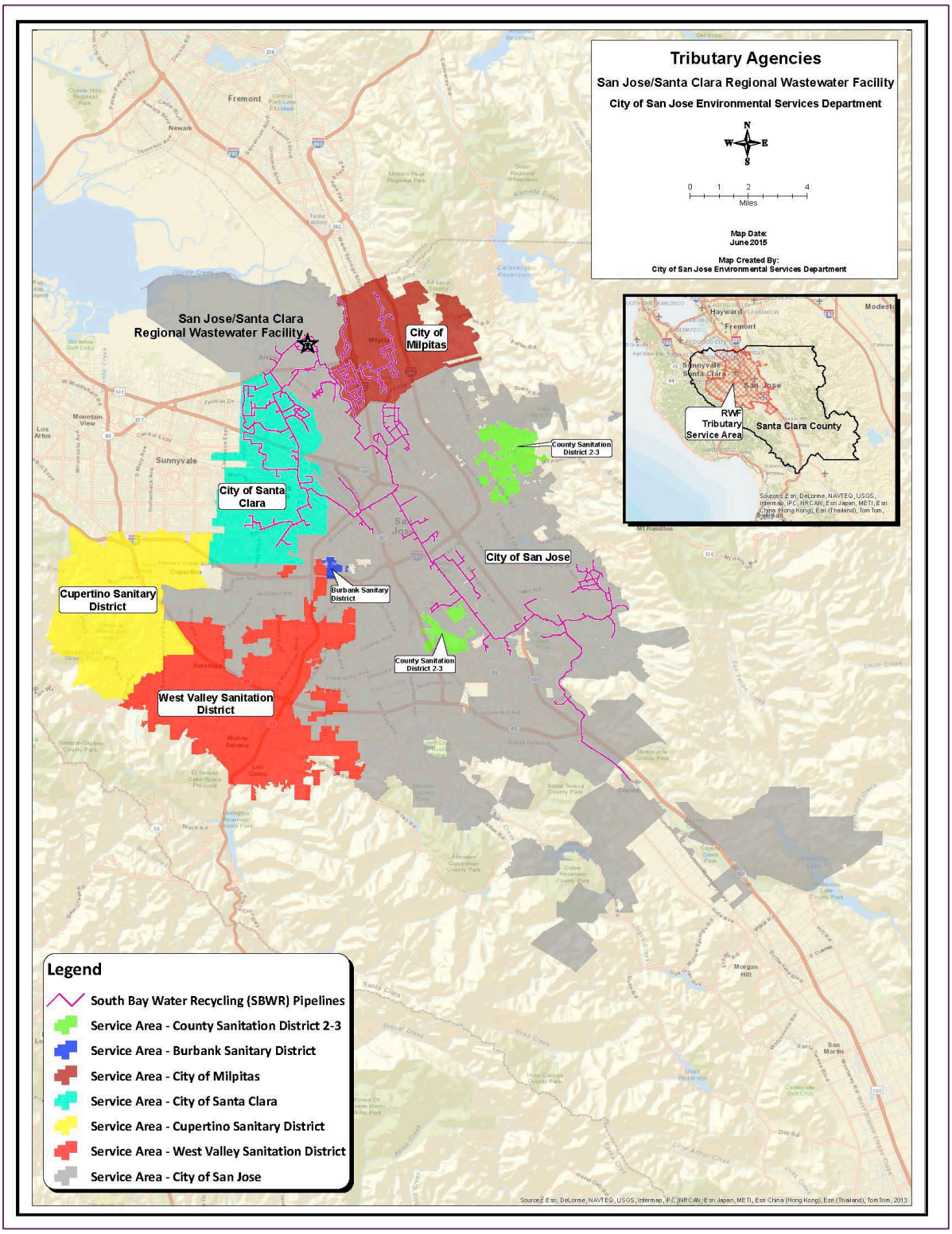


FIGURE 2. SJ-SC RWF SERVICE AREA AND TRIBUTARY AGENCIES

Pollutants of concern

Table 1, below, details SJ-SC RWF pollutants of concern and the reasons for choosing those pollutants.

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 cost.

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 a concentration that poses a threat of permit violation for over a decade.

Tier 2: A secondary level of concern is for substances that, 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 FOG and wipes, both of which clog pipes and fill 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 microplastics, pesticides without water quality objectives, per- and polyfluoroalkyl substances (PFAS), and pharmaceuticals that are detected at concentrations that merit research and control strategies because harm to aquatic organisms is possible or uncertain.

TABLE 1. POLLUTANTS OF CONCERN AND RATIONALE FOR SELECTION

Pollutant	Tier	Rationale
Mercury	Tier 2	TMDL
PCBs	Tier 2	TMDL
Copper	Tier 2	Permit Action Plan
Cyanide	Tier 2	Permit Action Plan
Pesticides	Tier 2, Tier 4	TMDL & Emerging Contaminants
FOG	Tier 3	Operational Impact – collection system
Wipes	Tier 3	Operational Impact – RWF & collection system
Pharmaceuticals	Tier 4	Emerging Contaminants
Microplastics	Tier 4	Emerging Contaminants
PFAS	Tier 4	Emerging Contaminants

Additional details on rationale for selecting pollutants can be found in Section "Pollutants of Concern Discussion".

Identification of Pollutant Sources

Table 2, below, details SJ-SC RWF pollutants of concern and their sources.

TABLE 2. POLLUTANTS AND THEIR SOURCES.

Pollutant	Source, or potential source
Mercury	Dental amalgam waste, thermometers, thermostats, compact fluorescent light bulbs
PCBs	Dielectric fluid in transformers built prior to 1978; Building caulking and some roofing materials from pre-1980s construction
Copper	Copper plumbing; pool and spa maintenance; vehicle service facilities
Cyanide	Industrial users; a very small concentration as a byproduct of chlorine disinfection
Pesticides	Residential ant and spider control; potentially professional pesticide operators; residential flea and tick topical treatments, especially fipronil and imidacloprid
FOG	Kitchen waste from restaurants and residents
Wipes	Residential disposal in the toilet
Pharmaceuticals	Residential or hospice disposal in the toilet; some pharmaceuticals, such as albuterol, oflaxacin, fluoxitine (Prozac), carbamazepine, and some antibiotics excreted by human users at low concentrations that still pass through the treatment facility and into the Bay
Microplastics	Beads in facial scrubs; toothpastes and personal care products; fibers from clothing
PFAS	Very broad use including fire-fighting foams; waterproof textiles and paper; non-stick coatings; industrial applications for semi-conductor, automotive, aerospace, photographic imaging, construction, aviation, and electronics

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. However, any persistent pollutant detected at high enough concentration could be tracked in this manner.

Influent, Effluent and Sludge Monitoring

Environmental Protection Agency (EPA) priority pollutants are monitored in 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 José, Environmental Services Department (ESD)

website. The *San José-Santa Clara Regional Wastewater Facility Annual Self-Monitoring Reports*, which summarize the same information, are also found on the website[1].

FOG and Sewer Investigations

The City maintains a team of four Environmental Inspectors / Assistant Inspectors who investigate FOG-related collection system problems in non-residential portions of San José. In addition, the City of Santa Clara has two staff dedicated to the FOG program (Code Enforcement Officer and Code Enforcement Technician), as well as clerical support. These teams perform routine inspections of grease control devices (GCDs) at food service establishments (FSEs) to ensure the devices are maintained and FOG-controlling best management practices (BMPs) are implemented (Figure 3). The teams also investigate sewer blockages in commercial areas, whether caused by FOG or other material, and recommend corrective actions.

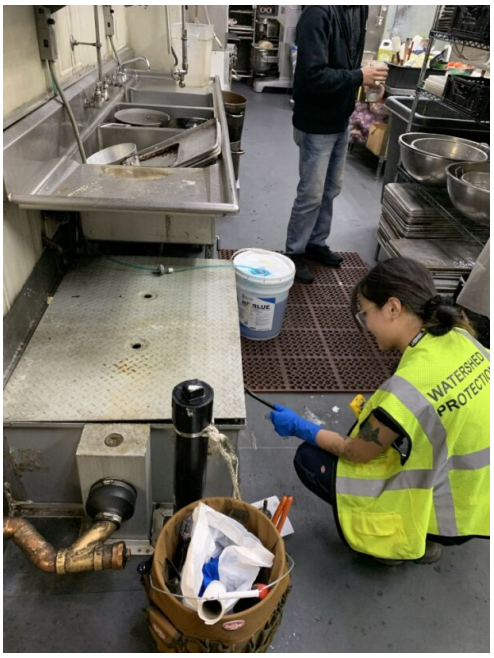


FIGURE 3. ENVIRONMENTAL INSPECTOR OPENING A GREASE TRAP

Special Studies

The SJ-SC RWF 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 (SFEI) and Regional Monitoring Program (RMP). The goal is to identify pollutants that may pass through the wastewater facility and into the Bay, ideally before they result in ecological problems.

Additional details on identification of specific pollutants can be found in Section "Pollutants of Concern Discussion".

[1] http://www.sanjoseca.gov/regulatoryreports

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 can 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 common to many wastewater treatment agencies. The SJ-SC RWF is a founding member and one of five principal members of the Bay Area Clean Water Agencies (BACWA). The facility also participates in leadership roles with the RMP. Ideas for reducing pollutants are often generated by collaborating with other facilities through those venues. Feasibility of specific pollutant reduction efforts in the SJ-SC RWF service area are determined by surveying residents, commercial and industrial businesses, hospitals, government agencies, and retail stores, as appropriate.

BMPs

Very often, industry guidelines in the form of BMPs have already been generated by industrial trade groups or agencies under The EPA. Local collaboration through Bay Area Pollution Prevention Group (BAPPG - a BACWA committee) develops and/or vets BMPs to determine those best suited for Bay Area needs.

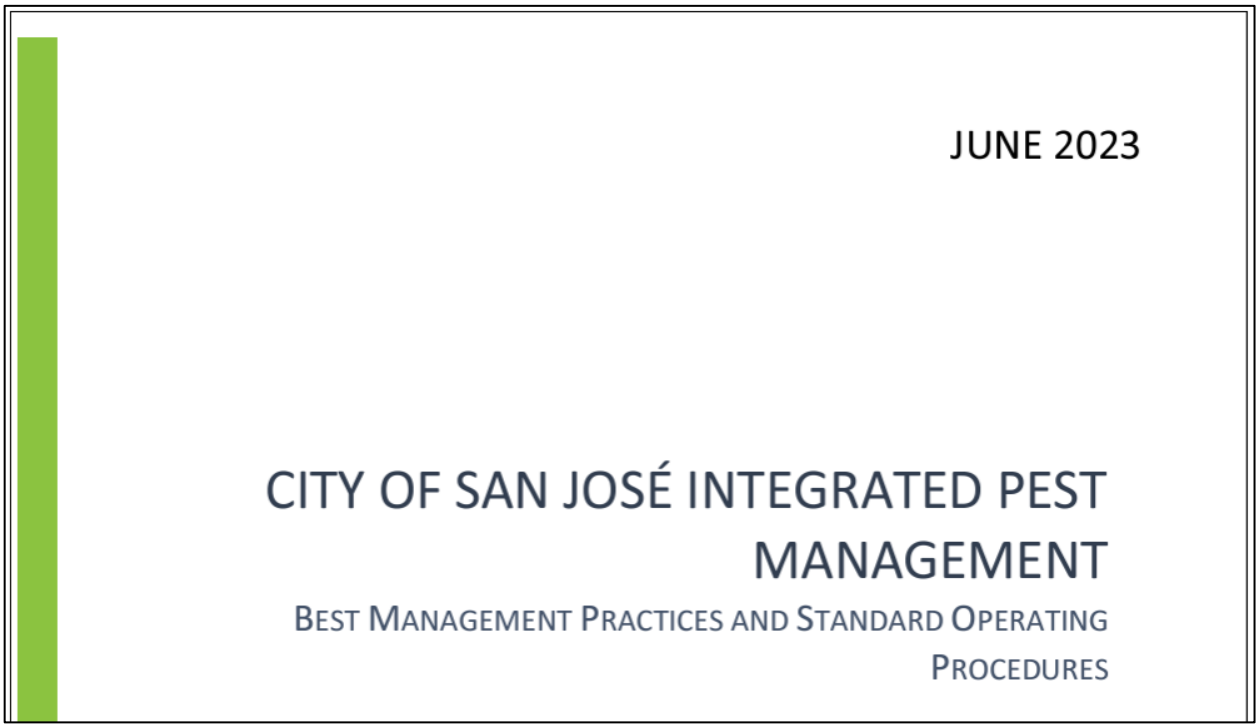
Outreach

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.

Additional details on specific tasks for pollutants can be found in Section “Pollutants of Concern Discussion”.

Outreach to employees

Many SJ-SC RWF employees are also residents in the area and receive public outreach messages related to pollution prevention. In addition, pesticides are a primary pollutant of concern that come from residents and have the potential for environmental release or operational upset at the SJ-SC RWF. Therefore, the City provides pesticides training to employees. In 2023, 145 City staff were trained on the City's Integrated Pest Management (IPM) policy, standard operating procedures (SOPs), and BMPs during the Annual Worker Safety Training and special team-specific outreach training sessions, representing 100% coverage for applicable employees. The City updated the IPM SOP in June 2023 to reflect current practices of pesticide toxicity control consistent with the City's Municipal Regional Stormwater NPDES permit (Figure 4).



Additional details and information on this training and outreach can be found in the "Pollutants of Concern Discussion" section of this report.

Public outreach

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

Permanent HHW Facilities

Santa Clara County has two permanent household hazardous waste (HHW) facilities: one facility in San Martin and the other in San José. On May 27, 2021, the City signed another cooperative agreement with the County of Santa Clara to continue to fund and participate in the Countywide HHW Program for a three-year term from July 1, 2021, through June 30, 2024. 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.

FIGURE 5. SJ EIC, LOCATION OF ONE OF SANTA CLARA'S HHW FACILITIES

Santa Clara County residents may make no-cost appointments at www.HHW.org or by calling (408) 299-7300 to drop off HHW on Wednesdays, Thursdays, Fridays, and Saturdays at San José Environmental Innovation Center (SJ EIC; Figure 5) located at 1608 Las Plumas Ave, San José, and monthly at the San Martin HHW Facility. Drop-off is free for residents and proof of residency is required. In addition, Very Small Quantity Generators may utilize the HHW facility for a competitive rate. Accepted items include paints, polishes, acids, batteries, poisons, pesticides, solvents, pool chemicals, iodine, perchlorates, propane, helium, small oxygen tanks, smoke detectors and more. Residents may also drop off most hazardous wastes at approved retail take-back locations, a list of which is on the County's HHW website.

The Santa Clara County HHW Program served 37,869 residents, 19,228 of which were San José residents, in FY 22-23. The number of collection events during this fiscal year was 206, with 197 of them held at the two permanent facilities and nine at temporary sites. The program was able to serve 317 small business drop-offs including local governments, Goodwill Industries, Hope Services and The Salvation Army. For more information on hazardous waste drop-off sites in Santa Clara County, residents and Very Small Quantity Generators can visit www.HHW.org or call 408-299-7300. Appointments are required for drop-off events.

BeautifySJ, Junk Pickup, and RAPID cleanup team

FIGURE 6. BEAUTIFYSJ CLEANUP

The Neighborhood Beautification Days (NBD) were first implemented in 2018, along with the residential Junk Pickup programs, to reduce illegal dumping throughout the City, and replace the previous Neighborhood Cleanup (NCU) program. The NBD Program transitioned to BeautifySJ during FY 18/19. The program provides funding for dumpster days throughout the City of San José with a focus on areas most impacted by illegal dumping. BeautifySJ cleanups are coordinated with Council Districts, neighborhood groups and associations as a way to encourage residents to dispose of items like furniture, mattresses, tires, carpet, small plastic appliances, and packing material appropriately. A summary of the FY 2022-2023 BeautifySJ cleanups can be found in Table 3.

TABLE 3. FY 2022-2023 BEAUTIFYSJ CLEANUPS SUMMARY

	Events hosted	Tons collected	Tons recycled
July 2022	2	13.37	0
August 2022	11	63.83	0
September 2022	16	167.04	0
October 2022	9	111.23	0
November 2022	8	136.36	0
December 2022	1	21.38	0
January 2023	1	0.65	0
February 2023	5	51.28	7.52
March 2023	9	77.03	4.87
April 2023	11	126.9	5.17
May 2023	13	122.3	4.45
June 2023	10	122	2.64
Total:	**96**	**1013.37**	**24.65**

Hazardous materials and pharmaceuticals are not accepted at BeautifySJ events; however, residents are educated about the County-wide HHW program where

FIGURE 7. JUNK PICKUP ADVERTISING

appointments are made for disposal of hazardous materials by calling (408) 299-7300 or visiting www.HHW.org.

ESD offers residents unlimited no-cost curbside Junk Pickups to encourage residents to legally dispose of large items (Figure 7). The most commonly collected items include mattresses/box springs, sofas, and miscellaneous furniture. Large appliances, such as refrigerators and electronic waste, such as TVs, are also collected. In FY 22-23 a total of 8,523 tons of materials were collected, recycled and/or properly disposed of through the Junk Pickup program.

Another effort aimed at preventing illegal dumping and improper disposal is the City's Removing and Preventing Illegal Dumping (RAPID) team, which cleans up illegal dumping such as furniture, mattresses, e-waste, appliances, tires, and hazardous waste from city roadway shoulders, park-strips, trails, and sidewalks. Within the 2022-2023 fiscal year, RAPID cleaned approximately 22,553 illegal dump sites and collected approximately 3,525 tons of debris including 189 gallons of human biological waste (Table 4). These materials could otherwise be disposed of improperly or find their way into storm drains or waterways.

TABLE 4. SELECT ITEMS COLLECTED BY RAPID TEAM IN FY 22-23

Item	
Tires	
Refrigerators	545
Mattresses	
TVs	696
Paint	
Human biological waste	189 gal

Other Education and Outreach

Youth Education

Outreach to school-age children is implemented through Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP [2]). Twenty-two bilingual musical assemblies, featuring the musical group ZunZun, performed at local elementary schools. Assemblies, programs, and activities to promote environmental stewardship were also available for both in-person and virtual audiences through the Watershed Watchers

[2] https://scvurppp.org/

program at the Environmental Education Center at the Don Edwards San Francisco Bay Wildlife Refuge in Alviso.

City staff also presented to over 300 students from Independence High School and Evergreen Valley College, both virtually and in person, in FY 22-23. These presentations taught students about IPM and P2 while training them on the City's Barn Owl nest box monitoring protocols and procedures.

Community Events and In-Person Outreach

FIGURE 8. CITY STAFF PROMOTE P2 MESSAGING AT VIVA CALLE SJ

As in-person events resumed or continued throughout 2023, City staff attended and hosted events throughout the RWF Service Area to present P2 messaging directly to the public. While performing in-person outreach, staff focused P2 messaging on general outreach and education about the RWF and wastewater, proper medicine disposal, hazardous waste disposal, impacts of FOG, flea and tick treatment alternatives, and other water quality concerns. City staff attending community events are often from multiple teams in the Environmental Services Department (ESD) including the Communications Division, Wastewater Compliance, Integrated Waste Management, Stormwater Management, and others to cross-promote messaging and answer questions from residents relating to all the services offered by ESD (Figure 8). City staff are committed to promoting trilingual (English, Spanish, Vietnamese) P2 messaging.

City staff spoke with over 398 attendees at three of the City's Viva Calle events throughout 2023. In April, City staff spoke with approximately 100 attendees during the San Jose State University (SJSU) and San José Giants Earth Day tabling events. In July, the City distributed 185 flyers on chewable flea/tick treatments at the San José Animal Care and Services Center (SJ ACS) Open House. In September, City staff tabled at the Bark in the Park event and spoke to 628 attendees and the Moon Festival speaking to an estimated 128 members of San José's Vietnamese Community at the Vietnamese American Cultural Center (VACC; Figure 9). In December, City staff attended Santa Visits Alviso event and engaged an estimated 200 attendees at Alviso Youth Center.

FIGURE 9. CITY STAFF PROMOTE P2 MESSAGING AT THE MOON FESTIVAL

Sports campaign

In 2023, the P2 team launched an innovative campaign in collaboration with the San Jose Sharks hockey team throughout September and October (Figure 10). This initiative, aimed at promoting the safe disposal of medicine, featured the catchy slogan "*Meds in*

the Bin, For the Win". The campaign was marked by dynamic in-stadium LED advertisements at multiple Sharks home games, enhancing visibility and engagement with the sports fans.

FIGURE 10. SHARKS P2 SEPTEMBER CAMPAIGN AD

A unique aspect of this partnership was the incorporation of "Player of the Game" graphics, which were shared at the end of each winning game, adorned with a prominent P2 graphic. This not only celebrated the players' achievements but also seamlessly integrated the campaign's message into the game-day experience.

In addition to the in-stadium exposure, the campaign utilized a variety of external outreach tactics. These included paid Google Display ads, targeted mobile ads through Univision, strategically placed Facebook ads, and visually striking bus shelter posters. All these advertisements were primarily targeted at Santa Clara County residents, ensuring maximum relevance and impact.

The Sharks campaign's effectiveness in raising community awareness of responsible medication disposal is underscored by the significant increase in visits to http://www.sjenvironment.org/Medicine during the months of September and October (Figure 11), as well as an increase in site visits in 2023 (11,182) compared to 2022 (10,983). The use of Sharks mascot, Sharkie, in the September campaign may have contributed to a spike in site visits.

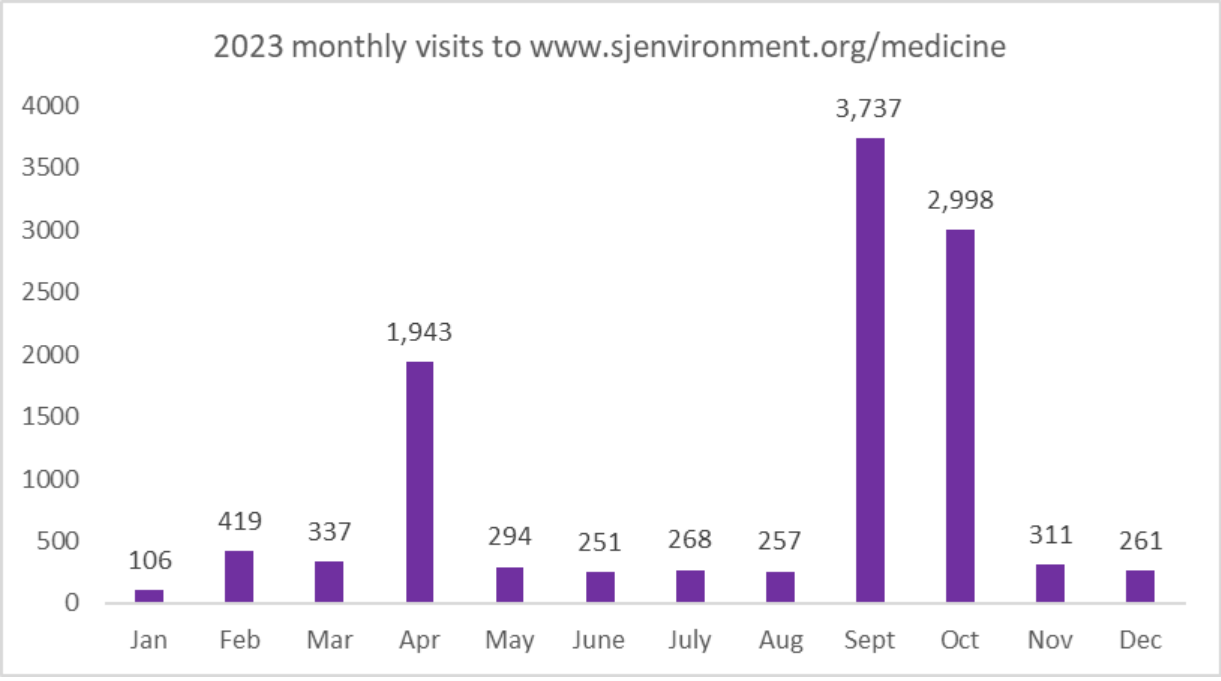


FIGURE 11. VISITS TO SJENVIRONMENT.ORG/MEDICINE IN 2023

Downtown Ice

ESD shared environmentally friendly messages at Downtown Ice, one of the South Bay's signature holiday events, located at the Circle of Palms Plaza in downtown San José (Figure 12). The seasonal ice rink is open every day throughout the winter holiday season. ESD sponsored fives dashers on the 2023 ice rink including two promoting P2 messaging: "putting trash in the bin" and "asking your vet about switching to chewable flea and tick meds." While skating in and around 32 twinkling palm trees and enjoying the holiday festivities, visitors will . This annual event attracts over 30,000 skaters and 64,000 visitors across the Bay Area each year.

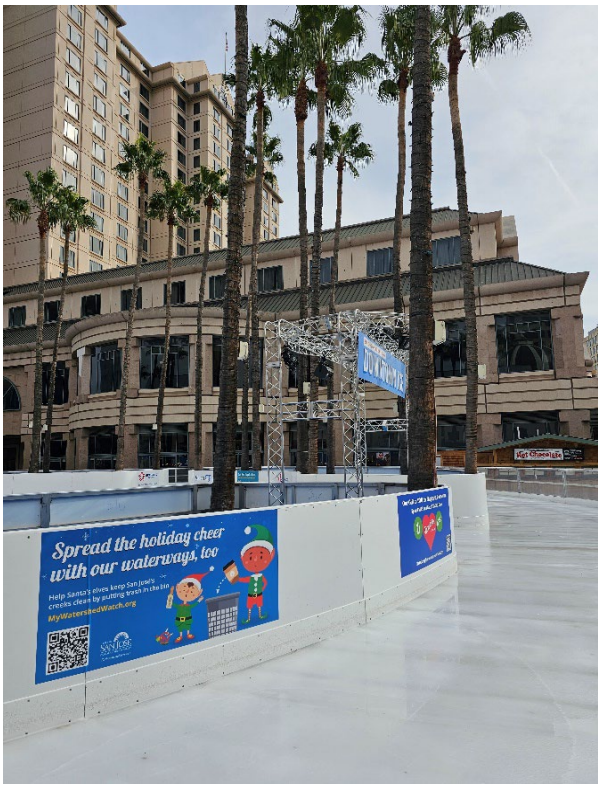


FIGURE 12. CITY OF SAN JOSÉ 2023 DOWNTOWN ICE MESSAGING

Social Media and Other Outreach

ESD maintains an active presence on multiple social media platforms: Facebook, Instagram, Twitter, YouTube, LinkedIn, and NextDoor. Social media platforms are used to highlight ESD programs and share program messaging, including P2, by creating social media ads, taking into consideration current developments, social media trends, and holidays/seasonal topics like Lunar New Year (Figure 13) or Halloween. Social media was a key method of promoting P2 messaging in 2023 as it allows for flexible, low-cost messaging to reach a wide audience. Ads are often targeted to specific audiences based on language-spoken and key demographics.

FIGURE 13. P2 AD TARGETED AT VIETNAMESE RESIDENTS TIMED WITH LUNAR NEW YEAR 2023

FIGURE 14. SHORT FORM VIDEO PROMOTING PROPER MEDICINES AND WIPES DISPOSAL POSTED ON ESD SOCIAL MEDIA PAGES

City staff are always looking to expand the reach of P2 messaging by capitalizing on current social media trends, like the rise of short form video content (Figure 14). Short form videos, such as those posted on Instagram Reels, often perform very well organically and are relatively inexpensive to make as they only require time and a free online graphic design tool to produce. ESD is planning to continue expanding use of short form videos in 2024 and will continue to follow social media trends to find new tactics and techniques.

ESD's Communications Division works hard to maintain a consistent presence on social media to relay relevant and timely messaging to followers. ESD boosted a post (paid fee to post organic post) on Facebook promoting the "Love your pet and the Bay, switch to chewable flea and tick meds today" message in Spring, Love Your Pet Day, National Play Outside Day and National Dog Day. ESD promoted proper medicine disposal during Pollution Prevention Week in September by boosting a social media post on Facebook. In addition, ESD published social media posts on Facebook, Instagram, and Twitter on

World Toilet Day and Halloween reminding residents to keep medicines and wipes out of toilets. See Figure 15 for example social media posts.

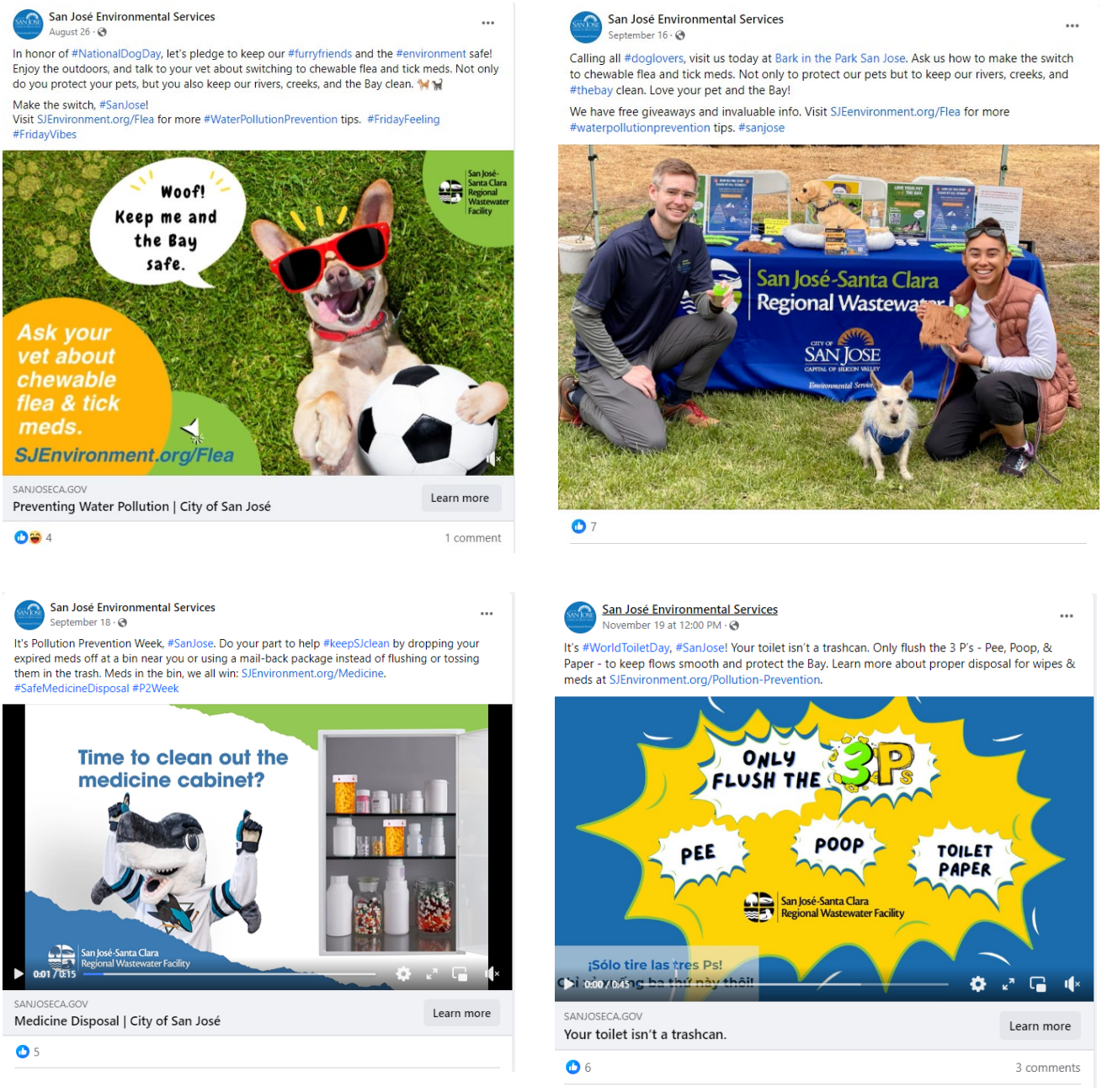


FIGURE 15. SOCIAL MEDIA POSTS OF P2 MESSAGES

City staff also utilized other forms of marketing besides social media to promote P2 messaging. A 30-second ad promoting safe medicine disposal using the "Meds in the bin, we all win" campaign slogan ran at Alma and Santa Teresa Department of Motor Vehicles (DMV) locations in San José during the month of March, September, October, and December. Advertising at the DMV reaches a captive and diverse audience by utilizing the greater geographic range and demographics of those who visit the DMV locations. During September, ESD ran Vietnamese and Spanish language radio ads promoting the general message of safe medicine disposal on local radio stations, Vien Thao and Uforia, to reach San José's large Vietnamese and Spanish population.

Total outreach and marketing statistics can be found below in Table 5.

Regional Partnerships

RMP

The RMP[3] is a collaborative effort between the SFEI, 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. In addition to contributing financially to the RMP as required by the NPDES Permit for the Facility, the City is an active collaborator and participant in the RMP. City staff serve in leadership and voting member positions on the steering committee, technical review committee, and several workgroups, including those focused on Emerging Contaminants and Microplastics. The City also provides in-kind staff support for specific RMP pollutant studies, many of which are aimed at understanding risks and sources of emerging contaminants and their pathways into the environment. A more comprehensive discussion of the City's efforts on emerging contaminants is on page 26 in the Pollutants of Concern Discussion section.

Our Water, Our World

The regional IPM partnership between BACWA and Bay Area Municipal Stormwater Collaborative (BAMSC) 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)[4] promotional program. In FY 22-23, 4 OWOW store trainings were held in San José.

BAPPG

San José participates in the BACWA group, BAPPG[5] as well as BAPPG's Pesticides Workgroup. 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

[3] https://www.sfei.org/rmp
[4] http://ourwaterourworld.org/
[5] https://bacwa.org/committees/bay-area-pollution-prevention-group/

outreach including a website[6]; FOG radio and media advertisements; and 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[7] that captures the regional collaborative's activities for the year. The 2023 key messages include:

1. Copper
    a. Select only ASTM B813 water-flushable flux rather than petroleum-based flux (which is not flushable and increases pipe corrosion rates).
    b. Incorporate additional BMPs during design, reaming, cleaning, and building commissioning that will reduce pipe corrosion rate.
    c. Seek mitigation options for copper products that are used in swimming pools, spas, and fountain treatments (often drained to sanitary sewer) as well as copper-treated fabrics that are subsequently laundered.
2. FOG
    a. Don't pour grease down the drain – collect and recycle used cooking oil.
3. Mercury and Silver
    a. Dental amalgam and silver fixer wastes are hazardous and shall not be disposed in dental office sinks.
    b. Incorporate BMPs for dental amalgam, silver fixer, and other hazardous wastes within a dental office.
    c. The mandated use of BMPs and amalgam separators has significantly decreased the mercury loads into the sewer.
    d. As of July 2017, the U.S. EPA is mandating the installation of amalgam separators and the use of several key BMPs that were originally developed and piloted in the Bay Area.
    e. Provide support for Extended Producer Responsibility (EPR) programs and legislation that limits or bans the sale of products that contain toxic pollutants when safer and effective alternatives are available.
4. Pesticides
    a. Promote integrated pest management and less-toxic products as alternatives to pesticides.
    b. Seek alternatives to fipronil and imidacloprid and other topical (collar and spot-on) pet treatments (conducted alternative analysis, completed talking points for veterinarians and messages for general public).
    c. Work with pesticides regulators to improve their ability to address down-the-drain pathways to wastewater treatment plants during pesticide registration, support their monitoring efforts, and implement mitigation when needed.
5. Pharmaceuticals
    a. No Drugs Down the Drain
    b. Don't Rush to Flush – Meds in the Bin, We All Win!

[6] https://baywise.org/
[7] https://bacwa.org/wp-content/uploads/2024/01/2023-BAPPG-Annual-Report.pdf

   c. Prevent Accidental Poisoning, Drug Abuse and Water Pollution by disposing medicines properly
6. Trash and Wipes
   a. Wipes Clog Pipes!
   b. Toilets Aren't Trashcans
7. PFAS
   a. Support legislation banning and/or restricting the use of PFAS substances in household products.
   b. Support legislation addressing other emerging contaminants of concern.

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 José Stormwater Program or SCVURPPP. The Municipal Regional Stormwater Permit also includes requirements associated with public information and outreach.

Summary

Table 5 summarizes pollution prevention outreach tactics and effectiveness for 2023.

TABLE 5. GENERAL POLLUTION PREVENTION OUTREACH

Program	Description / Status	Evaluation
Beautification Events	Events were hosted within City Council Districts citywide with a focus on areas most impacted by illegal dumping. Additionally, staff provide proactive graffiti removal and illegal dumping sweeps within each community hosting events.	96 Dumpster Day events in FY 22-23. – 976.7 tons of material collected – 24.65 tons of material recycled
Facilitate implementation of school environmental programs (SCVURPPP)	ZunZun interactive bilingual musical assembly program educates K-5 children on watersheds and urban runoff pollution prevention. The Watershed Watchers program at Don Edwards Wildlife Refuge in Alviso provides an interpretive program to educate children and youth about stormwater pollution prevention, watershed awareness, sustainable gardening, and litter prevention.	ZunZun outreach in FY 22-23: – 22 in-person assemblies, reaching 6,621 students from 10 schools in San José – One assembly at Pumpkins in the Park in October 2023 Don Edwards Wildlife Refuge virtual and self-guided at-home activities in FY 22-23: – 1,256 participants
Community Outreach and In-Person Events	City staff attends and hosts events throughout the RWF service area to promote P2 messaging.	Promoted P2 messaging to over 1,200 attendees at community events in 2023. - Viva Calle SJ: 398 - Earth Day: 100 - SJ Animal Care and Services Center Open House: 185 - Bark in the Park: 628

Program	Description / Status	Evaluation
	Events are typically attended by multiple teams to cross-promote P2 messaging to increase reach and provide comprehensive messaging to attendees.	- Moon Festival: 128 - Santa Visits Alviso: 200
DownTown Ice	DownTown Ice is a signature month-long holiday event for the South Bay located in downtown San José. Environmentally friendly messages were shared with attendees on dashers on the ice rink.	This event usually attracts 30,000 skaters and 64,000 visitors across the Bay Area each year.
Sports advertisements	Following successful campaigns in previous years, outreach campaigns promoting the safe disposal of medicine and use of flea medication continued in 2023 with the SJ Sharks (September and October 2023) team. Ads drove traffic to San José webpages, specifically the Medicine Disposal page[8] and the Pollution Prevention page[9], to provide further resources and education on P2 topics in ads.	Combined impressions for the 2023 San José Sharks campaigns in both months were 1,656,155. – 8,501 visits to the P2 pages in September and October. – The October campaign had a budget of $16,500, while the September campaign had a smaller budget of $10,000. The September campaign had 5,573 visits, which was 2,398 more visits than October with a smaller budget. This may be due to the popularity of using Sharkie in the September ad campaign. Sharkie may be a more influential endorsement.
Social Media and Other outreach	ESD maintained a consistent social media presence on many platforms. Posts are boosted to increase awareness or to coincide with specific events, like Pollution Prevention Week in September 2023, National Dog Day and National Play Outside Day in August 2023 Social media ads and posts with graphics or videos are created to promote P2 messaging. Other avenues like, video ads at the DMV, expand the reach of campaigns.	Social Media boosted posts: – World Toilet Day: 1,492 reach, 32 link clicks – Pollution Prevention Week: 1,235 reach, 22 link clicks – National Dog Day: 2,120 reach, 37 link clicks – National Play Outside Day: 2,470 reach, 40 link clicks – Halloween: 1,843 reach, 31 link clicks Digital Ads: – Meds in Bin ads: ▪ English: 11,284 reach, 1,971 link clicks ▪ Spanish: 18,287 reach, 885 link clicks ▪ Vietnamese: 16,460 reach, 1,029 link clicks

[8] https://www.sjenvironment.org/medicine
[9] https://www.sjenvironment.org/pollution-prevention

Program	Description / Status	Evaluation
	Radio ads are an important way increase the reach of P2 messaging to a wider target audience. ESD developed Vietnamese language radio ads promoting the general message of safe medicine disposal to run on a local radio station, Vien Thao, to reach target audience.	– Switch to Flea and Tick meds ads: ▪ English: 12,263 reach, 4,791 link clicks ▪ Spanish: 5,114 reach, 1,460 link clicks ▪ Vietnamese: 11,434 reach, 534 link clicks – Trilingual "Don't flush wipes" ad: 315.4k reach, 7,924 link clicks DMV ads two times every hour at two DMV locations during specific months: - "Switch to Flea and Tick meds" ad ran in March 2023, approximately 672 times total. - "Meds in the bin, we all win" ad ran in September and October 2023, approximately 1,344 times total. - "Don't flush wipes" ad ran in December 2023, approximately 672 times total. Vietnamese radio ad to promote safe medicine disposal campaign: – 86 thirty-second spots ran in 4 weeks in September 2023 with an estimate of 180,000 listeners in the Bay Area and 240,000 online listeners per month.

Criteria to Measure P2 Program Task Effectiveness

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

Influent and Biosolid Monitoring

The SJ-SC RWF, applying secondary 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[10] and Industrial User Pretreatment reports[11]. 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 lagoon stabilization and dewatering process for biosolids. Thus, biosolids sampled on any given day 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 HHW services and quantity of material collected

When pounds or gallons of material of hazardous substances, such as mercury in thermometers, unwanted pharmaceuticals, or kitchen grease, is collected, it is presumed

[10] https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/regulatory-reports/-folder-76
[11] https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/regulatory-reports/-folder-73

that this represents material that may have otherwise been disposed down a drain, toilet, or in the garbage. This presumption cannot be verified. On the other hand, HHW collection events highlight and advertise concerns about improper (e.g., toilet or kitchen sink) 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 exposed to the message. 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. Whenever possible, the City tracks metrics such as impressions (the number of people exposed to digital ads) or visits (actual clicks on links) to web sites, so the baseline traffic can be compared to changes in number of visitors following a large outreach effort. See Table 5 for outreach and marketing statistics.

Pollutants of Concern Discussion

Mercury

Why selected

Mercury is a legacy pollutant for which TMDLs were developed and a Watershed Permit established limits. The Mercury Watershed Permit was first adopted in 2008. The permit was reissued in 2023 through Regional Board Order No. R2-2022-0038. The Mercury and PCBs Watershed Permit establishes mercury limits and pollution prevention triggers for the SJ-SC RWF.

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 SJ-SC RWF. 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.

Reduction efforts and progress

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 2023, concentrations of mercury in wastewater facility effluent were far below the mercury concentration limits and triggers set in the Watershed Permit, as detailed in Table 6 below.

TABLE 6. MERCURY WATERSHED PERMIT LIMITS AND RESULTS.

	Annual Load (kg/yr)	Monthly Concentration (µg/L)	Weekly Concentration (µg/L)	Daily Concentration (µg/L)
Average Effluent Limits	0.800	0.025	0.027	NA
Triggers for Advanced Secondary Plants	NA	0.011	NA	0.021
2023 Maximum Results	0.104	0.00154	0.00154	0.00154

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 790 permitted dental practices in the program. The program has an extensive discharger identification program, which includes several methods for identifying new dental practices. The Dental Amalgam Program issued 19 new permits to dentists in the Tributary area in 2023.

The Federal Dental Amalgam Rule was published in June 2017, and the City's existing Dental Amalgam Program was updated for consistency with the rule's regulations. The new rule went into effect July 14, 2017, for new dental dischargers and July 14, 2020 for existing dentists, and the updated Sewer Use Ordinance was adopted June 15, 2021. The Dental Amalgam Program is working with dentists to help them comply with new requirements.

TABLE 7. DENTAL AMALGAM PROGRAM PERMITS ISSUED BY YEAR

	2019	2020	2021	2022	2023
Total Issued	898	829	807	798	790
New permits	17	18	12	22	19

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 BMPs, and annual report submission. Certifications of amalgam separator installation and BMP implementation have been received from 99% of dental practices. In 2023, oversight of dentists was primarily focused on outreach and dental annual reports were not required for the 2023 calendar year. Due to high staffing turn-over and staffing vacancies, in-person dental inspections were temporarily halted in early 2023 and resumed in August 2023. Dental Amalgam Program Annual Report Forms, BMPs, and amalgam separator certifications are available for download on the City of San José website[1].

Inspections have verified that amalgam separators were installed at 99% of practices. The remaining 1% represents newly identified dental facilities. No violations were identified or issued during 2023 as the inspections were on hold due to high staffing turn-over and staffing vacancies, and resumption of inspections started August 2023. From August to December 2023 no violations were identified.

Permanent San José HHW facility

San José's permanent HHW facility began operations in September 2014. San José and several participating tributary area cities renewed three-year funding and participation agreements, from July 1, 2021, through June 30, 2024, to participate in the County HHW Program which serves residents and small businesses. The permanent facility provides

pollution prevention outreach and collections year-round and in conjunction with holidays and special events.

The San José facility receives HHW from residential drop-off appointments most Wednesdays, Thursdays, 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 the County and participating cities. The facility also provides drop-off appointments for Very Small Quantity Generators at a competitive fee according to quantity and material type. Table 8 details the current mercury prevention plan for the SJ-SC RWF.

TABLE 8. 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 2023, a total of 790 permits were active. 19 new permits issued to practices. 99% of practices certified for amalgam separators and are following Dental Amalgam BMPs. Office inspections resumed in August 2023. A total of 18 inspections were conducted from August to December 2023.
County of Santa Clara HHW Department of Consumer and Environmental Protection Agency, Household and Small Business Hazardous Waste program.	Continue support of the County Residential 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 hosted 197 permanent residential hazardous waste drop-off events. County program also served 317 small business drop-offs including local governments, Goodwill Industries, Hope Services, and Salvation Army. In FY 22-23, HHW program recycled: 230 pounds of mercury containing products (includes thermostats, thermometers, and other products), 75,223 pounds of fluorescent lights, and 168,150 pounds of household batteries.
Dental Practice BMPs maintained on San José web site: Dental Amalgam Program[12] BAPPG approved amalgam separators[13]		

[12] http://www.sanjoseca.gov/dental
[13] https://www.sanjoseca.gov/home/showdocument?id=390

Evaluation and effectiveness

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 (Figure 16).

The facility continues to remove 98 to 99 percent of mercury from wastewater. In addition, total mercury load discharged to the sewer collection system continues to decrease (Figure 17). Most of the reduction is believed to be a result of changes in the dental industry.

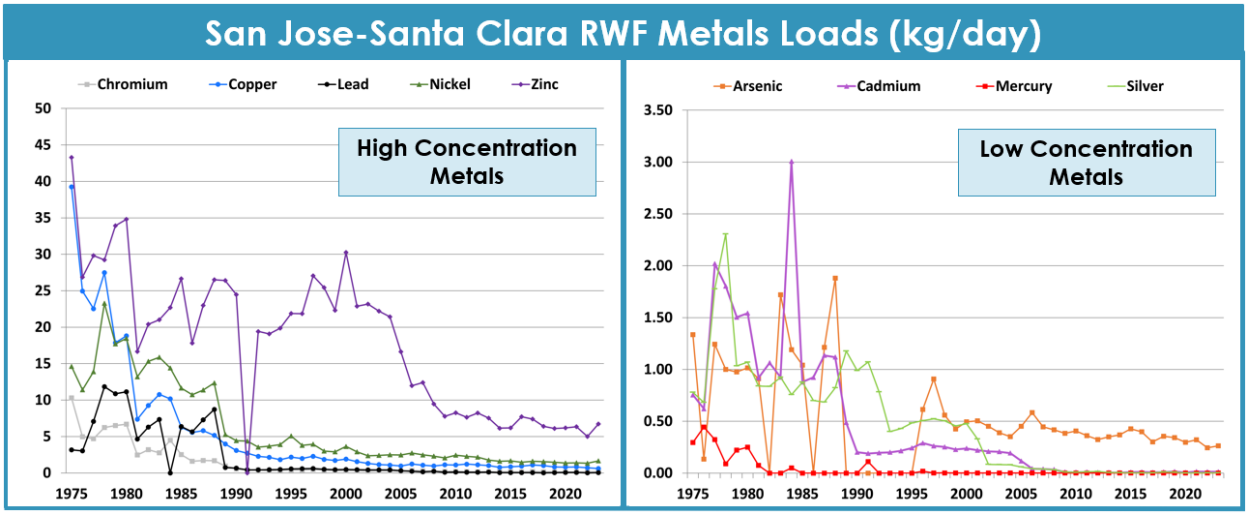


FIGURE 16. METALS LOADS (KG/DAY) FOR SJ-SC RWF

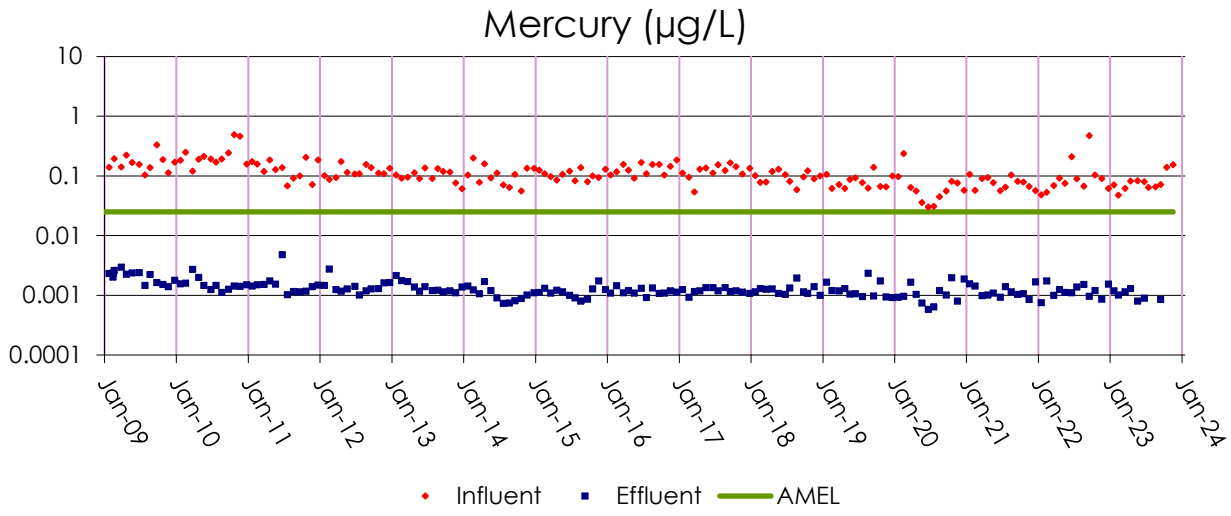


FIGURE 17. MERCURY REMOVAL PERFORMANCE 2009-2023

Polychlorinated Biphenyls (PCBs)

Why selected

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 2023 through Regional Board Order No. R2-2022-0038. The Mercury and PCBs Watershed Permit establishes PCBs limits and pollution prevention triggers for the SJ-SC RWF.

Sources

PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until manufacturing was banned in 1979. They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including:

- Electrical, heat transfer and hydraulic equipment
- Plasticizers in paints, plastics and rubber products
- Pigments, dyes and carbonless copy paper
- Other industrial applications[14]

Reduction efforts and progress

No PCBs have been detected at industrial facilities for well over a decade using detection Method 608.

The Pretreatment Program evaluates 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.

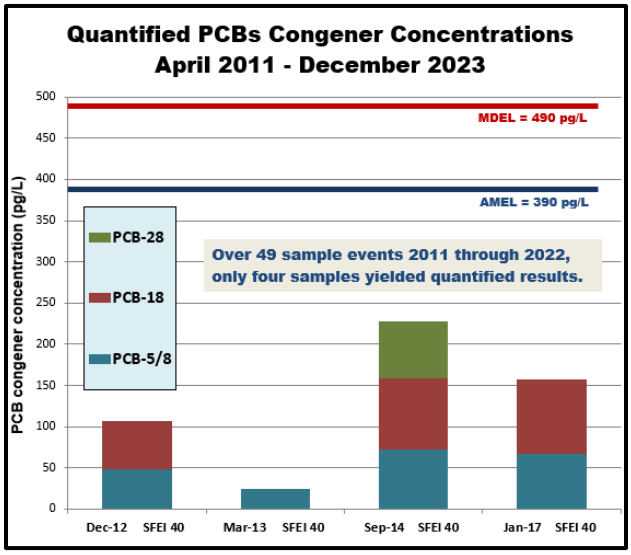


FIGURE 18. PCB DETECTIONS 2011-2023

Evaluation and effectiveness

PCBs are not detected in the SJ-SC RWF influent or effluent using standard detection methods (Method 608).

[14] https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs

The SJ-SC RWF is also required to measure total PCBs by congener quarterly, using USEPA Proposed Method 1668c, for information only. Since April 2011, only four of 49 sampling events have quantified any PCBs congeners (Figure 18).

Copper

Why selected

Copper is a pollutant 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: 16 and 11 µg/L, respectively.

Sources

Until the 1990s, industry contributed a third of total copper load arriving at the SJ-SC RWF. Between 1993 and 2004, industrial copper fell dramatically from its previous average daily load. 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%. Most of the copper load that persists in wastewater today comes from the slow corrosion of copper pipe in homes and businesses, but copper is also used as a pesticide in swimming pools, spas, and incorporated into fabrics.

Reduction efforts and progress

The current copper load to SJ-SC RWF is small and does not pose a threat to receiving waters given the effectiveness of copper removal at the SJ-SC RWF (97%). In the SJ-SC RWF service area, the main water wholesaler is the Santa Clara Valley Water District (SCVWD). SCVWD 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 Sustainability and Compliance team if overall sanitary sewage copper concentrations appear to be rising unexpectedly. The Sustainability and Compliance team can monitor this at the SJ-SC RWF and if necessary, contact SCVWD.

SJ-SC RWF Pretreatment 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 in 2023 was 4.66 lbs/day which is close to values measured prior to the Covid-19 pandemic (Figure 19). However, most of the increase is due to two large copper violations at the two metal finishers.

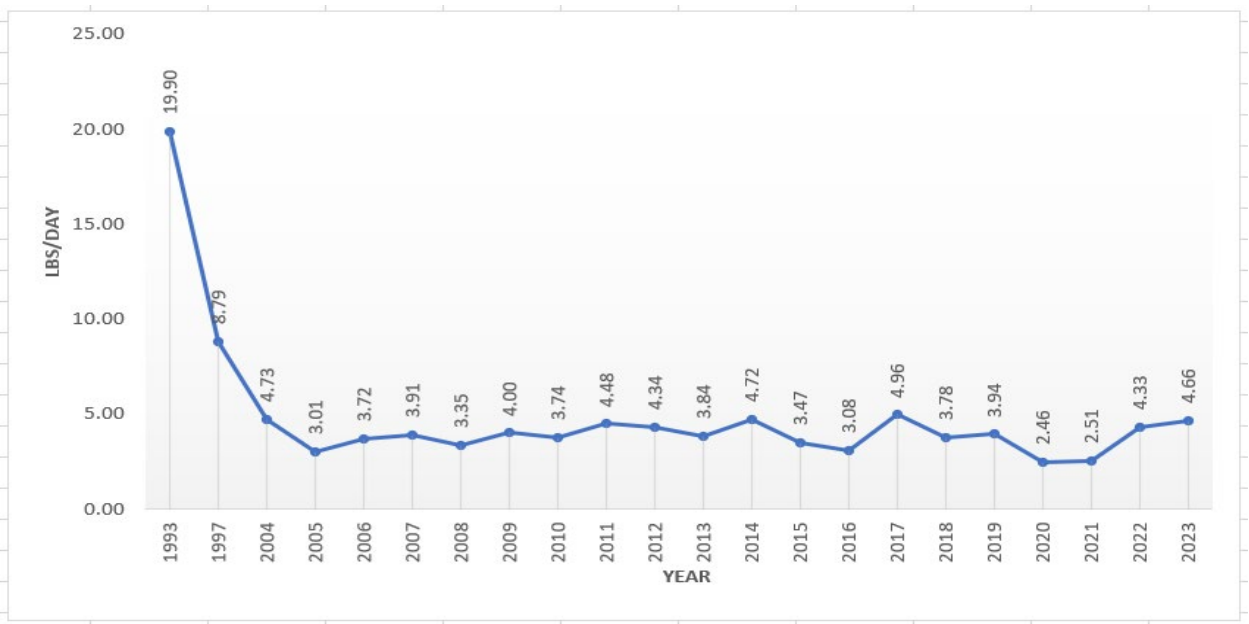


FIGURE 19. AVERAGE COPPER INDUSTRIAL LOADING PER WORKDAY

In addition, the City participates in BAPPG, which in collaboration with BACWA and BAMSC, maintains a website[15] with copper resources for plumbing and pools.

Evaluation and effectiveness

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 BNR. Today, the facility removes 97 percent of wastewater copper (Table 9). Figure 20 shows copper removal performance from 2009-2023.

TABLE 9. COPPER REMOVAL PERFORMANCE (IN µG/L) 2020-2023

Year							
	Low	**High**	**Average**	**Low**	**High**	**Average**	
	85	123	104	1.77	3.71	2.86	97%
	94	133	112	1.23	4.63	2.68	98%
	33	**103**	**67**	**1.14**	**3.11**	**1.75**	**97%**

[15] https://baywise.org/

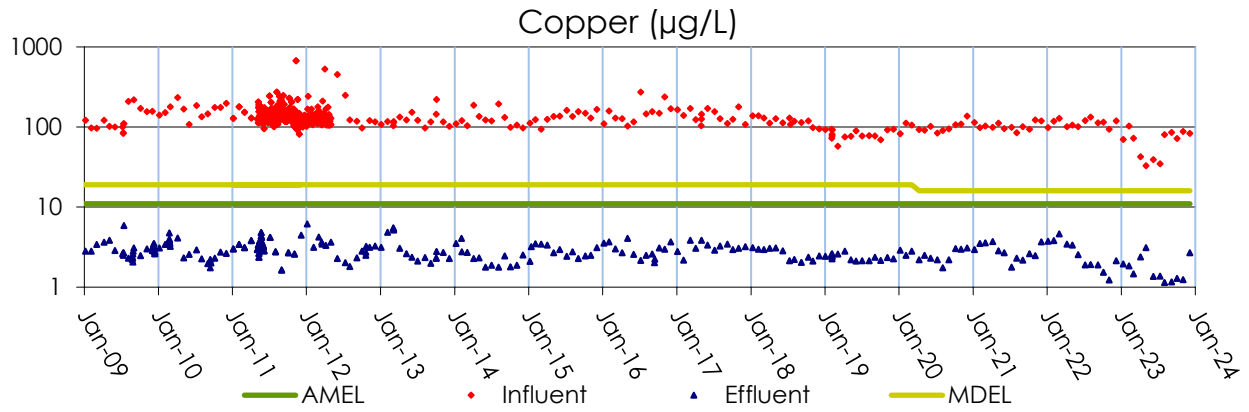


FIGURE 20. COPPER REMOVAL PERFORMANCE 2009-2023

Special provisions – Copper Action Plan

SJ-SC RWF Permit Provision VI.C.5.c. "Copper Action Plan," requires the SJ-SC RWF to implement a copper control program. Table 10 details the current copper action plan for the SJ-SC RWF.

TABLE 10. 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 consist, 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;
    c. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage BMPs that minimize copper discharges.

Table 11 details the current SJ-SC RWF copper prevention efforts.

TABLE 11. 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. Baywise/BAPPG to communicate copper pipe corrosion message to plumbing unions, contractors, building inspectors, and colleges.	Baywise/BAPPG maintained copper pipe fact sheet and has plans to update plumbing messages and copper source analysis in the future.
Industrial Waste Distribute BMPs to industrial metal finishers & printed circuit board manufacturers.	Distribution of Guidelines for Industrial Wastewater Reuse by City website.	Update and maintain Guidelines for Industrial Wastewater Reuse on City website.

Message / Program	Implementation & Timeline	Evaluation
Pools & Fountains Provide outreach to homeowners on pool and spa maintenance and plumbers' roles in reducing corrosion.	Track numbers of brochures distributed each year.	Three brochures were distributed in 2023 due to a reduced number and virtual method for inspections because of restrictions in place from the COVID-19 pandemic.
SJ-SC RWF SJ-SC RWF influent and effluent copper.	Monitor copper in wastewater facility influent & effluent monthly.	Copper concentration in Facility effluent decreased slightly to 1.75 µg/l.
Copper BMPs maintained on San José web site: Cooling Towers[16] Roof Runoff Factsheet[17] Guidelines for Industrial Water Reuse[18] Draining Pools and Spas brochure[19] Pools[20] Car Washing brochure[21] Baywise/BAPPG Plumbing Resources[22]		

Cyanide

Why selected

Cyanide is a pollutant for which BPAs for the Bay have been established. 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 11 and 5.7 µg/L, respectively.

Sources

The facility disinfection process is the main source of the small concentration of cyanide that is discharged. SJ-SC RWF, and many other wastewater treatment plants, produce a small amount of cyanide from chloramination disinfection, a standard disinfection byproduct. Cyanide is used in industrial electroplating operations, and this is the only potentially significant source in the service area.

Reduction efforts and progress

Inspection and surveillance efforts are an integrated part of all inspections and monitoring of industrial users that have cyanide in their processes or are potential cyanide

[16] https://www.sanjoseca.gov/Home/ShowDocument?id=37053
[17] https://www.sanjoseca.gov/home/showdocument?id=37097
[18] https://www.sanjoseca.gov/Home/ShowDocument?id=37059
[19] https://www.sanjoseca.gov/home/showdocument?id=1228
[20] https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/our-creeks-rivers-bay/preventing-water-pollution/pools
[21] https://www.sanjoseca.gov/home/showdocument?id=37099
[22] https://baywise.org/business/plumbing-resources/

contributors as described in the Cyanide Action Plan. Cyanide concentrations in influent have been consistently below detection levels so additional reduction efforts do not appear to be needed at this time.

Cyanide influent concentration levels have typically remained at or below quantified levels of detection (3 µg/L) since November 2005. In 2023, influent values measured below quantified levels of detection, with exception of an influent concentration of 6.8 µg/L in July and 3.4 µg/L in August.

Table 12 details the current SJ-SC RWF efforts to reduce and prevent cyanide.

TABLE 12. CYANIDE PREVENTION PLAN.

Source	Message /		
	Inspect each potential contributor at least semiannually.	Review business licenses, internet listings, and referrals to update list of potential cyanide contributors annually.	
	Surveillance and monitoring of IUs with cyanide processes.	Surveillance and monitoring of industrial discharges and facility influent to detect cyanide.	4 industrial discharge violations at 2 facilities were identified and issued enforcement.
	Distribute educational materials to potential sources.	Cyanide fact sheet is posted on City website and distributed by inspectors as needed.	e
SJ-SC RWF effluent	Monitor cyanide in wastewater facility effluent monthly.	SJ-SC RWF effluent below discharge permit limits: 5.7 µg/l AMEL, 13 µg/l MDEL.	During 2023, effluent concentrations were well below reporting limit of 3 µg/l, with exception of an effluent concentration of 3.1 µg/l in August.

Evaluation and effectiveness

The cyanide concentration increases from zero to about 0.9 µg/L as a byproduct from the SJ-SC RWF's disinfection process (Table 13).

TABLE 13. CYANIDE INFLUENT AND EFFLUENT LEVELS (IN µG/L) 2021-2023.

Year	Influent			Effluent			I
	Low	High	Average	Low	High	Average	
	0.9(ND)	3.5	1.6	0.9(ND)	2.0(DNQ)	1.0	N/A
	0.9(ND)	7.5	2.5	0.9(ND)	2.3(DNQ)	1.6	
	1.5(ND)	**6.8**	**2.2**	**1.5(ND)**	**3.1**	**1.8**	

Special provisions – Cyanide action plan

SJ-SC RWF Permit Provision VI.C.5.d. "Cyanide Action Plan," requires implementation of a cyanide control program. Table 14 details and evaluates the current cyanide action plan for the SJ-SC RWF.

TABLE 14. 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)

Pesticides

Why selected

Pesticides by design are toxic chemicals, the vast majority of which adversely affect human health and the environment around the world. Many are considered persistent organic pollutants (POPs), lingering for long periods of time in the environment while bioaccumulating throughout the food chain. In addition, pesticides which are resistant to biotic/abiotic breakdown can be transported via water, affecting people and wildlife far from where they are released.[23]

Sources

Pesticides can enter SJ-SC RWF 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. However, while urban stormwater runoff is the major source, pesticides flowing through the sanitary sewer is still a significant pathway because of flea and tick treatments that rub off from pets, for example. For further discussion on pesticides in the sanitary sewer source, see *Fipronil and Imidacloprid* in the Emerging Contaminants section below.

[23] https://www.epa.gov/international-cooperation/persistent-organic-pollutants-global-issue-global-response

Reduction efforts and progress

Most pesticide P2 efforts are implemented under the Municipal Regional Stormwater NPDES Permit (Stormwater Permit). Program BMPs for pesticide management include significant education and outreach efforts to residents, businesses, pest control professionals, and municipal staff to promote behavior changes relative to pesticide use and less toxic pest control methods. Annual Stormwater Reports [24] are available online at the SCVURPPP website. You can also view San José's Stormwater Annual Reports [25] online.

FIGURE 21. SCVURPPP OWOW OUTREACH COLLATERAL - CHOOSING LESS TOXIC PRODUCTS TO MANAGE PESTS

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 BAPPG, SCVURPP, and Bay Area Municipal Stormwater Collaborative (BAMSC). SCVURPPP leads the County-wide pesticide outreach effort through Watershed Watch Campaign and the OWOW.

In FY 22-23, the Watershed Watch outreach effort included TV and radio ads, collateral and displays, as well as online digital media. From July 2022 through December 2022, the Watershed Watch Campaign included 425 total spots on IPM topics, including 141 spots on hiring an eco-friendly pest control professional, and 22 spots on the Santa Clara Valley Green Gardener program. From January 2023 through June 2023, the Campaign transitioned its tactics to focus on promotion through YouTube, streaming video, and Pandora. The Green Gardener and Pest Control messaging garnered 218,817 views through YouTube, 130,058 views through streaming video, and reached 36,716 listeners through Pandora.

Table 15 details the current SJ-SC RWF efforts and progress to reduce and prevent pesticide pollution.

[24] https://www.cleancreeks.org/158/Annual-Reports
[25] https://www.sanjoseca.gov/home/showpublisheddocument/89431/638001265688130000

TABLE 15. 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 to business audiences, "Hiring a Company that Can Prevent Pest Problems" residential fact sheet.	Distribute to business audiences, "Hiring a Company that Can Prevent Pest Problems" residential fact sheet.
Residential – Home Use & Disposal		
Advertise means of safe pesticide disposal on the City's website and HHW program public education and outreach.	Advertise means of safe pesticide disposal on the City's website and HHW program public education and outreach.	Santa Clara County HHW Program, FY 22-23: – Served 37,869 residents, including 19,228 San José residents. – Collected 176,450 pounds of poisonous liquids and 73,000 pounds of poisonous solids.
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 training sessions on relevant IPM topics for all City employees that apply pesticides. The City provides annual training on the City's IPM policy and IPM techniques during the Annual Worker Safety training and additional trainings.	145 municipal staff were trained, 127 of which could handle or apply pesticides per their job description, on the City's IPM Policy via an in person seminar. Of the 127 applicators trained, 54 of them applied pesticides to City sites. 100% of applicable employees were trained. Municipal staff received additional training on proactive management and pesticide application equipment calibration, gopher and ground squirrel management options, 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. The City utilized Barn own nest boxes for small rodent population control in 13 parks, 2 community gardens, and at a public high school.

Evaluation and effectiveness

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.

FOG

Why selected

FOG is produced from food manufacturing as well as residential, commercial, industrial, and institutional food preparation. FOG clings to sewer pipes and causes clogs and sewer backups.

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 (which were updated with the issuance of the Revised Monitoring and Reporting Program, Order WQ 2013-0058-EXEC), and reiterated the requirement to develop and implement a Sewer System Management Plan (SSMP) that included provisions for FOG control. 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.

Sources

FOG-laden wastewater is discharged from a variety of residential, commercial, industrial, and institutional sources throughout the SJ-SC RWF service area. FOG is a pollutant of concern due to its impact on the sanitary sewer collection system.

Reduction efforts and progress

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 SJ-SC RWF.

The FOG section of the City's SSMP, which was updated in 2023, describes seven elements of the City's FOG program (Table 16).

TABLE 16. SSMP 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 enough 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.

Within the City of San José, the 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 SSOs. Since December 2004, the City has been reporting all overflows into a publicly accessible statewide electronic database in accordance with 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 32 total SSOs reported during 2023, a decrease from 46 total SSOs reported in 2022 (Figure 22).

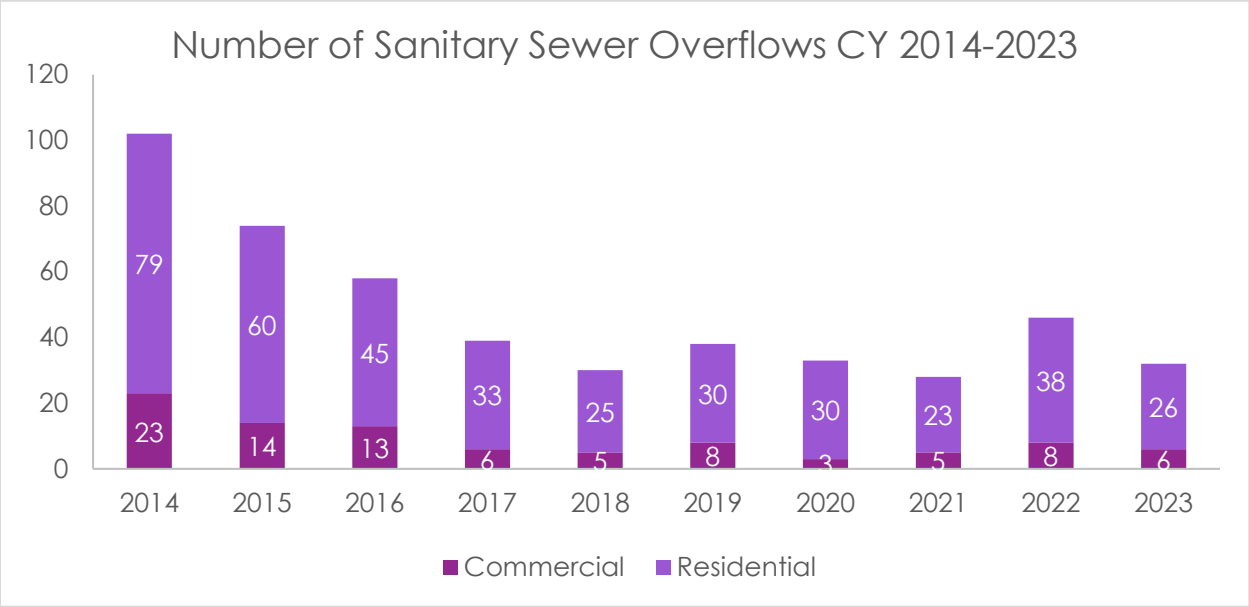


FIGURE 22. NUMBER OF SSOS IN SAN JOSÉ YEARS 2014-2023

Of the 32 SSOs, 26 were in Residential areas and 6 were in Commercial areas (Figure 22). City sewer crews identified 17 (53%) with FOG as the contributing cause: 15 residential and 2 commercial (Figure 24).

When an overflow or significant blockage occurs in a predominantly residential area, and FOG is determined to be the primary cause, City Sewer crews distribute door hangers in the area (Figure 23), to educate residents about the impacts of grease in the sewer and to inform them of alternative disposal methods. Approximately 4,000 doorhangers were distributed by the City of San José in 2023. City staff also shared tips for proper disposal of FOG at 22 tabling events throughout the year. During 2023, DOT distributed 87 flyers at these events.

FIGURE 23. #FOGWASTE EDUCATIONAL DOOR HANGERS

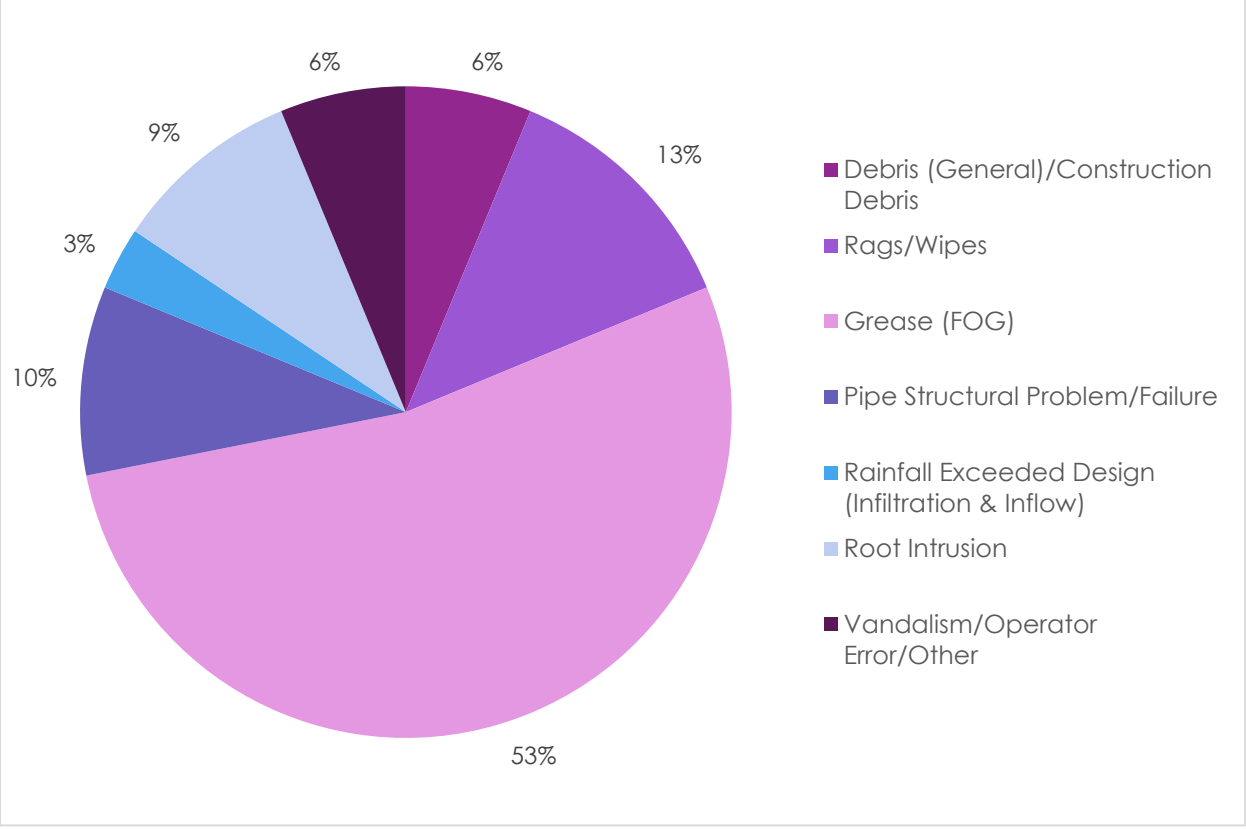


FIGURE 24. NUMBER AND CAUSE OF SSOS IN THE SAN JOSÉ COLLECTION SYSTEM IN 2023

Commercial FOG Control Measures

Plan Check Review

The City's Building Division performs grease control plan check reviews on all new Food Service Establishments (FSEs) as part of opening a business in San José. In 2023, the FOG inspection program determined that 16 FSEs had inadequate grease control measures installed on site and referred them to the PBCE grease control plan check process to determine proper grease control to install. In addition, in the City of Santa Clara, from July 1, 2022, through June 30, 2023, 118 grease control plan check reviews were completed.

FIGURE 25. #FOGWASTE MESSAGING ON CITY MAINTENANCE TRUCKS

FSE Inspections

The Commercial FSE Inspection Program in San José prioritizes FSE inspections based upon whether a site is grease-producing, has adequate pre-treatment, the likelihood of an 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.

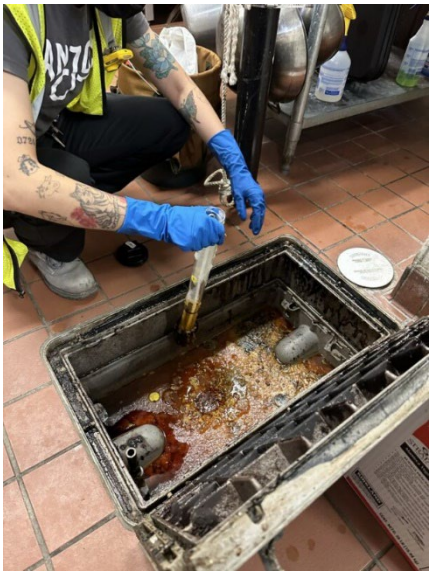


FIGURE 26. ENVIRONMENTAL INSPECTOR TAKING A CORE SAMPLE FROM A GREASE TRAP

FSEs are inspected by San José staff for compliance with applicable Municipal Codes and BMPs related to grease management and grease removal device maintenance. In FY 22-23, 1,389 FOG inspections were conducted at 698 FSEs in San José. FSEs in San José with GCDs 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 (Figures 26 and 27). In FY 22-23, 63 GCDs were inspected (down from 123 in FY 21-22 due to the position being vacant for the majority of the fiscal year).

Educating FSE owners, managers, and workers on ordinance requirements and grease controlling BMPs is a major component of the FSE Inspection Program. FOG-

related educational materials have been developed and translated into multiple languages to assist with education efforts. In FY 22-23, approximately 1,056 educational pieces were distributed during FSE inspections to help FSE operators achieve and maintain compliance.

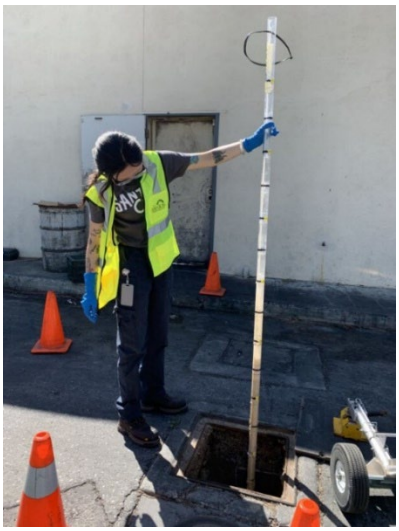


FIGURE 27. GREASE INTERCEPTOR SAMPLING

Grease Investigations

Inspection staff from the FOG Inspection Program respond to reports of grease blockages in the sanitary sewer in San José. These grease investigations involve inspecting FSEs near affected sewer lines for compliance with code requirements for GCD 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 22-23, the City performed four grease investigations involving 21 facilities, with 55 inspections conducted as part of these grease investigations. 18 violations were documented and three Official Warning Notices issued. Education is also an important component of grease investigations, with 54 FOG-related educational materials distributed as part of the grease investigations. In addition, the City of Santa Clara performed 128 FOG inspections in FY 22-23. They also performed 7 investigations because of referrals of excessive grease in the sewer from wastewater field maintenance crews.

FIGURE 28. ENGLISH, SPANISH, AND VIETNAMESE FOG COLLATERAL

FOG Digital Compliance System

The San José Municipal Code (SJMC) requires FSEs to regularly maintain their GCDs by hiring a State-licensed Inedible Kitchen Grease Hauler and/or self-cleaning their GCD. SJMC also requires FSEs to keep three (3) years of GCD maintenance records on-site and available for inspection. These records demonstrate that their GCD is being maintained and they provide the working status of the device. Proper working status is required to prevent FOG from entering the City's sanitary sewer system.

Records-related violations represent the majority of violations documented by FOG Inspectors. To reduce these violations, the City offers a voluntary online reporting system for GCD maintenance records (Figure 29). Records submitted online can be remotely reviewed to ensure compliance with FOG ordinances. FOG Inspectors conduct outreach tasks as part of FOG inspections to enroll FSEs in the digital compliance system. Upon request, the FOG program staff communicated with Inedible Kitchen Grease Haulers to answer questions about enrolling in the digital compliance system. As of the end of CY 2023, about 1,500 of the approximately 2,500 targeted FSEs have enrolled in the voluntary digital compliance system.

FIGURE 29. SAN JOSÉ'S DIGITAL COMPLIANCE SYSTEM

Evaluation and effectiveness

Table 17 details the current SJ-SC RWF efforts and progress to reduce and prevent FOG pollution.

TABLE 17. FOG SUMMARY

Message / Program	Implementation & Timeline	Evaluation
Commercial Food Preparation		
Implement FOG Food Service Facility inspections as required in SSMP.	Conduct FOG and GCD Inspections at FSEs in San José.	Conducted 1,389 FOG Inspections at 698 FSEs in FY 22-23 – 395 violations documented – 71 Official Warning Notices issued – 13 Administrative Citations Referrals (ACR) issued Conducted 63 GCD Inspections in FY 22-23
Distribute grease management information to inspected restaurants and FOG generators.	Educate food service owners/operators on FOG BMPs during inspections.	Distributed 1,056 educational pieces during FSE inspections in FY 22-23

Message / Program	Implementation & Timeline	Evaluation
Inspect FSEs in response to DOT 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.	City of San José in FY-22-23 investigated 4 grease complaints involving 21 facilities: – 55 inspections conducted – 18 violations documented – 3 Official Warning Notices issued. – 0 ACR issued – 54 educational materials distributed during investigations City of Santa Clara in FY 22-23 conducted: – 128 FOG inspections – 7 grease investigations
Requirement to install GCDs (such as traps or interceptors) at Commercial, Industrial, and Institutional FSEs	Plan checks for new and remodeled food service facilities to GCDs.	City of San José in CY 2023 – Building Division does all GCD sizing review as part of their overall Plan Check process for opening a FSE within San José. The Building Division no longer tracks the number of plan checks. The FOG program referred 16 sites to the plan check program for potentially inadequate or untreated FOG waste streams in 2023. City of Santa Clara in FY 22-23 – 118 FOG plan reviews completed.
Residential		
Educate residents about preventing grease blockages through BAPPG.	Participate in grease message delivery through BACWA and BAPPG.	Digital-only campaigns with proper FOG disposal messaging garnered over 3 million impressions to Bay Area residents and over 5.5 thousand ad-clicks by Santa Clara County residents directing to the Baywise FOG landing page[26].
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.	City of San José in 2023 – 32 overflows in 2023 with 26 in residential areas, 6 in Commercial areas. 17 SSOs had FOG as a contributing factor, 15 in residential areas and 2 in a commercial area. – DOT distributed FOG door hangers in neighborhoods where residential grease blockages occurred. A total of at least 4,000 doorhangers were distributed in 2023.
FOG Art	Continue utilizing FOG art education campaign collateral materials.	Vactor trucks continue to display FOG Art messages.

[26] https://baywise.org/residential/fog/

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, effluent, and biosolids through the RMP and other partnerships.

The breadth and depth of emerging contaminant investigations and studies has grown steadily over recent years. This growth is the outcome of an increase in both regulatory and scientific attention on this broad class of contaminants. Recently increased and steady funding for emerging contaminant investigations has enabled appropriate levels of response to the increased attention. Bay Area Wastewater Agencies, in partnership with our regulators at the San Francisco Bay Regional Water Quality Control Board (Water Board), formalized increased financial support and participation in emerging contaminant investigations. This was accomplished through a group permit that provides additional funding for RMP studies of emerging contaminants, and through a June 2020 white paper that memorializes an agreement for San Francisco Bay publicly owned treatment works (POTWs) to participate in emerging contaminant studies.

The focus on emerging contaminants in the regulatory and scientific communities has also gone beyond simple agreements to participate in more studies. Beginning in late 2019, the RMP formed a small subcommittee to re-design the focus of the RMP's ambient Bay monitoring program that tracks status and trends of pollutants. The primary goal of the redesign was to reduce efforts on legacy contaminants so that the program can shift resources towards integrating more work to characterize trends in emerging contaminants. City staff served a key role in this redesign subcommittee as the voting representative for the wastewater community.

Emerging Contaminant Investigations in 2023

Recent studies with the RMP focused on contaminants of emerging concern (CECs) including microplastics, bisphenols, pharmaceuticals, per- and poly-fluoroalkyl substances (PFAS), organophosphate esters (OPEs), ethoxylated surfactants, quaternary ammonium compounds (QACs), and sunscreens. In 2023, the SJ-SC RWF, through ongoing collaborations with the RMP, performed investigations of emerging contaminants, including influent, effluent, and biosolids for QACs. SFEI also completed analyses and a draft report for an RMP PFAS study that included samples from SJ-SC RWF and San José permitted dischargers.

RMP Emerging Contaminants workgroup iteratively evaluates the strategy each year by discussing contaminants that have had significant changes to their tiered framework approach since 2018. The most recent update to the strategy, and the summary and discussion of priorities can be found in the *Contaminants of Emerging Concern in San Francisco Bay: A Strategy for Future Investigations 2020 Update*[27]. Currently, the RMP is

[27] https://www.sfei.org/sites/default/files/biblio_files/CEC%20Strategy%20-%202020%20Update%20-%20Final_92320.pdf

working to revise its CEC strategy and tiered risk-based framework, with complete revision slated for 2024. In 2023, two classes of emerging contaminants were reclassified from the moderate to high concern for the Bay: OPEs and PFAS. Emerging contaminants or classes that remain in the moderate concern tier include alkylphenols, bisphenols, fipronil, imidacloprid, and microplastics. SJ-SC RWF focuses on fipronil, imidacloprid, microplastics, and PFAS as priority pollutants of concern for outreach messaging and special studies. The remainder are proactively tracked through participation in special studies and regional engagement.

Alkylphenols

Alkylphenols and alkylphenol ethoxylates are used as detergents and emulsifiers in paints, cleaning products, pesticides, and in textile, paper, and metal industries. These compounds are commonly detected in Bay water, sediment, bivalves, fish, and bird eggs. Concentrations in the Bay are below most toxicity thresholds and usage is likely decreasing due to a phase-out. An RMP paper published in 2023 examined levels in stormwater runoff, wastewater effluent, and ambient Bay water. [28] Concentrations are generally similar between stormwater and wastewater, while concentrations in Bay water have remained below toxicity thresholds but suggest impacts from both stormwater runoff and wastewater effluent for multiple types of ethoxylated surfactants.

Bisphenols

Bisphenols, a class of synthetic, mobile, endocrine-disrupting chemicals, are widely used in the production of plastics and resins. In 2019, the global production of bisphenol A, the most widely used and well-studied bisphenol, exceeded 8 million metric tons. The RMP began monitoring for bisphenols in 2017.

SFEI, through the RMP, coordinated the collection of effluent samples from six wastewater facilities in the SF Bay, including SJ-SC RWF, in August and September of 2020. In 2022 Ila Shimabuku et. al, from SFEI, determined that levels of bisphenols in the SF Bay are "generally consistent with reported concentrations in other estuarine and marine settings globally." [29]. In October 2022, Miguel Mendez et. al, SFEI, published a paper [30] that recommended bisphenols remain in the "Moderate Concern" category in the RMP, as they may present a risk to Bay biota. The study also recommended continued monitoring of wastewater and stormwater, as well as screening of Bay biota to help to understand the fate and potential impacts of bisphenols in Bay wastewater and stormwater. Screening of Bay biota would also help to understand the fate and potential impacts of bisphenols in the Bay. Previous studies have detected bisphenols in municipal wastewater effluent and urban stormwater runoff.

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[28] Lindborg, A.R., Overdahl, K.E., Vogler, B., Lin, D., Sutton, R. and Ferguson, P.L. 2023. Assessment of Long-Chain Polyethoxylate Surfactants in Wastewater Effluent, Stormwater Runoff, and Ambient Water of San Francisco Bay, CA. ACS ES&T Water, 3(4), pp.1233-1242. https://doi.org/10.1021/acsestwater.3c00024

[29] Shimabuku I, Chen D, Wu Y, Miller E, Sun J, Sutton R. Occurrence and risk assessment of organophosphate esters and bisphenols in San Francisco Bay, California, USA. Science of the Total Environment [Internet]. 2022; 813. https://www.sciencedirect.com/science/article/abs/pii/S0048969721073630?via%3Dihub

[30] Mendez M, Miller E, Liu J, Chen D, Sutton R. Bisphenols in San Francisco Bay: Wastewater, Stormwater, and Margin Sediment Monitoring. Richmond, Ca: San Francisco Estuary Institute; 2022. Report No.: 1093

Since 2009, many states and the federal government have implemented targeted restrictions on the use of bisphenol A. However, these chemicals are still widely used in a variety of products. In addition, some manufacturers switched to bisphenol A alternatives such as bisphenol F and S, which are not as well studied as bisphenol A, however "similarities in structure and functionality have indicated similar toxic effects[30]."

Fipronil and Imidacloprid

Fipronil and imidacloprid are chemicals commonly found in flea and tick treatments. The California Department of Pesticide Regulation is currently reviewing the use of these chemicals over potential human health risks. After application of these treatments to pets and homes, many inadvertently enter the wastewater stream after washing of hands, pet beds, and other surfaces that come in contact with a pet. Unlike many other pesticides (see "Pesticides" section above), monitoring at SJ-SC RWF and other POTWs has demonstrated that these chemicals cannot be completely removed at wastewater treatment facilities. This means that these chemicals are discharged into our creeks, rivers, and San Francisco Bay where they can accumulate at concentrations that are toxic to sensitive aquatic species. Through the City's partnership with BAPPG, information, messaging, and collateral regarding the use of oral flea and tick preventatives began being developed in 2019.

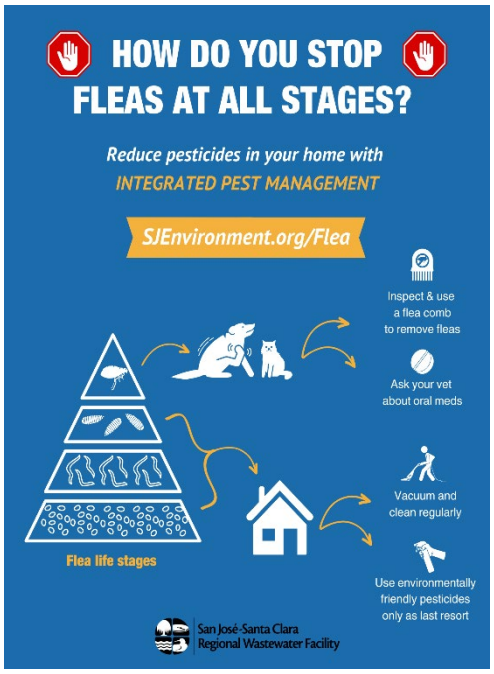

FIGURE 30. SAN JOSÉ IPM INFOGRAPHIC

In 2023, the City continued to create its own digital and physical collateral with similar messaging focused on educating the public on impacts of topical flea and tick medications and awareness of alternatives, like oral (chewable) medications and Integrated Pest Management (IPM) techniques (Figure 30). For more information on flea and tick outreach to the public performed by the City, see *Other Education and Outreach* section above.

The SJ-SC RWF has been an active collaborator and contributor to BAPPG and the BAPPG Pesticides workgroup, providing input on outreach and comment letters as well as sharing messaging. Notably in 2023, the BAPPG Pesticides workgroup was awarded the

Media Release

Bay Area Pollution Prevention Group
Pesticides Subcommittee
wins 2023 award for water quality advocacy

San Francisco Water Board annually recognizes leaders in pollution prevention

November 9, 2023 **Contact:** Blair Robertson – Public Information Officer

OAKLAND – The Bay Area Pollution Prevention Group (BAPPG) Pesticides Subcommittee has been named the winner of the 2023 Dr. Teng-chung Wu Pollution Prevention Award for its outreach and advocacy activities to reduce pesticides in stormwater and municipal wastewater.

FIGURE 31. CALIFORNIA WATER BOARDS MEDIA RELEASE ON 2023 P2 AWARD

Dr. Teng-chung Wu Pollution Prevention award for the group's outreach and policy-related efforts to reduce pesticides in municipal wastewater and stormwater through a source control-focused approach (Figure 31). Along with public outreach campaigns and the *Baywise*[31] website, BAPPG is also working directly with veterinarians through American Veterinary Medical Association (AVMA) and is developing a Veterinary Information Network (VIN) survey to investigate the veterinarian community's knowledge of fipronil and imidacloprid's water quality concerns and the alternatives veterinarians recommend. BAPPG continues to track and provide input to pesticide regulators during pesticide registration through comment letters and direct engagement with regulators.

In February 2023, City staff collaborated with the BAPPG Pesticides workgroup to host a presentation to the Santa Clara County Medical Association's Environmental Health Committee to educate attendees about water quality impacts of topical flea and tick treatments and about alternatives including oral treatments and IPM techniques. City staff plans to continue to present this topic with the BAPPG Pesticides workgroup throughout the RWF service area, focusing on presentations through community organizations and libraries. BAPPG also plans to work with other partner agencies in the Bay Area to bring this presentation to their service areas.

In 2019, information was added onto the City's *Preventing Water Pollution*[32] page and additional information can be found at Baywise's "Your Pets" page[33]. In late 2020, the City developed a dedicated flea and tick section to the ESD FAQ page[34] to direct residents to answers to common questions. The page was refined and finalized in March 2022. The City plans to publish a dedicated webpage dealing directly with flea and tick control and impacts on Bay habitats in 2024.

Microplastics

Microplastics are persistent and prevalent throughout SF Bay, and concentrations can build up over time. Previous microplastics monitoring generated significant public attention, which led to the creation of an RMP microplastics workgroup, first convened as a workshop in June 2016 and held annually since then. Microplastics workgroup meetings are hosted by the RMP and attended by various stakeholders, including San

[31] https://baywise.org/residential/pets/
[32] https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/our-creeks-rivers-bay/preventing-water-pollution/
[33] https://baywise.org/residential/pets/
[34] https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/frequently-asked-questions

José. The SJ-SC RWF has been an active collaborator and contributor to the microplastic workgroup, providing input and advice on study design and scope, and review of results and reports.

The RMP microplastics workgroup continues to direct research to support the Ocean Protection Council's (OPC) Statewide Microplastics Strategy [35], emphasizing the importance of determining potential impacts based on the chemistry of microplastic particles rather than further characterizing and counting particles.

Results from source and pathway tracking of microplastics to the environment indicate that a very large number of particles are transported via stormwater when compared to the numbers transported by wastewater. Most stormwater transported particles are tire wear fragments, which contain chemicals such as 6PPD-quinone (6PPD) that are harmful to fish. Based in part on RMP investigations of tire particles as a source of 6PPD to the Bay and its tributaries, in 2023 the California Department of Toxic Substances Control (DTSC) designated motor vehicle tires containing 6PPD as a Priority Product. This designation required "domestic and foreign manufacturers of motor vehicle tires…that contain 6PPD and are placed into the stream of commerce in California" to submit a Priority Product Notification[36].

Additional research has suggested that microplastic fibers may be of concern, as they are the most common type of microplastic observed in the Bay and consumed by wildlife. Wastewater may be a substantial contributor of microfibers to POTW receiving waters. The RMP is working to further investigate and understand the impact of these microplastics. In part to address requirements of the Statewide Microplastics Strategy, in 2023 the OPC began leading a study focused on microplastic transmission through POTWs and removal efficiencies of different wastewater treatment processes. As part of this study, the California Association of Sanitation Agencies (CASA), of which ESD is a member, is conducting an add-on study focused on standardizing and refining sampling and analysis protocols for wastewater microplastics analyses.

Organophosphate esters (OPEs)

OPEs are synthetic chemicals generally used as flame retardants and plasticizers. They are common throughout the environment due to high global production and widespread use. In 2015, global production of OPEs was estimated at 680,000 metric tons.

The RMP began monitoring for OPEs starting in 2014. In 2022 Ila Shimabuku et. al, from SFEI, determined that levels of OPEs in the SF Bay are "generally consistent with reported concentrations in other estuarine and marine settings globally"[29]. This study and a previous 2019 study by Sutton et al., SFEI[37], found some OPEs in the Bay at levels well above toxicity thresholds, leading the RMP to move OPEs from Moderate to High concern

[35] SB-1263 Ocean Protection Council: Statewide Microplastics Strategy. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1263
[36] https://dtsc.ca.gov/scp/motor_vehicle_tires_containing_6ppd/
[37] Sutton, R., Chen, D., Sun, J., Greig, D. J., & Wu, Y. (2019). Characterization of brominated, chlorinated, and phosphate flame retardants in San Francisco Bay, an urban estuary. Science of The Total Environment, 652, 212–223. https://doi.org/10.1016/j.scitotenv.2018.10.096

within its tiered risk-based framework in 2023[38]. Previous studies have also detected OPEs in municipal wastewater effluent and urban stormwater runoff. OPEs are recognized as regrettable substitutes for polybrominated diphenyl ethers (PBDEs), and policies have reduced their use, however, these chemicals are still widely used in a variety of products.

PFAS, including PFOS, PFOA and long-chain carboxylates

The RMP has monitored PFAS in a variety of matrices for more than a decade with the SJ-SC RWF supporting this work through periodic review of monitoring approaches, work products, and providing wastewater samples when requested. PFAS are widely detected in San Francisco Bay matrices including water and sediment, and many have little available toxicity data. Recent monitoring suggests decreases in PFOS concentrations, likely because of changing use patterns that include the nationwide phase-out in 2002. However, concentrations of some of the many other members of the PFAS family of compounds, such as PFOA, have remained relatively constant, albeit it at substantially lower levels overall.

In November 2020, SJ-SC RWF provided the first of a series of influent, effluent, and biosolids samples for analysis in collaboration with the State and Regional Water Quality Control Boards, the San Francisco Estuary Institute, and other BACWA partners on a study characterizing wastewater-associated PFAS levels in the San Francisco Bay Region. From the phase 1 POTW samples, SFEI determined that concentrations of PFAS in wastewater effluent are higher than ambient water, but below ecotoxicity thresholds. Examinations of PFAS in stormwater, conducted by SFEI through an EPA grant-funded project, will improve understanding of other non-wastewater sources and pathways of PFAS[39]. The environmental persistence, widespread use, continual development of possible "regrettable substitutions", and concerning concentrations in the Bay has elevated PFAS from the moderate to high concern tier of the RMP's risk-based framework.

Phase 2 of the study focused on characterizing residential and industrial dischargers' contributions of PFAS to wastewater. SJ-SC RWF participated in phase 2 and provided samples from 8 San José dischargers in 2022, as well as a second set of influent and effluent samples. Preliminary results suggest that residential discharges may account for a large proportion of wastewater PFAS in municipal POTWs that have predominantly residential flows. Industrial laundry may be another important source of wastewater PFAS warranting further investigation. A final report for Phase 2 of the study is expected to be published in the first half of 2024.

Clean Water Summit Partners (CWSP) is a collective of state and regional clean water associations that includes, among others, BACWA and CASA. In 2023, City staff attended a virtual PFAS workshop hosted by CWSP to learn about recent statewide and national developments in PFAS research, regulation, and legislation. Topics included local agency

[38] San Francisco Estuary Institute (SFEI). 2023. RMP Update 2023. SFEI Contribution #1148. San Francisco Estuary Institute, Richmond, CA. https://www.sfei.org/rmp/update

[39] Mendez M, Trinh M, Miller E, Lin D, Sutton R. PFAS in San Francisco Bay Water. Richmond, CA: San Francisco Estuary Institute. Report No.: 1094.

messaging tactics and methods to improve source control, with particular focus on reducing PFAS use in consumer product manufacturing.

In October 2023, EPA finalized a rule to require enhanced PFAS reporting to the Toxics Release Inventory, eliminating an exemption that allowed facilities to avoid reporting small concentrations of PFAS released to the environment. EPA added PFAS to its list of chemicals of special concern in the hope that enhanced reporting will provide a more complete picture of PFAS quantities from different waste streams. SJ-SC RWF, BACWA, the RMP, and other organizations are following EPA guidance and preparing for any potential legislation that may follow.

Other emerging contaminants

Safe Medicine Disposal

The City participated in two types of activities that involve safe medicine disposal:

- Countywide HHW Program: For FY 22-23, 7,999 pounds of medications were collected through this program. Participation in the countywide HHW Program is described in greater detail in the previous Public outreach section.
- The City highlighted the environmental impact of safe medicine disposal on social media during Pollution Prevention Week in September 2023, Halloween in October 2023, and World Toilet Day in November 2023. The results are described in greater detail in the previous Public outreach section.

Santa Clara County's Product Stewardship Plan for unwanted medicine from households is operated by MED-Project, LLC and Inmar Rx Solutions, Inc. In FY 22-23, a total of 80,082 pounds of pharmaceuticals were collected via kiosk drop-off sites and 399 pounds of pharmaceutical waste through mail-back return packages as reported by MED-Project, LLC [40] and Inmar Rx Solutions, Inc[41].

FIGURE 32. SAFE MEDICINE DISPOSAL ADVERTISING DEVELOPED BY THE CITY OF SAN JOSÉ

A total of 4,873 pounds of used home generated sharps were managed by the HHW Program. Similar to pharmaceuticals, MED-Project, LLC operates a Product Stewardship Plan for unwanted sharps from households in the County and collected a total of 124,230

[40] MED-Project, LLC Med-Project Medicine Annual Report 2023. https://hhw.santaclaracounty.gov/recycling-tips/medication-disposal
[41] Inmar Rx Solutions Inmar Medicine Annual Report 2023. https://hhw.santaclaracounty.gov/recycling-tips/medication-disposal

pounds of sharps via kiosk drop-off sites and 558 pounds of sharps waste through mail-back return packages during the fourth year of program implementation[42].

Wipes and Quaternary Ammonium Compounds (QACs)

While wipes have been an issue at wastewater facilities for some time now, the onset of the COVID-19 pandemic led to an increase in the quantity of wipes and wipes-related issues at many wastewater facilities across the nation. This was especially of concern early in the pandemic when there was a national shortage of toilet paper and there were concerns of more people turning to wipes as an alternative.

BAPPG continues to maintain information on wipes and their impacts at Baywise's "Your Toilet" page[43]. BAPPG also developed and promoted a fall 2023 Google and YouTube ad campaign to inform online audiences not to flush tissues or medicine. Additionally, BAPPG educates about impacts from improper wipes disposal while speaking to Dental Assistant/Hygienist classes at various Bay Area colleges about best management practices related to mercury and silver. BAPPG continues to support the National Stewardship Action Council as they advocate for stricter guidelines on flushable wipes labeling and producer responsibility.

San José also did its own outreach, through social media posts and in person outreach, urging residents not to flush their wipes, which can significantly impact the collection system performance by causing blockages. In 2023, San José created a YouTube video to promote the "three P's" (poop, pee, paper) message for flushing (Figure 33). Goals for 2024 include continuing and expanding in person outreach and digital outreach, particularly in the short form video format that is growing in popularity.

FIGURE 33. SCREENSHOT FROM SAN JOSÉ 3 P'S VIDEO

Similar to BAPPG, as the concern over flushed wipes grew, the RMP came to the conclusion that this is a unique opportunity for a study on QACs in wastewater and biosolids. QACs are present in a variety of disinfectant products that were used and over-used during the pandemic. Impacts of QACs may include disruption of wastewater treatment unit operations, proliferation of antibiotic resistance, formation of nitrosamine disinfection byproducts, and impacts on biota in surface waters.[44] The SJ-

[42] MED-Project, LLC Med-Project Sharps Annual Report 2023. https://hhw.santaclaracounty.gov/recycling-tips/sharps-disposal

[43] https://baywise.org/residential/your-toilet/

[44] Arnold, William A.; Blum, Arlene; Branyan, Jennifer; and others. Quaternary Ammonium Compounds: A Chemical Class of Emerging Concern. Environ. Sci. Technol. 2023, 57, 7645–7665. Publication Date: May 9, 2023. https://doi.org/10.1021/acs.est.2c08244

SC RWF provided samples of influent, effluent, and biosolids for the third year of the study. These samples will be compared to "baseline" data from a 2017 study of wastewater, stormwater, and sediment.

Emerging Contaminant Investigations planned

Based on past studies conducted from 2008 – 2023 and increasing efforts from the RMP and other collaborators, the SJ-SC RWF plans to conduct or support several investigations focused on increasing our understanding of CECs in 2024. These planned studies include:

- Participation in regional PFAS studies led by SFEI that will be informed by Phase 2 regional study results. This follow-up work has received EPA grant funding and will include additional wastewater characterization, as well as characterization of other sources and pathways of PFAS to the environment.
- Continue sampling for QACs per extended study plan in biosolids until mid-2024.
- 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.

TABLE 18. EMERGING CONTAMINANT PLAN

Message / Program	Implementation & Timeline	Evaluation
Flea and tick Switch from spot-on treatments to chewables or tablets.	Participate in BAPPG studies, planning, and outreach activities. Continue to develop and expand Regional and City campaigns and evaluate future enhancements to the campaigns. Created educational presentation aimed at medical professionals and presented in person to the Santa Clara County Medical Association's Environmental Health Committee. Plans to schedule more presentations virtually at community organizations within the RWF Service Area and to bring this presentation to other Bay Area wastewater agencies' service areas are in the works for 2024 and beyond. Maintain online FAQ page for flea and tick treatment information updating as necessary.	San José was an active member of BAPPG and the BAPPG Pesticides Workgroup in 2023 and worked to approve and share outreach collateral for oral flea and tick alternatives. City staff and BAPPG Pesticides workgroup presented Flea and Tick Treatment Impacts and Alternatives educational presentation to 10 members of the Santa Clara County Medical Association's Environmental Health Committee.

Message / Program	Implementation & Timeline	Evaluation
Unwanted Medications Do not flush unwanted medicine down the toilet or sink or put in the 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 collection program for the County.	FY 22-23: MED-Project and Inmar Rx Solutions collected 80,082 lbs of pharmaceuticals.
Santa Clara County HHW program The City continues to provide ongoing residential outreach to promote HHW program.	City agreement to participate in countywide HHW Program and for County to operate the San José HHW facility continues through June 2024.	FY 22-23: County HHW facility served 37,869 residents including 19,228 San José residents, and safely managed 2,581,561 pounds of hazardous waste: – 7,999 pounds of unwanted or expired medications collected. – 4,873 pounds of used sharps managed.
Wipes Wipes clog pipes	Participate in BAPPG studies, planning, and outreach activities. Participate in SFEI-RMP studies of QACs. Develop messaging directing residents to dispose of wipes in the trash can.	Worked with BAPPG and RMP on studies and messaging. Developed social media messaging instructing residents to properly dispose of wipes.
Investigation Work with SFEI-RMP to continue emerging contaminant studies.	Plan for future emerging contaminant studies on pharmaceuticals, microplastics, PFAS, non-targeted analytes, & other prioritized CECs.	2023: Worked with RMP, SFEI, and national scientists to collect samples and/or provide input for studies on PFAS and QACs. Participated in planning workshops for microplastics and PFAS studies.

Attachment A – Acronyms

6PPD	6PPD-quinone, a compound found in tire wear particles
ACR	Administrative Citations Referral
AVMA	American Veterinary Medical Association
BACWA	Bay Area Clean Water Agencies
BAMSC	Bay Area Municipal Stormwater Collaborative
BAPPG	Bay Area Pollution Prevention Group
BeautifySJ	Current name for San José's neighborhood cleanup program
BMPs	best management practices
BNR	biological nutrient removal
BPAs	Basin Plan Amendments
CASA	California Association of Sanitation Agencies
CECs	Contaminants of Emerging Concern
City	City of San José
CMS	copper management strategy
COVID-19 pandemic	SARS-Cov-2 virus pandemic
CWSP	Clean Water Summit Partners
DMV	Department of Motor Vehicles
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
ESD	Environmental Services Department
EPA	Environmental Protection Agency
FOG	fats, oils, and grease
FSEs	food service establishments
GCDs	grease control devices
GWDR	General Waste Discharge Requirements for Sanitary Sewer Systems
HHW	household hazardous waste
IPM	Integrated Pest Management
IUs	permitted industrial users
LCR	Lead and Copper Rule
LSB	Lower South Bay
NBD	Neighborhood Beautification Days
NCU	Neighborhood Cleanup
NPDES	National Pollutant Discharge Elimination System
OPC	Ocean Protection Council
OPEs	organophosphate esters
OWOW	Our Water, Our World
P2	pollution prevention
P2 Report	Pollutant Minimization Report
PBDEs	Polybrominated diphenyl ethers

PCBs	polychlorinated biphenyls
PFAS	per- and polyfluoroalkyl substances
POPs	persistent organic pollutants
POTWs	Publicly Owned Treatment Works
QACs	quaternary ammonium compounds
quicksilver	mercury
RAPID	Removing and Preventing Illegal Dumping team
RMP	Regional Monitoring Program
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Valley Water District
SFEI	San Francisco Estuary Institute
Sharks	San José Sharks professional ice hockey team
SJ ACS	San José Animal Care and Services Center
SJ EIC	San José Environmental Innovation Center
SJMC	San José Municipal Code
SJSU	San Jose State University
SJ-SC RWF	San José-Santa Clara Regional Wastewater Facility
SOP	standard operating procedure
SSMP	sewer system management plan
SSO	sanitary sewer overflow
Stormwater Permit	Municipal Regional Stormwater NPDES Permit
SWRCB	State Water Resources Control Board
TMDL	total maximum daily load
tributary agency	one of eight cities or unincorporated areas that SJ-SC RWF services
TTOs	total toxic organics
VACC	Vietnamese American Cultural Center
VIN	Veterinary Information Network
Water Board	San Francisco Bay Regional Water Quality Control Board

Attachment B – Santa Clara County Annual HHW Memorandum

County of Santa Clara
Consumer and Environmental Protection Agency
Household Hazardous Waste Program
1553 Berger Drive, Suite 200
San Jose, CA 95112
Tel: (408) 299-7300 Fax: (408) 280-6479

http://www.HHW.org

Memorandum

August 2, 2023

To: Storm Water/Urban Runoff P2 Staff

From: Billy Puk, Hazardous Materials Program Manager
Household Hazardous Waste Program
County of Santa Clara

DocuSigned by:
Billy Puk
88F7570175724D1...

Re: Fiscal Year 2022-2023 HHW Program Update

Participation
The HHW Program served 37,869 residents from July 1, 2022 to June 30, 2023 and safely managed 2,581,561 pounds of hazardous waste. There was a total of 206 collection events: 197 at two permanent facilities and nine at temporary sites strategically located throughout the County. In addition, the program served 317 small business drop-offs including local governments, Goodwill Industries, and The Salvation Army.

Paint
A total of 1,250,481 pounds of paint and paint related material were collected. Latex paint accounted for 663,999 pounds, and oil-based paint related material accounted for 586,482 pounds. There are fifty-one (51) take-back locations at retail stores within the County, and several one-day take-back events managed by the paint manufacturers. Paint collected at these locations does not contribute to the above quantities.

Pesticides
The HHW Program collected 176,450 pounds of poisonous liquids, and 73,000 pounds of poisonous solids during the reporting year.

Household batteries
A total of 168,150 pounds of household batteries were collected and recycled. Of that volume, retail take-back stores accounted for 74,728 pounds. Forty-two (42) 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. Note that some additional take-back batteries sites within the County are not part of our network of partners.

Mercury-containing fluorescent lamps
A total of 75,223 pounds of fluorescent lamps were collected during the reporting period. Of that volume, retail take-back stores accounted for 40,036 pounds. 35,187 pounds lamps were collected at HHW events. Twenty-seven (27) stores serve as fluorescent lamp take-back partners. Similar to batteries, some additional lamps take-back locations within the County are not part of our network of partners.

Mercury Containing Products
Two hundred thirty (230) pounds (includes thermostats, thermometers and other mercury containing products) were collected by the program.

Pharmaceuticals and Sharps
A total of 7,999 pounds of unwanted/expired medications were managed through the HHW Program. Additionally, Santa Clara County's Product Stewardship Plan for unwanted medicine from households is operated by MED-Project, LLC and Inmar Rx Solutions, Inc. During the current reporting cycle, a total of 80,082 pounds of pharmaceuticals were collected via kiosk drop-off sites and 399 pounds of pharmaceutical waste through Mail-back return packages as reported by MED-Project, LLC[1] and Inmar Rx Solutions, Inc[2].

A total of 4,873 pounds of used home generated sharps were managed by the HHW Program. Similar to pharmaceuticals, MED-Project, LLC operates a Product Stewardship Plan for unwanted sharps from households in the County and collected a total of 124,230 pounds of sharps via kiosk drop-off sites and 558 pounds of sharps waste through Mail-back return packages during the fourth year of program implementation[3].

Public Outreach
Staff participated in nine community outreach events.

[1] MED-Project, LLC Med-Project Medicine Annual Report 2023

[2] Inmar Rx Solutions Inmar Medicine Annual Report 2023

[3] MED-Project, LLC Med-Project Sharps Annual Report 2023