



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 2022 Pollution Prevention Annual Report

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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.

2022 was yet again impacted by the pandemic from the SARS-Cov-2 virus that causes COVID-19 (COVID-19 pandemic), which first impacted the SF Bay Area in March of 2020. However, this year staff were able to return to in-person outreach and other efforts that had changed or been put on hold in prior years. Following federal, state, county, and city health and



FIGURE 1. POLLUTION PREVENTION INFOGRAPHIC

safety environmental guidance was and remains a top priority for the Regional Wastewater Facility. The City of San José (City) was able to resume many plans for outreach campaigns and messages placed on hold through the first years of the 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 2022, 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, 2022, to December 31, 2022.

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 2022, an average of approximately 84 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 193 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).

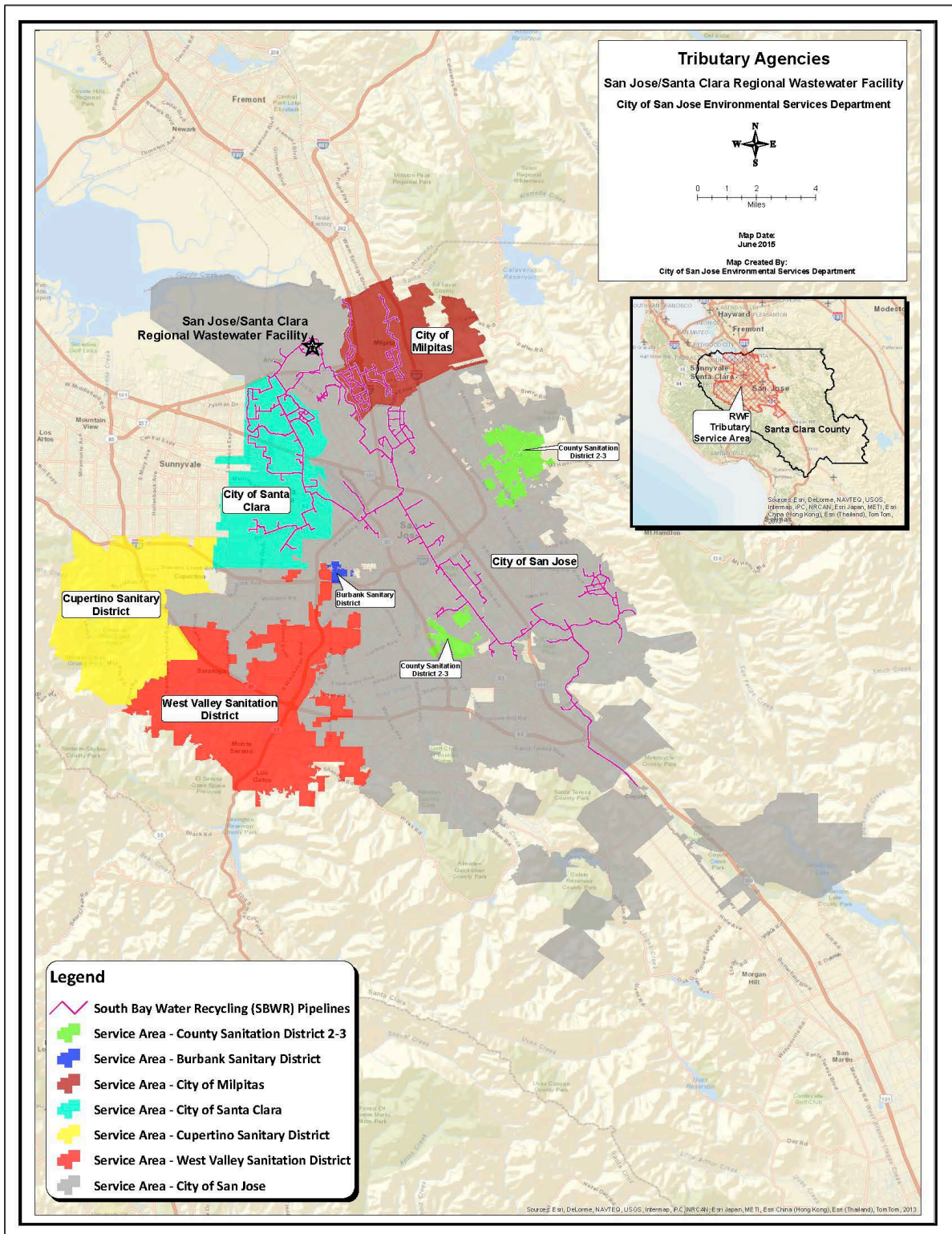


FIGURE 2. SJ-SC RWF SERVICE AREA AND TRIBUTARY AGENCIES

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 |
|------------------------|----------------|--|
| <i>Mercury</i> | Tier 2 | TMDL |
| <i>PCBs</i> | Tier 2 | TMDL |
| <i>Copper</i> | Tier 2 | Permit Action Plan |
| <i>Cyanide</i> | Tier 2 | Permit Action Plan |
| <i>Pesticides</i> | Tier 2, Tier 4 | TMDL & Emerging Contaminants |
| <i>FOG</i> | Tier 3 | Operational Impact – collection system |
| <i>Wipes</i> | Tier 3 | Operational Impact – RWF & collection system |
| <i>Pharmaceuticals</i> | Tier 4 | Emerging Contaminants |
| <i>Microplastics</i> | Tier 4 | Emerging Contaminants |
| <i>PFAS</i> | 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 |
|------------------------|---|
| <i>Mercury</i> | Dental amalgam waste, thermometers, thermostats, compact fluorescent light bulbs |
| <i>PCBs</i> | Dielectric fluid in transformers built prior to 1978. Building caulking and some roofing materials from pre-1980s construction |
| <i>Copper</i> | Copper plumbing, pool and spa maintenance, vehicle service facilities |
| <i>Cyanide</i> | Industrial users, and always a very small concentration that is a byproduct of chlorine disinfection |
| <i>Pesticides</i> | Residential ant and spider control, and potentially professional pesticide operators. Residential flea and tick topical treatments, especially fipronil and imidacloprid. |
| <i>FOG</i> | Kitchen waste from restaurants and residents |
| <i>Wipes</i> | Residential disposal in the toilet. |
| <i>Pharmaceuticals</i> | Residential or hospice disposal in the toilet. Some pharmaceuticals, such as albuterol, ofloxacin, fluoxetine (Prozac), carbamazepine, and some antibiotics are excreted by human users at low concentrations that still pass through the treatment facility, and into the Bay. |
| <i>Microplastics</i> | Beads in facial scrubs, toothpastes and personal care products. Fibers from clothing |
| <i>PFAS</i> | Very broad use including fire-fighting foams, waterproof textiles and paper, non-stick coatings, and 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. But, any persistent pollutant detected at high enough concentration, could be tracked in this manner.

Influent, Effluent and Sludge Monitoring

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. The teams also investigate sewer blockages in commercial areas, whether caused by FOG or other material, and recommends corrective actions.

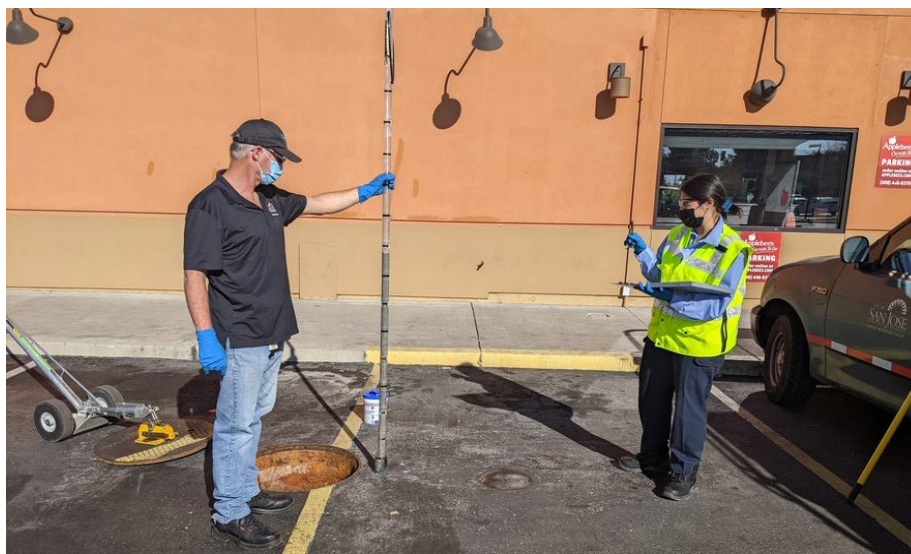


FIGURE 3. CITY INSPECTORS CHECKING A GREASE INTERCEPTOR

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 Environmental Protection Agency (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 2022, 157 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 97% coverage for applicable employees. The City plans to update the IPM SOP by the end of FY 2022-23 to ensure it reflects current practices of pesticide toxicity control consistent with the City's Municipal Regional Stormwater NPDES permit.

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



FIGURE 4. THE CITY'S IPM SOP

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.

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) located at 1608 Las Plumas Ave, San José, and monthly at the San Martin HHW Facility. 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. 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.



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

The Santa Clara County HHW Program served 38,009 residents, 20,035 of which were San José residents, in FY 21-22. The number of collection events during this fiscal year was 189, with 184 of them held at the two permanent facilities and five at temporary sites as the program resumed events for the first time in two years. The program was able to serve 309 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. BEAUTIFICATION DAY CLEANUP TEAM AT WORK

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 2021-2022 BeautifySJ cleanups can be found in Table 3.

TABLE 3. FY 2021-2022 BEAUTIFYSJ CLEANUPS SUMMARY

| | Events hosted | Tons collected | Tons recycled | Tons donated |
|-----------------------|---------------|----------------|---------------|--------------|
| July 2021 | 12 | 60.78 | 43.19 | 0.11 |
| August 2021 | 11 | 78.27 | 56.68 | 0 |
| September 2021 | 14 | 106.1 | 78.23 | 0.05 |
| October 2021 | 12 | 103.17 | 77.88 | 0.14 |
| November 2021 | 8 | 83.32 | 63.13 | 0.09 |
| December 2021 | 2 | 26.13 | 19.6 | 0 |
| January 2022 | 13 | 49.66 | 37.45 | 2.08 |
| February 2022 | 7 | 59.78 | 44.88 | 0.42 |
| March 2022 | 9 | 103.452 | 72.22 | 0.67 |
| April 2022 | 6 | 43.07 | 32.82 | 0.1 |
| May 2022 | 15 | 101.22 | 76.35 | 0 |
| June 2022 | 8 | 111.43 | 83.72 | 0 |
| Total: | 117 | 897.09 | 686.21 | 3.67 |

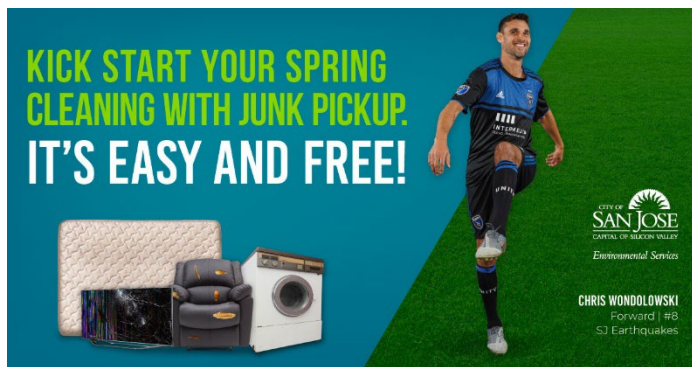


FIGURE 7. JUNK PICKUP ADVERTISING

Hazardous materials and pharmaceuticals are not accepted at Beautification Day events; however, residents are educated about the County-wide HHW program where appointments are made for disposal of hazardous materials by calling (408) 299-7300 or visiting www.HHW.org.

ESD offers residents free unlimited curbside Junk Pickups to encourage residents to legally dispose of large

items. The most commonly collected items include mattresses/box springs, couches and miscellaneous furniture. Items such as refrigerators and TVs have also been collected. In FY 21-22 a total of 9,635 tons of materials were collected and 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 2021-2022 fiscal year, RAPID cleaned approximately 21,140 illegal dump sites and collected approximately 2,319 tons of debris including 148 gallons of human biological waste (Table 4). These materials could otherwise be disposed of improperly or find their way into storm drains or waterways.



FIGURE 8. IMPROPERLY DISPOSED HHW LOCATED AND CLEANED BY RAPID TEAM

TABLE 4. SELECT ITEMS COLLECTED BY RAPID TEAM IN FY 20-21

| Item | Quantity collected |
|------------------------|--------------------|
| Tires | 1,329 |
| Refrigerators | 402 |
| Mattresses | 3,852 |
| TVs recycled | 590 |
| Paint | 276 gal |
| Human biological waste | 148 gal |

Other Education and Outreach

Youth Education

Outreach to school-age children is implemented through Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCVURPPP) ² bilingual musical assemblies, featuring the musical group ZunZun, performed at local elementary schools and the Watershed Watchers program at the Environmental Education Center at the Don Edwards San Francisco Bay Wildlife Refuge in Alviso. Due to health and safety concerns because of the COVID-19 pandemic, most assemblies, programs, and activities were adapted for remote outreach (e.g., virtual assemblies and events, and self-guided tours and activities to promote environmental stewardship).

City staff also presented to 401 students from Independence High School, Pioneer High School, and Evergreen Valley College, both virtually and in person, in FY 21-22. 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 9. CITY STAFF AND SHARKIE RUN THE WATERSHED WATCHERS GAME AT VIVA CALLE SJ

As in-person events resumed throughout 2022, City staff attended and hosted events throughout the RWF Service Area to present P2 messaging directly to the public. While performing in-person outreach, P2 messaging focused 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 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 the Environmental Services Department. City staff does its best to promote trilingual P2 messaging (speaking English, Spanish, Vietnamese).

City staff spoke with over 300 attendees at three of the City's Viva Calle events throughout 2022. Sharkie made an appearance at one event (Figure 9) as part of the City's contract with the National Hockey League team the San José Sharks (Sharks), which led to an increase in foot traffic at the ESD tent. In August, City staff spoke with an estimated 70 attendees at a Major League Soccer game hosted by the San José



FIGURE 10 CITY STAFF PROMOTE P2 MESSAGING AT THE MOON FESTIVAL.

² <https://scvurppp.org/>

Earthquakes (Quakes) as part of the City's contract with the Quakes. In September, City staff spoke to roughly 100 members of San José's Vietnamese Community during the Moon Festival at the Vietnamese American Cultural Center (VACC) (Figure 10).

Sports campaigns

San José utilized its sports outreach with the Quakes in August 2022 and the Sharks in February 2022. The P2 ads promoted safe medicine disposal and switching to environmentally friendly pet chewable flea and tick treatments. Examples of messages used for these campaigns are **“Meds in the Bin, We all Win! Protect your family and the Bay with proper med disposal.”** and **“Love your pet and the Bay. Switch to chewable flea and tick meds today.”** Ads with the Quakes promoted the message “Meds in the bin, We all win!” and drove traffic to the [Medicine Disposal page](#)³ of the City's website. The page provides a list and map of locations in San José and the surrounding region where residents can safely dispose of their medicine. Ads with the Sharks promoted the message “Love your pet and the Bay. Switch to chewable flea and tick meds today” and drove traffic to the [Preventing Water Pollution page](#)⁴, which has a section on the harms of topical flea and tick medication.



FIGURE 11. QUAKES P2 AUGUST CAMPAIGN AD

Quakes Campaign

The City's partnership with the Quakes allows for an opportunity for Spanish-language outreach to increase the audience of P2 campaigns by connecting with Spanish-speaking Quakes fans. Safe medicine disposal messaging was promoted through in-stadium and public outreach via the sports campaign: **“Meds in the Bin, We all Win!”** Messaging appeared at two Quakes home games in August 2022. This messaging included ads in English and Spanish on Quakes game-day radio, in-stadium outreach with LED signage that was played throughout the game near the field and in the concourse area, and a PA announcement read to fans during the game. Digital ads featuring Quakes players were also shown in English and Spanish on social media sites, including ads with graphics and videos featuring Quakes players (Figure 11). A breakdown of digital tactics and impressions is found in Table 5.

TABLE 5. 2022 QUAKES TACTICS AND IMPRESSIONS

| Quakes Tactics | Impressions August 2022 |
|-------------------|-------------------------|
| Facebook | 106,280 |
| YouTube video ads | 310,888 |
| Twitter | 83,895 |
| Total | 501,063 |

³ <https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/our-creeks-rivers-bay/preventing-water-pollution/medicine-disposal>

⁴ <https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/our-creeks-rivers-bay/preventing-water-pollution>

Sharks Campaign



The only Sharks P2 campaign was in February for 2022. Messaging included: **“Love your pet and the Bay. Switch to chewable flea and tick meds”**. ESD ran in-stadium LED ads at six home games. The partnership also included “Player of the Game” graphics shared at the end of each winning game with a P2 graphic on it. External outreach tactics included Google Display ads and bus shelter posters (Figure 12). All ads, when possible, were targeted at Santa Clara County residents. Figure 13 summarizes the number of visits to *Preventing Water Pollution* web page from 2020 through 2022.

FIGURE 12. SHARKS P2 FEBRUARY CAMPAIGN AD

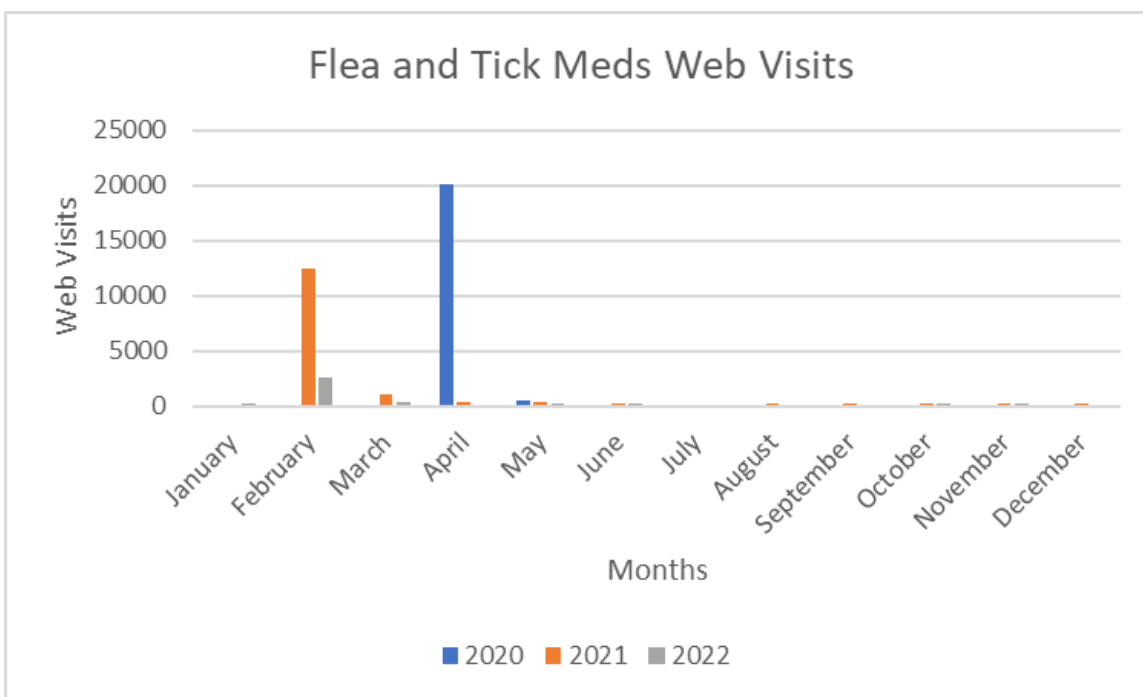


FIGURE 13. VISITS TO SJ ENVIRONMENT FLEA AND TICK PAGE 2020-2022

Christmas in the Park

ESD shared environmentally friendly messages at Christmas in the Park (CITP), one of the South Bay's signature holiday events, located at Cesar Chavez Plaza in downtown San José. ESD's sponsorship of the event included messages being showcased using signage, Sounds of the Season announcements, social media ads, and CITP's e-newsletter throughout the month-long event to more than 500,000 visitors from across the Bay Area (Figure 14). The announcements informed attendees about switching to environmentally friendly chewable flea and tick treatments to keep the Bay healthy.

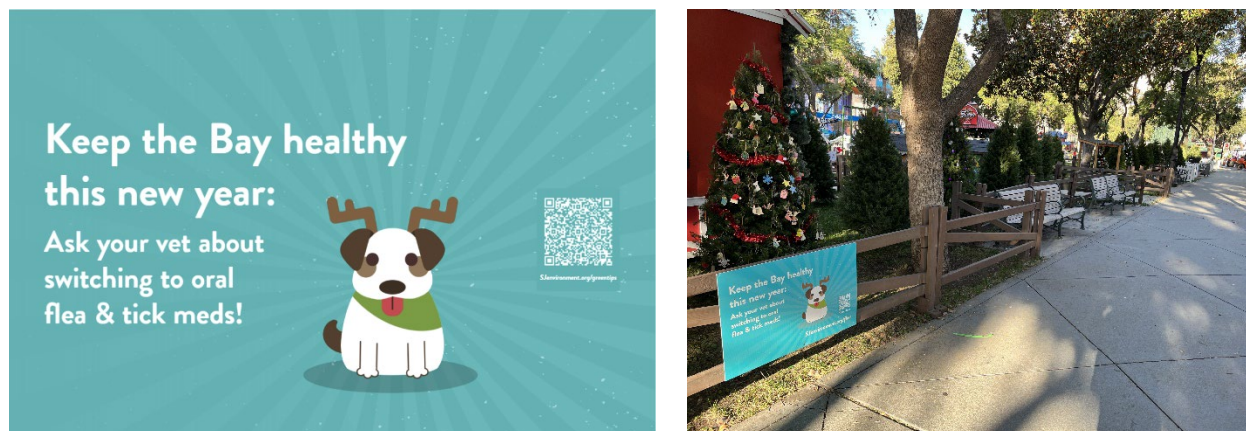


FIGURE 14. CITY OF SAN JOSÉ 2022 CHRISTMAS IN THE PARK MESSAGING

City staff also hosted a passport style event where participants visited 5 stations to speak with representatives from different ESD teams to learn about different topics. After visiting all 5 stations, participants received a goodie bag with giveaways from ESD. City staff from multiple ESD teams and Green Team attended the event to promote P2 messaging. City staff's messaging included general RWF and wastewater education, impacts of wipes, highlighting the City's Junk Pickup program, stormwater related issues, and more. An estimated 100 attendees participated in the event. Messaging reached attendees of all ages as many participants went through each station in small groups of friends or family.

Social Media and Other Outreach

ESD maintains an active presence on multiple social media platforms: Twitter, Instagram, Facebook, 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 15). Social media



FIGURE 15. P2 AD TARGETED AT VIETNAMESE RESIDENTS TIMED WITH LUNAR NEW YEAR 2022

was a key method of promoting P2 messaging in 2022 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.

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 16). Short form videos, such as those posted on Instagram Reels, often perform very well organically and are relatively cheap to make as they only require time and a smartphone to produce. ESD is planning to expand use of short form videos in 2023 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. In Spring, ESD boosted a post on Facebook promoting the "love your pet and the Bay, switch to chewable flea and tick meds today" message. ESD promoted proper medicine disposal during National Drug Take Back Day in both April and October, and during Pollution Prevention Week in September by boosting a social media post on Facebook and running an ad on Twitter. In addition, ESD published social media posts on Facebook, Instagram, and Twitter on World Toilet Day (Nov. 19) reminding residents to keep medicines out of toilets. See Figure 17 below for example social media posts.



FIGURE 16. SHORT FORM VIDEO PROMOTING PROPER MEDICINE DISPOSAL POSTED ON ESD SOCIAL MEDIA PAGES

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 DMV locations in San José during the month of November. 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 and October, ESD ran Vietnamese language radio ads promoting the general message of safe medicine disposal to run on a local radio station, Vien Thao, to reach San José's large Vietnamese population.

Regional Partnerships

RMP

The RMP⁵ 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

⁵ <https://www.sfei.org/rmp>

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 47 in the Pollutants of Concern Discussion section.

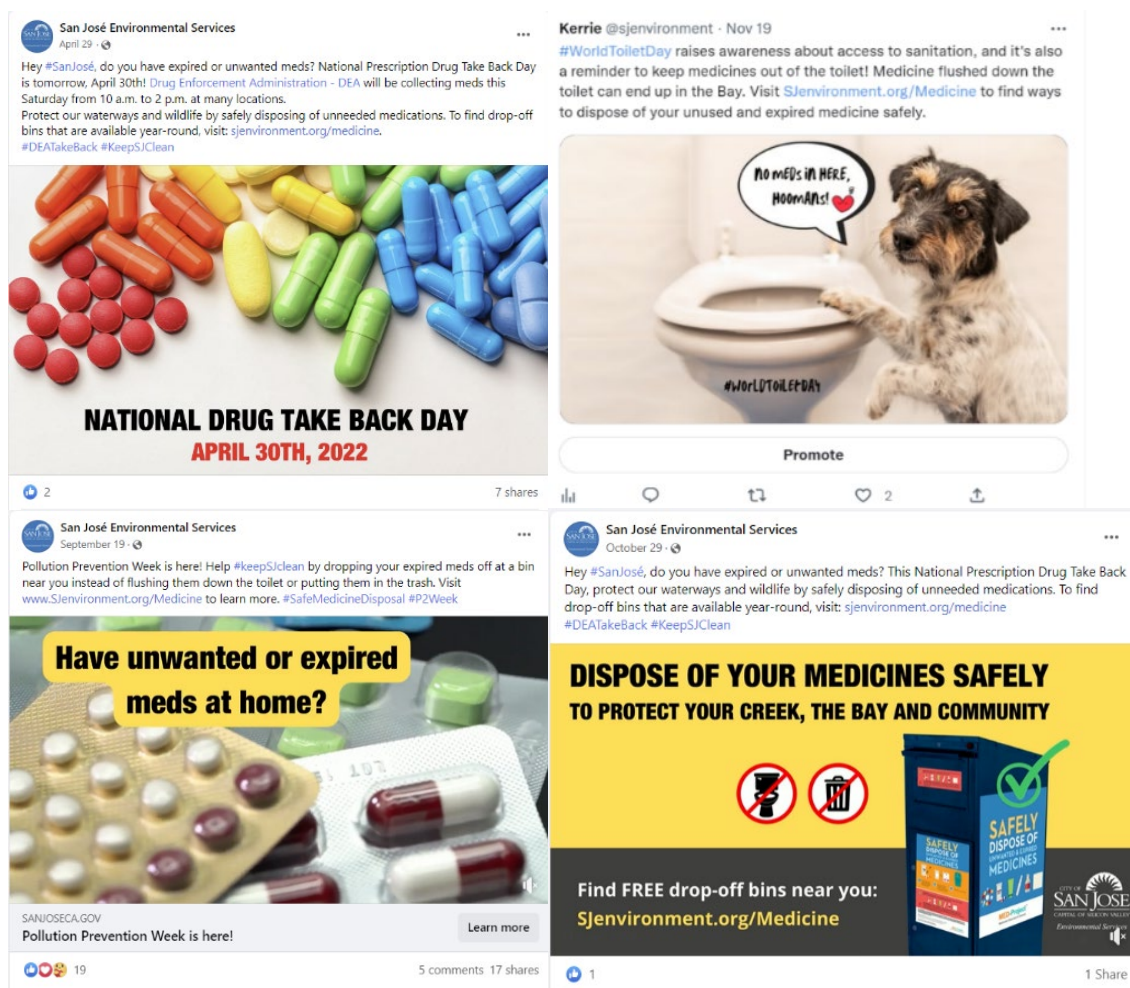


FIGURE 17. SOCIAL MEDIA POSTS OF P2 MESSAGES

Our Water, Our World

The regional IPM partnership between BACWA and Bay Area Stormwater Management Agencies Association (BASMAA) was established in 2002 to promote less-toxic pest control. The partnership encourages less-toxic pest prevention and control methods by means of a point-of-sale *Our Water, Our World (OWOW)*⁶ promotional program. In FY 21-22, 4 OWOW store trainings were held, training 32 employees.

⁶ <http://ourwaterourworld.org/>

BAPPG

San José participates in the BACWA group, BAPPG⁷ 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 outreach including a [website](#)⁸, FOG radio and media advertisements, presentations at dental training events regarding mercury waste, to hospice and home care providers about proper pharmaceutical disposal, and to building code officials regarding disposal of demolition waste.

BAPPG submits a separate [annual report](#)⁹ that captures the regional collaborative's activities for the year. The 2022 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 US EPA is mandating the installation of amalgam separators and the use of several key BMPs.
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 currently drafting messages for general public).
 - c. Work with pesticides regulators to improve their ability to address Publicly Owned Treatment Works (POTWs) during pesticide registration, to support their monitoring efforts, and to implement mitigation when needed.
5. Pharmaceuticals

⁷ <https://bacwa.org/committees/bay-area-pollution-prevention-group/>

⁸ <https://baywise.org/>

⁹ <https://bacwa.org/wp-content/uploads/2023/01/2022-BAPPG-Annual-Report.pdf> (bacwa.org)

- a. No Drugs Down the Drain
- b. Don't Rush to Flush – Meds in the Bin, We All Win!
- 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.

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 6 summarizes pollution prevention outreach tactics and effectiveness for 2022.

TABLE 6. 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. | 83 Dumpster Day events in FY 2021-22. - 849.87 tons of material collected. - 7.69 tons of material were 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 | In FY 21-22, ZunZun conducted 2 livestream assemblies and 16 in-person assemblies, reaching 4,541 students from 18 schools in San José. In addition, they performed one assembly at Pumpkins in the Park in October 2022. A total of 2,469 people in the County participated in the Don Edwards Wildlife Refuge virtual and self-guided at-home activities in FY 21-22. |
| Community Outreach and In-Person Events | City staff attends and hosts events throughout the RWF service area to promote P2 messaging. Events are typically attended by multiple teams to cross-promote P2 messaging to increase reach and provide comprehensive messaging to attendees. | Promoted P2 messaging to over 500 attendees at various community events like Viva Calle SJ and the Moon Festival hosted at the VACC. |

| Program | Description / Status | Evaluation |
|---------------------------------|---|--|
| Christmas in the Park | <p>CITP is a signature month-long holiday event for the South Bay located in downtown San José. Environmentally friendly messages were shared with attendees through signage placed in the tree maze and pollution prevention messages were broadcast to attendees via "Sounds of the Season" PSA announcements.</p> <p>City staff held a passport style where participants spoke with representatives from multiple teams in ESD and Green Team. Each station promoted different P2 messaging.</p> | <p>The tree maze signage with a QR code directing residents to ESD green tips webpage and the Sounds of the Season announcements broadcast during CITP about switching to oral flea and tick meds reached an estimated 500,000 visitors.</p> <p>At the CITP Passport event, City staff and Green Team promoted P2 messaging to roughly 100 participants.</p> |
| Sports advertisements | <p>Following successful campaigns in previous years, outreach campaigns promoting the safe disposal of medicine and use of flea medication continued in 2022 with the Quakes (August 2022) and Sharks (February 2022) teams.</p> <p>Ads drove traffic to San José webpages, specifically the Medicine Disposal page¹⁰ and the Pollution Prevention page¹¹, to provide further resources and education on P2 topics in ads.</p> | <p>Combined impressions for both sports campaigns in 2022 were 1,711,788.</p> <p><i>San José Earthquakes</i></p> <ul style="list-style-type: none"> - 6,387 visits to the medicine disposal page in August 2022 during the Quakes campaign. - Game-day radio ads, social media ads on Facebook and Twitter, YouTube video ads, mobile ads and Spanish-language digital ads on Univision's mobile platforms ran in September. <p><i>San José Sharks</i></p> <ul style="list-style-type: none"> - During the 2022 Sharks campaigns, there were 2,629 visits to the P2 pages in February. - The two tactics were Google Display Ads and bus shelter posters which provided a greater geographic range throughout Santa Clara County. |
| Social Media and Other outreach | <p>ESD maintained a consistent social media presence on many platforms. Posts are boosted to increase awareness or to coincide with specific events, like National Drug Take Back Day in April and October 2022, and Pollution Prevention Week in September 2022.</p> | <ul style="list-style-type: none"> - From February-March 2022 a social media boosted post ran on Facebook to promote switching to environmentally friendly chewable flea and tick treatments to keep the Bay healthy resulted in: 27,497 impressions, with 11,892 people reached, and 307 link clicks. |

¹⁰ <https://www.sjenvironment.org/medicine>

¹¹ <https://www.sjenvironment.org/pollution-prevention>

| Program | Description / Status | Evaluation |
|---------|--|---|
| | <p>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.</p> <p>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.</p> | <ul style="list-style-type: none"> - Social media boosted posts during the Pollution Prevention Week resulted in: <ul style="list-style-type: none"> ▪ Facebook: 7,957 impressions, with 5,184 people reached, and 201 link clicks. ▪ Twitter: 8,062 impressions, and 1,836 link clicks. - DMV “Meds in the bin, we all win” ad ran in November 2022. The ad ran two times every hour at two DMV locations, or approximately 672 times total. - The social media post on World Toilet Day resulted in 55 impressions on Twitter, 105 impressions and 95 people reached on Facebook, 160 impressions and 149 people reached on Instagram. ▪ Vietnamese radio ad to promote safe medicine disposal campaign: 86 thirty-second spots ran in 4 weeks in September and October 2022 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](#)¹² and [Industrial User Pretreatment reports](#)¹³. 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

¹² <https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/regulatory-reports/-folder-76>

¹³ <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.

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 2017 through Regional Board Order No. R2-2017-0041. 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 2022, 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 7 below.

TABLE 7. 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 |
| 2022 Maximum Results | 0.112 | 0.00173 | 0.00173 | 0.00173 |

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 798 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 22 new permits to dentists in the Tributary area in 2022.

The new 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 8. DENTAL AMALGAM PROGRAM PERMITS ISSUED BY YEAR

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|-------------|-------------|-------------|-------------|-------------|
| <i>Total Issued</i> | 856 | 898 | 829 | 807 | 798 |
| <i>New permits</i> | 32 | 17 | 18 | 12 | 22 |

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 2022, oversight of dentists was focused on outreach and dental annual reports were not required for the 2022 calendar year. Due to state and local orders because of the COVID-19 pandemic, in-person dental inspections were temporarily halted in 2022. Dental Amalgam Program Annual Report Forms, BMPs, and amalgam separator certifications are available for download on the City of San José [website](#)¹⁴.

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 2022 as the inspections were on hold due to restrictions in place because of the COVID-19 pandemic.

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

¹⁴ <http://www.sanjoseca.gov/dental>

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 9 details the current mercury prevention plan for the SJ-SC RWF.

TABLE 9. 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 2022, a total of 798 permits were active. 22 new permits issued to practices. 99% of practices certified for amalgam separators and are following Dental Amalgam BMPs. No office inspections were conducted in 2022. Due to state and local COVID-19 orders, in-person dental inspections were temporarily halted through 2022. |
| 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 184 permanent residential hazardous waste drop-off events. County program also served 309 small business drop-offs including local governments, Goodwill Industries, Hope Services, and Salvation Army. In FY 21-22, HHW program recycled: 495 pounds of mercury containing products (includes thermostats, thermometers, and other products), 83,204 pounds of fluorescent lights, and 142,417 pounds of household batteries. |
| Dental Practice BMPs maintained on San José web site: Dental Amalgam Program ¹⁵ BAPPG approved amalgam separators ¹⁶ | | |

¹⁵ <http://www.sanjoseca.gov/dental>

¹⁶ <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 18).

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 19). Most of the reduction is believed to be a result of changes in the dental industry.

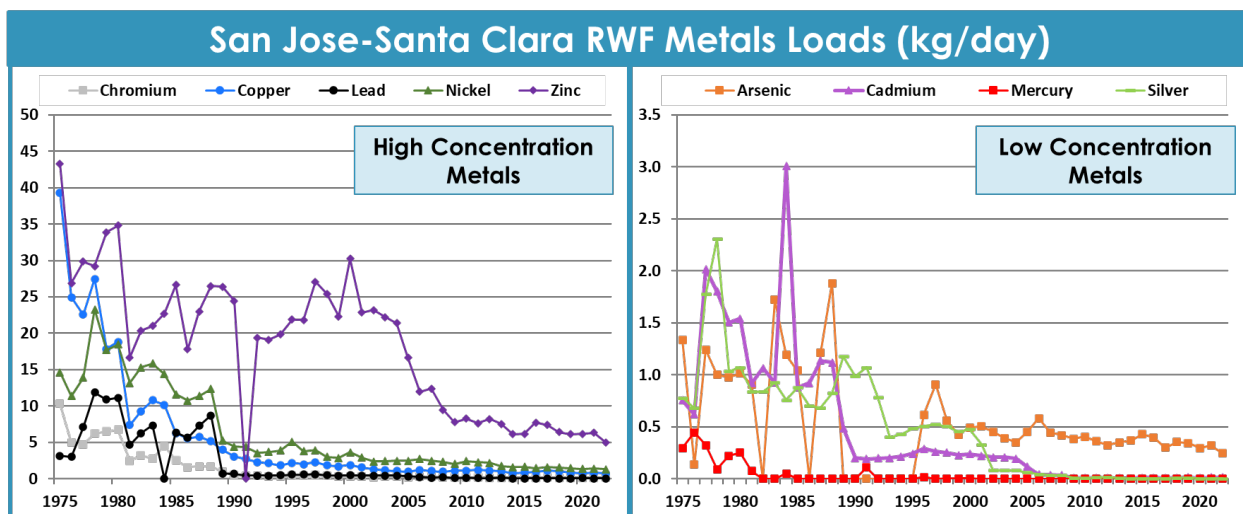


FIGURE 18. METALS LOADS (KG/DAY) FOR SJ-SC RWF

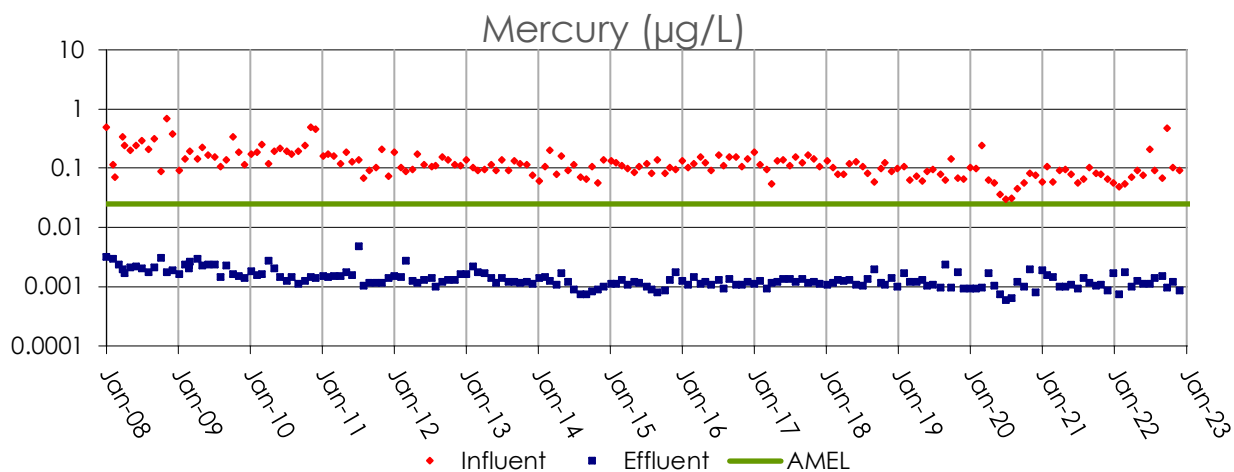


FIGURE 19. MERCURY REMOVAL PERFORMANCE 2008-2022

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 2017 through Regional Board Order No. R2-2017-0041. 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 applications¹⁷

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.

Evaluation and effectiveness

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

The SJ-SC RWF is also required to measure total PCBs by congener quarterly, using

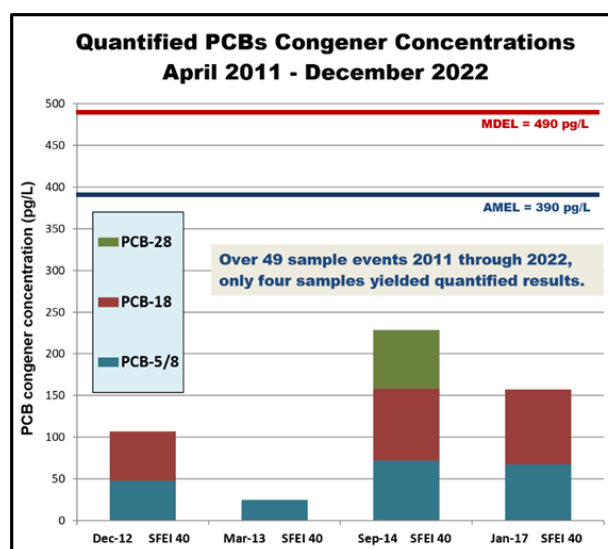


FIGURE 20. PROPOSED METHOD 1668C QUANTIFIED PCBs CONGENER CONCENTRATIONS 2011-2022

¹⁷ <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs>

USEPA Proposed Method 1668c, for information only. Since April 2011, only four of 49 sampling events have quantified any PCBs congeners (Figure 20).

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 (98%). 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 2022 was 4.33 lbs/day which is close to values measured prior to the Covid-19 pandemic and higher than last year's value of 2.51 lbs/day (Figure 21). This increase may be due to industrial users resuming or increasing operations after COVID rules were eased.

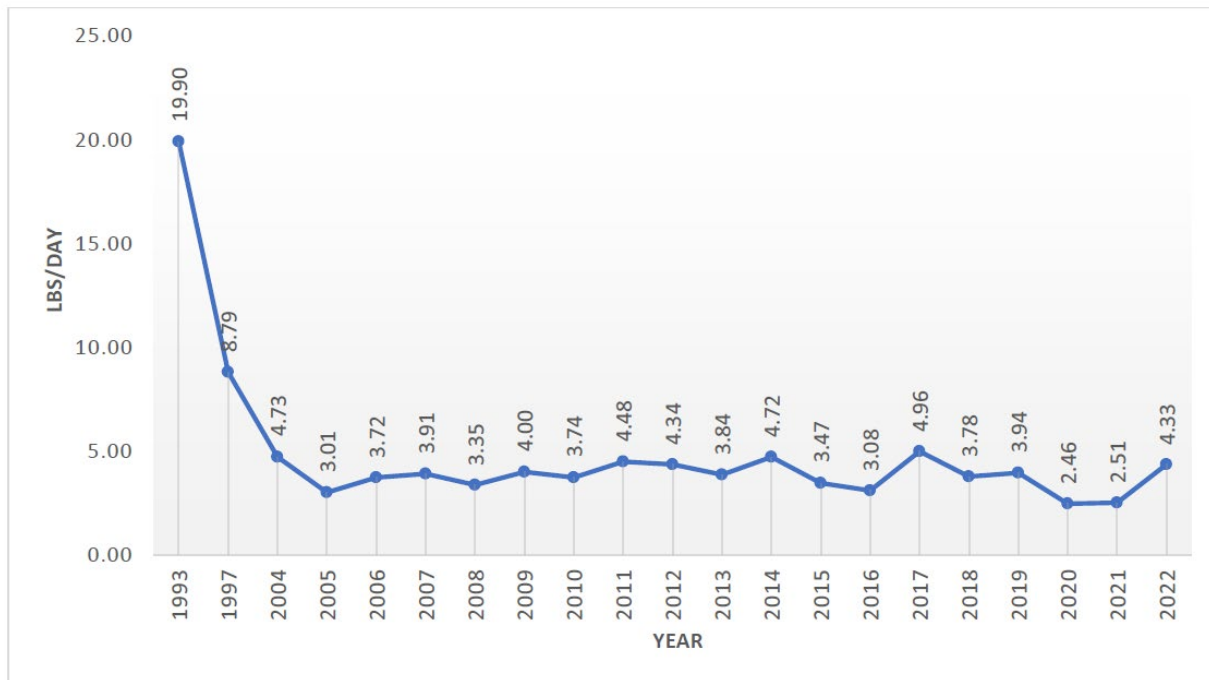


FIGURE 21. AVERAGE COPPER INDUSTRIAL LOADING PER WORKDAY

In addition, the City participates in BAPPG, which in collaboration with BACWA and BASMAA, maintains a [website](https://baywise.org/)¹⁸ with copper resources for plumbing and pools.

Table 10 details the current SJ-SC RWF copper prevention efforts.

TABLE 10. 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. |
| Pools & Fountains Provide outreach to homeowners on pool and spa maintenance and plumbers' roles in reducing corrosion. | Track numbers of brochures distributed each year | Two brochures were distributed in 2022 due to a reduced number and virtual method for inspections because of restrictions in place from the COVID-19 pandemic. |

¹⁸ <https://baywise.org/>

| Message / Program | Implementation & Timeline | Evaluation |
|--|--|--|
| 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 2.68 µg/l. |
| Copper BMPs maintained on San José web site: | | |
| Cooling Towers ¹⁹ | | |
| Roof Runoff Factsheet ²⁰ | | |
| Guidelines for Industrial Water Reuse ²¹ | | |
| Draining Pools and Spas brochure ²² | | |
| Pools ²³ | | |
| Car Washing brochure ²⁴ | | |
| Baywise/BAPPG Plumbing Resources ²⁵ | | |

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 11). Figure 22 shows copper removal performance from 2008-2022.

TABLE 11. COPPER REMOVAL PERFORMANCE (IN µG/L) 2019-2022

| Year | Influent | | | Effluent | | | Removal |
|-------------|-----------|------------|------------|-------------|-------------|-------------|------------|
| | Low | High | Average | Low | High | Average | |
| 2020 | 82 | 137 | 101 | 1.75 | 3.10 | 2.54 | 97% |
| 2021 | 85 | 123 | 104 | 1.77 | 3.71 | 2.86 | 97% |
| 2022 | 94 | 133 | 112 | 1.23 | 4.63 | 2.68 | 98% |

¹⁹ <https://www.sanjoseca.gov/Home/ShowDocument?id=37053>

²⁰ <https://www.sanjoseca.gov/home/showdocument?id=37097>

²¹ <https://www.sanjoseca.gov/Home/ShowDocument?id=37059>

²² <https://www.sanjoseca.gov/home/showdocument?id=1228>

²³ <https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/our-creeks-rivers-bay/preventing-water-pollution/pools>

²⁴ <https://www.sanjoseca.gov/home/showdocument?id=37099>

²⁵ <https://baywise.org/business/plumbing-resources/>

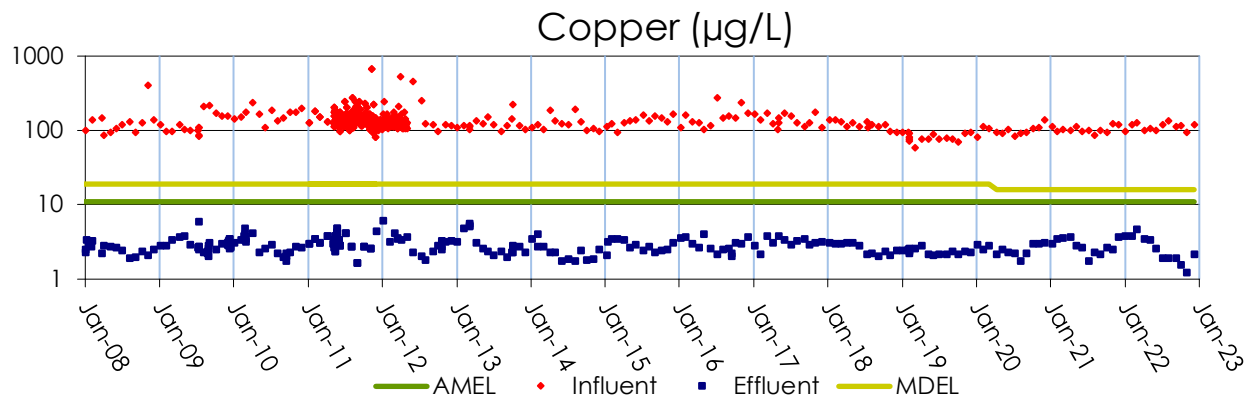


FIGURE 22. COPPER REMOVAL PERFORMANCE 2008-2022

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 12 details and evaluates the current copper action plan for the SJ-SC RWF.

TABLE 12. 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, and ...
 - c. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage BMPs that minimize copper discharges.

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 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 2022, influent values measured below quantified levels of detection, with exception of an influent concentration of 7.5 µg/L in June and 3.6 µg/L in November (Table 14).

Table 13 details the current SJ-SC RWF efforts to reduce and prevent cyanide.

TABLE 13. CYANIDE PREVENTION PLAN.

| Source | Message / Program | Implementation & Timeline | Evaluation |
|---------------------------------|--|---|---|
| Industrial wastewater discharge | Inspect each potential contributor at least semiannually. | Review business licenses, internet listings, and referrals to update list of potential cyanide contributors annually. | Inspected 69 facilities at least semiannually that potentially use cyanide. |
| | Surveillance and monitoring of IUs with cyanide processes. | Surveillance and monitoring of industrial discharges and facility influent to detect cyanide. | Three industrial discharge violations at two 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. | Update and maintain Cyanide fact sheet and distribute as needed. |
| 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 2022, effluent concentrations were well below reporting limit of 3 µg/l. |

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 14).

TABLE 14. CYANIDE INFLUENT AND EFFLUENT LEVELS (IN $\mu\text{G/L}$) 2020-2022.

| Year | Influent | | | Effluent | | | Removal |
|-------------|----------------|------------|------------|----------------|-----------------|------------|------------|
| | Low | High | Average | Low | High | Average | |
| 2020 | 0.9(ND) | 2.0(DNQ) | 1.3 | 0.9(ND) | 2.0(DNQ) | 1.0 | N/A |
| 2021 | 0.9(ND) | 3.5 | 1.6 | 0.9(ND) | 2.0(DNQ) | 1.0 | N/A |
| 2022 | 0.9(ND) | 7.5 | 2.5 | 0.9(ND) | 2.3(DNQ) | 1.6 | N/A |

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 15 details and evaluates the current cyanide action plan for the SJ-SC RWF.

TABLE 15. 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 $\mu\text{g/L}$

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.²⁶

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

²⁶ <https://www.epa.gov/international-cooperation/persistent-organic-pollutants-global-issue-global-response>

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.

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*²⁷ are available online at the SCVURPPP website. You can also view San José's *Stormwater Annual Reports*²⁸ online.

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

In FY 21-22, the Watershed Watch outreach effort included TV and radio ads, collateral and displays, as well as online digital media. The Watershed Watch Campaign included 992 total spots on IPM topics, including 223 spots on hiring an eco-friendly pest control professional, and 252 spots on the Santa Clara Valley Green Gardener program.

Table 16 details the current SJ-SC RWF efforts and progress to reduce and prevent pesticide pollution.



FIGURE 23. SCVURPPP OWOW OUTREACH COLLATERAL - CHOOSING LESS TOXIC PRODUCTS TO MANAGE PESTS

²⁷ <https://www.cleancreeks.org/158/Annual-Reports>

²⁸ <https://www.sanjoseca.gov/home/showpublisheddocument/89431/638001265688130000>

TABLE 16. 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 HHW availability for disposal of waste pesticides. | Advertise means of safe pesticide disposal on the City's website and HHW program public education and outreach. |
| Municipal- Pesticides Applied on City Property | | |
| <p>Training of City employees; contractors invited to attend training.</p> <p>Follow City IPM Policy, SOPs, and BMPs.</p> <p>Use less-toxic pest controls.</p> | <p>Hold regular training sessions on relevant IPM topics for all City employees that apply pesticides.</p> <p>The City provides annual training on the City's IPM policy and IPM techniques during the Annual Worker Safety training and additional trainings.</p> | <p>157 San José municipal staff, 97 of whom do not apply pesticides but must be aware of pesticide safety and IPM policy expectations, were trained on the City's IPM Policy, SOPs, and BMPs via online Annual Worker Safety seminar due to the COVID-19 pandemic and Santa Clara County public health orders, representing 97% coverage for applicable employees.</p> <p>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.</p> <p>Staff removed invasive weeds and plants using cultural and mechanical methods, mulching, permeable grout, and other non-chemical strategies, including goats and sheep.</p> <p>The City utilized Barn own nest boxes for small rodent population control in 13 parks, 2 community gardens, and at a public high school.</p> |

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 does not specify what the FOG control program must include nor how it is to be implemented. In fact, the GWDR may not require a FOG control program at all if it can be adequately demonstrated that FOG is not a problem for an individual collection system. 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 2020, describes seven elements of the City's FOG program (Table 17).

TABLE 17. 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 46 SSOs reported during 2022, an increase from 28 SSOs reported in 2021 (Figure 24).

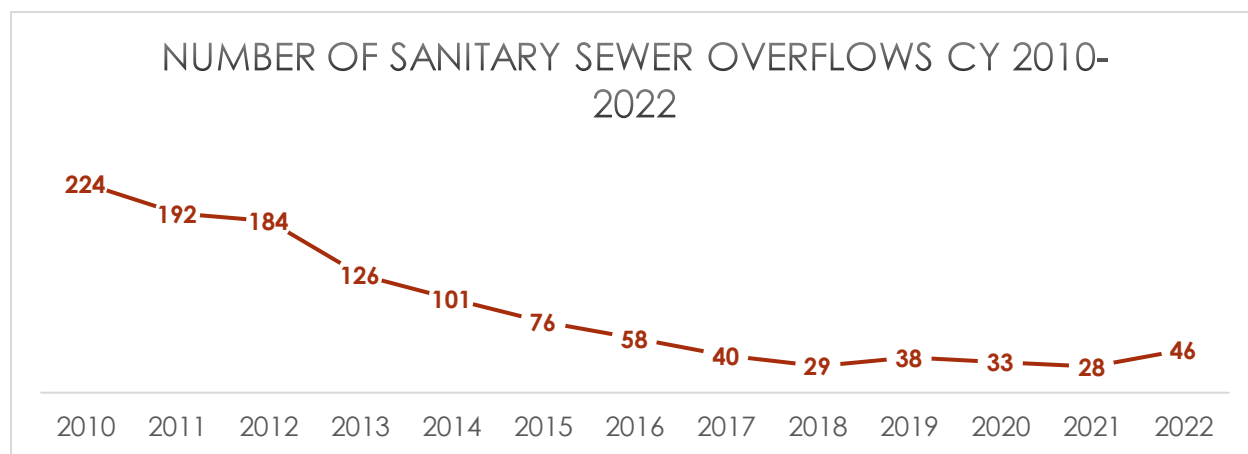


FIGURE 24. NUMBER OF SSOs IN SAN JOSÉ YEARS 2010-2022

Of the 46 SSOs, 38 were in Residential areas and 8 were in Commercial areas (Figure 25). City sewer crews identified 27 (59%) with FOG as the contributing cause: 21 residential and 6 commercial (Figure 26).

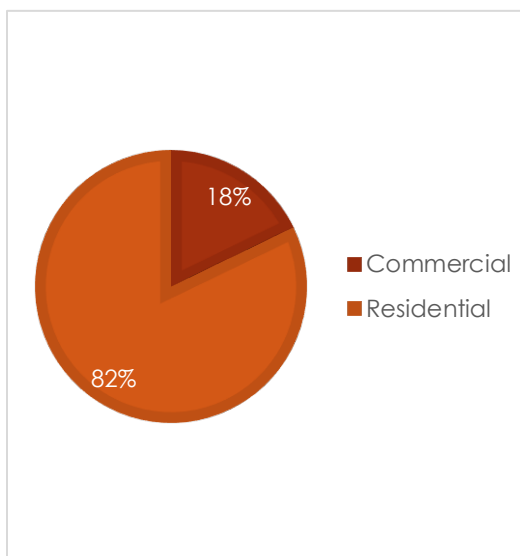


FIGURE 25. SSOs IN THE SAN JOSÉ COLLECTION SYSTEM IN 2022

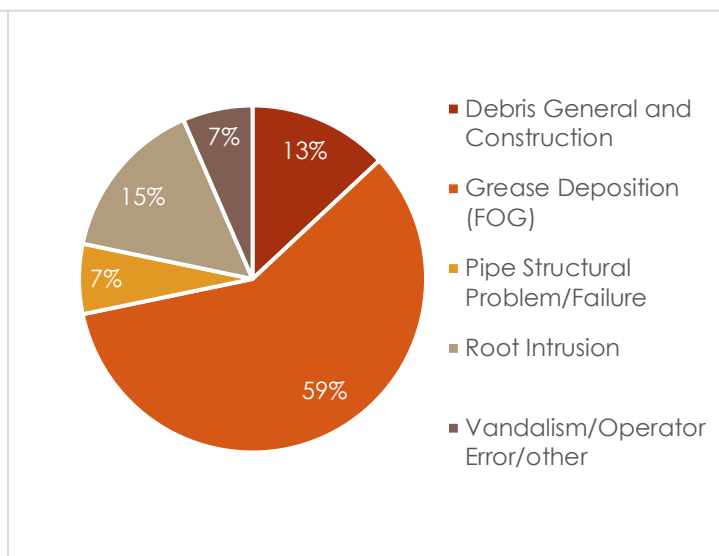


FIGURE 26. NUMBER AND CAUSE OF SSOs IN THE SAN JOSÉ COLLECTION SYSTEM IN 2022



FIGURE 27. #FOGWASTE EDUCATIONAL DOOR HANGERS

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 27), to educate residents about the impacts of grease in the sewer and to inform them of alternative disposal methods. Approximately 2,545 doorhangers were distributed by the City of San José in 2022. In addition, the City of Santa Clara distributed 280 doorhangers and brochures between July 1, 2021 through June 30, 2022.

In 2012, San José's DOT made significant adjustments to the implementation of the SSMP to change the City's management of the sanitary sewer collection system from reactive to proactive. These changes aimed to reduce the total SSOs, total volume of waste spilled during SSO events, and response time to SSOs. Since 2010, San José reduced the number of SSOs from approximately 9.5 per 100 miles of sanitary sewer line to about 2.2 SSOs per 100 miles of sanitary sewer lines in 2022.

Plan Check Review and GCD Sizing

San José transitioned plan check review responsibility from Environmental Services to the City's Building Division in July 2017. The Building Division already performed all plumbing and other plan review and permitting duties, so this move streamlined the entire plan review process for FSEs. Building Division staff performs grease control plan check reviews on all new FSE's as part of opening a business in San José. City staff have used updated guidance for sizing GCDs since June 2017, based off guidance performed by



FIGURE 28. #FOGWASTE MESSAGING ON CITY MAINTENANCE TRUCKS

EEC Environmental in 2016. The Building Division no longer tracks the number of grease control plan checks. The FOG inspection program also refers existing FSE's to the plan check process when grease production at FSE appears to not be consistent with GCDs installed on site. In 2022, the FOG inspection program referred 16 FSEs to the plan check process for having FOG waste streams that were potentially inadequately treated or untreated. In addition, in the City of Santa Clara, from July 1, 2021, through June 30, 2022, 96 grease control plan check reviews were completed.

Commercial FOG Control Inspections

The Commercial FSE Inspection Program in San José prioritizes FSE inspections based upon whether a site is grease-producing, has adequate 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.

On March 16, 2020, the Health Officer of the County of Santa Clara issued a Shelter in Place order directing all governmental agencies to cease non-essential operations at physical locations in the County. FOG and GCD inspections were suspended from mid-March 2020. For FY 20-21, the FOG Control program's efforts concentrated on FOG Contact Tasks, where inspectors contacted FSEs with GCDs over the phone, instructed them to continue to maintain equipment, and encouraged them to enroll and use the City's new online digital compliance portal to upload maintenance records. FSE inspections resumed at a limited rate in 2nd quarter of FY 21-22, with full caseloads for inspections resuming with the start of FY 22-23.



FIGURE 29. 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 21-22, 371 FOG inspections were conducted at 176 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 (Figure 29). In FY 21-22, 123 GCDs were inspected (up from 2 in FY 20-21).

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 21-22, approximately 1,433 educational pieces were distributed during FSE inspections to help FSE operators achieve and maintain compliance.

Enforcement actions are taken against any FSE that does not clean their GCDs at the minimum frequency, fails to keep records documenting the cleaning, and/or other pertinent FOG violations. Facilities found to have violations are re-inspected and enforcements are escalated until all violations are corrected. In FY 21-22, 100 of the 176 FSEs inspected had one or more violations (57%, down from 60% in FY 20-21). A total of 114 discrete violations were documented (up from 9 in FY-20-21). In FY 21-22, Inspectors issued 36 Official Warning Notices (up from 1 in FY 20-21, there were no Compliance Meetings (same as in 20-21), and there were 2 Referral for Administrative Citations (ACR) issued (up from 0 in 20-21).



FIGURE 30. INSPECTING A COMMERCIAL GREASE INTERCEPTOR

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 21-22, the City performed six grease investigations involving 22 facilities, with 73 inspections conducted

as part of these grease investigations. 21 violations were documented, zero Official Warning Notices, and 1 Referral to Administrative Citation was issued. Education is also an important component of grease investigations, with 45 FOG-related educational materials distributed as part of the grease investigations. In addition, the City of Santa Clara performed, from July 1, 2021 through June 30, 2022, 134 FOG inspections. They also performed 11 investigations because of referrals of excessive grease in the sewer from wastewater field maintenance crews.

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3. Hãy cập nhật hóa hồ sơ về việc bảo trì máy móc kiểm soát dầu mỡ

Việc ghi danh là miễn phí, dễ dàng và bảo mật. Khuyến khích tham gia và đảm bảo hợp lệ. Hãy ghi danh hôm nay.

Có câu hỏi? Hãy liên hệ nogrease@sanjoseca.gov
Muốn biết thêm chi tiết, xin liên lạc sanjoseca.gov/restaurants

FIGURE 31. ENGLISH, SPANISH, AND VIETNAMESE FOG COLLATERAL

FOG Digital Compliance Pilot

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 are an important compliance tool, and records-related violations represent the majority of violations documented by Inspectors. In September 2019, San José launched the digital compliance system - a voluntary online reporting system for GCD maintenance records. Records submitted online can be remotely reviewed to ensure compliance



FIGURE 32. SAN JOSÉ'S DIGITAL COMPLIANCE PILOT

with FOG ordinances. FSE's are required to keep records either through the compliance system or have them available at time of inspection. Starting in 2020, FOG Inspectors conducted outreach tasks (FOG Contact Tasks) to enroll FSEs in the online reporting program. In calendar year 2022, 3,290 FOG Contact Tasks were completed. As of the end of the 2022 calendar year, about 1,400 of the approximately 2,400 targeted FSEs have enrolled in the voluntary digital compliance system. In 2022, FOG Contact Tasks were used to respond to faults discovered during GCD inspections. Several State-licensed Inedible Kitchen Grease Haulers are uploading records on behalf of their client FSEs, and cleaning frequency can now be confirmed through the program. In calendar year 2022, the FOG program continued the process of developing comprehensive 1:1 training for use of the digital compliance system for haulers who were interested. These trainings started being conducted in 2022 and have been tailored to each grease hauler on an as needed basis.

Evaluation and effectiveness

Table 18 details the current SJ-SC RWF efforts and progress to reduce and prevent FOG pollution.

TABLE 18. 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 371 FOG Inspections at 176 FSEs in FY 21-22 <ul style="list-style-type: none"> - 114 violations documented - 36 Official Warning Notices issued - 2 ACR issued Conducted 123 GCD Inspections in FY 21-22 Conducted 3,290 FOG Contact tasks in calendar year 2022. |

| Message / Program | Implementation & Timeline | Evaluation |
|---|--|---|
| Distribute grease management information to inspected restaurants and FOG generators. | Educate food service owners/operators on FOG BMPs during inspections. | Distributed 1,433 educational pieces during FSE inspections in FY 21-22 |
| 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. | <p>City of San José in FY-21-22</p> <ul style="list-style-type: none"> - Investigated 6 grease complaints involving 22 facilities - 73 inspections conducted - 21 violations documented - 1 ACR issued - 45 educational materials distributed during investigations <p>City of Santa Clara, from July 1, 2021, through June 30, 2022</p> <ul style="list-style-type: none"> - 134 FOG inspections conducted - 11 grease investigations conducted |
| 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 | <p>City of San José in 2022</p> <ul style="list-style-type: none"> - 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 2022. <p>City of Santa Clara, from July 1, 2021, through June 30, 2022</p> <ul style="list-style-type: none"> - 96 FOG plan reviews were 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 ²⁹ . |
| Respond to grease related sewer overflow complaints (DOT). | <p>Percent of reported blockages attributed to FOG.</p> <p>Notify residents via door hangers when grease-related overflows occur in residential areas.</p> | <p>City of San José in 2022</p> <ul style="list-style-type: none"> - 46 overflows in 2022 with 38 in residential areas, 8 in Commercial areas. 27 SSOs had FOG as a contributing factor, 21 in residential areas and 6 in a commercial area. |

²⁹ <https://baywise.org/residential/fog/>

| Message / Program | Implementation & Timeline | Evaluation |
|-------------------|---|---|
| | | <ul style="list-style-type: none"> - DOT distributed FOG door hangers in neighborhoods where residential grease blockages occurred. A total of at least 2,545 doorhangers were distributed in 2022. <p>City of Santa Clara, from July 1, 2021, through June 30, 2022</p> <ul style="list-style-type: none"> - 280 educational materials, including door hangers and brochures, distributed in residential segments that contributed to FOG buildup. |
| FOG Art | Continue utilizing FOG art education campaign collateral materials. | Vactor trucks continue to display FOG Art messages. |

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, 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 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 2022

Recent studies with the RMP focused on microplastics, bisphenols, pharmaceuticals, per- and poly-fluoroalkyl substances (PFAS), organophosphate esters (OPEs), quaternary

ammonium compounds (QACs), and sunscreens. In 2022, the SJ-SC RWF, through ongoing collaborations with the RMP, performed investigations of emerging contaminants, including influent, effluent, and biosolids for PFAS and QACs. The City also participated in investigations for PFAS that included sampling of 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*³⁰. Currently, seven emerging contaminants or classes are of moderate concern for the Bay. These include alkylphenols, bisphenols, fipronil, imidacloprid, microplastics, OPEs, and PFAS compounds. 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 are below most toxicity thresholds and usage is likely decreasing due to a phase-out. Recent RMP work has examined levels in stormwater runoff, wastewater effluent, and ambient Bay water. Concentrations are generally similar, with a few effluent samples containing unusually high levels, however levels in Bay water have remained below toxicity thresholds.³⁰

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 (BPA), 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.”³¹. In October 2022, Miguel Mendez et. al, SFEI, published a paper³² that recommended bisphenols remain in the “Moderate Concern” category in the RMP, as

³⁰ https://www.sfei.org/sites/default/files/biblio_files/CEC%20Strategy%20-%202020%20Update%20-%20Final_92320.pdf

³¹ 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>

³² 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

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.

Since 2009, many states and the federal government have implemented targeted restrictions on the use of BPA. However, these chemicals are still widely used in a variety of products. In addition, some manufacturers switched to BPA alternatives such as bisphenol F and S, these are not as well studied as BPA, however "available data suggest they share similar toxic properties³⁸."

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 33. FLEA AND TICK MESSAGING PUBLISHED ON ESD'S SOCIAL MEDIA PAGES

In 2022 the City continued to create its own digital and physical collateral with similar messaging (Figure 33). 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. 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. Along with public outreach campaigns and the

*Baywise*³³ website, BAPPG worked directly with veterinarians, veterinary medical

³³ <https://baywise.org/residential/pets/>

associations, and veterinary technician community college programs. They are also developing a 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 engagement with regulators directly.

City staff collaborated with the BAPPG Pesticides workgroup to host a zoom presentation through the City of Santa Clara Public Library to educate 12 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*³⁴ page and additional information can be found at Baywise's "Your Pets" page³⁵. In late 2020, the City developed a dedicated flea and tick section to the *ESD FAQ page*³⁶ to direct residents to answers to common questions. The page was refined and finalized in March 2022. The City is now in the process of creating a dedicated webpage dealing directly with flea and tick control and impacts on Bay habitats that is slated to be published in 2023. Additionally, the City plans to develop an internal policy regarding the use of fipronil- and imidacloprid-containing flea and tick topical medicines in 2023.

Microplastics

Microplastics are persistent and prevalent throughout SF Bay, which can result in concentrations building 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,

MICROPLÁSTICOS

Podrías estar consumiendo partículas de plástico al consumir pescados

"Los microplásticos también terminan en la tierra. Entonces, plantamos lo que nos vamos a comer o comemos peces rodeados de microplásticos. Estamos viendo todo ese impacto. Se dice que uno se come una tarjeta de crédito cada semana; el equivalente a una tarjeta de crédito", aseguró Miguel Méndez, científico ambiental de San Francisco Estuary Institute.

Por **TELEMUNDO 48** • Publicado el 19 de abril del 2022 • Actualizado a las 7:03 pm del 19 de abril del 2022





FIGURE 34. TELEMUNDO HEADLINE FROM APRIL 19, 2022: MICROPLASTICS FROM URBAN SOURCES SUCH AS TIRES AND LAUNDRY ARE UBIQUITOUS AND HAVE POTENTIAL IMPACTS TO WILDLIFE AND HUMANS

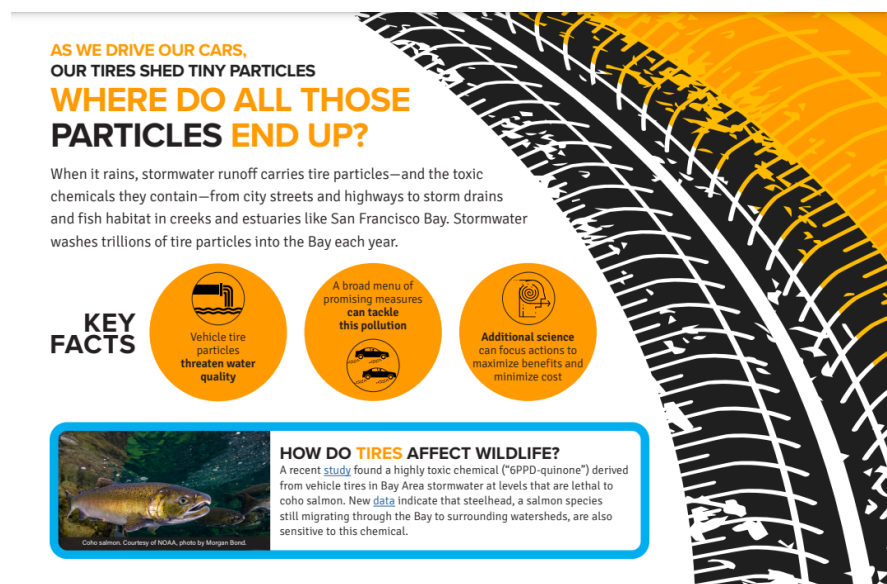
³⁴ <https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/our-creeks-rivers-bay/preventing-water-pollution/>

³⁵ <https://baywise.org/residential/pets/>

³⁶ <https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/frequently-asked-questions>

including San 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. A follow-up investigation of microplastics, conducted in 2017, included additional sampling of SJ-SC RWF effluent.

Initial 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 that are harmful to fish. In 2022, SFEI developed a one-page fact sheet to assist with outreach and education on the impacts of tire particles on the Bay (Figure 35)³⁷.



Also in 2022, the Ocean Protection Council presented a Statewide Microplastics Strategy to California legislature. This strategy acknowledges the importance of tire wear particles and calls for the development of a tires-specific pollution prevention³⁸. As a result of these investigations, the RMP microplastics workgroup has directed researchers to focus on potential impacts of

FIGURE 35. 2022 MICROPLASTICS FROM TIRE PARTICLES FACT SHEET

microplastics based the chemistry of the particles rather than further characterizing and counting particles.

Research has also 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. The RMP is working to further investigate and understand the impact of these microplastics.

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

³⁷ Moran, K.; Askevold, R. 2022. *Microplastics from Tire Particles in San Francisco Bay Factsheet*. SFEI Contribution No. 1074. San Francisco Estuary Institute: Richmond, CA.

³⁸ Davis J; Foley M; Askevold RA; Sutton R; Senn D, Plane E. 2022. *2022 Pulse of the Bay*. SFEI Contribution No. 1095. San Francisco Estuary Institute: Richmond, California.

concentrations in other estuarine and marine settings globally.”³¹. The study supports the need to control releases of these contaminants to protect the Bay ecosystem and maintain these in the “Moderate Concern” tier within the RMP framework. Previous studies have detected OPEs in municipal wastewater effluent and urban stormwater runoff. OPEs are recognized as regrettable substitutes for PBDEs, policies have reduced their use, however, these chemicals are still widely used in a variety of products³⁸.

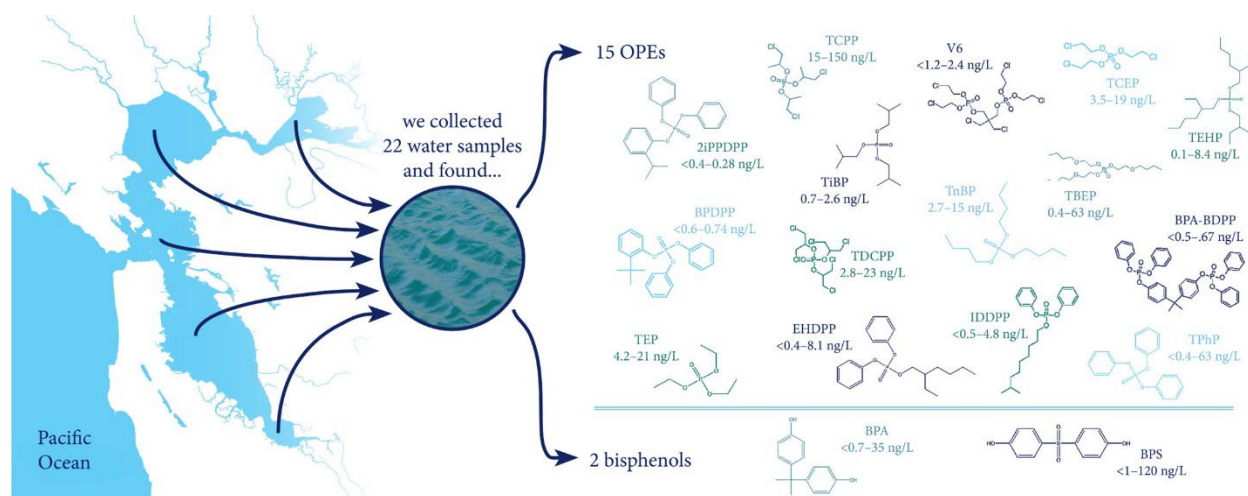


FIGURE 36. SHIMABUKU ET. AL. 2022 DETECTED 15 OF 22 OPEs AND 2 OF 16 BISPHENOLS IN BAY WATERS.

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 WWTP samples, SFEI determined that concentrations of PFAS in wastewater effluent are higher than ambient water, but below ecotoxicity thresholds. However, this does not account for bioaccumulative effects. SFEI has suggested that a similar examination of stormwater would be relevant to better understand sources of PFAS. The

results do support the continued classification of PFAS as a “moderate concern” under the RMP risk-based framework.³⁹

Phase 2 of the study is focusing up the pipe, at residential flow and industry dischargers to determine relative concentrations of PFAS. SJ-SC RWF is participating in phase 2 and provided samples from 8 San José dischargers in 2022, as well as influent, effluent, and biosolids for comparison. This study seeks to determine whether residential flows are important sources of PFAS and whether some industries discharge higher than average concentrations. Results of this effort are expected in early 2023.

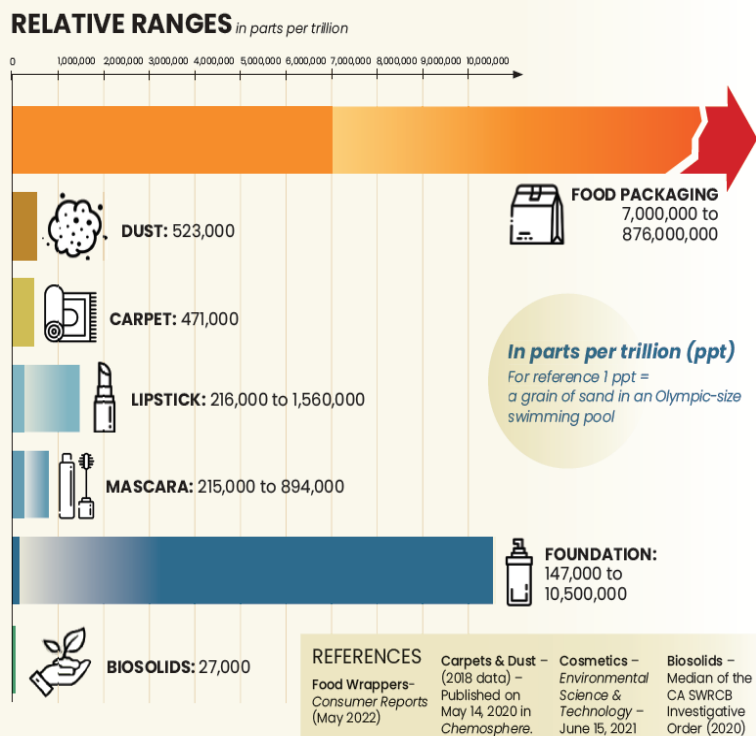


FIGURE 37. CASA INFOGRAPHIC ON SOURCES OF PFAS

In 2022, the California Association of Sanitation Agencies (CASA), which ESD is a member of, examined current scientific literature to generate an infographic comparing concentrations of PFAS in everyday products and biosolids. Figure 37 illustrates the relative concentrations of PFAS from select products and biosolids for which there is data currently available. Understanding sources of PFAS can help with understanding of wastewater's role as well as managing PFAS in the environment and assisting with potential mitigation efforts in the future.

In December 2022, EPA issued a memorandum titled *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs*⁴⁰. This memo built upon an April 2022 memo, *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority*. The December memo expanded the audience from EPA regions to states and includes new recommendations related to biosolids, permit limits, and coordination across relevant state agencies. The memo provides guidance on how states might monitor and take steps to reduce PFAS where detected. The document will help EPA obtain information on sources and quantities of PFAS discharges to inform other EPA efforts to address PFAS. SJ-

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.

⁴⁰ https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

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 21-22, 8,548 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 National Drug Take Back Day in April and October 2022, and Pollution Prevention Week in September 2022. The results are described in greater detail in the previous Public outreach section

In June 2015, the City began participating with the SCVWD, on a three-year grant, in partnership with the California Product Stewardship Council (CPSC) and the County Department of Environmental Health's HHW Program with the City contributing funds for 10 bins in City of San José. As planned, the pilot program transitioned to the pharmaceutical industry supported MED-Project in June 2017 as required by the County pharmaceuticals take-back ordinance for drop-off bins and mail-back services. In FY 21-22 72,696 pounds of pharmaceuticals were collected via kiosk drop-off sites during the third year of program implementation.



FIGURE 38. SAFE MEDICINE DISPOSAL ADVERTISING DEVELOPED BY THE CITY OF SAN JOSÉ

Wipes and Quaternary Ammonium Compounds

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" page⁴¹. BAPPG also 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

⁴¹ <https://baywise.org/residential/your-toilet/>

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. Goals for 2023 include continuing and expanding in person outreach and creation of a video to promote the “three P’s” (poop, pee, paper) message for flushing.

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.⁴² The SJ-SC RWF provided samples of influent, effluent, and biosolids for the second 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 – 2022 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 2023. These planned studies include:

- Participation in the PFAS phase 2 regional study that will characterize PFAS loads from targeted industrial sources and general residential sources throughout the San Francisco Bay Region.
- Continue sampling for QACs per extended study plan in influent, effluent, and biosolids until mid-2023.
- 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,



FIGURE 39. SJ ENVIRONMENT WIPES SOCIAL MEDIA POST FROM EARLY IN THE COVID-19 PANDEMIC

⁴² Hora, Priya I.; Pati, Sarah G.; McNamara, Patrick J.; and Arnold, William A. Increased Use of Quaternary Ammonium Compounds during the SARS-CoV-2 Pandemic and Beyond: Consideration of Environmental Implications. *Environ. Sci. Technol. Lett.* 2020, 7, 9, 622–631. Publication Date: June 26, 2020. <https://doi.org/10.1021/acs.estlett.0c00437>

- Additional monitoring of other CECs as identified and prioritized through the RMP Emerging Contaminant Workgroup.

TABLE 19. EMERGING CONTAMINANT PLAN

| Message / Program | Implementation & Timeline | Evaluation |
|--|--|--|
| <p>Unwanted Medications</p> <p>Do not flush unwanted medicine down the toilet or sink or put in the trash.</p> <p>Bring in unwanted medicine for proper disposal.</p> <p>Support the collection of unwanted and expired pharmaceuticals.</p> | <p>Track pounds of medications collected by HHW and City initiatives.</p> <p>Continue to collect pharmaceuticals at industry managed MED-Project collection program for the County.</p> | <p>MED-Project has collected 72,696 lbs of pharmaceuticals in FY 21-22.</p> |
| <p>Santa Clara County HHW program</p> <p>The City continues to provide ongoing residential outreach to promote HHW program.</p> | <p>City agreement to participate in countywide HHW Program and for County to operate the San José HHW facility continues through June 2024.</p> | <p>2022: City of San José and other participating cities signed 3-year funding and cooperative agreements with the County to participate in the countywide program; County will operate the San José permanent HHW facility as part of program.</p> <p>FY 21-22: County HHW facility served 38,009 residents including 20,035 San José residents, and safely managed 2,839,924 pounds of hazardous waste:</p> <ul style="list-style-type: none"> - 8,548 pounds of unwanted or expired medications collected. - 5,965 pounds of used sharps managed. |
| <p>Flea and tick</p> <p>Switch from spot-on treatments to chewables or tablets.</p> | <p>Participate in BAPPG studies, planning, and outreach activities.</p> <p>Continue to develop and expand Regional and City campaigns and evaluate future enhancements to the campaigns.</p> <p>Created educational presentation aimed at pet owners and presented virtually for the Santa Clara Public Library. Plans to schedule more presentations virtually at community organizations within the RWF Service Area and to bring this presentation to other</p> | <p>San José was an active member of BAPPG and the BAPPG Pesticides Workgroup in 2022 and worked to approve and share outreach collateral for oral flea and tick alternatives.</p> <p>BACWA ran a digital only flea and tick campaign that garnered over 2 million impressions of Bay Area residents and 5,819 clicks by Santa Clara County residents.</p> <p>City staff and BAPPG Pesticides workgroup presented Flea and Tick Treatment Impacts and Alternatives educational presentation to 12 attendees.</p> |

| Message / Program | Implementation & Timeline | Evaluation |
|---|---|--|
| | <p>Bay Area wastewater agencies' service areas are in the works for 2023 and beyond.</p> <p>Maintain online FAQ page for flea and tick treatment information updating as necessary.</p> <p>Develop internal City policy regarding fipronil- and imidacloprid-containing flea and tick topical treatments.</p> | |
| <p>Wipes Wipes clog pipes</p> | <p>Participate in BAPPG studies, planning, and outreach activities.</p> <p>Participate in SFEI-RMP studies of QACs.</p> <p>Develop messaging directing residents to dispose of wipes in the trash can.</p> | <p>Worked with BAPPG and RMP on studies and messaging. Developed social media messaging instructing residents to properly dispose of wipes.</p> |
| <p>Investigation Work with SFEI-RMP to continue emerging contaminant studies.</p> | <p>Plan for future emerging contaminant studies on pharmaceuticals, microplastics, PFAS, non-targeted analytes, & other prioritized CECs.</p> | <p>2022: Worked with RMP, SFEI, and national scientists to collect samples for analysis of PFAS and QACs.</p> <p>Participated in planning workshops for microplastics studies, environmental health effects and directed regional efforts towards investigating impacts associated with chemistry of tire fragments.</p> |

Attachment A – Acronyms

| | |
|---------------------------|---|
| ACR | Administrative Citations Referral |
| BACWA | Bay Area Clean Water Agencies |
| BAMS Collaborative | Bay Area Municipal Stormwater Collaborative |
| BAPPG | Bay Area Pollution Prevention Group |
| BASMAA | Bay Area Stormwater Management Agencies Association |
| BMPs | best management practices |
| BNR | biological nutrient removal |
| BPAs | Basin Plan Amendments |
| CASA | California Association of Sanitation Agencies |
| CITP | Christmas in the Park |
| City | City of San José |
| CMS | copper management strategy |
| COVID-19 pandemic | SARS-Cov-2 virus pandemic |
| CPSC | California Product Stewardship Council |
| DOT | Department of Transportation |
| 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 |
| HGI | hydromechanical grease interceptor |
| 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 |
| OPEs | organophosphate esters |
| OWOW | Our Water, Our World |
| P2 | pollution prevention |
| P2 Report | Pollutant Minimization Report |
| PCBs | polychlorinated biphenyls |
| PFAS | per- and polyfluoroalkyl substances |
| POPs | persistent organic pollutants |
| POTWs | Publicly Owned Treatment Works |
| QACs | quaternary ammonium compounds |

| | |
|--------------------------|---|
| Quakes | San José Earthquakes professional soccer team |
| 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 EIC | San José Environmental Innovation Center |
| SJMC | San José Municipal Code |
| 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 |
| Water Board | San Francisco Bay Regional Water Quality Control Board |

Attachment B – Santa Clara County Annual HHW Memorandum

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County of Santa Clara

Consumer and Environmental Protection Agency
Household Hazardous Waste Program
1552 Berger Drive, Suite 200
San Jose, CA 95112
Tel: (408) 299-7300 Fax: (408) 280-6479



<http://www.HHW.org>

Memorandum

August 1, 2022

To: Storm Water/Urban Runoff P2 Staff

From: Billy Puk, Hazardous Materials Program Manager
Household Hazardous Waste Program
Recycling and Waste Reduction Division
County of Santa Clara

Recusation by:

Billy Puk
Hazardous Materials Program Manager

Re: Fiscal Year 2021-2022 HHW Program Update

Participation

The HHW Program served 38,009 residents from July 1, 2021 through June 30, 2022 and safely managed 2,839,924 pounds of hazardous waste. There was a total of 189 collection events: 184 at two permanent facilities, and five at temporary sites as the program resumed events for the first time in two years in the Cities of Sunnyvale, Santa Clara, and Milpitas. In addition, the program served 309 small business drop-offs including local governments, Goodwill Industries, Hope Services, and The Salvation Army.

Paint

A total of 1,268,696 pounds of paint and paint related material were collected. Latex paint accounted for 593,997 pounds, and oil-based paint related material accounted for 674,699 pounds. There are fifty-four (54) 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 213,750 pounds of poisonous liquids, and 87,900 pounds of poisonous solids during the reporting year.

Household batteries

A total of 142,417 pounds of household batteries were collected and recycled. Of that volume, retail take-back stores accounted for 74,226 pounds. Forty-one (41) stores serve as our network of battery take-back partners. In addition, our battery partners manage their collected rechargeable batteries directly through Call2Recycle, the North American Product Stewardship Organization funded by the producers. Lastly, there are many additional Santa Clara County locations that take-back batteries that are not part of our network of partners.

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Mercury-containing fluorescent lamps

A total of 83,204 pounds of fluorescent lamps were collected during the reporting period. Of that volume, retail take-back stores accounted for 46,818 pounds. The remaining were collected at HHW events. Twenty-five (25) stores serve as fluorescent lamp take-back partners. Similar to batteries, there are other Santa Clara County locations that accept fluorescent lamps that are not part of our network of partners.

Mercury Containing Products

Four hundred ninety-five (495) pounds (includes thermostats, thermometers and other mercury containing products) were collected by the program.

Pharmaceuticals and Sharps

A total of 8,548 pounds of unwanted/expired medications were managed through the program. Additionally, MED-Project, LLC operates a Product Stewardship Plan for unwanted medicine from households in the County of Santa Clara and collected a total of 72,696 pounds of pharmaceuticals via kiosk drop-off sites and 165 pounds of pharmaceutical waste through return mail-back packages during the fourth year of program implementation¹.

A total of 5,965 pounds of used home generated sharps were managed. Similar to pharmaceuticals, MED-Project, LLC operates a Product Stewardship Plan for unwanted sharps from households in the County of Santa Clara and collected a total of 104,063 pounds of sharps via kiosk drop-off sites during and 653 pounds of sharps waste through return mail-back packages the second year of program implementation².

Public Outreach

No public outreach events were held during this period due to pandemic and staffing restrictions.

¹ MED-Project, LLC [Med-Project Medicine Annual Report 2022](#)

² MED-Project, LLC [Med-Project Sharps Annual Report 2022](#)