



555 County Center
Redwood City, CA 94063

P 650.599.1406
F 650.361.8227
flowstobay.org

September 30, 2019

Mr. Michael Montgomery
Executive Officer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

SUBJECT: SUBMITTAL OF THE SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM'S FY 2018/19 ANNUAL REPORT

Dear Mr. Montgomery:

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), a program of the City/County Association of Governments of San Mateo County (C/CAG), is pleased to submit the attached Fiscal Year 2018/19 Annual Report. This report describes Municipal Regional Permit (MRP) compliance activities conducted at the regional and countywide levels on behalf of San Mateo County municipalities. It also incorporates by reference and includes as appendices three reports submitted by the Bay Area Stormwater Management Agencies Association (BASMAA) on behalf of all Bay Area MRP Permittees.

I certify under penalty of law that the SMCWPPP FY 2018/19 Annual Report was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my enquiry of the person or persons who manage the system, or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SMCWPPP and the 22 municipal agencies in San Mateo County look forward to continuing to work with you and your staff on implementation of the MRP. If you have any questions or comments, please call me at (650) 599-1419.

Sincerely,

A handwritten signature in cursive script that reads "Matthew Fabry".

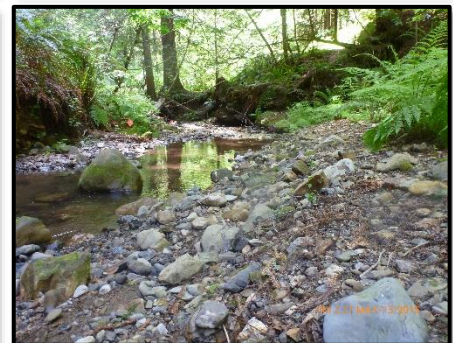
Matthew Fabry
Program Manager

Attachment: SMCWPPP FY 2018/19 Annual Report



SAN MATEO COUNTYWIDE
**Water Pollution
Prevention Program**
Clean Water. Healthy Community.
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FY 2018/19 Annual Report



September 30, 2019

Credits

This report is being submitted by the participating agencies in the



Town of Atherton

City of Belmont

City of Brisbane

City of Burlingame

Town of Colma

City of Daly City

City of East Palo Alto

City of Foster City

City of Half Moon Bay

Town of Hillsborough

City of Menlo Park

City of Millbrae

City of Pacifica

Town of Portola Valley

City of Redwood City

City of San Bruno

City of San Carlos

City of San Mateo

County of San Mateo

SM County Flood Control District

City of South San Francisco

Town of Woodside

San Mateo Countywide Water Pollution Prevention Program

555 County Center

Redwood City, California 94063

**A Program of the City/County Association of Governments
(C/CAG)**

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LIST OF ACRONYMS

BASMAA	Bay Area Stormwater Management Agencies Association
BAWSCA	Bay Area Water Supply and Conservation Agency
BMPs	Best Management Practices
BSM	Biotreatment Soil Mix
C3TG	C.3 Stormwater Technical Guidance
CALBIG	California Building Inspectors Group
CASQA	California Stormwater Quality Association
C/CAG	City/County Association of Governments of San Mateo County
CEH	County Environmental Health
CEQA	California Environmental Quality Act
CII	Commercial/Industrial/Illicit Discharge
DC	Development Committee
DIY	Do-It-Yourself
DO	Dissolved Oxygen
DPR	Department of Pesticide Regulation
EPA	Environmental Protection Agency
FY	Fiscal Year
GSRD	Gross Solids Removal Device
GI	Green Infrastructure
GIS	Geographic Information System
IPM	Integrated Pest Management
IMR	Information Monitoring Report
JPA	Joint Powers Authority
LID	Low Impact Development
MRP	Bay Area Stormwater NPDES Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NDS	New Development Subcommittee
NPDES	National Pollutant Discharge Elimination System
OAL	California Office of Administrative Law
O&M	Operations and Maintenance
OWOW	Our Water Our World

PCBs	Polychlorinated Biphenyls
PIP	Public Information and Participation
POC	Pollutants of Concern
POTW	Publicly-Owned Treatment Works (sewage treatment plants)
RFQ	Request for Qualifications
RMP	San Francisco Estuary Regional Monitoring Program
SAP	Sampling and Analysis Plan
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFEP	San Francisco Estuary Partnership
SFEI	San Francisco Estuary Institute
SMC	San Mateo County
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SOP	Standard Operating Procedure
STLS	Small Tributaries Load Strategy
SWRP	Stormwater Resource Plan
SWPPP	Stormwater Pollution Prevention Plan
TAC	Technical Advisory Committee
TMA	Trash Management Area
TMDL	Total Maximum Daily Load
WLA	Waste Load Allocation
WY	Water Year

EXECUTIVE SUMMARY

INTRODUCTION

This FY 2018/19 Annual Report was developed in compliance with the reissued National Pollutant Discharge Elimination System (NPDES) Municipal Regional Permit (referred to as the MRP)¹ for stormwater runoff discharges from San Mateo County and certain other San Francisco Bay Area communities. It summarizes stormwater management activities implemented by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP or Countywide Program) in FY 2018/19. SMCWPPP's activities benefit 22 municipal agencies in San Mateo County: 15 cities, five towns, the County of San Mateo, and the San Mateo County Flood Control District. Each of these agencies also separately submits an individual Annual Report to the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) focusing on that agency's stormwater management activities during FY 2018/19.

SMCWPPP is a program of the City/County Association of Governments (C/CAG) of San Mateo County. C/CAG is a Joint Powers Authority (JPA) that addresses issues of regional importance to San Mateo County jurisdictions such as congestion management and water quality. The C/CAG Board of Directors is comprised of a local elected city council representative from each city and town in San Mateo County, a member of the County Board of Supervisors, and representatives from the transit district and transportation authority. A 1993 amendment to the JPA Agreement made C/CAG responsible for assisting San Mateo County municipalities with complying with the municipal stormwater NPDES permit, including its latest incarnation as the MRP. Stormwater management-related activities of C/CAG and its various related committees and workgroups are described below.



C/CAG Board

Throughout FY 2018/19, the C/CAG Board of Directors received presentations, updates, and took actions on various stormwater-related issues, as summarized below (all C/CAG Board meeting agenda materials and minutes are available at www.ccag.ca.gov/board-of-directors):

- September 2018 – Board received an update on the Countywide Water Coordination Committee efforts to create a new flood / sea level rise resiliency agency;
- October 2018 – Approved amendments to Urban Rain Design (URD) and EOA Task Orders, received an update on the Countywide Stormwater Program Highlights for FY 2017/18;
- November 2018 – Approved Paradigm Environmental Funding Agreement for developing Countywide Sustainable Streets Master Plan, Amendment #1 to Larry Walker Associates (LWA) agreement for additional funds for Green Infrastructure (GI) Guidance documents, Countywide Water Coordination Committee update on flood / sea level rise resiliency agency creation;

¹NPDES Permit No. CAS612008 (Order No. R2-2015-0049), dated November 19, 2015. The MRP has a five-year term: effective January 1, 2016 and expires December 31, 2020.

- January 2019 – Approved Resolution 19-01 endorsing new Flood and Sea Level Rise Resiliency Agency proposal, appointment of Sam Bautista to Stormwater Committee for City of Pacifica;
- February 2019 – Approved Clean Water Pathways Funding Agreement with the San Mateo County Office of Education for teacher training institute;
- March 2019 – Approved Resolution 19-15 adopting definition of northern, central, southern and coastal areas for the Flood and Sea Level Rise Resiliency District Board of Directors, received update on the Fair Oaks Community School Safe Routes to School / GI project, approved letter of support for AB 825 (Mullin) for forming the new Flood and Sea Level Rise Resiliency District;
- April 2019 – Approved support letter for Assembly Member Mullin’s \$8 million budget request for designing regional stormwater retention systems, approved time extensions for EOA and LWA task orders;
- May 2019 – Approved solicitation for city/town governing board seats for Flood and Sea Level Rise Resiliency District; and
- June 2019 – Approved FY 2019/20 C/CAG Budget, including budget for SMCWPPP; approved Resolution 19-52 appointing five city/town members to the governing board of the new Flood and Seal Level Rise Resiliency District; approved consultant Task Orders and Funding Agreements for EOA, LWA, Stephen Groener Associates (SGA), URD, Bay Area Stormwater Management Agencies Association (BASMAA), and BAWSCA.

Program Manager and Staff

C/CAG’s Program Manager oversees the overall Countywide Program, serving as staff to the C/CAG Board and liaison among San Mateo County municipalities, technical consultants, committees, BASMAA, the California Stormwater Quality Association (CASQA), and Regional Water Board staff. The Program Manager represents San Mateo County municipalities at regional and statewide meetings and manages technical consultants that support programmatic activities. C/CAG’s Stormwater Program Specialist supports the Program Manager in implementing the Countywide Program. In addition to providing regular staff support, agenda reports, and presentations to the C/CAG Board and the Stormwater Committee, the Program Manager and staff participated in the following activities during the FY 2018/19 reporting year:

- BASMAA: The Program Manager continued representing the Countywide Program on the Board of Directors (continued serving as Vice-Chair). Program Manager and staff participate in Board meetings, BASMAA regional project meetings, and BASMAA committee meetings.
- CASQA: The Program Manager serves as co-chair of the CASQA Legislative Committee; staff attended and presented at the annual CASQA conference.
- San Francisco Estuary Partnership Implementation Committee: The Program Manager continued serving on the committee representing the municipal stormwater perspective, participating in quarterly meetings.
- In May 2019, the Program Manager was appointed to a one-year term as an expert consultant to the US EPA Environmental Finance Advisory Board to assist in responding to a congressional request for information regarding stormwater funding and financing, attending an initial meeting in Washington DC on June 6.

- The Program Manager/staff gave presentations through organizations such as C/CAG, various municipal agency councils, American Public Works Association, South Bayside Waste Management Authority, Metropolitan Transportation Commission, Sustainable Silicon Valley, and CASQA on a variety of topics such as stormwater management, trash controls, and GI.
- Grant Activities:
 - The Program Manager continued representing BASMAA on the Urban Greening Bay Area grant from EPA (Water Quality Improvement Fund) to the San Francisco Estuary Partnership/Association of Bay Area Governments. In conjunction with the project consultant and Roadmap Implementation Committee, the Program Manager began work to create fact sheets that clarify the eligibility of GI in transportation funding programs.
 - C/CAG staff worked with Assembly Member Mullin and his staff on an \$8 million budget request for advancing designs of multi-benefit regional stormwater capture facilities. The budget request was ultimately approved at a lesser amount (\$3 million) and will be administered to C/CAG as a grant from the California Natural Resources Agency. These funds will help move forward one or more of the regional retention project concepts C/CAG has developed.
 - Continued implementing the Countywide Sustainable Streets Master Plan under the \$986,300 Caltrans Adaptation Planning grant. This plan will prioritize street segments for including GI with other planned investments, such as bike/pedestrian and complete streets projects, safe routes to school improvements, pavement rehabilitation, etc. In developing the plan, C/CAG's consultant team will also be doing climate change modeling related to precipitation, public outreach/engagement, developing project concepts, and creating a web-based tracking tool.

Stormwater Committee

C/CAG's stormwater management-related decisions are generally made in consultation with the NPDES Stormwater Committee. At its November 2012 meeting, the C/CAG Board authorized reconvening this committee to include director-level appointees with decision-making authority for implementing stormwater management programs within San Mateo County municipalities in compliance with requirements in the MRP. The Committee meets on an approximate bimonthly basis (depending on need) on the third Thursday of the month at the San Mateo County Transit District Office in San Carlos.

The Stormwater Committee met three times during FY 2018/19 (October, February, and April) to assist with planning and organizing SMCWPPP's stormwater management activities including MRP compliance actions. Details on Stormwater Committee meeting agendas, minutes, and presentations can be found on the Committee's [website](#). In addition, the Stormwater Committee's ad-hoc permit implementation work group met twice during FY 2018/19 (November 15 and March 12). This small workgroup assists C/CAG staff with priority MRP implementation issues and overall program direction, including helping staff to develop recommendations to bring to the full Stormwater Committee for formal approval.

Technical Advisory Committee and Subcommittees

The Stormwater Committee provides direction to and receives feedback and recommendations from the Technical Advisory Committee (TAC). During FY 2012/13, the TAC transferred its former policy-related

functions to the Stormwater Committee and transitioned to a quarterly workshop format. The new format allowed more detailed discussion of MRP compliance topics, including check-ins on what jurisdictions should be focused on in the coming quarter and what should have been accomplished and documented in the preceding quarter. The TAC did not meet in FY 2018/19 but received regular emails from the Program Manager and staff with updates on key permit compliance topics and occasional requests for feedback. SMCWPPP has also established various subcommittees and work groups to the TAC that met regularly during FY 2018/19 to help implement the different aspects of MRP, as discussed below.

C/CAG Water Committee

In October 2015, C/CAG created a new ad-hoc “Water Committee” to serve as a forum for countywide discussion regarding water-related issues and to advise the C/CAG Board regarding countywide collaboration strategies relative to water issues, including potential creation of a new agency or modification of an existing agency to accomplish such collaboration, as well as explore potential funding options. Issues being evaluated include stormwater pollution control, flood control, and sea level rise. The Committee recommended formation of a formal Countywide Water Coordinating Committee (CWCC), which the C/CAG Board acted upon, with the new committee first meeting in May 2017. The Program Manager and staff, in conjunction with the Executive Director, provide staff support to the CWCC. Details on the CWCC can be found on C/CAG’s [website](#).

During FY 2018/19, the CWCC worked with a consultant and an 18-member [Staff Advisory Team](#) (SAT) to develop a proposal for a new agency that would address sea level rise, coastal erosion, flooding, and regional stormwater management in San Mateo County, on a countywide basis. This process was a joint process between C/CAG and the County of San Mateo. The Program Manager, staff, and C/CAG Executive Director participated in regular SAT meetings (seven meetings between August and December) to help create the proposal for the new agency. Details on the Flood and Sea Level Rise Resiliency Agency Proposal ([Proposal](#)) and related meetings can be found on the new website, resilientsanmateo.org. In developing the Proposal, there were numerous meetings with the cities/towns and other stakeholders to gather information.

The final Proposal calls for legislatively revising the existing San Mateo County Flood Control District to change the name to the “San Mateo County Flood and Sea Level Rise Resiliency District (FSLRRD),” provide enhanced authorities to address sea level rise and coastal erosion, change the governing board to a new seven-member body that includes five city/town elected officials and two supervisors representing specific geographic areas within the county, and update funding/financing authorities to be consistent with current state statute. The Proposal also calls for commitments from the County and the 20 cities and towns to provide three years of “startup” funding (\$1.5 million annually, split evenly between the County and the 20 cities/towns). During the three-year startup period, the FSLRRD would develop an investment strategy that can be used to generate sustainable, long-term revenue, such as through a parcel tax, property-related fee, or other mechanism. The CWCC recommended that the C/CAG Board endorse the Proposal for a new Flood and Sea Level Rise Resiliency Agency at its December 2018 meeting. The C/CAG Board and County Board of Supervisors both endorsed the Proposal at their January 2019 meetings.

Following the C/CAG Board and Board of Supervisor endorsements, County staff and the consultant team took the Proposal to each of the 20 cities and towns to solicit their endorsements and commitment of funding. The requested funding was broken into three tiers based on agency population, with the

largest cities contributing \$55,000 per year, medium cities contributing \$40,000, and smaller cities contributing \$25,000. The County would contribute \$750,000 per year. Each of the cities and towns ultimately endorsed the agency and committed three years of startup funding.

Flood and Sea Level Rise Resiliency District

Once each of the 20 cities and towns and the County endorsed the FSLRRD, the C/CAG Board appointed the five city/town elected officials to the future governing board. The County Board of Supervisors appointed the two supervisors. The seven governing board members representing the different geographic areas in the county are:

- North: Donna Colson, City of Burlingame
- Central: Diane Papan, City of San Mateo
- South: Lisa Gauthier, City of East Palo Alto
- Coast: Debra Ruddock, City of Half Moon Bay
- At-Large: Maryann Derwin, Town of Portola Valley
- Coast Supervisor: Don Horsley
- At-Large Supervisor: Dave Pine

The governing board is initially appointed as an advisory committee to the Board of Supervisors in its capacity as the governing board of the existing Flood Control District as legislation to create the FSLRRD moves through the legislature ([AB 825](#), Mullin). As of the writing of this report, the legislation has passed through the Assembly and the Senate and is awaiting confirmation on the Senate and Assembly floors prior to going to the Governor for signature by September 30. The advisory committee is initially focused on hiring an Executive Director for the FSLRRD, preparing a workplan and budget for the startup period, and drafting a Request for Proposals for creating the investment strategy that will be used to seek long-term, sustainable funding. Details on the advisory committee can be found [here](#). The advisory committee meets monthly, generally on the third Monday from 4-6 PM in San Mateo.

The FSLRRD is intended to address sea level rise, coastal erosion, flooding, and regional stormwater management. As such, assuming the FSLRRD can secure long-term, sustainable funding during the startup period, it will likely play a key role in helping to design, build, and maintain regional stormwater facilities that will help achieve water quality goals in the MRP. The three-year funding commitment by the County and cities/towns (\$4.5 million over three years) is an important step forward for achieving integrated water management in San Mateo County.

ORGANIZATION OF REPORT

This FY 2018/19 Annual Report is structured around the following major provisions of the MRP:

- C.2. Municipal Operations
- C.3. New Development and Redevelopment
- C.4. Industrial and Commercial Site Controls
- C.5. Illicit Discharge Detection and Elimination

- C.6. Construction Site Control
- C.7. Public Information and Outreach
- C.8. Water Quality Monitoring
- C.9. Pesticides Toxicity Control
- C.10. Trash Load Reduction
- C.11. Mercury Controls
- C.12. PCBs Controls
- C.13. Copper Controls
- C.15. Exempted and Conditionally Exempted Discharges

The following sections briefly summarize how SMCWPPP provided assistance in FY 2018/19 in implementing the MRP for each of the above provisions.

C.2 Municipal Operations

The objective of MRP Provision C.2 is “to ensure development and implementation of appropriate Best Management Practices (BMPs) by all Permittees to control and reduce discharges of non-stormwater and stormwater runoff pollutants to storm drains and watercourses during operation, inspection, repair and maintenance activities of municipal facilities and infrastructure.” Most MRP-required Provision C.2 Municipal Operations tasks are implemented individually by each Permittee in San Mateo County. The Countywide Program helps agency staff to understand MRP requirements and develops various tools that assist agency staff to effectively plan, implement, and report on compliance activities. SMCWPPP’s assistance and the implementation of Municipal Operations tasks are coordinated through the SMCWPPP Public Works Municipal Maintenance Subcommittee.

SMCWPPP performs a number of tasks to assist San Mateo County Permittees with implementation of Provision C.2, with input and assistance provided by the Public Works Municipal Maintenance Subcommittee. FY 2018/19 accomplishments included the following:

- Held one Public Works Municipal Maintenance Subcommittee meeting; and
- Updated a pesticide tracking template, in coordination with SMCWPPP’s Parks Maintenance and IPM Work Group, to assist San Mateo County Permittees comply with pesticide tracking and reporting requirements in MRP Provision C.9.a.

C.3 New Development and Redevelopment

During FY 2018/19, SMCWPPP continued to provide compliance assistance with MRP Provision C.3, New Development and Redevelopment, through the New Development Subcommittee (NDS) and Green Infrastructure Committee (GI Committee). The NDS and GI Committee each met four times in FY 2018/19, with good participation by municipal staff.

In support of the GI Plan requirement in the MRP and to more broadly plan for precipitation-based climate change impacts to the transportation network in San Mateo County, C/CAG successfully applied for and received a Caltrans Adaptation Planning Grant to develop the San Mateo Countywide Sustainable Streets Master Plan. This plan will provide an implementation-level approach to achieving

water quality goals in the MRP and other community benefits associated with green infrastructure (GI). To further support cost-effective GI implementation, C/CAG was awarded \$2.94 million in State Budget funds issued through the California Natural Resources Agency to advance designs of regional stormwater capture projects.

In future years, SMCWPPP will continue its efforts to work with San Mateo County municipalities, schools, and the San Mateo County Office of Sustainability, to pursue funding for and facilitate implementation of cost-effective GI, including regional multi-jurisdiction and multi-benefit stormwater capture and treatment projects. This will include continued follow-up on project concepts and related prioritization efforts presented in SMCWPPP's Countywide Stormwater Resource Plan, and advancing project designs through \$2.94 million in state grant funds recently issued to C/CAG through the California Natural Resources Agency. All of these efforts to support GI implementation in San Mateo County and seek new project funding and opportunities will be integrated to the extent feasible with plans to create a new Flood and Sea Level Rise Resiliency Agency (FSLRRD) (resilientsanmateo.org) in the County by January 2020.

SMCWPPP's accomplishments during FY 2018/19 include the following tasks to assist San Mateo County municipalities with implementation of Provision C.3:

- Held four meetings of the New Development Subcommittee (NDS) to assist municipal agencies in San Mateo County to comply with MRP Provisions C.3 (New Development and Redevelopment) and C.6 (Construction Controls).
- Held four meetings of the GI Committee. SMCWPPP's facilitation of the four meetings, and related review work outside of the meetings, allowed SMCWPPP to participate in the development, review, and completion of work products related to key elements of the GI Plan requirements, and to educate and support GI Committee members in their preparation of GI Plans.
- Continued a countywide effort to develop components of the GI Plans required by MRP Provision C.3.j. The model and countywide components were for local San Mateo County municipality review, use and/or modification in their local GI Plans.
- Continued ongoing updates of guidance documents including the C.3 Regulated Projects Guide (an updated version of the C.3 Technical Guidance), checklists, and fact sheets for consistency with MRP requirements and ease of use by municipal staff.
- Completed the Green Infrastructure Design Guide, which is part of the new SMCWPPP GreenSuite for San Mateo County Permittees. The Green Infrastructure Design Guide includes typical details and standard specifications for numerous GI design options. It builds upon efforts from the San Francisco Public Utilities Commission and other prominent stormwater programs throughout the country and is intended to fulfill requirement under MRP Provisions C.3.j.i(2)(e) and (f). These provision require Permittees to develop general guidelines and standard specifications and typical details in support of GI implementation, including projects adopted via GI Plans and/or other local mechanisms.
- Participated in the BASMAA Development Committee and led its GI Alternative Sizing Criteria Work Group to develop an approach to sizing GI facilities in constrained non-regulated roadway projects.

- Conducted a variety of GI outreach activities, including rain barrel program promotion, publishing newsletter articles, and social media posts. C/CAG staff also attended classroom presentations and participated in efforts to engage schools via programs led by the San Mateo County Office of Education, including the C/CAG-funded Clean Water Pathways teacher fellowship program and the Collective Impact Project. C/CAG staff has also supported local and regional implementation of GI, through presenting GI Plans to local agency Councils and participation in regional planning meetings with the Metropolitan Planning Commission on identifying funding nexuses among stormwater and transportation programs.
- Conducted a full-day C.3 workshop entitled “Green Infrastructure Guidance and Stormwater Controls for Regulated Projects.”

C.4 Industrial and Commercial Site Controls

A primary goal of SMCWPPP's Commercial, Industrial and Illicit Discharge (CII) component is to assist San Mateo County Permittees in controlling the discharge of pollutants in stormwater from commercial and industrial businesses to the maximum extent practicable. San Mateo County Permittees are responsible for complying with various business inspection requirements under MRP Provision C.4. SMCWPPP's CII component assists San Mateo County Permittee staff with understanding these MRP requirements and develops various related tools, templates, reporting forms, and other MRP compliance support materials. SMCWPPP's assistance with MRP Provision C.4 is coordinated through the CII Subcommittee, which met four times in FY 2018/19, with good participation by municipal staff.

During FY 2018/19, SMCWPPP performed a variety of tasks to assist San Mateo County Permittees with implementation of MRP Provision C.4, with input and assistance provided by the CII Subcommittee. Accomplishments included the following:

- Updated the *Stormwater Inspector Guidance on Meeting Annual MRP C.4.d Training Requirements*;
- Adapted a landscape maintenance postcard from the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP);
- Adapted a BMP booklet entitled *How Your Business Can Prevent Stormwater Pollution* from the Alameda County Clean Water Program (ACCWP) in English, Spanish and Vietnamese;
- Developed a Food Service Facility BMP fact sheet; and
- Updated the business stormwater inspector contact list on the SMCWPPP website.

C.5 Illicit Discharge Detection and Elimination

Another important goal of SMCWPPP's CII component is to assist San Mateo County Permittees effectively prohibit the discharge of illicit, non-stormwater discharges to the municipal storm drain system. San Mateo County Permittees are responsible for controlling non-stormwater discharges prohibited by MRP Provision C.5. SMCWPPP's CII component assists San Mateo County Permittee staff with understanding these MRP requirements and develops various related tools, templates, reporting forms, and other MRP compliance support materials. SMCWPPP's assistance with MRP Provision C.5 is coordinated through the CII Subcommittee.

During FY 2018/19, SMCWPPP performed a number of tasks to assist San Mateo County Permittees with implementation of MRP Provision C.5, with input and assistance provided by the CII Subcommittee. Accomplishments included the following:

- Updated the inventory of mobile cleaner businesses in San Mateo County;
- Updated the table of stormwater enforcement actions against mobile businesses to share countywide with stormwater inspectors;
- Updated the mobile cleaner businesses BMP fact sheet;
- Worked with SMCWPPP's public outreach component to develop Facebook posts and Google advertisements promoting mobile business BMPs;
- Assisted with development of the swimming pools, hot tubs and fountain water discharges fact sheet; and
- Updated the Illicit Discharge contact list on the SMCWPPP website.

C.6 Construction Site Control

This component of SMCWPPP assists San Mateo County municipalities in complying with MRP Provision C.6 (Construction Site Control). This assistance continued to be provided through the New Development Subcommittee. SMCWPPP's accomplishments during FY 2018/19 include the following tasks to assist San Mateo County municipalities with implementation of MRP Provision C.6:

- Conducted a construction site controls training for the California Building Inspectors Group (CALBIG) on October 10, 2018;
- Printed 2,000 copies of the Construction Site Inspection Form and distributed them to the Subcommittee members;
- Updated the SMCWPPP inspection data tracking template; and
- Conducted the March 11, 2019 Construction Site Inspector Workshop.

C.7 Public Information and Outreach

The primary goals of SMCWPPP's Public Information and Participation (PIP) component are to:

- Educate the public about the causes of stormwater pollution and its adverse effects on water quality in local creeks, lagoons, shorelines and neighborhoods;
- Encourage residents to adopt less polluting and more environmentally beneficial practices; and
- Increase residents' participation and involvement in SMCWPPP activities.

PIP is essential for controlling and reducing the source of pollution since many preventable pollutants are associated with everyday residential activity. Stormwater pollution may be reduced when residents are educated and motivated by the benefits of reducing pollutants. This approach of education and motivation is cost-effective and efficient in meeting the goal of reducing pollutants in stormwater to the maximum extent practicable.

The SMCWPPP PIP Subcommittee oversees the development of outreach and educational materials and guides the implementation of the PIP component of the program. The Subcommittee met two times in

FY 2018/19 with good participation by municipal staff. SMCWPPP's PIP accomplishments during FY 2018/19 included the following:

- Partnered with Bay Area Water Supply & Conservation Agency (BAWSCA) on a rain barrel outreach campaign that received 744 website page views. Received a total of 32 applications for 42 rebates from residents and distributed rain barrel rebate fliers at outreach events. A total of 1,267 rain barrels have been installed to-date in San Mateo County under the rebate program.
- Supported the PIP Subcommittee with a Green Infrastructure (GI) Outreach Support Campaign to help the process of the GI Plan adoption by September 2019, per the MRP requirement.
- Promoted the San Mateo County Environmental Health Services (EHS) campaigns to reduce littering of cigarette butts, introduce re-fillable propane canisters, and educate residents about safe battery recycling.
- Promoted Coastal Cleanup Day to raise awareness of the event and the consequences of littering behaviors.
- Promoted Caltrans educational materials in English and Spanish about uncovered loads.
- Gained 3,985 new Facebook fans with a total of 139,266 total post reach with stormwater pollution prevention Facebook messaging.
- Sent 10 e-newsletters to a list of 3,684 opt-in subscribers with topics covering eco-friendly gardening practices, local cleanup events and stormwater pollution prevention information and tips.
- Received 14,548 visitors to the SMCWPPP website (flowstobay.org), which focuses on stormwater pollution prevention messaging and resources.
- Participated in 15 public outreach events in San Mateo County, which involved speaking one-on-one with residents and handing out collateral materials. SMCWPPP materials were distributed at an additional 45 outreach events by a partnering agency.
- Created a new, countywide stormwater-focused teacher fellowship program in coordination with the County Office of Education and also supported countywide school outreach efforts by creating a green infrastructure lesson plan and conducting in-class presentations.
- Performed point-of-purchase outreach with Our Water Our World materials to 10 hardware stores in San Mateo County while conducting in-store tabling events to engage residents in discussions about eco-friendly alternatives to pesticides.
- Promoted outreach messaging to residents regarding eco-friendly alternatives to pesticides in SMCWPPP's e-newsletter, website (flowstobay.org) and social media channels.

C.8 Water Quality Monitoring

On behalf of its San Mateo County Permittees, SMCWPPP performs water quality monitoring activities in compliance with MRP Provision C.8. Some of this work is accomplished through participation in BASMAA regional projects. Per Provision C.8, SMCWPPP will submit an Integrated Monitoring Report (in lieu of the annual Urban Creeks Monitoring Report) to the Regional Water Board by March 31, 2020. SMCWPPP's previous Integrated Monitoring Report was submitted March 2014 and covered water quality monitoring data collected October 1, 2011 through September 30, 2013. The March 31, 2020

Integrated Monitoring Report will report on all water quality monitoring data collected since the March 2014 Integrated Monitoring Report.

In addition, in accordance with MRP Provision C.8.f., Pollutants of Concern (POC) Monitoring, SMCWPPP will submit by October 15, 2019 a report describing the POC Monitoring tasks accomplished in WY 2019 and the planned allocation of sampling effort for POC Monitoring in WY 2020. The report will include monitoring locations, number and types of samples collected, a description of the objectives of the sampling (i.e., management question addressed), and the analytes measured. However, per Provision C.8.h., the results of the monitoring will not be included, but instead will be documented in the Integrated Monitoring Report due March 2020.

C.9 Pesticides Toxicity Control

The primary objective of MRP Provision C.9 Pesticides Toxicity Control is to prevent the impairment of urban streams by pesticide-related toxicity. As such, Provision C.9 helps implement the *TMDL for Diazinon and Pesticide-related Toxicity for Urban Creeks* in the San Francisco Bay region. Permittees are required to implement a pesticide toxicity control program that addresses their own use of pesticides and use by others within their jurisdictions. The focus is on pesticides that pose a threat to water quality, including applications with the potential to enter the municipal stormwater conveyance system.

Most MRP-required Provision C.9 tasks are implemented individually by each San Mateo County Permittee. SMCWPPP helps agency staff to understand MRP requirements and develops various tools that assist agency staff to effectively plan, implement, and report on compliance activities. SMCWPPP's assistance with MRP Provision C.9 is coordinated through SMCWPPP's Parks Maintenance and Integrated Pest Management (IPM) Work Group. The exception is Provision C.9.h, the public outreach portion of Provision C.9, which is implemented through the SMCWPPP Public Information and Participation (PIP) component. The Parks Maintenance and IPM Work Group met once in FY 2018/19 with good participation by municipal staff.

During FY 2018/19, SMCWPPP performed several tasks to assist San Mateo County Permittees with implementation of Provision C.9, with input and assistance provided by the Parks Maintenance and IPM Work Group. SMCWPPP's accomplishments included the following:

- Presented information on pesticide control requirements in the MRP at a landscape IPM training workshop organized by the San Mateo County Department of Agriculture (County Ag);
- Continued coordinating with County Ag;
- Participated in relevant BASMAA and CASQA activities;
- Continued to maintain retail partnerships at 10 top-tier stores (e.g., Home Depot and Hassett Ace Hardware) within San Mateo County, including ordering materials, organizing outreach collateral, checking in with store managers, and providing outreach to residents;
- Conducted outreach at community events to educate customers about less toxic alternatives to commercial pesticides and fertilizers, including conducting 10 in-store tabling events for store customers;
- Updated a pesticide tracking template to assist San Mateo County Permittees comply with pesticide tracking and reporting requirements in MRP Provision C.9.a.; and
- Prepared the *Pesticides Source Control Actions Effectiveness Evaluation* (Appendix 9).

C.10 Trash Load Reduction

MRP Provision C.10 Trash Load Reduction tasks are implemented by each San Mateo County Permittee. SMCWPPP helps agency staff to understand trash load reduction requirements and develops various tools needed to effectively plan, implement, and report on compliance with the requirements. Provision C.10 requires Permittees (as applicable) to:

- Reduce trash discharges from 2009 levels by 70% by July 2017 and 80% by July 2019;
- Ensure that lands they do not own or operate but that are plumbed directly to their storm drain systems in Very High, High and Moderate trash generation areas are identified and equipped by full capture systems or managed to a level equivalent to full capture systems;
- Install and maintain full capture systems that treat a mandatory minimum acreage;
- Assess trash reductions associated with control measures other than full capture systems using a visual assessment protocol;
- Develop and implement a receiving waters trash monitoring program plan;
- Annually cleanup/assess a mandatory minimum number of creek/shoreline trash hotspots; and
- Maintain a Long-Term Trash Load Reduction Plan designed to achieve 100% trash reduction by July 2022.

SMCWPPP performs a variety of tasks to assist San Mateo County Permittees with implementation of MRP Provision C.10 and the requirements listed above, with input and assistance provided by the SMCWPPP Trash Subcommittee and Litter Work Group. In FY 2018/19, SMCWPPP coordinated and facilitated three meetings of SMCWPPP's Trash Subcommittee and two meetings of SMCWPPP's Litter Work Group, with good participation by municipal staff. FY 2018/19 accomplishments included the following:

- Assisted San Mateo County Permittees in delineating trash full capture treatment areas and managing trash full capture information in GIS (currently nearly 10,000 acres are treated by full capture systems in San Mateo County);
- Continued to implement SMCWPPP's Trash Assessment Strategy, including conducting roughly 670 On-land Visual Trash Assessments (OVTAs) at about 220 sites and maintaining the Program's online OVTA database to allow San Mateo County Permittees access to timely load reduction estimates;
- Continued providing guidance to San Mateo County Permittees on MRP operation and maintenance requirements and standard operating procedures for trash full capture systems;
- Compiled and standardized data from 38 trash hot spot assessments and cleanups, and entered the data into the SMCWPPP hot spot database;
- Finalized and distributed the *Litter Reduction Toolkit for Multi-family Dwellings* which provides guidance to San Mateo County Permittee staff on BMPs for reducing litter at properties in San Mateo County (flowstobay.org/litter-reduction-toolkit), and began creating a fact sheet for Permittees to use;
- Coordinated with the SMCWPPP Public Information and Participation (PIP) Subcommittee on countywide school outreach and countywide litter campaign branding efforts;

- Responded to Regional Water Board staff requests for information on existing, planned and potential locations for trash full capture systems that are mutually beneficial to San Mateo County Permittees and Caltrans;
- Coordinated with Caltrans on trash capture efforts, including the installation of trash full-capture systems through cooperative implementation agreements;
- Provided guidance to each San Mateo County Permittee on the recommended approach to further characterize trash generation levels in areas >10,000 ft² draining to private inlets connected to its MS4;
- Conducted qualitative trash receiving water monitoring at 30 creek/channel sites and conducted a field training for San Mateo County Permittee staff on protocols included in the *BASMAA Receiving Waters Trash Monitoring Program Plan*;
- Participated in the development and submittal of the *BASMAA Receiving Waters Trash Monitoring Program Plan Preliminary Report*, in compliance with MRP provision C.10.b.v.; and
- Assisted San Mateo County Permittees in developing information necessary for reporting trash load reductions with their FY 2018/19 Annual Reports.

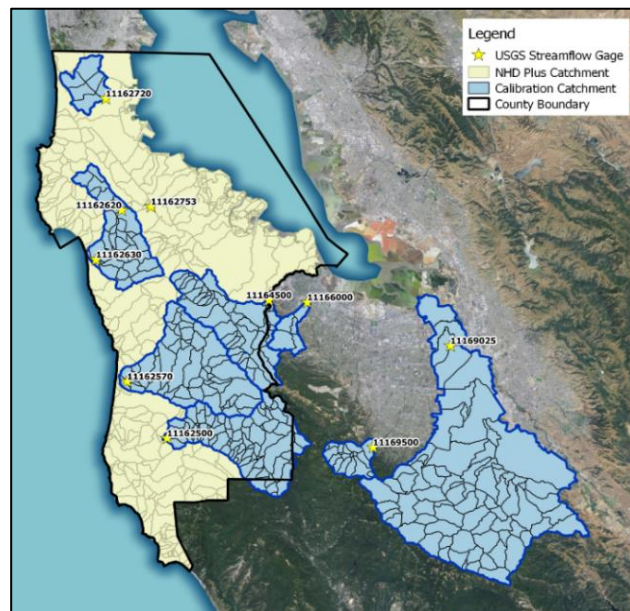
C.11 Mercury Controls

MRP Provision C.11 Mercury Controls implements stormwater runoff-related actions required by the San Francisco Bay mercury Total Maximum Daily Load (TMDL) water quality restoration program. SMCWPPP performs a variety of activities to address mercury in stormwater runoff in compliance with MRP Provision C.11. Some of this work is accomplished via participation in BASMAA regional projects. Please note that efforts that address both PCBs and mercury are described in this section rather than the following section (Section 12, PCBs Controls). Section 12 focuses on efforts that address PCBs only.

MRP Provisions C.11/12.b., Assess Mercury/PCBs Load Reductions from Stormwater, required Permittees to submit in their 2015/16 Annual Report for Executive Officer approval an assessment methodology. The purpose of the assessment methodology is to quantify in a technically sound manner mercury and PCBs loads reduced through implementation of a variety of pollutant controls, including pollution prevention, source control, and stormwater runoff treatment measures such as green infrastructure. SMCWPPP and San Mateo County Permittees helped develop the assessment methodology through participation in a BASMAA regional project. The assessment methodology developed via the BASMAA regional project is referred to as the Interim Accounting Methodology and has been approved by the Executive Officer of the Regional Water Board.

Permittees are required to annually report on the use of the methodology to demonstrate progress toward achieving the mercury and PCBs load reductions required in this permit term. Efforts by SMCWPPP and San Mateo County Permittees to implement control measures to achieve mercury and PCBs load reductions in San Mateo County and the load reductions quantified to-date are described in a separate report (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff*, SMCWPPP, September 30, 2019).

Permittees are also required to conduct a Reasonable Assurance Analysis (RAA) to demonstrate quantitatively that mercury and PCBs load reductions specified in the MRP will be achieved by 2040 through implementation of green infrastructure. SMCWPPP's initial steps in the RAA development process included development of a baseline model of all County watersheds to simulate existing hydrology and sediment and pollutant loads to the Bay. The baseline model is based on USEPA's Loading Simulation Program C++ (LSPC), a recoded version of the Hydrology Simulation Program – FORTRAN (HSPF) into C++, with architectural improvements that allow efficient simulation of the many watersheds of San Mateo County, as well as tools for summarizing sediment and pollutant loads. The model provides hourly simulation of flows, sediment loads, and pollutant concentrations for



Model Domain of San Mateo County RAA

each of the individual model subwatersheds in the County. The model was configured based on HSPF parameters established through previous model development efforts of the Bay Area Hydrologic Model (BAHM) and Santa Clara Valley Water District modeling of the Guadalupe River, with significant upgrades that utilized recent monitoring efforts to provide model calibration and validation.

SMCWPPP linked the baseline LSPC model with EPA's System for Urban Stormwater Treatment and Analysis Integration (SUSTAIN), which provides simulation of green infrastructure and estimation of pollutant load reductions. The model has been configured based on the project opportunities identified in the San Mateo Countywide Stormwater Resource Plan (SWRP) for LID retrofit, Green Streets, and regional stormwater capture projects, as well as additional conceptualized regional projects, projected LID projects for new and redevelopment (per Provision C.3), and green infrastructure projects currently constructed (primarily C.3 regulated projects implemented since 2005). SUSTAIN was used to model various alternative strategies for achieving countywide mercury and PCBs load reduction targets for green infrastructure. SMCWPPP also developed methods for reporting RAA output that will inform each Permittee on the goals for green infrastructure to be considered during the efforts to plan control measures for mercury and PCBs in coordination with green infrastructure planning. Additional description of the baseline LSPC and SUSTAIN green infrastructure model was provided in Appendix 11 to SMCWPPP's FY 2017/18 Annual Report (see memorandum entitled *Quantitative Relationship between Green Infrastructure Implementation and PCBs/Mercury Load Reduction*).

SMCWPPP's initial RAA modeling for San Mateo County Permittee review and feedback resulted in some modifications for a final modeling run that provided targets for each Permittee in terms of the amount of green infrastructure needed to meet MRP requirements, associated volume of stormwater runoff managed, and associated area of impervious surface treated. In 2018 SMCWPPP developed its *San Mateo County-Wide Reasonable Assurance Analysis Addressing PCBs and Mercury: Phase I Baseline Modeling Report* and in August 2019, an initial draft of its *San Mateo County-Wide Reasonable Assurance Analysis Addressing PCBs and Mercury: Phase II Green Infrastructure Modeling Report*. These

documents are being submitted for peer review, per MRP requirements, in September/October 2019, and will be submitted to the Regional Water Board in 2020.

During FY 2018/19, SMCWPPP also continued to participate in the regional BASMAA RAA Workgroup, which supports and coordinates Permittee efforts to plan control measures for mercury and PCBs in coordination with green infrastructure planning. Following completion of the BASMAA Bay Area RAA Guidance in 2017, the BASMAA RAA Workgroup has continued to meet to discuss opportunities to share information among countywide RAA efforts, present the status of RAAs to Regional Water Board staff, and identify regional studies or approaches for peer review to support Permittee efforts to perform the RAA. The RAA Workgroup confirmed multiple peer reviewers and developed associated documents to guide the peer review process that began in August 2019 and will finish in November 2019. SMCWPPP has presented to the RAA Workgroup, the regional Pollutants of Concern (POC) Steering Committee, and the MRP 3.0 Steering Committee on the status of the San Mateo Countywide RAA.

MRP Provisions C.11/12.d require that Permittees prepare a plan and schedule for mercury and PCBs control measure implementation and a corresponding RAA demonstrating quantitatively that sufficient control measures will be implemented to attain the mercury and PCBs TMDL wasteload allocations by 2028 and 2030, respectively. The plan and schedule are due in September 2020. SMCWPPP has developed modeling approaches for quantifying mercury and PCBs loads in San Mateo County and conducting the RAA. SMCWPPP will continue these efforts in FY 2019/20, along with developing the control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations, per the requirements in MRP Provisions C.11/12.d.

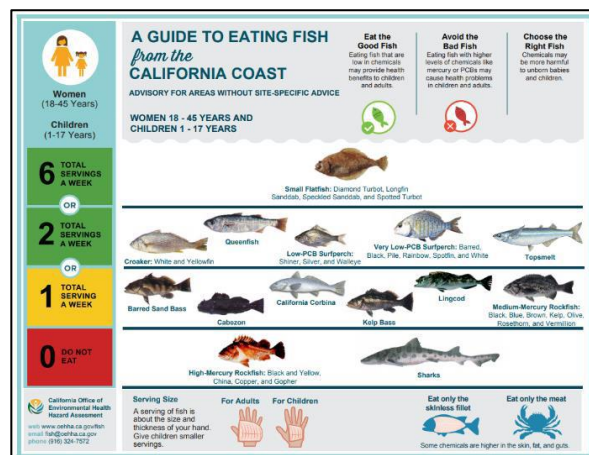
MRP Provisions C.11.e and C.12.h require Permittees to conduct an ongoing risk reduction program to address public health impacts of mercury and PCBs in San Francisco Bay fish. SMCWPPP assists San Mateo County Permittees comply with the risk reduction program requirements by coordinating with and reporting on the Fish Smart program conducted by San Mateo County Environmental Health Services (EHS). During FY 2018/19, EHS conducted a variety of activities that target at-risk populations (e.g., subsistence fisherman) via the Fish Smart program, including the following:

- There are currently 17 Fish Smart program signs posted in San Mateo County. EHS staff maintained signs posted along the San Francisco Bay shore (e.g., at fishing piers) in the Cities of Brisbane, South San Francisco, San Mateo, Burlingame, and Redwood City.
- Two new Fish Smart in San Francisco Bay signs were installed, one at the Point San Bruno Park fishing pier in South San Francisco, and the other at the Seaport Centre Office Complex (along Redwood Creek) in Redwood City. Fishing has been observed at both of these locations.
- The Office of Environmental Health Hazard Assessment (OEHHA) recently updated its statewide advisory for the California coast. EHS provided signs in English, Spanish, Tagalog, and Chinese to City of Pacifica staff to post at the Pacifica Pier and printed the advisories in four languages to distribute in flyer format.



**New Fish Smart Sign Installed October 2018,
Seaport Centre Office Complex, Redwood City**

- EHS promoted the updated OEHHA California coast advisory in various languages through flyer distribution at community events as well as at Pillar Point Harbor and select Half Moon Bay and Pacifica locations.
- EHS provided San Francisco Bay fish consumption guidelines in various languages to local marinas and some retail stores that sell bait and tackle.
- EHS promoted Monterey Bay Aquarium’s Seafood Watch Guides, which help consumers and businesses choose seafood that is fished or farmed in ways that support a healthy ocean.



Social Media Post Example

- EHS staff spoke with 2,500 residents at 10 events (e.g., County Fair and various health fairs) and provided information on about how to reduce exposure to toxins from consuming San Francisco Bay and Pacific Ocean fish, along with other pollution prevention topics.
- EHS continued to maintain the smchealth.org/fishsmart website, which had over 2,700 visits.
- EHS created 10 social media posts about safe fish consumption guidelines for the Bay and Ocean. Posts combined totaled over 110,000 impressions (number of times a post was on-screen), and over 9,800 engagements (e.g., a link in the post was clicked on). One of the FY 2018/19 Facebook posts had the greatest reach of any post on facebook.com/smchealth since this social media site was created.

C.12 PCBs Controls

MRP Provision C.12, PCBs Controls, implements stormwater runoff-related actions required by the San Francisco Bay PCB Total Maximum Daily Load (TMDL) water quality restoration program. SMCWPPP performs a variety of activities to address PCBs in stormwater runoff in compliance with MRP Provision C.12. Please note that efforts that address both PCBs and mercury are described in the previous section (Section 11, Mercury Controls). This section focuses on efforts that address PCBs only.

Permittees are required to annually report on progress toward achieving the PCBs load reductions required this permit term. Efforts by SMCWPPP and San Mateo County Permittees to implement control measures to achieve mercury and PCBs load reductions in San Mateo County and the load reductions quantified to-date are described in a separate report (Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019). Please note that per the documentation in SMCWPPP’s FY 2017/18 Annual Report, the estimated PCBs load reduction across the permit area over the time period of FY 2013/14 through FY 2017/18 was 691 g/yr, indicating that the MRP regional performance criterion of 500 g/yr of PCBs load reduced by July 2018 was achieved.²

²It is important to note that the MRP allows Permittees to meet the regional criterion as a group – criteria for individual counties would only apply when the regional group criterion was not met.

MRP Provision C.12.f. requires that Permittees develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs concentrations of 50 parts per million or greater in applicable structures³ at the time such structures undergo demolition, so that PCBs do not enter municipal storm drain systems. On behalf of MRP Permittees, BASMAA conducted a multi-year regional project to assist MRP Permittees to address Provision C.12.f. The BASMAA project, which began in FY 2016/17 and was completed in March 2019, assisted Permittees in developing local programs to manage PCBs-containing materials during building demolition. It developed guidance materials, tools and training materials and conducted outreach. SMCWPPP actively participated in the project, including providing BASMAA's project manager.

Key BASMAA project deliverables provided to each Permittee to use as appropriate given local procedures and needs included:

- A protocol for pre-demolition building survey for priority PCBs-containing building materials;
- Model language for municipal adoption (e.g., ordinance) of the new program to manage PCBs materials during building demolition and model supporting staff report and resolution;
- CEQA strategy and model notice of exemption;
- Supplemental demolition permit model application materials, including forms, process flow charts, and applicant instructions; and
- An analysis to assist municipalities that pursue cost recovery.

Other project deliverables included:

- A coordination/communication strategy for the project;
- A technical memorandum summarizing any new information & decisions needed by BASMAA at outset, including an annotated table of regulatory drivers and relevant requirements;
- A technical memorandum with the state of the practice for identifying PCBs-containing building materials (developed to inform development of the pre-demolition building survey protocol listed below);
- Industry stakeholder outreach materials and a fact sheet for municipal staff;
- A spreadsheet tool used to develop the prioritized list of potential PCBs-containing building materials that the demolition program will focus on;
- A conceptual approach for an assessment methodology and data collection program to quantify PCBs loads reduced through managing PCBs-containing materials during building demolition.

During FY 2018/19, the BASMAA project concluded by conducting the following outreach and training tasks:

- Prepared training materials for municipal staff on adoption and implementation of the new program;

³ Applicable structures are buildings built or remodeled from January 1, 1950 through December 31, 1980, with the following exemptions: single-family residential buildings, wood-framed buildings, and partial building demolitions.

- Developed outreach materials and a standard presentation to inform industry stakeholders including developers, planning firms, urban planning non-governmental organizations, demolition firms, property owners, property managers, and realtors about the new program to manage PCBs in building materials during demolition;
- Using the above training materials, conducted training workshops (in-person and a webinar) for key municipal and countywide stormwater program staff;
- Conducted a webinar for industry stakeholders; and
- Developed a list of Bay Area opportunities, including contact information and dates, for municipal and/or stormwater program staff to conduct additional outreach to industry stakeholders using the above industry outreach materials.

In addition, during FY 2018/19 MRP Permittees worked together through the BASMAA Monitoring and Pollutants of Concern Committee (MPC) to begin developing a framework to comply with data collection/evaluation and reporting requirements under Provision C.12.f. Permittees began implementing the program on July 1, 2019.

MRP Provision C.12.g requires Permittees to conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas. This requirement is being addressed through a multi-year project by the San Francisco Bay Regional Monitoring Program (RMP) to develop a series of conceptual models of PCBs in Priority Margin Units (PMUs). SMCWPPP's FY 2016/17 Annual Report included a workplan developed by BASMAA that describes how these information needs will be accomplished, including the studies to be performed and a preliminary schedule. SMCWPPP's FY 2017/18 Annual Report included a write-up developed by BASMAA that described the status of the studies. The MRP requires Permittees to report in the March 30, 2020, Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of the studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.13 Copper Controls

Provision C.13 of the MRP addresses copper control measures identified in the San Francisco Bay Basin Water Quality Control Plan (commonly referred to as the Basin Plan) that the Regional Water Board has deemed necessary to support copper site-specific objectives in San Francisco Bay. SMCWPPP's accomplishments during FY 2018/19 include the following tasks to assist San Mateo County Permittees with implementation of Provision C.13:

- Continued to train municipal inspectors on the MRP requirements and BMPs for architectural copper installation, cleaning, and treating. The trainings utilized a SMCWPPP factsheet entitled "Requirements for Architectural Copper: Protect water quality during installation, cleaning, treating, and washing!" which targets suppliers and installers of copper materials and is available on the SMCWPPP website (flowstobay.com). Building inspectors received the information from a SMCWPPP presentation at the California Building Inspectors Group (CALBIG) meeting on October 10, 2018 and construction site inspectors received the information during the March 11, 2019 SMCWPPP Construction Site Inspection Workshop.

- Developed a fact sheet entitled *Best Management Practices for Pools, Hot Tubs, and Fountain Water Discharges* related to managing discharges from pools, spas and fountains that includes information on avoiding the use of copper-based algaecides. The fact sheet is available on the SMCWPPP website.
- Provided information through the SMCWPPP website on ensuring through routine industrial facility inspections that proper BMPs are in place at industrial facilities likely to use copper or have sources of copper. In addition, industrial inspectors received information on this topic in a guidance document prepared by SMCWPPP entitled *Stormwater Inspector Guidance on Meeting Annual MRP C.4.d Training Requirements* (June 1, 2019).

C.15 Exempted and Conditionally Exempted Discharges

The objective of MRP Provision C.15, Exempted and Conditionally Exempted Discharges, is to exempt unpolluted non-stormwater discharges from the MRP's general non-stormwater discharge prohibition (Provision A.1) and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. This section describes SMCWPPP's countywide activities conducted to help San Mateo County Permittees implement this provision. SMCWPPP helps municipal staff understand the MRP's requirements and makes various MRP compliance support materials available for their use. SMCWPPP's PIP component conducts selected activities to assist San Mateo County Permittees comply with outreach requirements in Provision C.15.b.iv. (Individual Residential Car Washing Discharge), C.15.b.v (Swimming Pool, Hot Tub, Spa and Fountain Water), and Provision C.15.b.vi. (Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering).

SMCWPPP performs a variety of activities to assist San Mateo County Permittees with implementation of Provision C.15. SMCWPPP's FY 2018/19 accomplishments included the following:

- Continued outreach efforts through social media posts to encourage residents to use car washes rather than washing their cars at home;
- Conducted targeted outreach to mobile car wash businesses to educate them on the hazards of dumping their used wash waters down storm drains and related BMPs;
- Conducted a countywide Google Ad campaign targeting residents who may use mobile wash services;
- Created a BMP fact sheet for swimming pools, hot tubs, spas, and fountain water discharges and promoted these types of BMPs through social media posts;
- Continued conducting outreach to San Mateo County residents, via social media, the SMCWPPP e-newsletter and blog, and through SMCWPPP's point-of-purchase program, to support and promote eco-friendly alternatives to toxic pesticides;
- Promoted planting of drought tolerant, native vegetation via social media, and the SMCWPPP e-newsletter and blog; and
- Continued to promote water-saving tips via social media.

SECTION 1 INTRODUCTION

BACKGROUND

This FY 2018/19 Annual Report was developed in compliance with the reissued National Pollutant Discharge Elimination System (NPDES) Municipal Regional Permit (referred to as the MRP)¹ for stormwater runoff discharges from San Mateo County and certain other San Francisco Bay Area communities. It summarizes stormwater management activities implemented by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP or Countywide Program) in FY 2018/19. SMCWPPP's activities benefit 22 municipal agencies in San Mateo County: 15 cities, five towns, the County of San Mateo, and the San Mateo County Flood Control District. Each of these agencies also separately submits an individual Annual Report to the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) focusing on that agency's stormwater management activities during FY 2018/19.

The organizational structure of SMCWPPP is shown on Figure 1-1. SMCWPPP is a program of the City/County Association of Governments (C/CAG) of San Mateo County. C/CAG is a Joint Powers Authority (JPA) that addresses issues of regional importance to San Mateo County jurisdictions such as congestion management and water quality. The C/CAG Board of Directors is comprised of a local elected city council representative from each city and town in San Mateo County, a member of the County Board of Supervisors, and representatives from the transit district and transportation authority. A 1993 amendment to the JPA Agreement made C/CAG responsible for assisting San Mateo County municipalities with complying with the municipal stormwater NPDES permit, including its latest incarnation as the MRP. Stormwater management-related activities of C/CAG and its various related committees and workgroups are described below.



C/CAG Board

Throughout FY 2018/19, the C/CAG Board of Directors received presentations, updates, and took actions on various stormwater-related issues, as summarized below (all C/CAG Board meeting agenda materials and minutes are available at www.ccag.ca.gov/board-of-directors):

- September 2018 – Board received an update on the Countywide Water Coordination Committee efforts to create a new flood / sea level rise resiliency agency;
- October 2018 – Approved amendments to Urban Rain Design and EOA Task Orders, received an update on the Countywide Stormwater Program Highlights for FY 2017/18;

¹NPDES Permit No. CAS612008 (Order No. R2-2015-0049), dated November 19, 2015. The MRP has a five-year term: effective January 1, 2016 and expires December 31, 2020.

- November 2018 – Approved Paradigm Environmental Funding Agreement for developing Countywide Sustainable Streets Master Plan, Amendment #1 to Larry Walker Associates agreement for additional funds for Green Infrastructure (GI) Guidance documents, Countywide Water Coordination Committee update on flood / sea level rise resiliency agency creation;
- January 2019 – Approved Resolution 19-01 endorsing new Flood and Sea Level Rise Resiliency Agency proposal, appointment of Sam Bautista to Stormwater Committee for City of Pacifica;
- February 2019 – Approved Clean Water Pathways Funding Agreement with the San Mateo County Office of Education for teacher training institute;
- March 2019 – Approved Resolution 19-15 adopting definition of northern, central, southern and coastal areas for the Flood and Sea Level Rise Resiliency District Board of Directors, received update on the Fair Oaks Community School Safe Routes to School / GI project, approved letter of support for AB 825 (Mullin) for forming the new Flood and Sea Level Rise Resiliency District;
- April 2019 – Approved support letter for Assembly Member Mullin’s \$8 million budget request for designing regional stormwater retention systems, approved time extensions for EOA and LWA task orders;
- May 2019 – Approved solicitation for city/town governing board seats for Flood and Sea Level Rise Resiliency District; and
- June 2019 – Approved FY 2019/20 C/CAG Budget, including budget for SMCWPPP; approved Resolution 19-52 appointing five city/town members to the governing board of the new Flood and Seal Level Rise Resiliency District; approved consultant Task Orders and Funding Agreements:
 - Amendment No. 1 to Task Order EOA-08 for completion of Water Year 2019 monitoring activities;
 - Task Orders EOA-09 and EOA-10 for FY 2019/20 general program support and Water Year 2020 monitoring activities;
 - Task Order LWA-05 for FY 2019/20 GI and Reasonable Assurance Analysis support;
 - Task Order SGA-05 for FY 2019/20 outreach support;
 - Amendment No.3 to URD-01 to complete GI Design Guide;
 - Amendment No.2 to Bay Area Stormwater Management Agencies Association funding agreement for FY 2019/20 dues and regional project contributions; and
 - Amendment No.4 to the Bay Area Water Supply and Conservation Agency funding agreement for FY 2019/20 for countywide rain barrel rebate program.

Program Manager and Staff

C/CAG’s Program Manager oversees the overall Countywide Program, serving as staff to the C/CAG Board and liaison among San Mateo County municipalities, technical consultants, committees, the Bay Area Stormwater Management Agencies Association (BASMAA), the California Stormwater Quality Association (CASQA), and Regional Water Board staff. The Program Manager represents San Mateo County municipalities at regional and statewide meetings and manages technical consultants that support programmatic activities. C/CAG’s Stormwater Program Specialist supports the Program Manager in implementing the Countywide Program. In addition to providing regular staff support, agenda reports,

and presentations to the C/CAG Board and the Stormwater Committee, the Program Manager and staff participated in the following activities during the FY 2018/19 reporting year:

- BASMAA: The Program Manager continued representing the Countywide Program on the Board of Directors (continued serving as Vice-Chair). Program Manager and staff participate in Board meetings, BASMAA regional project meetings, and BASMAA committee meetings.
- CASQA: The Program Manager serves as co-chair of the CASQA Legislative Committee; staff attended and presented at the annual CASQA conference.
- San Francisco Estuary Partnership Implementation Committee: The Program Manager continued serving on the committee representing the municipal stormwater perspective, participating in quarterly meetings.
- In May 2019, the Program Manager was appointed to a one-year term as an expert consultant to the US EPA Environmental Finance Advisory Board to assist in responding to a congressional request for information regarding stormwater funding and financing, attending an initial meeting in Washington DC on June 6.
- Presentations by the Program Manager/staff:
 - California Stormwater Quality Association annual conference ([“Lighting the Fire - Making the Business Case and Building a Diverse Funding Portfolio for Green Infrastructure,”](#) and [“The GreenSuite – Ramping Up Green Infrastructure Guidance in San Mateo County,”](#) October);
 - C/CAG Board of Directors meeting ([“Countywide Stormwater Program Update,”](#) October);
 - American Public Works Association Silicon Valley Chapter meeting, ([“Stormwater Planning and Implementation in San Mateo County,”](#) January);
 - Daly City Council Meeting ([“Green Infrastructure Plan Update,”](#) January);
 - Pacifica City Council Meeting ([“Green Infrastructure Plan Update,”](#) March);
 - C/CAG Annual Retreat ([“Managing Stormwater in San Mateo County,”](#) April);
 - Redwood City Council Meeting ([“Progress Report on the Development of the Green Infrastructure Plan & Policy Discussion,”](#) April);
 - Sustainable Silicon Valley, Rains to Bay Event ([“Green Stormwater Management,”](#) May);
 - C/CAG Congestion Management and Environmental Quality Committee ([“Stormwater Program Update,”](#) June);
 - South Bayside Waste Management Authority ([“Stormwater Trash Load Reductions in San Mateo County,”](#) June);
 - Municipal Regional Permit 3.0 Steering Committee ([“Lessons Learned from PCB Load Reduction Efforts and RAA Results,”](#) June);
 - San Mateo County Climate Collaborative ([“Sustainable Stormwater Management,”](#) June);
 - Metropolitan Transportation Commission Management Team ([“Stormwater and Transportation,”](#) July 2018, [“What is Green Infrastructure,”](#) June 2019);

- South San Francisco City Council Meeting (“[Green Infrastructure Plan Update](#),” July); and
- Silicon Valley Bike Coalition Annual Bike Summit (“[Moving to Sustainable Streets](#),” August).
- Grant Activities:
 - Continued representing BASMAA on the Urban Greening Bay Area grant from EPA (Water Quality Improvement Fund) to the San Francisco Estuary Partnership/Association of Bay Area Governments. Although BASMAA’s grant project finished in 2018/19, additional unused funding from other grant tasks was shifted to the BASMAA Roundtable effort to further advance the specific actions to prioritize sustainable streets in funding sources. The Program Manager, in conjunction with the project consultant and Roadmap Implementation Committee, began work to create fact sheets that clarify the eligibility of GI in transportation funding programs. This work continues in FY 2019/20.
 - C/CAG staff worked with Assembly Member Mullin and his staff on an \$8 million budget request for advancing designs of multi-benefit regional stormwater capture facilities. The budget request was ultimately approved at a lesser amount (\$3 million) and will be administered to C/CAG as a grant from the California Natural Resources Agency. These funds will help move one or more of the regional retention project concepts C/CAG developed forward. See Section 3 (C.3 New Development and Redevelopment) for more details on these funds and regional project efforts in San Mateo County.
 - Continued implementing the Countywide Sustainable Streets Master Plan under the \$986,300 Caltrans Adaptation Planning grant. This plan will prioritize street segments for including GI with other planned investments, such as bike/pedestrian and complete streets projects, safe routes to school improvements, pavement rehabilitation, etc. In developing the plan, C/CAG’s consultant team will also be doing climate change modeling related to precipitation, public outreach/engagement, developing project concepts, and creating a web-based tracking tool. See Section 3 (C.3 New Development and Redevelopment) for more details.

Stormwater Committee

C/CAG’s stormwater management-related decisions are generally made in consultation with the NPDES Stormwater Committee. At its November 2012 meeting, the C/CAG Board authorized reconvening this committee to include director-level appointees with decision-making authority for implementing stormwater management programs within San Mateo County municipalities in compliance with requirements in the MRP. The Committee meets on an approximate bimonthly basis (depending on need) on the third Thursday of the month at the San Mateo County Transit District Office in San Carlos. Public notices for Committee meetings are posted in accordance with Brown Act requirements on the ground floor of the same location.

The Stormwater Committee met three times during FY 2018/19 (October, February, and April) to assist with planning and organizing SMCWPPP’s stormwater management activities including MRP compliance actions. Appendix 1 includes a table summarizing attendance at the Stormwater Committee meetings held during FY 2018/19. Details on Stormwater Committee meeting agendas, minutes, and presentations can be found on the Committee’s [website](#).

In addition, the Stormwater Committee's ad-hoc permit implementation work group met twice during FY 2018/19 (November 15 and March 12). This small workgroup assists C/CAG staff with priority MRP implementation issues and overall program direction, including helping staff to develop recommendations to bring to the full Stormwater Committee for formal approval.

The below sections describe the Stormwater Committee's mission statement, membership criteria, and roles and responsibilities.

Mission Statement

The Stormwater Committee provides policy and technical advice and recommendations to the C/CAG Board of Directors and direction to technical committees (described below) on all matters relating to stormwater management and compliance with associated regulatory mandates from the State and Regional Water Boards.

Membership

The Stormwater Committee is comprised of one director-level representative from each San Mateo County municipality, recommended by City/Town/County Managers, with decision-making authority and primary responsibility for implementing stormwater management programs within their jurisdictions, and one non-voting executive management representative from the Regional Water Board staff, all appointed by the C/CAG Board. There are no term limits and members may be removed and replaced as needed.

Roles & Responsibilities

The role of the Stormwater Committee is to provide policy and technical advice, recommendations to the C/CAG Board, and direction to stormwater technical committees on matters related to stormwater management and associated regulatory requirements. While the Stormwater Committee may consider any item reasonably related to stormwater and associated regulatory requirements, the following issues are the primary focus of the Stormwater Committee:

- Review and provide recommendations for SMCWPPP's annual budget as part of the overall C/CAG budget approval process;
- Authorize submittal of countywide and regional compliance documents on behalf of their respective agencies for activities performed via C/CAG through SMCWPPP or BASMAA;
- Convey relevant program and compliance information and direction to appropriate staff and departments within their agencies;
- Form ad-hoc work groups to address stormwater-related issues on an as-needed basis (e.g., permit reissuance);
- Discuss and provide policy recommendations on stormwater issues, such as:
 - Funding stormwater compliance activities at the local and countywide level;
 - Unfunded mandate test claims;
 - Permit appeals and litigation;
 - Reissuance of the MRP;

- Permit requirements, especially those related to new and redevelopment, green infrastructure, monitoring, and pollutants of concern, including trash, mercury, PCBs, and pesticides;
- Training and technical support needs for municipal staffs; and
- Legislation and statewide policy issues impacting San Mateo County municipalities.

Technical Advisory Committee and Subcommittees

The Stormwater Committee provides direction to and receives feedback and recommendations from the Technical Advisory Committee (TAC). During FY 2012/13, the TAC transferred its former policy-related functions to the Stormwater Committee and transitioned to a quarterly workshop format. The new format allowed more detailed discussion of MRP compliance topics, including check-ins on what jurisdictions should be focused on in the coming quarter and what should have been accomplished and documented in the preceding quarter. The TAC did not meet in FY 2018/19 but received regular emails from the Program Manager and staff with updates on key permit compliance topics and occasional requests for feedback.

SMCWPPP has established various subcommittees and work groups to the TAC to help implement the different aspects of MRP, as shown on Figure 1-1. The subcommittees and work groups met regularly during FY 2018/19 and are discussed further in the remaining sections of this report.

C/CAG Water Committee

In October 2015, C/CAG created a new ad-hoc “Water Committee” to serve as a forum for countywide discussion regarding water-related issues and to advise the C/CAG Board regarding countywide collaboration strategies relative to water issues, including potential creation of a new agency or modification of an existing agency to accomplish such collaboration, as well as explore potential funding options. Issues being evaluated include stormwater pollution control, flood control, and sea level rise. The Committee recommended formation of a formal Countywide Water Coordinating Committee (CWCC), which the C/CAG Board acted upon, with the new committee first meeting in May 2017. The Program Manager and staff, in conjunction with the Executive Director, provide staff support to the CWCC. Details on the CWCC can be found on C/CAG’s [website](#).

During FY 2018/19, the CWCC worked with a consultant and an 18-member [Staff Advisory Team](#) (SAT) to develop a proposal for a new agency that would address sea level rise, coastal erosion, flooding, and regional stormwater management in San Mateo County, on a countywide basis. This process was a joint process between C/CAG and the County of San Mateo. The Program Manager, staff, and C/CAG Executive Director participated in regular SAT meetings (seven meetings between August and December) to help create the proposal for the new agency. Details on the Flood and Sea Level Rise Resiliency Agency Proposal ([Proposal](#)) and related meetings can be found on the new website, resilientsanmateo.org. In developing the Proposal, there were numerous meetings with the cities/towns and other stakeholders to gather information.

The final Proposal calls for legislatively revising the existing San Mateo County Flood Control District to change the name to the “San Mateo County Flood and Sea Level Rise Resiliency District (FSLRRD),” provide enhanced authorities to address sea level rise and coastal erosion, change the governing board to a new seven-member body that includes five city/town elected officials and two supervisors

representing specific geographic areas within the county, and update funding/financing authorities to be consistent with current state statute. The Proposal also calls for commitments from the County and the 20 cities and towns to provide three years of “startup” funding (\$1.5 million annually, split evenly between the County and the 20 cities/towns). During the three-year startup period, the FSLRRD would develop an investment strategy that can be used to generate sustainable, long-term revenue, such as through a parcel tax, property-related fee, or other mechanism. The CWCC recommended that the C/CAG Board endorse the Proposal for a new Flood and Sea Level Rise Resiliency Agency at its December 2018 meeting. The C/CAG Board and County Board of Supervisors both endorsed the Proposal at their January 2019 meetings.

Following the C/CAG Board and Board of Supervisor endorsements, County staff and the consultant team took the Proposal to each of the 20 cities and towns to solicit their endorsements and commitment of funding. The requested funding was broken into three tiers based on agency population, with the largest cities contributing \$55,000 per year, medium cities contributing \$40,000, and smaller cities contributing \$25,000. The County would contribute \$750,000 per year. Each of the cities and towns ultimately endorsed the agency and committed three years of startup funding.

Flood and Sea Level Rise Resiliency District

Once each of the 20 cities and towns and the County endorsed the FSLRRD, the C/CAG Board appointed the five city/town elected officials to the future governing board. The County Board of Supervisors appointed the two supervisors. The seven governing board members representing the different geographic areas in the county are:

- North: Donna Colson, City of Burlingame
- Central: Diane Papan, City of San Mateo
- South: Lisa Gauthier, City of East Palo Alto
- Coast: Debra Ruddock, City of Half Moon Bay
- At-Large: Maryann Derwin, Town of Portola Valley
- Coast Supervisor: Don Horsley
- At-Large Supervisor: Dave Pine

The governing board is initially appointed as an advisory committee to the Board of Supervisors in its capacity as the governing board of the existing Flood Control District as legislation to create the FSLRRD moves through the legislature ([AB 825](#), Mullin). As of the writing of this report, the legislation has passed through the Assembly and the Senate and is awaiting confirmation on the Senate and Assembly floors prior to going to the Governor for signature by September 30. The advisory committee is initially focused on hiring an Executive Director for the FSLRRD, preparing a workplan and budget for the startup period, and drafting a Request for Proposals for creating the investment strategy that will be used to seek long-term, sustainable funding. Details on the advisory committee can be found [here](#). The advisory committee meets monthly, generally on the third Monday from 4-6 PM in San Mateo.

The FSLRRD is intended to address sea level rise, coastal erosion, flooding, and regional stormwater management. As such, assuming the FSLRRD can secure long-term, sustainable funding during the startup period, it will likely play a key role in helping to design, build, and maintain regional stormwater

facilities that will help achieve water quality goals in the MRP. The three-year funding commitment by the County and cities/towns (\$4.5 million over three years) is an important step forward for achieving integrated water management in San Mateo County.

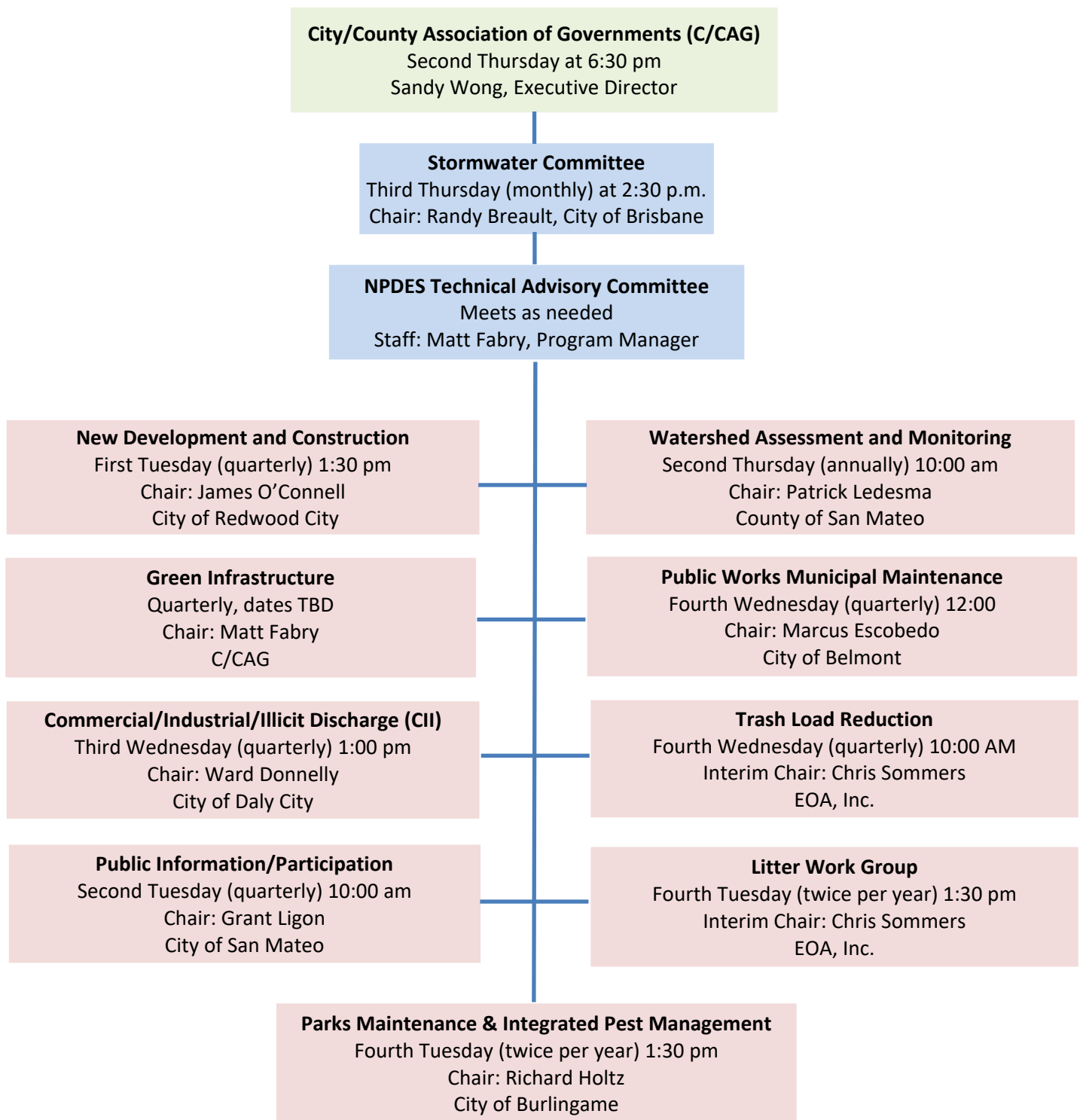
ORGANIZATION OF REPORT

This FY 2018/19 Annual Report is structured around the following major provisions of the reissued MRP:

- C.2. Municipal Operations
- C.3. New Development and Redevelopment
- C.4. Industrial and Commercial Site Controls
- C.5. Illicit Discharge Detection and Elimination
- C.6. Construction Site Control
- C.7. Public Information and Outreach
- C.8. Water Quality Monitoring
- C.9. Pesticides Toxicity Control
- C.10. Trash Load Reduction
- C.11. Mercury Controls
- C.12. PCBs Controls
- C.13. Copper Controls
- C.15. Exempted and Conditionally Exempted Discharges

The following sections of this report summarize how SMCWPPP provided assistance in FY 2018/19 in implementing the MRP for each of the above provisions. Each section includes three sub-sections: 1) Introduction, 2) Implementation of MRP Actions, and 3) Future Actions.

Figure 1-1. Organizational Structure and FY 2018/19 Meeting Schedule.



SECTION 2

C.2 MUNICIPAL OPERATIONS

INTRODUCTION

The objective of MRP Provision C.2 is “to ensure development and implementation of appropriate Best Management Practices (BMPs) by all Permittees to control and reduce discharges of non-stormwater and stormwater runoff pollutants to storm drains and watercourses during operation, inspection, repair and maintenance activities of municipal facilities and infrastructure.”

Most MRP-required Provision C.2 Municipal Operations tasks are implemented individually by each Permittee in San Mateo County. The Countywide Program helps agency staff to understand MRP requirements and develops various tools that assist agency staff to effectively plan, implement, and report on compliance activities. SMCWPPP’s assistance and the implementation of Municipal Operations tasks are coordinated through the SMCWPPP Public Works Municipal Maintenance Subcommittee.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP performs a number of tasks to assist San Mateo County Permittees with implementation of Provision C.2, with input and assistance provided by the Public Works Municipal Maintenance Subcommittee. FY 2018/19 accomplishments included the following:

- Held one Public Works Municipal Maintenance Subcommittee meeting; and
- Updated a pesticide tracking template, in coordination with SMCWPPP’s Parks Maintenance and IPM Work Group, to assist San Mateo County Permittees comply with pesticide tracking and reporting requirements in MRP Provision C.9.a.

More information on each of these accomplishments is provided below.

Public Works Municipal Maintenance Subcommittee

The Public Works Municipal Maintenance Subcommittee provides the opportunity for sharing information about municipal operations-related MRP requirements and methods for achieving compliance. The meetings provided a forum to share experiences with implementing MRP provisions and applying associated BMPs related to activities such as:

- Street and road repair maintenance activities;
- Sidewalk/plaza maintenance and pavement washing;
- Graffiti removal;
- Corporation yard activities; and
- Stormwater pump station monitoring and inspections.

Marcus Escobedo from the City of Belmont chaired the Subcommittee during FY 2018/19. The Subcommittee generally meets twice during each fiscal year. The Subcommittee met one time in FY 2018/19 with good participation by municipal staff, as shown by the attendance list (Appendix 2). The second meeting was postponed until July 2019 to allow for a review of the MRP Annual Reporting forms.

Countywide Program staff also facilitated discussions at meetings about a variety of pertinent topics, including storm drain cleaning activities, corporation yard BMPs, storm drain system repairs, performance of trash full capture devices, and green infrastructure (GI) maintenance.

Program Materials

Since the first version of the MRP was adopted in 2009, SMCWPPP staff has developed a variety of materials to assist municipal maintenance agency staff with implementing Provision C.2. These materials are all available on the SMCWPPP website (flowstobay.org) and continue to be useful tools that assist agency staff to achieve permit compliance. The materials are described below.

In FY 2009/10, SMCWPPP developed a Stormwater Pollution Prevention Plan (SWPPP) template for use by San Mateo County Permittees in tailoring, updating, or creating SWPPPs for their corporation yards, satellite facilities, and maintenance facilities.

In FY 2010/11, SMCWPPP prepared the “Municipal Corporation Yard Inspection Form.” This form provides detailed checklists for the types of BMPs recommended in the corporation yard SWPPP template. During FY 2010/11, SMCWPPP also prepared “Sources of Stormwater BMP information for Maintenance Activities Listed in MRP’s Provision C.2,” to assist San Mateo County Permittees with complying with the following Provision C.2 requirements: Provision C.2.a Street and Road Repair and Maintenance; Provision C.2.b Sidewalk/Plaza Maintenance and Pavement Washing; Provision C.2.c Graffiti Removal; and Provision C.2.f Corporation Yards. The sources of BMP information used to develop these materials were CASQA’s Stormwater BMP Handbook Municipal and Caltrans’ Storm Water Quality Handbook Maintenance Staff Guidance.

During FY 2010/11, SMCWPPP developed the “Stormwater Pump Station Dry Season DO Monitoring and Inspection Form” to assist San Mateo County Permittees in developing a systematic and efficient way to collect DO monitoring and inspection information. The following twelve agencies in San Mateo County operate stormwater pump stations: Cities of Belmont, Burlingame, East Palo Alto, Foster City, Menlo Park, Millbrae, Pacifica, Redwood City, San Carlos, San Mateo, and South San Francisco, and the San Mateo County Flood Control District.

In FY 2015/16, SMCWPPP developed a trash full capture device inspection and cleaning field form template, a Small Full Capture Device O&M Standard Operating Procedure (SOP), a Hydrodynamic Separator O&M SOP, and a Trash Full-Capture Device O&M Verification Program Template and Guidance document. These materials were developed in coordination with the Trash Subcommittee to help municipal staff comply with new requirements in MRP Provision C.10.b.i., Full Trash Capture Systems. These requirements include certifying that trash full capture systems are operated and maintained to meet full trash capture system requirements and keeping associated maintenance records.

In FY 2016/17, SMCWPPP developed a trash full capture device inspection and cleaning data tracking Microsoft Excel template to assist with tracking and reporting requirements in MRP Provision C.10.b.i.

Also in FY 2016/17, SMCWPPP developed a template in Excel to assist with pesticide tracking and reporting requirements in MRP Provision C.9.a. The pesticides tracking template utilizes a lookup list of pesticides and active ingredients compiled from data tables available on the Department of Pesticide Regulation (DPR) website. In coordination with the Parks Maintenance and IPM Work Group, the template was updated during FY 2018/19 with the current two years of pesticide product data from the DPR website.

FUTURE ACTIONS

FY 2019/20 activities planned by SMCWPPP to assist San Mateo County Permittees comply with MRP requirements in Provision C.2 include the following:

- Continue holding Public Works Municipal Maintenance Subcommittee meetings;
- Update tracking templates and guidance materials, as needed; and
- Coordinate with SMCWPPP's New Development Subcommittee to provide guidance on GI maintenance and related training materials.

SECTION 3

C.3 NEW DEVELOPMENT AND REDEVELOPMENT

INTRODUCTION

This section describes SMCWPPP’s activities to assist municipal agencies in San Mateo County to comply with MRP Provision C.3, New Development and Redevelopment. SMCWPPP continued to provide compliance assistance with MRP Provision C.3 (and Provision C.6 Construction Site Controls – see Section 6) through the New Development Subcommittee (NDS) and Green Infrastructure Committee (GI Committee). SMCWPPP also obtained input and direction from agency representatives through the NDS and GI Committees. During FY 2018/19, the NDS was chaired by James O’Connell with the City of Redwood City. The NDS met four times in FY 2018/19 with good participation by municipal staff, as shown by the attendance list (Appendix 3). The GI Committee was overseen by Matt Fabry and Reid Bogert of C/CAG. The GI Committee also met four times in FY 2018/19 with a high level of attendance and input by municipal staff, as shown by the attendance list (Appendix 3).

In support of the GI Plan requirement in the MRP and to more broadly plan for precipitation-based climate change impacts to the transportation network in San Mateo County, C/CAG successfully applied for and received a Caltrans Adaptation Planning Grant to develop the San Mateo Countywide Sustainable Streets Master Plan. This plan will provide an implementation-level approach to achieving water quality goals in the MRP and other community benefits associated with green infrastructure (GI). To further support cost-effective GI implementation, C/CAG was awarded \$2.94 million in State Budget funds issued through the California Natural Resources Agency to advance designs of multi-benefit regional stormwater capture projects.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP’s accomplishments during FY 2018/19 include the following tasks to assist San Mateo County municipalities with implementation of Provision C.3:

- Held four meetings of the New Development Subcommittee (NDS) to assist municipal agencies in San Mateo County to comply with MRP Provisions C.3 (New Development and Redevelopment) and C.6 (Construction Controls).
- Held four meetings of the GI Committee. SMCWPPP’s facilitation of the four meetings, and related review work outside of the meetings, allowed SMCWPPP to participate in the development, review, and completion of work products related to key elements of the GI Plan requirements, and to educate and support GI Committee members in their preparation of GI Plans.

- Continued a countywide effort to develop components of the GI Plans required by MRP Provision C.3.j. The model and countywide components were for local San Mateo County municipality review, use and/or modification in their local GI Plans.
- Continued ongoing updates of guidance documents including the C.3 Regulated Projects Guide (an updated version of the C.3 Technical Guidance), checklists, and fact sheets for consistency with MRP requirements and ease of use by municipal staff.
- Completed the Green Infrastructure Design Guide, which is part of the new SMCWPPP GreenSuite for San Mateo County Permittees. The Green Infrastructure Design Guide includes typical details and standard specifications for numerous GI design options. It builds upon efforts from the San Francisco Public Utilities Commission and other prominent stormwater programs throughout the country and is intended to fulfill requirement under MRP Provisions C.3.j.i(2)(e) and (f). These provision require Permittees to develop general guidelines and standard specifications and typical details in support of GI implementation, including projects adopted via GI Plans and/or other local mechanisms.
- Conducted a full-day C.3 workshop entitled “Green Infrastructure Guidance and Stormwater Controls for Regulated Projects.”
- Participated in the BASMAA Development Committee and led its GI Alternative Sizing Criteria Work Group to develop an approach to sizing GI facilities in constrained non-regulated roadway projects.
- Conducted a variety of GI outreach activities, including rain barrel program promotion, publishing newsletter articles, and social media posts. C/CAG staff also attended classroom presentations and participated in efforts to engage schools via programs led by the San Mateo County Office of Education, including the C/CAG-funded Clean Water Pathways teacher fellowship program and the Collective Impact Project. C/CAG staff has also supported local and regional implementation of GI, through presenting GI Plans to local agency Councils and participation in regional planning meetings with the Metropolitan Planning Commission on identifying funding nexuses among stormwater and transportation programs.

More information on these accomplishments is provided below.

C.3 Implementation and Outreach Products

With the assistance of the NDS, SMCWPPP developed, updated and/or assisted with the following technical and outreach products:

- Biotreatment Soil Media (BSM) Products – SMCWPPP developed an updated BSM Supplier List (Appendix 3). The NDS approved the update in January 2019 and some minor changes were made in June 2019. The document has been posted on the SMCWPPP website (flowstobay.org).
- C.3 – C.6 New Development Checklist – SMCWPPP and the NDS updated the checklist that is used with new development projects to collect the necessary data for reporting to the Regional Water Board and for proper approval of plans and specifications for the projects. The checklist was converted to a fillable PDF form with input cells and embedded calculations. It was finalized in January of 2019 and is posted on the SMCWPPP website (flowstobay.org).

- C.3 Regulated Projects Guide – SMCWPPP began updating the document (formerly known as the C.3 Stormwater Technical Guidance Version 5.0) with new content - and graphics to match the look and feel of the Green Infrastructure Design Guide - for Permittee and design community use. The new draft Version 6.0 will be completed in August 2019, distributed to the NDS for comment, finalized and then posted on the SMCWPPP website (flowstobay.org).

2019 New Development (C.3) Workshop

SMCWPPP conducted a workshop entitled “Green Infrastructure Guidance and Stormwater Controls for Regulated Projects” on June 18, 2019 at the City of San Mateo Public Library. The full-day workshop was attended by 63 people. The workshop started with “basic training” providing an overview of stormwater control measures and the new development-related requirements in the MRP. This was followed by several presentations on the new Green Infrastructure Design Guide – including GI types, design, and maintenance. The afternoon presentations provided information on the update underway of the C.3 Regulated Projects Guide, and a panel of municipal staff discussing GI implementation mechanisms. The workshop wrapped up with a presentation on the new SMCWPPP toolkit for reducing litter and waste through the design of new buildings. The workshop registration flyer, agenda, sign-in sheet, and evaluation form summary are provided in Appendix 3. Based on the evaluation forms submitted, attendees generally found that the workshop was valuable and met their expectations.

Green Infrastructure Planning

During FY 2018/19, SMCWPPP continued its efforts to develop countywide GI Plan model documents and components for review, comment, and eventual use or modification by San Mateo County municipalities to meet the requirements of the MRP.

Green Infrastructure Committee (GI Committee)

SMCWPPP continued to work with and assist San Mateo County municipalities via the GI Committee. The central purpose of the GI Committee is to ensure consistent jurisdictional involvement with and formal review and comment on work products prepared by SMCWPPP to fulfill GI Plan requirements. The GI Committee provided input reflective of local issues, needs, and opportunities that informed the development of the countywide tools and model documents being used by local jurisdictions during preparation of their local GI Plans. The GI Committee also provided a forum for San Mateo County municipalities to discuss their ongoing work in preparing GI Plans and learning from each other’s processes. The GI Committee met biannually and information was shared between meetings to support work product development.

Two GI Committee meetings were held in FY 2018/19: October 31, 2018 and January 30, 2019. Topics and discussion items included:

- Model GI Plan materials;
- Discussion of San Mateo County municipalities’ ongoing work in preparing their individual GI Plans;
- Guidelines and standards, typical details, and specifications approach, organization, and content, via the development of the Green Infrastructure Design Guide and updates to the C.3 Regulated Projects Guide;

- The Reasonable Analysis Assurance (RAA) and its various modelling inputs, including new and redevelopment land use projections and regional project opportunities, and initial countywide and jurisdictional modelling results;
- Development and finalization of land area projections for new and redevelopment for the 2020 and 2030 target years specified in the MRP;
- Discussion of funding strategies and opportunities, and development of a revised funding analysis, completed in January 2019;
- Opportunities for public outreach support and engagement with local Councils on GI Plan adoption;
- Kick-off of the San Mateo Countywide Sustainable Streets Master Plan project and its associated goals of supporting GI implementation; and,
- Deliverables and schedules.

GI Plan Development

SMCWPPP provided San Mateo County municipality representatives with various materials to support the development of their GI Plans. SMCWPPP and San Mateo County municipality staff participated in discussions to develop the various components needed to comply with the MRP requirements and milestone deadlines. SMCWPPP and San Mateo County municipality staff also reviewed and commented on RAA modelling criteria and results, land area projections for new and redevelopment for the 2020 and 2030 target years, draft GreenSuite design guides, potential funding opportunities, and public outreach opportunities. These are all elements needed to complete a GI Plan. The development of countywide model documents for use and/or refinement by San Mateo County municipalities, and direction on how to achieve or complete other required elements, were presented to San Mateo County municipalities for review and comment. Multiple avenues of coordination and outreach were used to ensure a consistent GI Plan approach among San Mateo County municipalities, including presentations to the C/CAG Stormwater Committee to gain consensus on modelling assumptions and the framework to develop interim and long-term goals for water quality objectives. Individual meetings with agency staff were also held to clarify questions about the results of the RAA as they pertain to unique community characteristics and project opportunities. C/CAG staff also met separately with Regional Water Board staff to review preliminary modelling results and clarify questions about the proposed approach. Additional details on the GI RAA analysis and modelling reports are provided in Section C.11.

In FY 2018/19, SMCWPPP also completed the San Mateo Countywide [Green Infrastructure Design Guide](#) and a draft of the C.3 Regulated Projects Guide. The Green Infrastructure Design Guide was posted to the SMCWPPP website (flowstobay.org) in June 2019. SMCWPPP plans to complete and post the updated C.3 Regulated Projects Guide by winter 2019. Further edits and revisions are anticipated for both documents, and in FY 2019/20 SMCWPPP plans to create a web-based version of the combined GreenSuite as part of a redesign of the SMCWPPP website.

Green Infrastructure Outreach

During FY 2018/19, SMCWPPP continued performing a variety of GI-related outreach, including the following efforts:

- Created and promoted a [Sustainable Streets and Green Infrastructure](#) page on the SMCWPPP website (flowstobay.org).

- Initiated a new partnership with the County Office of Education to implement the Clean Water Pathways teacher fellowship program, designed to support long-term incorporation of stormwater pollution prevention and GI design solutions into school curricula and programming across age groups (Pre-K through 12) throughout San Mateo County. SMCWPPP supported additional school-age outreach via classroom presentations and project ideation meetings with representatives from school districts, schools and partner agencies. More details on this program and other outreach activities are provided in Section C.7.
- Continued the Countywide Rain Barrel Rebate Program in partnership with the Bay Area Water Supply and Conservation Agency, including regular social media, newsletter, and community outreach event promotion. The Rain Barrel Rebate Campaign received 744 website page views, and 32 applications for 42 rebates were submitted by San Mateo residents. Over 1,090 rain barrels have been installed to-date through this program.
- Conducted and promoted two rain barrel workshops for community residents to learn more about rain barrel usage, benefits, and installation. One participant was awarded a free rain barrel for attending. C/CAG was also selected to present on its rain barrel rebate program at the 2019 Annual CASQA Conference.
- Held three outreach and public education events about the San Mateo Countywide Sustainable Streets Master Plan that reached approximately 350 residents who learned about Sustainable Streets and were provided with the opportunity to build their own street plans.
- Developed a GI fact sheet and poster to help inform the public about six different types of GI and their benefits.
- Conducted an intercept survey throughout the county to ask over 200 San Mateo County residents about their perceptions of GI.
- Wrote six GI-related newsletter articles that were distributed to 3,684 people.
- Made 45 social media posts related to GI, reaching 33,016 followers, including the following examples:
 - BREAKING NEWS: San Mateo County officials are moving on a GI plan that aims to transform the urban landscape and storm drainage systems. Joe LaClair, the planning services manager for San Mateo County describes the project's simple goal: "to have water move through man-made systems, such as soil and plant areas, to treat it before it goes into other bodies of water." You can read more here: bit.ly/2XIKCj2.
 - Ready to test your rain barrel knowledge? If you make it through our quiz without getting stumped (or stuck 😊), you'll BE ENTERED TO WIN a FREE PRIZE from #flowstobay!!
 - Wanna see something cool? Take a look at our dynamic web-viewer that lets residents learn more about watersheds in San Mateo County, including flood-prone streams, future sea level rise scenarios, implemented GI project and tons more! Check it out: bit.ly/2QjLNgg.
 - Hey South San Francisco residents! Don't miss this opportunity to make your voice heard in the visioning process for a new stormwater capture facility. It'll be the first of its kind on the Peninsula! South San Francisco Public Works Department #greeninfrastructure #ssfstormwatercaptureproject.

- Rain barrels protect our local waters by reducing urban runoff that transports litter, motor oil, copper and other pollutants from entering storm drains. San Mateo County even has a rebate program where you can get back up to \$100! Click here to find out more and get yours: <http://bit.ly/2IQh6L1>.

San Mateo Countywide Stormwater Resource Plan

In 2017 SMCWPPP completed the Countywide Stormwater Resource Plan (SRP) to support San Mateo County MRP Permittees in developing GI Plans and achieving San Francisco Bay mercury and PCBs TMDL implementation requirements. It also serves an essential role in pursuing funding needs and opportunities (e.g., Proposition 1 grants) for project implementation. The SRP addresses stormwater and water resources planning needs within watersheds of San Francisco Bay and the Pacific Ocean coast. The SRP identifies and prioritizes stormwater capture opportunities throughout the county using a metrics-based process that considers factors such as: effectiveness for stormwater capture (e.g., imperviousness of drainage area, parcel size, soil type, slope); proximity to flood-prone channels, TMDL waterbodies, and potential PCBs risk areas; ability to co-locate the project with other city or county projects; and multiple benefits including potential to augment local water supplies, water quality source control, re-establishment of natural hydrology, creation or enhancement of natural habitat, or community enhancement.

This process identified LID retrofit, Green Streets, and regional stormwater capture project opportunities. The process screened theoretical projects on public parcels within every city and unincorporated County jurisdictions and categorized them as high, medium, or low priority. The resulting prioritized list of potential projects provides an initial attempt to identify opportunities that can be considered (in combination with LID for new and redevelopment) for GI and TMDL implementation planning efforts to meet MRP requirements. The SRP included conceptual designs for four LID retrofit projects, three regional projects, and 15 Green Streets. These concepts include maps of the proposed projects and associated drainage areas, information to support future designs, modeled estimates of stormwater capture volumes and mercury and PCBs loads reduced, and cost estimates.

The SRP was approved by C/CAG and submitted to the State Water Resources Control Board in February 2017. The State Water Board issued a letter on May 18, 2017 confirming the SWRP is consistent with State guidelines.

The SRP also provided the modeling foundation for the GI portion of the RAA for local GI Plans, as detailed in Sections C.11 of this report and will also support the project opportunity rating and prioritization process laid out in the San Mateo Countywide Sustainable Streets Master Plan. The countywide hydrology and sediment model was updated to account for non-jurisdictional watershed areas and to include additional identified regional project concepts that were vetted for feasibility from local agency input.

The following sections provide an update of early implementation and “no missed opportunity” efforts stemming from the SRP concepts and related prioritization efforts. C/CAG’s recently awarded \$3 million State General Fund Grant for regional project designs will advance designs on potentially multiple regional retention projects, including the projects described below.

Atherton

Atherton continued pursuing a new GI facility to help reduce existing flooding issues in the lower reaches of Atherton Creek and reduce pollutant loads. The Town hired a consultant that developed a preliminary

project design in early 2018. The project was presented at the Town's Park and Recreation Committee and Town Council multiple times. The project received significant public opposition with respect to siting the project in the Town's only park (Holbrook-Palmer Park). As a result, the Council directed Town staff to evaluate other potential project locations at which a facility could be sited and still take advantage of the \$13.6 million funding commitment for the project from Caltrans. The project is now being proposed at Cartan Field located at Menlo College in Atherton. The Town has created a [page](#) on its website that includes details on the proposed project.

Redwood City

Redwood City continued designing two Green Street projects that received funding via Round 1 of Proposition 1 stormwater implementation grants administered by the State Water Resources Control Board: Middlefield Road Streetscape and Kennedy Middle School Safe Routes to School. These Green Streets were originally included as a project concept in the Stormwater Resource Plan to ensure San Mateo County MRP Permittees would be eligible to compete for this type of funding. SMCWPPP also prepared the successful grant proposal for the City. The Kennedy Middle School project is complete and the Middlefield Road Streetscape is scheduled to be constructed by about June 2020. SMCWPPP also developed a concept for regional stormwater retention facilities beneath playing fields at the City's Red Morton Park that would potentially manage runoff from up to 1,650 acres. The concept was presented to the City's Utilities Subcommittee and City Council as part of its GI Plan adoption, and C/CAG is working with the County Office of Sustainability to advance preliminary design of the project via funds awarded from the EPA San Francisco Bay Water Quality Improvement Fund to the County. Additional coordination among interested parties is continuing in early FY 2019/20.

San Bruno/Caltrans

SMCWPPP developed another concept for a regional retention facility on Caltrans property between the I-280 and I-380 interchange. The project concept was responsive to an identified need for upstream retention in San Bruno's Storm Drain Master Plan to alleviate downstream flooding. The project concept was submitted to Caltrans for consideration for funding given that approximately 40 acres of Caltrans rights-of-way are in the project drainage area. The concept is currently on a list for Caltrans consideration for future funding, but it is currently anticipated to be a low priority project for Caltrans due to low overall benefit relative to Caltrans interests (primarily trash load reduction and then TMDL pollutant load reductions). Because there is also upstream drainage area within unincorporated San Mateo County, C/CAG and the County are also hoping to advance design work for this project, leveraging the EPA grant funds mentioned in the above Redwood City project.

City of San Mateo

Due to escalating construction costs and unforeseen budget items, the City of San Mateo withdrew from its State Proposition 1 stormwater implementation grant for two Green Streets and a green parking lot. These projects were originally included as project concepts in the Stormwater Resource Plan and SMCWPPP prepared the successful grant proposal for the City of San Mateo. The City still plans to build a Green Street project at 4th Avenue and Fremont (with curb extension and bioretention) as part of the San Francisco Estuary Partnership / BASMAA Urban Greening Bay Area grant from EPA through its San Francisco Bay Water Quality Improvement Fund.

South San Francisco

The City of South San Francisco continues to pursue a regional retention facility at Orange Memorial Park with \$9.5 million in funding from Caltrans in an initial Cooperative Implementation Agreement and an additional \$6 million also from Caltrans to support their trash requirement goals. The City is in the design phase for a stormwater capture facility that will remove sediment, clean water flowing from Colma Creek into the San Francisco Bay, and potentially provide for parkland irrigation at Orange Memorial Park. This regional stormwater capture project would potentially capture flows from a large multi-jurisdictional area of primarily old urban land uses. The City anticipates starting construction in FY 2019/20.

Safe Routes to School/Green Streets Infrastructure Pilot Program

C/CAG awarded \$2.1 million in December 2017 for 10 Safe Routes to School/Green Streets Infrastructure Pilot Projects funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees imposed by C/CAG on registered vehicles in San Mateo County. Grants were awarded to the following jurisdictions:

- City of Brisbane
- Town of Colma
- City of Daly City
- City of East Palo Alto
- City of Half Moon Bay (Figure 3-1)
- City of Menlo Park
- City of Millbrae
- City of Pacifica
- City of Redwood City
- County of San Mateo



Figure 3-1. Completed Half Moon Bay Pilot

To date, projects have been completed in Half Moon Bay and Daly City. Six additional projects (Brisbane, Menlo Park, Millbrae, Pacifica, Redwood City, and unincorporated County) will be completed in the remainder of calendar year 2019, and two projects (Colma and East Palo Alto) will be constructed in 2020.

Collectively these projects represent a commitment by SMCWPPP and San Mateo County MRP Permittees to pursue early implementation opportunities during the term of MRP 2.0. These projects will augment groundwater recharge, remove pollutants, and reduce the volume and velocity of stormwater runoff entering the storm drainage system and discharging into local creeks. The projects represent proactive implementation of GI while these cities complete their GI Plans as required by the MRP.

Calm Before the Storm: San Mateo Countywide Sustainable Streets Master Plan

In May 2019, C/CAG was awarded a Caltrans Adaptation Planning Grant for \$986,300 (with \$145,185 in matching funds) to develop the San Mateo Countywide Sustainable Streets Master Plan. This project was initiated in October 2019 and will support GI Plan implementation through refined drainage area analysis and opportunity prioritization, as well as provide key linkages to transportation network project investments and planning timelines, all with consideration of the future precipitation-related climate change impacts. The San Mateo Countywide Sustainable Streets Master Plan will further support GI implementation via additional project concepts, model Sustainable Streets policies and a web-based and publicly available updated project implementation mapping and tracking tool.

The following bullets outline the overall goals and elements of the San Mateo Countywide Sustainable Streets Master Plan:

- High resolution drainage mapping of street segments draining to individual catch-basins;
- Downscaled climate change analysis of precipitation-based climate change impacts to the transportation network and associated water quality and flood reduction benefits of GI;
- Countywide Master Plan with prioritized street segments associated with Sustainable Streets typologies and linked to funding mechanisms and implementation timelines;
- Model Sustainable Streets policies;
- Project concepts;
- Updated web-based project mapping and tracking tool; and,
- Community engagement and consideration of disproportionate impacts to vulnerable communities.

Sustainable Streets combine Complete Streets that accommodate all modes and users' safety and Green Streets that incorporate GI to manage stormwater. As climate change impacts local infrastructure, it will be increasingly important to focus on disadvantaged and vulnerable communities – flooding can have a disproportionate impact on those dependent upon walking, biking, or transit. The proposed project will take a multi-benefit approach to prioritizing Sustainable Streets opportunities throughout San Mateo County that includes evaluation of community-specific needs for safer, more Sustainable Streets.

The San Mateo Countywide Sustainable Streets Master Plan builds on existing efforts via the countywide modeling for the RAA and the SRP project prioritization, but its intent is to create a tangible and practical set of tools to further GI implementation and to address major obstacles, especially funding limitations. The San Mateo Countywide Sustainable Streets Master Plan will also incorporate further refinements to the prioritization framework in the SRP to include more community priorities (various infrastructure improvements, pavement maintenance planning, community vulnerability to climate change, and climate resiliency).

The Project Team has convened a Stakeholder Advisory Committee to provide a forum for input from transportation agencies and bike/pedestrian advocacy groups and will be convening a Technical Advisory Committee in FY 2019/20 to guide development of the prioritization process and updated tracking tool. The project is moving into the prioritization process and climate change analysis in early FY 2019/20 and is planned to be complete by July 1, 2020.

Tracking and Reporting Progress on Green Infrastructure

During FY 2018/19, SMCWPPP continued to make progress towards development and implementation of methods to track and report implementation of GI in San Mateo County. The ongoing effort to update an existing inventory of GI/LID facilities throughout the county is described in a separate report (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*). Appendix 11 contains the report.

MRP Provision C.3.j.iv. requires Permittees to report on implementation of GI measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions. Table 3-1 summarizes preliminary estimates for these types of information, based upon the

available data in the existing inventory of San Mateo County GI/LID facilities. As mentioned above, C/CAG is leveraging funding through the San Mateo Countywide Sustainable Streets Master Plan project to create an updated San Mateo County GI tracking tool. The project will support local GI Plans by providing enhanced detail on Green Street priorities, higher-resolution drainage mapping, and an updated tracking tool consistent with the requirements in MRP Provision C.3.j. The impervious area data in Table 3-1 are preliminary estimates calculated by multiplying the estimated total area treated by an imperviousness coefficient for general land use in the site area. This information will be updated after the Countywide Program’s GI tracking system is fully updated and populated.

Table 3-1. GI Measures Built on Private and Public Parcels in San Mateo County by Municipality

Municipality	Number of Projects Built From FY2002/03 to FY2018/19	Estimated Total Area Treated (acres)	Preliminary Estimated Total Impervious Area Treated¹ (acres)
Atherton	4	14	7
Belmont	11	30	22
Brisbane	4	38	34
Burlingame	21	20	17
Colma	11	33	23
Daly City	11	108	101
East Palo Alto	17	35	16
Foster City	16	63	48
Hillsborough	2	0	0
Menlo Park	32	245	183
Millbrae	2	15	8
Portola Valley	1	2	1
Redwood City	99	221	145
San Bruno	4	22	14
San Carlos	13	46	35
San Mateo City	38	56	45
San Mateo County	32	188	137
South San Francisco	76	324	259
Total	394	1,462	1,095

¹Preliminary estimate calculated by multiplying the estimated total area treated by an imperviousness coefficient for general land use in the site area. This information will be updated after the Countywide Program’s GI tracking system is fully updated and populated.

Regional Collaboration

As in past years, throughout FY 2018/19 SMCWPPP participated in BASMAA’s Development Committee (DC). Through the BASMAA DC, SMCWPPP participated in regional projects that assist SMCWPPP and its San Mateo County municipalities in meeting specific requirements of Provision C.3, as described below.

Regional Project on Alternative Sizing Criteria for GI Systems

In FY 2018/19 BASMAA completed a regional project to evaluate approaches to treatment measure selection and sizing in roadway projects where GI project constraints preclude fully meeting the MRP Provision C.3.d sizing requirements. SMCWPPP staff participated in the project oversight through the BASMAA DC GI Alternative Sizing Work Group. In December 2017, BASMAA's consultant, Dubin Environmental, completed a hydrologic modeling analysis and report containing bioretention facility sizing curves for different rainfall regions in the Bay Area. The report was approved by the BASMAA Board of Directors in January of 2018. SMCWPPP staff assisted the Work Group in developing accompanying guidance for the report which was approved by the BASMAA Board of Directors in May 2019. The guidance includes information on a GI sizing approach that informs municipal GI plans, policies, and development procedures. See the following BASMAA report for more information: *Annual Reporting for FY 2018-2019, Regional Supplement for New Development and Redevelopment* (Appendix 13). Information summarizing the sizing criteria was incorporated into SMCWPPP's Green Infrastructure Design Guide.

Biotreatment Soil Media (BSM) Specifications

In FY 2018/19 SMCWPPP continued to support municipal staff, consultants and suppliers who have questions on the review and use of BSM. SMCWPPP staff screened and worked with vendors that are supplying the BSM product in the Bay Area and wish to be added to the vendor list that is posted on the SMCWPPP website (flowstobay.org). The vendors must demonstrate an understanding of the BASMAA specification, submit lab results and a sample of their BSM product, and use consistent terminology on their websites advertising the product. See the <http://basmaa.org/Announcements/basmaa-revisions-to-mrp-biotreatment-soil-mix-bsm-spec> and the flowstobay.org/newdevelopment webpages for more details.

Biotreatment Soil Mix Specifications and Bioretention Design with Trees

As a result of the Biotreatment Soil Roundtable held on June 30, 2016, a regional work group was formed to discuss designs that incorporate trees into bioretention areas. SMCWPPP staff took the lead on facilitating this new Trees and BSM Design Work Group. In FY 2018/19, the Trees-BSM Design Work Group did not meet but continued to compile information on various design issues with trees in bioretention areas. Members of the work group include several arborists, GI consultants, and municipal staff from parks departments and stormwater programs. Information related to the integration of trees and stormwater treatment has been added to the C.3 Regulated Projects Guide. In FY 2019/20, the Work Group will meet and review examples of tree-specific treatment measure designs, discuss soil and maintenance issues, and develop recommendations for design and maintenance of stormwater tree systems using the new GI Alternative Sizing approach.

Participation in Processes to Promote Green Infrastructure

Provision C.3.j.iii requires that Permittees individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of GI measures into local infrastructure projects, including transportation projects. SMCWPPP is tracking and participating in the BASMAA activities to assist Permittees comply with this provision.

BASMAA's efforts include finishing work on its portion of the Urban Greening Bay Area grant from EPA's San Francisco Bay Water Quality Improvement Fund to the San Francisco Estuary Partnership / Association of Bay Area Governments. Although BASMAA's grant project finished in FY 2018/19, additional unused

funding from other grant tasks was shifted to the BASMAA Roundtable effort to further advance the specific actions to prioritize Sustainable Streets in funding sources. SMCWPPP's Program Manager, in conjunction with the project consultant and Roadmap Implementation Committee, began work to create fact sheets that clarify the eligibility of GI in transportation funding programs. This work is continuing during FY 2019/20. The Program Manager has also been participating as a BASMAA Board Member in joint meetings among BASMAA, BAFPA (Bay Area Flood Protection Agencies Association), and MTC (Metropolitan Transportation Commission) to look for more opportunities to integrate stormwater management into regional planning and transportation efforts. There were three meetings during FY 2018/19, with additional meetings planned in FY 2019/20.

SMCWPPP's Program Manager was also on the planning committee and a participant in ReNUWit's (Renewing our Nation's Urban Water Infrastructure) two-day July 2019 stormwater workshop among stormwater, flood, water supply, regulatory, and environmental organizations to talk about how stormwater could be better utilized as a water supply resource.

FUTURE ACTIONS

In FY 2019/20, SMCWPPP plans to continue working with the NDS (the GI Committee has been integrated into the NDS Committee starting FY 2019/20) to conduct the following activities to assist San Mateo County municipalities to comply with MRP Provision C.3:

- Continue to exchange information with San Mateo County municipalities on MRP implementation and other timely issues through quarterly NDS meetings and the annual C.3 workshop.
- Update the San Mateo Countywide Green Infrastructure Design Guide based upon San Mateo County municipality comments, and provide an interactive Green Infrastructure Design Guide online on the Countywide Program's Flows to Bay website (flowstobay.org).
- Complete version 6.0 of the updated C.3 Regulated Projects Guide as part of the new GreenSuite.
- Revise checklists and outreach flyers as needed to respond to San Mateo County municipal staff issues, concerns, and suggestions for improvement.
- Support San Mateo County municipalities with GI Plan implementation.
- Conduct GI outreach and education with the public, municipal staff, and elected officials;
- Continue to coordinate with other related SMCWPPP subcommittees as needed (e.g., Litter Workgroup and deployment of the Litter Reduction Toolkit for Multi-Family Dwellings, Public Information and Participation Subcommittee to engage on GI outreach).
- Finalize process for tracking and mapping completed GI projects, through the tool developed as part of the San Mateo Countywide Sustainable Streets Plan effort.
- Continue to collaborate with BASMAA and Bay Area countywide stormwater programs to distribute the GI Alternative Sizing approach report and guidance, update the BSM specifications and BSM suppliers list, and develop designs for biotreatment areas with trees. To the extent possible, work with biotreatment mulch suppliers to develop better specifications for that product.
- Continue working with BASMAA on issues related to MRP implementation, particularly the GI requirements and related provisions.

- Plan and conduct a C.3 workshop for municipal staff (tentatively scheduled for June of 2020), building on the trainings conducted in previous years. Topics may include implementation of GI Plans, using an on-line interactive Green Infrastructure Design Guide, and example reviews of development project plans.
- Advance the outputs of the San Mateo Countywide Sustainable Streets Master Plan and;
- Continue its efforts to work with San Mateo County municipalities, schools, and the San Mateo County Office of Sustainability, to pursue funding for and facilitate implementation of cost-effective GI, including regional multi-jurisdiction and multi-benefit stormwater capture and treatment projects. This will include continued follow-up on project concepts and related prioritization efforts presented in SMCWPPP's Countywide Stormwater Resource Plan. SMCWPPP will also continue developing an implementation-level approach to achieving water quality goals and other community benefits associated with GI, via the ongoing development of the San Mateo Countywide Sustainable Streets Master Plan (funded by a Caltrans Adaptation Planning Grant issued to C/CAG). In addition, SMCWPPP will continue advancing GI project designs through \$2.94 million in state grant funds issued to C/CAG through the California Natural Resources Agency. All of these efforts to support GI implementation in San Mateo County and seek new project funding and opportunities will be integrated to the extent feasible with plans to create a new Flood and Sea Level Rise Resiliency Agency (FSLRRD) (resilientsanmateo.org) in the County by January 2020. See Section 1 for additional details.

SECTION 4

C.4 INDUSTRIAL AND COMMERCIAL SITE CONTROLS

INTRODUCTION

A primary goal of SMCWPPP's Commercial, Industrial and Illicit Discharge (CII) component is to assist San Mateo County Permittees in controlling the discharge of pollutants in stormwater from commercial and industrial businesses to the maximum extent practicable. San Mateo County Permittees are responsible for complying with various commercial and industrial business facility inspection requirements under MRP Provision C.4. SMCWPPP's CII component assists San Mateo County Permittee staff with understanding these MRP requirements and develops various related tools, templates, reporting forms, and other MRP compliance support materials. The CII component also assists San Mateo County Permittees to comply with other MRP provisions that are discussed in other sections of this report (Sections 5 and 13).

SMCWPPP's assistance with MRP Provision C.4 and other CII component provisions is coordinated through the CII Subcommittee.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP performs a variety of tasks to assist San Mateo County Permittees with implementation of MRP Provision C.4, with input and assistance provided by the CII Subcommittee. FY 2018/19 accomplishments included the following:

- Held four CII Subcommittee meetings;
- Updated the *Stormwater Inspector Guidance on Meeting Annual MRP C.4.d Training Requirements*;
- Adapted a landscape maintenance postcard from the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP);
- Adapted a BMP booklet entitled *How Your Business Can Prevent Stormwater Pollution* from the Alameda County Clean Water Program (ACCWP) in English, Spanish and Vietnamese;
- Developed a Food Service Facility BMP fact sheet; and
- Updated the business stormwater inspector contact list on the SMCWPPP website.

More information on each of these accomplishments is provided below.

CII Subcommittee

The CII Subcommittee provides the opportunity for sharing information about MRP requirements related to commercial/industrial facility inspections and methods for achieving compliance. The Subcommittee

met four times during FY 2018/19 with good participation by municipal staff, as shown by the attendance list (Appendix 4). The meetings provided the opportunity for municipal staffs to share their experiences with implementing MRP provisions related to the CII component, including Provision C.4. Ward Donnelly from the City of Daly City continued to chair the CII Subcommittee during FY 2018/19.

Most San Mateo County cities previously had agreements with San Mateo County Environmental Health Services (EHS) for EHS staff to conduct stormwater inspections of certain businesses (i.e., sites that EHS already inspects for other reasons, including facilities with onsite hazardous materials and retail food facilities). However, due to staffing and cost concerns, EHS terminated these agreements as of December 31, 2017. During FY 2018/19 CII Subcommittee meetings, the continued focus was facilitating discussion and providing support to Permittees in conducting their own stormwater facility inspection programs. In addition, the business stormwater inspector contact list on the SMCWPPP website (flowstobay.org) was updated.

Regional Water Board staff attended two Subcommittee meetings in FY 2018/19. At the December 2018 meeting Regional Water Board staff discussed inspection data reported in the Annual Reports and the upcoming MRP reissuance. At the March 2019 meeting the new Industrial and Construction General Permit section lead discussed the Regional Water Board's focus on the Industrial Stormwater General Permit non-filers that the municipalities have been reporting in their Annual Reports.

Program Materials

In FY 2017/18 Countywide Program staff updated the SMCWPPP Stormwater Inspection Form Template and developed a Stormwater Inspection Tracking Excel Template for cities to track their stormwater inspection data, if needed.

In FY 2018/19, Countywide Program staff continued to update or develop outreach materials identified by the Subcommittee. A landscape maintenance illicit discharge postcard from SCVURPPP was adapted to a SMCWPPP postcard with BMPs in three languages (English, Spanish and Vietnamese). The *How Your Business Can Prevent Stormwater Pollution Tips for a Cleaner Bay and Ocean* BMP booklet from ACCWP was adapted for SMCWPPP in English, Spanish and Vietnamese. The Subcommittee also developed a new Food Service Facility BMP fact sheet. These outreach materials are included in Appendix 4.

CII Training Workshop

The Countywide Program did not conduct an inspector training workshop this fiscal year. However, SMCWPPP updated the *Stormwater Inspector Guidance on Meeting Annual MRP C.4.d Training Requirements* (June 1, 2019). This guidance compiles available training materials for inspectors including the SMCWPPP guidance document *How to Conduct Stormwater Inspections* (April 2015), workshop presentations, BASMAA's Pollutants of Concern training materials, webinars, and related documents. An example training tracking table is also provided.

FUTURE ACTIONS

FY 2019/20 activities planned by SMCWPPP to assist San Mateo County Permittees comply with MRP requirements in Provision C.4 include the following:

- Continue holding quarterly CII Subcommittee meetings;

- Continue to update existing or develop new business outreach materials as needed;
- Hold an inspector training workshop; and
- Assist San Mateo County Permittees with the implementation of commercial and industrial stormwater inspection tasks, including continuing to assist with Business Inspection Plans (BIPs) and associated prioritizing of inspections, data management, and Enforcement Response Plans (ERPs).

SECTION 5

C.5 ILLICIT DISCHARGE DETECTION AND ELIMINATION

INTRODUCTION

A primary goal of SMCWPPP's Commercial, Industrial and Illicit Discharge (CII) component is to assist San Mateo County Permittees effectively prohibit the discharge of illicit, non-stormwater discharges to the municipal storm drain system. SMCWPPP San Mateo County Permittees are responsible for controlling non-stormwater discharges prohibited by MRP Provision C.5. SMCWPPP's CII component assists San Mateo County Permittee staff with understanding these MRP requirements and develops various related tools, templates, reporting forms, and other MRP compliance support materials. SMCWPPP's CII component also assists Permittees to comply with other MRP provisions that are discussed in other sections of this report (see Sections 4 and 13).

SMCWPPP's CII component is coordinated through the CII Subcommittee. See Section 4 for further details about the CII Subcommittee.

IMPLEMENTATION OF MRP PROVISIONS

During FY 2018/19, SMCWPPP performed a number of tasks to assist San Mateo County Permittees with implementation of MRP Provision C.5, with input and assistance provided by the CII Subcommittee. Accomplishments included the following:

- Updated the inventory of mobile cleaner businesses in San Mateo County;
- Updated the table of stormwater enforcement actions against mobile businesses to share countywide with stormwater inspectors;
- Updated the mobile cleaner businesses BMP fact sheet;
- Worked with SMCWPPP's public outreach component to develop Facebook posts and Google advertisements promoting mobile business BMPs;
- Assisted with development of the swimming pools, hot tubs and fountain water discharges fact sheet; and
- Updated the Illicit Discharge contact list on the SMCWPPP website.

More information on these accomplishments is provided in this section.

Mobile Businesses

In FY 2012/13, the CII Subcommittee adapted a Mobile Business BMPs brochure developed by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) for use in San Mateo County.

Beginning in FY 2013/14, the CII Subcommittee surveyed San Mateo County agencies and compiled information on mobile businesses that were subject to stormwater enforcement actions during that fiscal year. This information was compiled in a table and made available on the password-protected section of the SMCWPPP website. The table is periodically updated with additional enforcement action information.

During FY 2014/15, the CII Subcommittee worked with SMCWPPP's Public Information and Participation (PIP) Subcommittee to post an outreach message on Facebook that targeted mobile cleaner businesses. This April 2015 posting included a link to the BMPs brochure.

During FY 2016/17, the CII Subcommittee developed a regional inventory of mobile businesses operating in San Mateo County by compiling lists provided by individual agencies with additional businesses identified via Internet searches (e.g., through Google and Yelp). The mobile businesses identified fell in the following categories: carpet cleaners, auto washers, steam cleaners, power washers and pet care providers. SMCWPPP mailed its mobile business BMPs brochure to all of the businesses in the inventory in late June and early July 2017. In March 2017, SMCWPPP's PIP Subcommittee posted outreach messages on Facebook targeting residents who hire carpet cleaners or pet groomers.

In FY 2018/19 the mobile businesses stormwater enforcement actions table was updated and this information was made available on a password-protected page of the Countywide Program's website (flowstobay.org). CII Subcommittee representatives were informed when each update was completed. The county inventory of mobile businesses was also updated and made available on the password-protected webpage. The inventory is included in Appendix 5.

Also in FY 2018/19, the Mobile Business BMPs brochure was updated to a new fact sheet format (Figure 5-1). The brochure is available on the SMCWPPP website (flowstobay.org) and is also included in Appendix 5. In addition, during FY 2018/19, the CII Subcommittee again worked with SMCWPPP's PIP Subcommittee on placing both Google advertisements and Facebook posts promoting mobile business BMPs. The Google advertisement display campaign and search campaign ran from May 14 - 22, 2019. A series of three Facebook posts ran in March, April and May 2019. The details on the Google advertisements and Facebook posts, along with the performance metrics are provided in Appendix 5. Figure 5-2 includes examples from SMCWPPP's countywide Google Ad campaign, which targeted residents who may use mobile wash services. 126 people clicked on the newly updated Mobile Business BMP fact sheet with a total of 98,232 impressions. Figure 5-3 includes an example from the Facebook posts.

In addition, BASMAA has a long-standing Surface Cleaner Training and Recognition program that focuses on improving the use of BMPs for businesses that clean surfaces (i.e., sidewalks, plazas, parking areas and building exteriors). See the following BASMAA report for more information: *Annual Reporting for FY 2018-2019, Regional Supplement for Training and Outreach* (Appendix 13). San Mateo County Permittees have continued to refer cleaners to BASMAA's website for surface cleaning training materials.



flowstobay.org
SAN MATEO COUNTYWIDE
WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

BEST MANAGEMENT PRACTICES FOR

MOBILE BUSINESSES

Carpet Cleaners | Vehicle Washers/Detailers | Power Washers | Pet Care Services | Steam Cleaners

Information about using Best Management Practices (BMPs) to prevent wash and rinse waters from entering storm drain systems and polluting local waterways, the San Francisco Bay, and the Pacific Ocean.

WHY SHOULD WE BE CONCERNED WITH WASH WATER DISPOSAL?

Wash water from mobile cleaning is NOT just dirt and water. It also may contain soaps, toxic chemicals, heavy metals, oil, and/or grease that are harmful to our creeks and waterways. Pollutants draining from mobile cleaning activities are washed into the street and into the storm drain system which then flows to our creeks, Bay, and Ocean without any cleaning or filtering.

Federal, State, and local regulations prohibit discharge of anything but rain water in the storm drain.

Implementing the proper Best Management Practices (BMPs) is easy and is required for compliance with stormwater pollution prevention regulations.

WHAT ABOUT BIODEGRADABLE & NON-TOXIC CLEANING PRODUCTS?

Cleaning products labeled "non-toxic" and "biodegradable" can still harm wildlife if they enter a storm drain system. Fish, for example, are affected by both regular and biodegradable soap! However, if disposed of in the sanitary sewer system, wastewater treatment plants prefer biodegradable products over toxic cleaners.

All soaps—even biodegradable ones—are harmful to fish!

PLAN AHEAD

- Determine where you will discharge wastewater before starting a new job.
- Be sure to have equipment on hand (i.e. long hoses, sump pump, etc.) for directing discharge to sanitary sewer access points.
- Ensure hoses are long enough to reach access points that are far from your holding tank.
- Contact your local hardware or construction material stores for available tools and materials for mobile businesses including wet/dry vacuums and sump pumps, mats, sand or gravel bags, wattles, etc.

4 STEPS TO REMEMBER BEFORE YOU CLEAN

- 1. Be a BASMAA Recognized Mobile Cleaner**
Take the online "mobile surface cleaning" training from BASMAA (Bay Area Stormwater Management Agencies Association). This program will train you on how to clean different surfaces in an environmentally acceptable way and publish your name as a trained cleaner. Visit www.basmaa.org.
- 2. Identify Storm Drain Locations**
Walk around the job site and identify where all storm drains are located. Wash water must not be allowed to flow into the storm drains.
- 3. Protect Drains and Collect Water**
Contact your local City stormwater inspector to determine specific discharge requirements. Obtain permission to discharge to the property owner's sanitary sewer plumbing or landscaping before starting the job.
- 4. Dispose Wash Water Properly**
Contact your local wastewater treatment plant for specific discharge requirements entering the sanitary sewer system (phone numbers are listed on next page). Obtain permission from the property owner to discharge wash water at the job site or the contractor's place of business.



flowstobay.org

For More Information About Stormwater Pollution Prevention email info@flowstobay.org

UPDATED APRIL 2019



flowstobay.org
SAN MATEO COUNTYWIDE
WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

BEST MANAGEMENT PRACTICES FOR

MOBILE BUSINESSES

Carpet Cleaners | Vehicle Washers/Detailers | Power Washers | Pet Care Services | Steam Cleaners

Protect the Bay, the Ocean, and Yourself! When wash water flows into storm drains it goes straight to local creeks and the San Francisco Bay or Pacific Ocean without any cleaning or filtering.

DOING THE JOB RIGHT: CHECKLIST OF BMPs

- Walk the area to identify storm drains.
- Sweep the wash area to remove debris.
- If feasible, wash on a vegetated or gravel surface where wash water can infiltrate into the ground without runoff.
- Contain wash area so that water does not drain down streets and gutters—use sand bags, plugs, containment mats or berms.
- Block or seal off any storm drain inlets and sloping areas that release water to the gutter to prevent wash water from entering the storm drain.
- Put storm drain protection in place before starting the washing process and remove before you leave the site.
- Vacuum or shake floor mats into a trash can.
- Minimize water use; use nozzles on hoses.
- Use less-toxic cleaning products (or wash without soaps and solvents, if possible).
- Use a "wet-vac" to vacuum up the contained wash water for proper disposal.
- Remove all debris or sediment accumulated during washing activities and put in the trash, or if it is hazardous, dispose of it properly.

OPTIONS FOR DISPOSAL

- 1. Never drain wash or rinse water into streets, gutters, parking lots, or storm drains.**
- 2. Wash and rinse waters can usually be discharged to the sanitary sewer through a drain at the property owner's home or business, such as a utility sink, floor drain, mop sink, cleanout or toilet.** Take precautions to prevent debris, hazardous materials or anything that can clog from entering sinks, toilets or sanitary drains.
- 3. Direct water to landscaping or gravel surfaces.** Wash water must completely soak into vegetation before you leave the site.



IF YOU DISCHARGE WASH WATER GENERATED BY MOBILE CLEANING ACTIVITIES TO THE STORM DRAIN, YOU ARE VIOLATING MUNICIPAL STORMWATER ORDINANCES AND MAY BE SUBJECT TO A FINE.

Wastewater Treatment Plants

Burlingame Waste Water Treatment Facility	(650) 342-3127
<small>Burlingame, Burlingame Hills, and Millbrae</small>	
Millbrae Water Pollution Control Plant	(650) 259-2388
<small>North San Mateo County Sanitation District</small>	
North San Mateo County Sanitation District	(650) 991-8200
<small>Redwood City and parts of Millbrae</small>	
Pacific's Calera Creek Water Recycling Plant	(650) 738-4660
<small>San Mateo Waste Water Treatment Plant</small>	
San Mateo Waste Water Treatment Plant	(650) 522-7300
<small>Forster City, Millbrae, and San Mateo</small>	
Sewer Authority Mid Coastwide Wastewater Treatment Facility	(650) 726-0124
<small>Redwood City, Gilroy, Fremont, Menlo Park, Menlo Park, Redwood City</small>	
Silicon Valley Clean Water	(650) 832-6243
<small>Alhambra, Redwood City, San Carlos, Menlo Park, and parts of West Bay San Mateo District</small>	
South San Francisco/San Bruno Water Quality Control Plant	(650) 877-8555
<small>Colma, San Bruno, South San Francisco, and Southern Daly City</small>	



flowstobay.org

The San Mateo Countywide Water Pollution Prevention Program acknowledges the Santa Clara Valley Urban Runoff Pollution Prevention Program for developing and sharing the content of this brochure.

Figure 5-1. Mobile Businesses BMP Fact Sheet

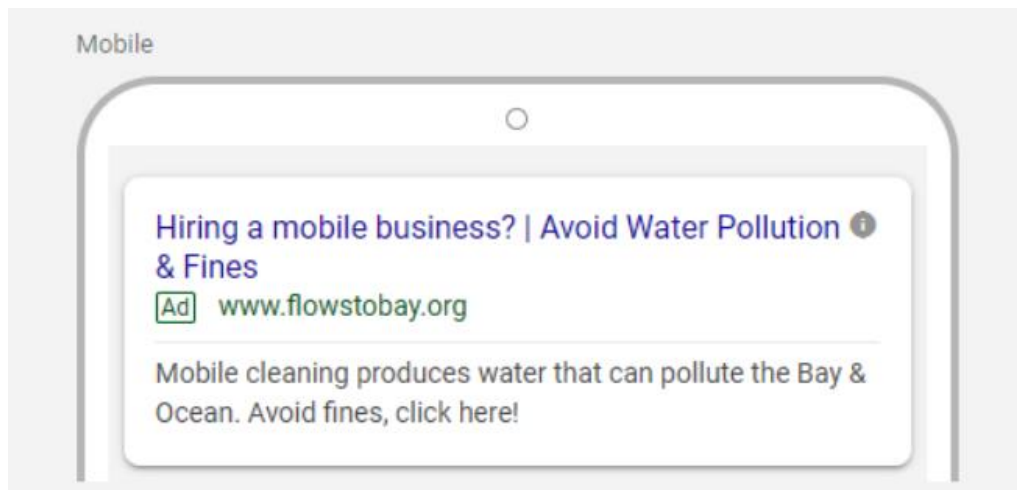
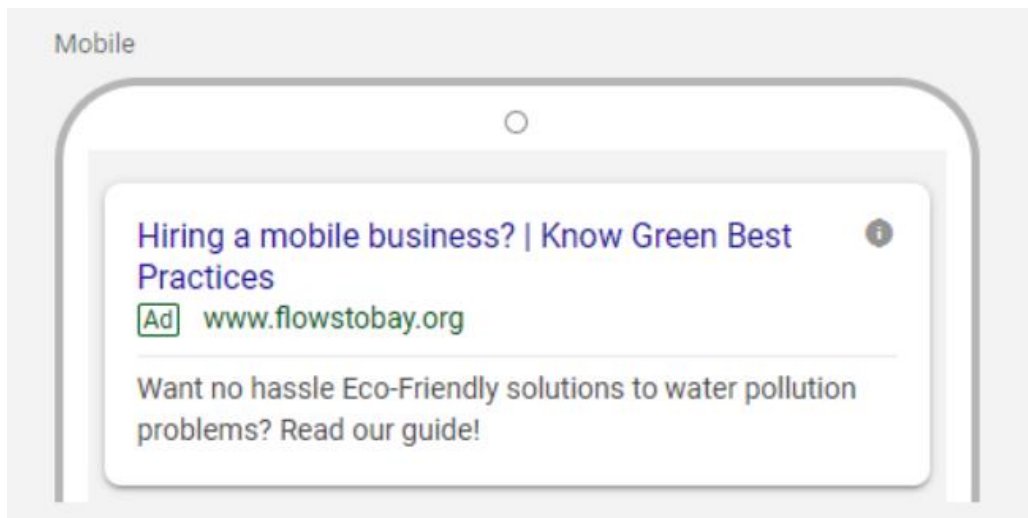
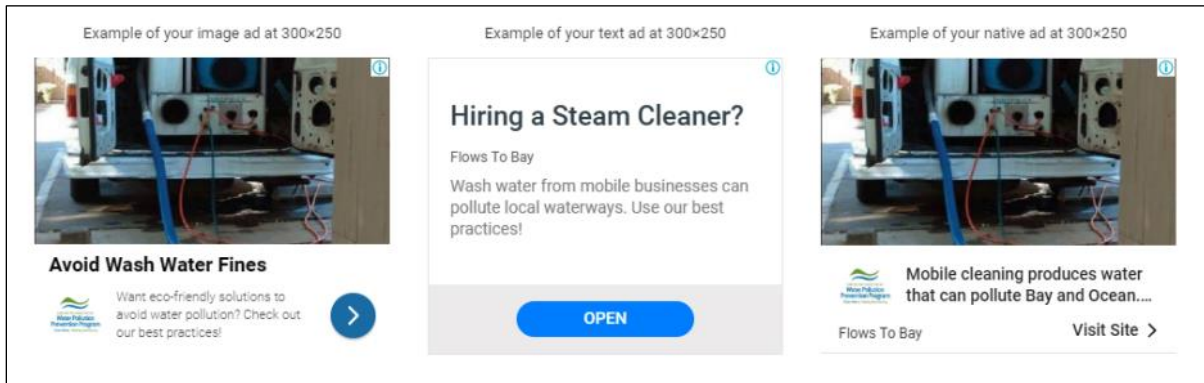


Figure 5-2. Examples from the Google Ads Mobile Businesses BMP Campaign

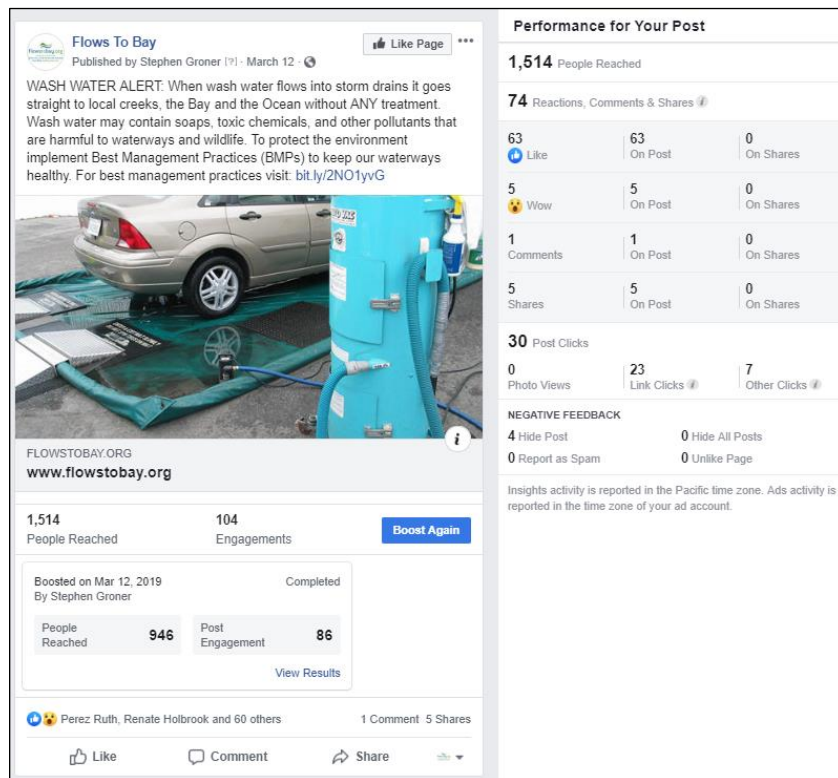


Figure 5-3. Example from the Facebook Mobile Businesses BMP Campaign

Countywide Program Materials

SMCWPPP has developed a variety of materials to assist municipal agency staff with implementing Provision C.5. These materials are all available on the SMCWPPP website (flowstobay.org) and continue to be useful tools that assist agency staff to achieve permit compliance. The materials include an Illicit Discharge Investigation Field Form template, an Illicit Discharge Tracking Excel Template, and outreach materials. In FY 2018/19, the CII Subcommittee also worked with SMCWPPP’s PIP Subcommittee to develop a swimming pools, hot tubs and fountain water discharges fact sheet (Appendix 5), which is further described in Section 15.

FUTURE ACTIONS

During FY 2019/20, SMCWPPP will assist San Mateo County Permittees comply with the requirements in MRP Provision C.5 by continuing to:

- Hold CII Subcommittee meetings;
- Assist with the implementation of illicit discharge detection and elimination tasks, including data management, Enforcement Response Plans (ERPs), and complaint tracking and follow-up; and
- Assist Permittees comply with the requirements for controlling mobile sources in MRP Provision C.5.e., including providing updated information on mobile business BMPs as needed, sharing enforcement information, periodically updating the regional enforcement inventory, and conducting outreach activities.

SECTION 6

C.6 CONSTRUCTION SITE CONTROL

INTRODUCTION

This component of SMCWPPP assists San Mateo County municipalities in complying with MRP Provision C.6 (Construction Site Control). This assistance continued to be provided through the New Development Subcommittee (NDS, see Section 3 for more details). SMCWPPP staff also obtained input and direction from municipal agency representatives through the NDS when planning the trainings and other compliance assistance activities described below.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP's accomplishments during FY 2018/19 include the following tasks to assist San Mateo County municipalities with implementation of MRP Provision C.6:

- Conducted a construction site controls training for the California Building Inspectors Group (CALBIG) on October 10, 2018;
- Printed 2,000 copies of the Construction Site Inspection Form and distributed them to the Subcommittee members;
- Updated the SMCWPPP inspection data tracking template; and
- Conducted the March 11, 2019 Construction Site Inspector Workshop.

CALBIG Training Meeting

In FY 2018/19, SMCWPPP continued its partnership with CALBIG, a group in which many building inspectors from San Mateo County municipalities participate. At the group's October 10, 2018 meeting, SMCWPPP staff gave a presentation covering an overview of the MRP and Provisions C.3 and C.6, current stormwater requirements for construction sites, proper implementation of construction BMPs, C.13.a (architectural copper), current issues, and tips for keeping construction inspection programs in compliance. Approximately 42 people attended the training, including agency inspectors, local stormwater program staff, and contractors. The meeting announcement and agenda are provided in Appendix 6.

Construction Site Inspection Form

In August 2018, SMCWPPP staff printed and distributed 2,000 copies in triplicate form of the SMCWPPP Construction Site Inspection Report to San Mateo County municipalities.

2019 Construction Site Inspector Workshop

The 2019 Construction Site Inspector Workshop was held March 11, 2019 and was attended by 51 people. For the second year in a row, the workshop was held at the County of San Mateo's Coyote Point Park in the City of San Mateo. The workshop began by dividing the attendees into two groups which then alternated between interactive field and classroom trainings. The trainings covered C.6 compliant construction site inspections and BMPs, with product suppliers demonstrating the various BMPs outside of the training building in the adjacent landscaped area. The indoor training consisted of a PowerPoint presentation on: (1) MRP C.6 regulatory requirements, (2) a BMP overview, and (3) conducting construction site inspections, with a focus on filling out the Construction Site Inspection Report. The outdoor training leaders discussed BMP types as well as placement, use, function, cost, and corresponding inspection issues for each BMP. Appendix 6 includes the workshop agenda, sign-in sheet, and evaluation summary. Based on the evaluation forms submitted, attendees generally found that the workshop, and the field training in particular, were valuable and indicated that their expectations were met or exceeded. Similar field trainings are planned for future workshops.

FUTURE ACTIONS

In FY 2019/20, SMCWPPP staff plans to work with the NDS to conduct the following activities to assist San Mateo County municipalities comply with MRP Provision C.6:

- Continue to exchange information with San Mateo County municipalities through quarterly NDS meetings;
- Plan and conduct a Construction Site Inspector Workshop focusing on field trainings, BMP inspections, Enforcement Response Plans and/or other topics of interest to the NDS; and
- Continue to coordinate with partner organizations, such as CALBIG, to provide additional training on construction-related stormwater issues.

SECTION 7

C.7 PUBLIC INFORMATION AND PARTICIPATION

INTRODUCTION

The primary goals of SMCWPPP's Public Information and Participation (PIP) component are to:

- Educate the public about the causes of stormwater pollution and its adverse effects on water quality in local creeks, lagoons, shorelines and neighborhoods;
- Encourage residents to adopt less polluting and more environmentally beneficial practices; and
- Increase residents' participation and involvement in SMCWPPP activities.

PIP is essential for controlling and reducing the source of pollution since many preventable pollutants are associated with everyday residential activity. Stormwater pollution may be reduced when residents are educated and motivated by the benefits of reducing pollutants. This approach of education and motivation is cost-effective and efficient in meeting the goal of reducing pollutants in stormwater to the maximum extent practicable.

IMPLEMENTATION OF MRP PROVISIONS

The SMCWPPP PIP Subcommittee oversees the development of outreach and educational materials and guides the implementation of the PIP component of the program. The Subcommittee met two times in FY 2018/19 with good participation by municipal staff, as shown by the attendance list, included in Appendix 7. SMCWPPP's PIP accomplishments during FY 2018/19 included the following:

- Partnered with Bay Area Water Supply & Conservation Agency (BAWSCA) on a rain barrel outreach campaign that received 744 website page views. Received a total of 32 applications for 42 rebates from residents and distributed rain barrel rebate fliers at outreach events. A total of 1,267 rain barrels have been installed to-date in San Mateo County under the rebate program.
- Supported the PIP Subcommittee with a Green Infrastructure (GI) Outreach Support Campaign to help the process of the GI Plan adoption by September 2019, per the MRP requirement.
- Promoted the San Mateo County Environmental Health Services (EHS) campaigns to reduce littering of cigarette butts, introduce re-fillable propane canisters, and educate residents about safe battery recycling.
- Promoted Coastal Cleanup Day to raise awareness of the event and the consequences of littering behaviors.
- Promoted Caltrans educational materials in English and Spanish about uncovered loads.

- Gained 3,985 new Facebook fans with a total of 139,266 total post reach with stormwater pollution prevention Facebook messaging.
- Sent 10 e-newsletters to a list of 3,684 opt-in subscribers with topics covering eco-friendly gardening practices, local cleanup events and stormwater pollution prevention information and tips.
- Received 14,548 visitors to the SMCWPPP website (flowstobay.org), which focuses on stormwater pollution prevention messaging and resources.
- Participated in 15 public outreach events in San Mateo County, which involved speaking one-on-one with residents and handing out collateral materials. SMCWPPP materials were distributed at an additional 45 outreach events by a partnering agency.
- Created a new, countywide stormwater-focused teacher fellowship program in coordination with the County Office of Education and also supported countywide school outreach efforts by creating a green infrastructure lesson plan and conducting in-class presentations.
- Performed point-of-purchase outreach with Our Water Our World materials to 10 hardware stores in San Mateo County while conducting in-store tabling events to engage residents in discussions about eco-friendly alternatives to pesticides.
- Promoted outreach messaging to residents regarding eco-friendly alternatives to pesticides in SMCWPPP's e-newsletter, website (flowstobay.org) and social media channels.

More information on each of these accomplishments is provided below.

C.7.b. Outreach Campaigns

Rain Barrel Outreach Program

As a result of the California drought and in an attempt to pursue alternative approaches to public engagement, SMCWPPP partnered with BAWSCA in 2014 to implement a pilot countywide rain barrel rebate program. During FY 2018/19, SMCWPPP continued its partnership with BAWSCA to promote the program, which subsidizes the cost of purchasing a rain barrel by providing rebates up to \$100. The program objectives include: 1) educate residents about the benefits of rain barrels to water conservation and water quality efforts, 2) promote green infrastructure tools for keeping local waters clean, and 3) encourage residents to participate in the Rain Barrel Rebate Program. A total of 1,267 rain barrels have been installed to-date in San Mateo County under the rebate program, and in FY 2018/19, a total 42 rain barrel rebates were processed stemming from 32 applications.

Prior to this partnership, the only agency in San Mateo County offering rain barrel rebates was the City of Millbrae. C/CAG previously provided BAWSCA with an additional \$25,000 to subsidize the rebates for San Mateo County residents, which, like BAWSCA's other water conservation programs, is a subscription-based program in which BAWSCA's member agencies (water supply agencies that receive water from the San Francisco Public Utilities Commission) can choose to participate. Those funds were still being used in FY 2018/19 to supplement countywide residential rebates. The program provides rebates for up to two rain barrels for single-family residential and four for multi-family/commercial properties. C/CAG's funding provides rebates of \$50 per barrel, countywide. Rebates are matched (total of \$100 per barrel) in areas of the county where a water supply agency is participating in the program.

During FY 2018/19, SMCWPPP’s PIP component continued efforts to promote the rain barrel program and inspire San Mateo County residents to join the rainwater harvesting movement. SMCWPPP conducted outreach to inform residents about the rebate and also the non-monetary benefits. The outreach strategy consisted of promoting the rain barrel rebate program through offline, online, and community outreach tactics.

As an offline tactic, rain barrel tip cards were designed and distributed at community outreach events and made available as point-of-purchase materials at home improvement stores. The tip cards helped create awareness of the purpose of rain barrels, emphasize how easy they are to install, and provide examples of financial and environmental benefits for installing a rain barrel.

Online tactics utilized included an “opt-in” map (Figure 7-1) hosted on the rain barrel page of the SMCWPPP website (flowstobay.org/rainbarrel). The map allows users to enter their location to demonstrate that they have installed a rain barrel and place themselves on a map of San Mateo County. Thus all website visitors can see where rain barrels have been installed throughout the County. This helps establish the social norm of rainwater harvesting and encourage others to join the movement.

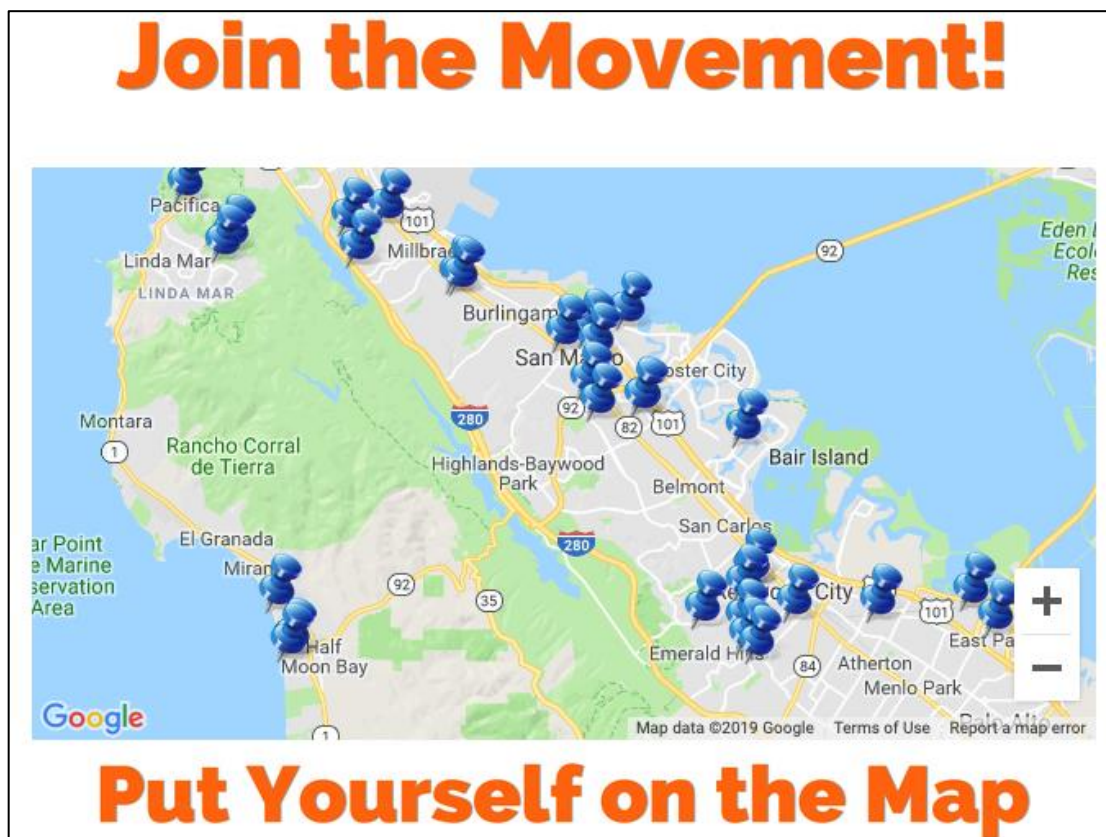


Figure 7-1. Rain Barrel Opt-in Map Found on SMCWPPP Website


SMCWPPP also promoted the rain barrel rebate program via social media channels on Facebook and Twitter. Educational posts were created to inform residents about the functions and benefits of rain barrels (Figure 7-2). SMCWPPP used posts showing photos of various rain barrels, while encouraging use

of the “opt-in” map, and placed ads to reach a wider audience. Posts were also created that promoted two free rain barrel workshops for County residents.



Flows To Bay
Published by Stephen Groner [9] · October 1, 2018 · [Like Page](#)

Are you a San Mateo County resident with a rain barrel installed? First off—**THANK YOU!** Secondly, make sure you join our map to show your rain barrel pride. Not yet a rain barrel aficionado? Sign up for our Oct 13th Workshop! Check it all out here: bit.ly/1C1jCEG



Get More Likes, Comments and Shares
Boost this post for \$10 to reach up to 1,900 people.

415 People Reached 32 Engagements [Boost Post](#)

Caroline Perry, Val XJord and Marti Noble 3 Shares

[Like](#) [Comment](#) [Share](#)

Performance for Your Post

415 People Reached

7 Likes, Comments & Shares

4 Likes	4 On Post	0 On Shares
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0 Comments	0 On Post	0 On Shares
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3 Shares	3 On Post	0 On Shares
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25 Post Clicks

8 Photo Views	6 Link Clicks	11 Other Clicks
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NEGATIVE FEEDBACK


2 Hide Post	1 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts.



Flows To Bay
Published by Stephen Groner · November 21, 2018 · Like Page

We're giving away a FREE RAIN BARREL to one lucky attendee of our Dec 1st Workshop at the Half Moon Bay Library. Have you signed up yet? Register here: bit.ly/dec1workshop



Rain Barrel Workshop
SATURDAY, DEC 1ST | 10 AM -12 PM | HALF MOON BAY LIBRARY

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SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

EVENTBRITE.COM
Rain Barrel Workshop with Flows To Bay Learn More

Date: Saturday, December 1st Time: 10:00am-12:00pm...

2,022
People Reached

31
Engagements

Boost Again

Boosted on Nov 21, 2018 By Stephen Groner Not Approved

People Reached 1.7K	Link Clicks 15
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View Details

Ann Marie Gazzano, Suz Kulovsky and 4 others 2 Shares

Like Comment Share

Performance for Your Post

2,022 People Reached

10 Likes, Comments & Shares

6 Likes	6 On Post	0 On Shares
2 Comments	0 On Post	2 On Shares
2 Shares	2 On Post	0 On Shares


21 Post Clicks

0 Photo Views	15 Link Clicks	6 Other Clicks
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NEGATIVE FEEDBACK


3 Hide Post	1 Hide All Posts	
0 Report as Spam	0 Unlike Page	

Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.



Flows To Bay
Published by Stephen Groner · September 25, 2018 · Like Page

We're obsessed with rain barrels, but can you blame us? They're easy to own and SMC's rain barrel rebate program can cover the cost of up to \$100! Come to our free rain barrel workshop at the San Mateo Library on October 13th and we'll help you get you started! Sign up here: bit.ly/2P1hMB0



**FLOWSTO BAY
RAIN BARREL
WORKSHOP**
SATURDAY, OCTOBER 13TH

947 People Reached 40 Engagements **Boost Again**

Boosted on Sep 25, 2018 By Stephen Groner Completed

People Reached 466	Post Engagement 268
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View Results

Flows To Bay, Eleuteria Salazar Villeda, Lavinia Quintana and 11 others 5 Shares

Like Comment Share

Performance for Your Post

947 People Reached

21 Likes, Comments & Shares

16 Likes	14 On Post	2 On Shares
0 Comments	0 On Post	0 On Shares
5 Shares	5 On Post	0 On Shares

19 Post Clicks

4 Photo Views	2 Link Clicks	13 Other Clicks
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NEGATIVE FEEDBACK

4 Hide Post	0 Hide All Posts	
0 Report as Spam	0 Unlike Page	

Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.

Figure 7-2. Examples of Rain Barrel Facebook and Twitter Posts

SMCWPPP hosted rain barrel workshops on October 13, 2018 at the San Mateo Public Library and on December 1, 2018 at the Half Moon Bay Public Library. There were a total of 167 registrations for the workshops and a total of 70 attendees. Both workshops were promoted on Facebook through advertisements, social media posts, and on the NextDoor App with assistance from PIP members. Representatives from Grassroots Ecology and the San Mateo Resource Conservation District (RCD) gave a presentation on the importance of rain barrels and demonstrated their installation and maintenance. Information on the BAWSCA rain barrel rebate was also provided to attendees. There was active participation with many questions asked about the installation and rebate process.

Rain Barrel Workshop Eventbrite event results:

Source	Views	Registrations
Eventbrite	1,146	167

Rain Barrel Workshop Facebook promotion results:

Source	Reach	Clicks
Facebook	8,796	278

Workshop attendees were asked to fill out a survey designed to gauge previous knowledge of rain barrels and how helpful the attendees found the workshop. The overall results of the survey were favorable, with the majority of survey participants indicating they learned the following: basic understanding of rain barrels, preparation of how to install rain barrels, the environmental benefits, and knowledge of local rebates. Tables 7-1 to 7-3 highlight a portion of the survey results.

Overall, the event turnout was positive with high ratings across the board. Future suggestions/topics from attendees included: contact list of contractors for rain barrel installation and their charge, resources of where to purchase materials for rain barrel installation, and step-by-step instructions on installation. Event invites and full survey results are included in Appendix 7.

Table 7-1. Rating Environmental Information Provided (1 - Poor, 5 - Excellent)

	1	2	3	4	5
Attendees	0%	0%	4%	25%	71%

Table 7-2. Rating Rain Barrel Installation Instruction (1 - Poor, 5 - Excellent)

	1	2	3	4	5
Attendees	3%	2%	11%	29%	55%

Table 7-3. Rating Information Presentation (1 - Not Fun / Uninteresting, 5 - Very Fun / Interesting)

	1	2	3	4	5
Attendees	0%	2%	7%	22%	69%

The Rain Barrel Campaign achieved measurable and impressive results in FY 2018/19. Between the two workshops, 70 residents representing 15 cities in San Mateo County attended. SMCWPPP partnered and cross-promoted these workshops with two local organizations: Grassroots Ecology and the RCD. Furthermore, a partnership with a local business, Hassett Ace Hardware, enabled us to raffle off a free rain barrel as well as two store gift cards to residents in attendance. In a survey conducted immediately after the rain barrel workshop, 84% of the 56 survey respondents reported that they were considering purchasing a rain barrel. In a follow-up-survey conducted 3 months after the workshop, 84% of 19 respondents self-reported that they considered purchasing a rain barrel after attending one of the SMCWPPP workshops, while 21% of the 19 respondents indicated having actually purchased a barrel.

Another tool used for analyzing the success of outreach was the sign-ups received on the SMCWPPP online rain barrel opt-in map, which is a record of locations in the SMC where residents have installed barrels (Figure 7-1). As a result of these workshops and the promotion via e-newsletters, Facebook, and Twitter, the rain barrel opt-in map saw growth of 119% during the fiscal year.

The PIP committee was provided with marketing material to promote the rain barrel rebate program:

- Pre-crafted copy and photos to be used for any medium that best suits their constituents;
- Redesigned Rain Barrel Tip cards to provide at community outreach events (Figure 7-3);
- BAWSCA rain barrel rebate cards (Figure 7-4); and
- A link to the Rain Barrel Opt-in map to encourage residents to join the movement at (flowstobay.org/rainbarrel).

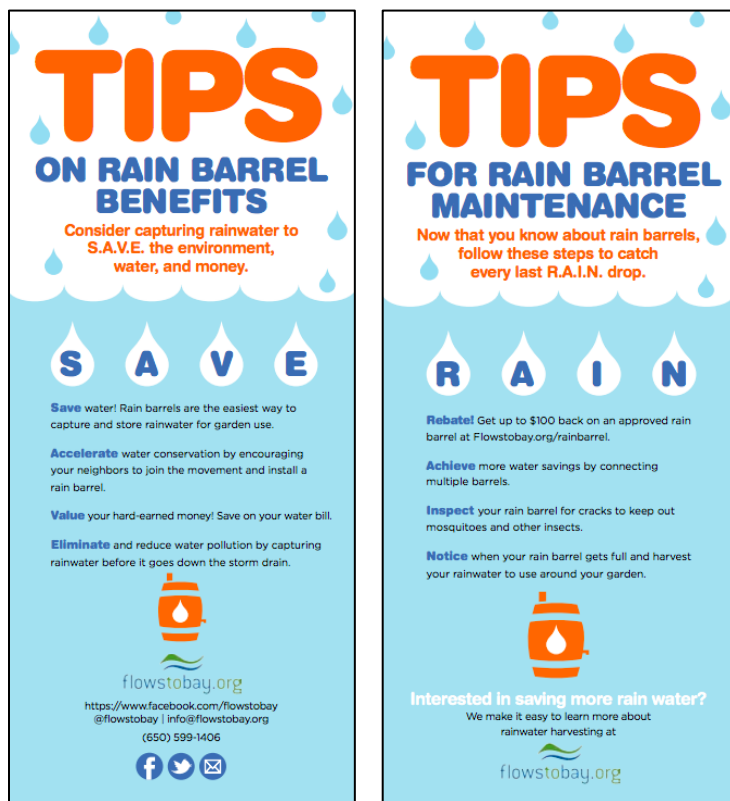


Figure 7-3. Rain Barrel Tip Card



Get Up to \$100 Rebates for Rain Barrels

\$50 San Mateo Countywide Rebate + Up to \$50 Water Agency Rebate = Up to \$100 Cash Back on a Qualifying Rain Barrel

Visit www.bawsca.org for:

- Rebate Application
- List of Participating Water Agencies
- Program Terms & Conditions

**Save Water
Reduce Runoff and Pollution
Collect Pure Rainwater for Your Garden**

SAW MATEO COUNTYWIDE Water Pollution Prevention Program
Clean Water. Healthy Community. www.flowstobay.org

BAWSCA
Bay Area Water Supply & Conservation Agency
and participating water agencies
(650) 349-3000
www.bawsca.org

Figure 7-4. Rain Barrel Rebate Card

Green Infrastructure Outreach Support Campaign

In FY 2018/19, SMCWPPP focused on supporting San Mateo County Permittees and GI committee members with projects related to mitigating stormwater pollution with GI initiatives, specifically as municipalities prepare to have their GI plans adopted by September 2019, per the MRP requirements. As determined by results of a conducted survey and discussion, the support took form of providing outreach resources and materials. These materials included a poster design, informational fact sheet, and a PowerPoint presentation template as seen in Figures 7-5 and 7-6. The intention of the outreach support campaign is to assist San Mateo County Permittees in educating residents, internal staff, elected officials and other stakeholders on topics that will facilitate broader community acceptance and support for GI projects and stormwater pollution mitigation initiatives.



GREEN INFRASTRUCTURE FOR A SUSTAINABLE SAN MATEO COUNTY

From mitigating flood risk to protecting our Bay and waterways, green or nature-based infrastructure can lessen the impacts of climate change and heavy storms in San Mateo County. Build green infrastructure to help build a stronger, safer, and more prepared community.

GREEN INFRASTRUCTURE AT WORK

- REDUCE POLLUTION**
Reduce pollutants from entering the Bay and ocean, and filter air pollutants & particulates.
- MANAGE FLOOD RISK**
Mitigates flood risk by slowing and reducing stormwater runoff during storms.
- INCREASE NATURAL HABITAT**
Increases wildlife habitat in urban areas with added vegetation.
- KEEP WATER LOCAL**
Captures and increases stormwater infiltration into the ground to help recharge local groundwater supply.
- PROMOTE SAFER COMMUNITIES**
Promotes traffic calming and increases bike & pedestrian safety through planned community designs.
- LOWER URBAN HEAT ISLAND EFFECTS**
Cools urban areas by deflecting sun radiation and providing shade.

HOW DOES GREEN INFRASTRUCTURE WORK?
There are various types of green infrastructure (GI) that range in size, scale, and function. The vast majority are built to be multi-beneficial which can provide habitat, flood protection, cleaner air, and cleaner water. GI that uses vegetation, soils, and natural processes, manage water and create healthier urban environments by mimicking nature that both captures and soaks up water. The natural filtration that occurs through most GI also works to remove pollutants and improve water quality.

flowstobay.org
SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

GREEN INFRASTRUCTURE AT WORK

- 01 REDUCE POLLUTION**
Green infrastructure that employs natural filtering processes which reduce water pollutants such as PCBs, mercury, and lead from entering the Bay and ocean and while it soaks above ground for filter air pollutants and particulates.
- 02 MANAGE FLOOD RISK**
Green infrastructure can mitigate flood risk by slowing and reducing stormwater runoff during storms.
- 03 PROMOTES SAFER COMMUNITIES**
Promotes traffic calming and increases bike and pedestrian safety through planned community designs.
- 04 KEEPS WATER LOCAL**
Captures and increases stormwater infiltration into the ground to help recharge local groundwater supply.
- 05 INCREASE NATURAL HABITAT**
Increases wildlife habitat in urban areas with added vegetation.

Figure 7-5. GI Poster and Fact Sheet Design for Outreach Support Campaign

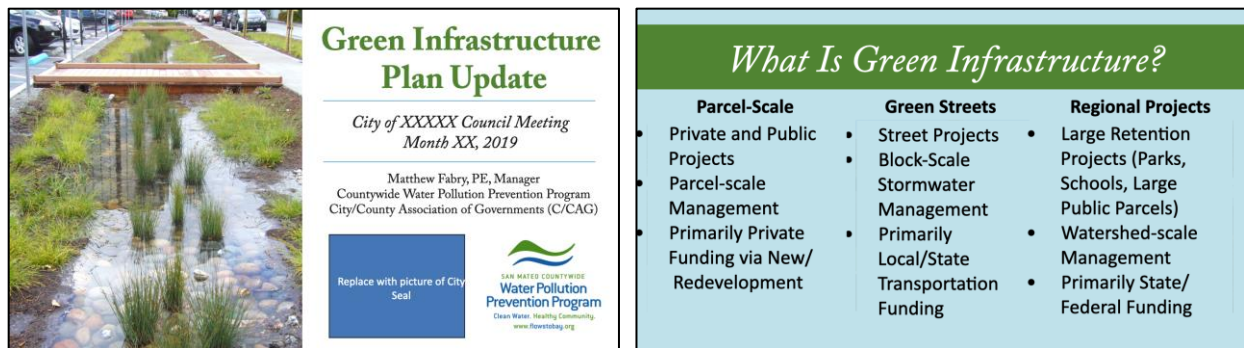


Figure 7-6. GI PowerPoint Presentation for Outreach Support Campaign

C.7.c. Stormwater Pollution Prevention Education

SMCWPPP continued to use social media, its website, and the e-newsletter to promote stormwater pollution prevention messages.

Social Media

SMCWPPP continued to maintain Facebook and Twitter social networks. These platforms were used as tools for two-way communication and have continued to be an effective method to engage with residents in the absence of face-to-face interactions. Facebook experienced a significant increase in followers this reporting period. SMCWPPP gained 3,375 total Facebook Page Likes (accounts for followers gained minus followers lost), reaching a total of 18,118 Page Likes between July 1, 2018 and June 30, 2019, a 23% increase from FY 2017/18. Between July 1, 2018 and June 30, 2019, we saw a 6% decrease in followers on the Twitter platform, taking us from 3,032 down to 2,848. This decrease was in most part due to not running a paid promotion, unlike previous years.

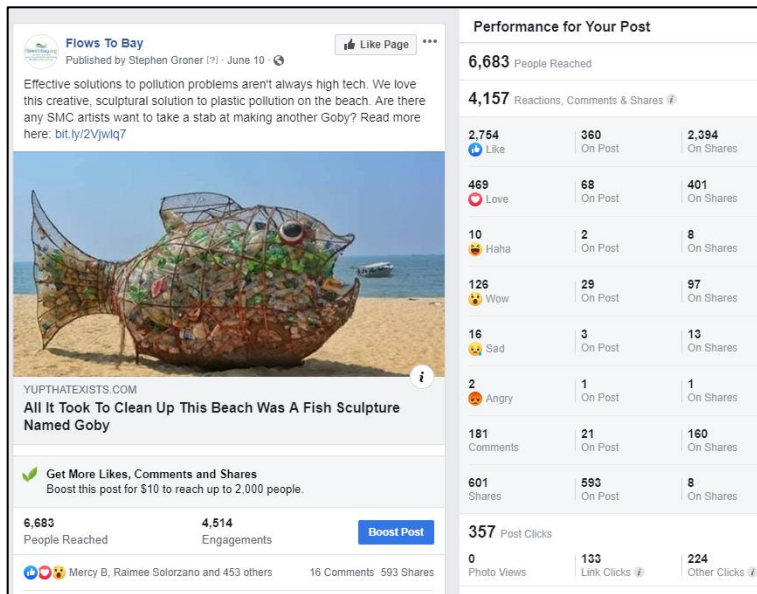
Social media platforms were used to publicize stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives. The platforms were primarily used to inform the public of environmental outreach events, to promote a shift towards incorporating sustainable behaviors into daily lifestyles, and to provide environmental and marine news relevant to San Mateo County pollution prevention. The accounts were monitored on a daily basis throughout the fiscal year. As part of the overall effort to enhance social presence and engagement with followers, several quizzes were published to the social media pages in FY 2018/19 in addition to a number of posts highlighting “community champions” (i.e., residents of San Mateo County who had gone above and beyond to be environmental stewards in their communities).

The following is a breakdown of tasks and evaluation metrics associated with social media activity for FY 2018/19:

- Continued utilizing Facebook and Twitter as two-way communication tools to share and exchange information on pollution prevention messages among residents, businesses, nonprofits, and community stakeholders within San Mateo County.
- Facebook and Twitter message topics included watershed protection, water pollution and Bay area marine news, wash water pollution prevention, the benefits of Green Infrastructure, household hazardous waste, and used motor oil & filter recycling content.


- Continued to utilize Facebook as the SMCWPPP website’s advertising platform to further promote messages.
- Facebook metrics:
 - Gained 3,375 Facebook Page Likes, reaching a total of 18,118 Page Likes;
 - Garnered 461,817 total page impressions (number of people that viewed the SMCWPPP page);
 - Reached a total of 139,266 people (number of people who had content from the SMCWPPP page enter their screen);
 - Garnered 9,369 interactions (likes, comments, and shares); and
 - Published a total of 245 Facebook posts.
- Twitter metrics:
 - Lost 175 Twitter followers, with 2,846 Twitter followers remaining;
 - Garnered 48,575 tweet impressions;
 - Garnered 211 engagements (likes and retweets); and
 - Published a total of 133 tweets.

Figure 7-7 presents some examples of FY 2018/19 Facebook Posts.



Flows To Bay
Published by Stephen Groner [?] · May 13 · 🌐

WASH WATER ALERT: When wash water flows into storm drains it goes straight to local creeks, the Bay and the Ocean without ANY treatment. Wash waters may contain soaps, toxic chemicals, and other pollutants that are harmful to waterways and wildlife. Keep wash waters, pest control fluids, and animal hair OUT of storm drains. To protect the environment implement Best Management Practices (BMPs). For best management practices visit: bit.ly/2NO1yVg



FLOWSTOBAY.ORG
www.flowstobay.org

3,094 People Reached **70** Engagements [Boost Again](#)

Boosted on May 13, 2019
By Stephen Groner Completed

People Reached	2.9K	Landing Page Views	0
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[View Results](#)

👍👎🗨️ 17 4 Comments 4 Shares

Performance for Your Post

3,094 People Reached

34 Reactions, Comments & Shares 🗨️

17 Like	17 On Post	0 On Shares
1 Haha 😂	1 On Post	0 On Shares
1 Wow 😲	1 On Post	0 On Shares
1 Sad 😞	1 On Post	0 On Shares
10 Comments	7 On Post	3 On Shares
4 Shares	4 On Post	0 On Shares
36 Post Clicks		
0 Photo Views	27 Link Clicks 🗨️	9 Other Clicks 🗨️

NEGATIVE FEEDBACK


2 Hide Post **0** Hide All Posts

0 Report as Spam **0** Unlike Page

Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.

Flows To Bay
Published by Stephen Groner [?] · May 23 · 🌐

In addition to being a leading cause of water pollution in San Mateo County, pet waste often becomes a primary food source for rodents. An unwanted neighbor in any community, rodents can decrease property values and present health risks to residents and their pets. What's an environmentally friendly solution to this rodent problem? Picking up after your pets and making sure garbage cans are covered! DoodyCalls



✔️ **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,000 people.

751 People Reached **68** Engagements [Boost Post](#)

👤 Kristine Eliares, S.I. Gordon and 19 others 1 Comment 6 Shares

Performance for Your Post

751 People Reached

36 Likes, Comments & Shares 🗨️

26 Likes	22 On Post	4 On Shares
3 Comments	1 On Post	2 On Shares
7 Shares	6 On Post	1 On Shares
32 Post Clicks		
4 Photo Views	0 Link Clicks 🗨️	28 Other Clicks 🗨️

NEGATIVE FEEDBACK

0 Hide Post **0** Hide All Posts

0 Report as Spam **0** Unlike Page

Reported stats may be delayed from what appears on posts

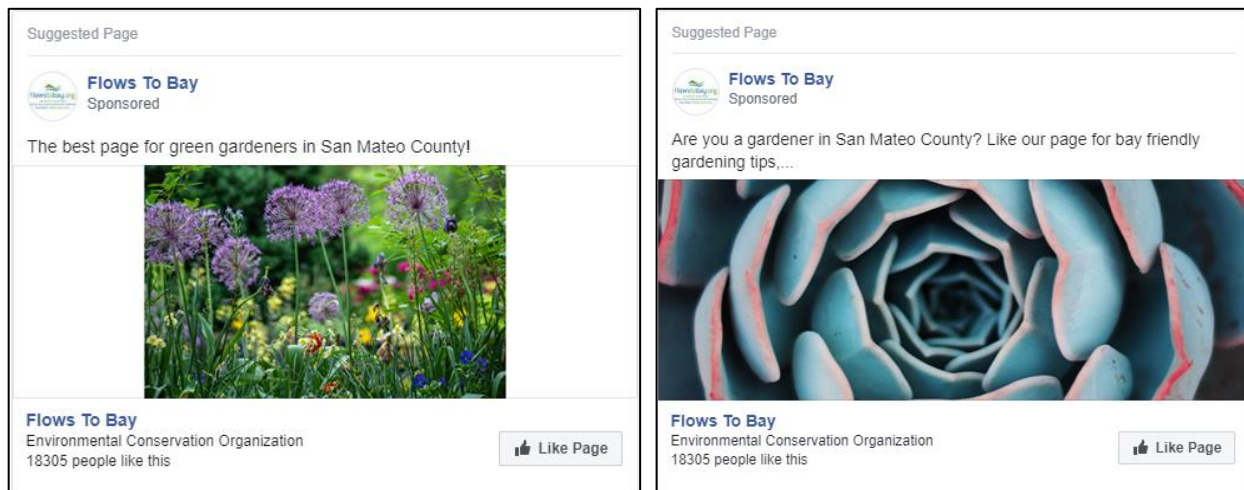
Figure 7-7. Examples of FY 2018/19 Facebook Posts

In addition to the standard Facebook and Twitter social media activity, Facebook Ad Campaigns ran from July 1, 2018 – June 30, 2019. These campaigns ran on an appropriate monthly budget approved by SMCWPPP, and increased SMCWPPP’s reach to potential community members through the use of audience location and interest targeting. The Facebook ad campaign drew a significant increase in followers during this reporting period, receiving 4,003 total Page Likes.

The following is a breakdown of a split test SMCWPPP ran to maximize the efficacy of the FY 2018/19 social media ad campaigns:

- Facebook ads:
 - July-June Campaigns: Tested Ad Copy (Assertions vs. Questions) across the following ad sets:
 - Gardening;
 - Beach Lovers; and
 - Highest Performing Ads from FY 17/18.
 - Ran a total of 375 Facebook ads;
 - Facebook ads resulted in a total of:
 - 4,003 Page Likes;
 - 6,979 total clicks on Ad Campaigns;
 - 128,612 total reach of Ad Campaigns;
 - \$0.80 per like on average (total cost of all ad campaigns/total # of likes garnered on all ad campaigns); and
 - \$0.65 per click on average (CPC (All))/# of Ad Campaigns).

Figure 7-8 presents some examples of FY 2018/19 Facebook Advertisements.



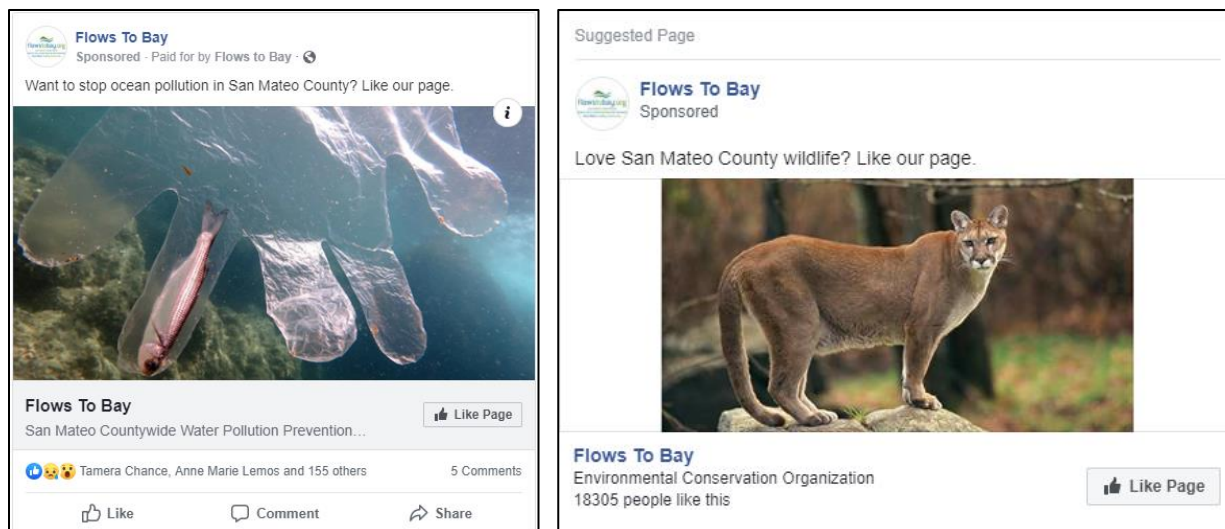





Figure 7-8. Examples of FY 2018/19 Facebook Advertisements.

Electronic Newsletter

The SMCWPPP e-newsletter was utilized to publicize stormwater issues, watershed information, and stormwater pollution prevention options to residents. A total of ten community e-newsletters were sent out to the SMCWPPP community e-newsletter subscriber list. SMCWPPP’s subscriber list reached a total of 3,836 subscribers in FY 2018/19. However, in trying to target more engaged residents, the list was culled down to active subscribers for Q3 and Q4. Examples of the e-newsletter are included in Appendix 7. Table 7-4 provides a breakdown of e-newsletter metrics from the FY 2018/19 campaign.

Table 7-4. SMCWPPP E-newsletter Metrics for FY 2018/19

Subject line	E-newsletter content	Send Date	Total Recipients	Open Rate	Click through Rate	Opened Click Rate
Summer Eco- Events in San Mateo County and Water-Wisdom from Your Neighbors	<ul style="list-style-type: none"> Meet Your Eco-Neighbors A Look Into Sustainable Streets Inspiring Local Landscapes 	6/25/19	1,963	42.5%	10.1%	23.2%
🌻 Spring Gardening Tips 🌻	<ul style="list-style-type: none"> Spring Gardening Tips 	5/23/19	2,037	29.8%	4.8%	16.1%
Teachers wanted for paid environmental literacy fellowship	<ul style="list-style-type: none"> The Clean Water Pathways Teacher Fellowship 	4/23/19	1,914	37.3%	1.8%	2.9%

Subject line	E-newsletter content	Send Date	Total Recipients	Open Rate	Click through Rate	Opened Click Rate
  Earth Day Events in San Mateo County	<ul style="list-style-type: none"> • Earth Day Events in and Around San Mateo County 	4/11/19	2,011	33.4%	5.2%	21.1%
Activist from Brisbane Tackles Trash and Wins, Earth Day Events, and Spring Water Tips	<ul style="list-style-type: none"> • Brisbane Eco-Hero • How Our Waters Can Win Big in 2019 • Earth Day Events 	4/03/19	2,017	32.8%	6.9%	21.1%
Enter our water-wise photo contest   	<ul style="list-style-type: none"> • Waterwise Photo Contest 	1/23/19	2,432	25.7%	0.7%	2.7%
San Mateo County: Solutions to Water Pollution and Green Infrastructure Updates	<ul style="list-style-type: none"> • Water Pollution Solutions • Rain Barrel Event Recap • Green Infrastructure 	12/13/18	3,826	20.8%	3.6%	16.8%
Rain Barrel Workshop - You're Invited!	<ul style="list-style-type: none"> • Join us for a Free Rain Barrel Workshop 	11/7/18	3,833	1.2%	1.1%	4.0%
San Mateo County News about Water Pollution Prevention	<ul style="list-style-type: none"> • Sign up for our Rain Barrel Workshop • Pesticide Quiz Results • The Final Straw! • Half Moon Bay's New Library Development 	9/27/18	3,800	21.5%	2.1%	9.9%
Volunteer for Clean Water  	<ul style="list-style-type: none"> • September water-related volunteer events 	8/29/18	3,836	26.4%	1.6%	6.2%

Note: Industry average open rate is 24%; average click rate on articles is 2.76%.

SMCWPPP Website

The Program continued to maintain the SMCWPPP website (flowstobay.org) as the central point of contact. The website was updated several times a month to ensure that SMCWPPP updates and contact information were up-to-date. These updates included changes to page text, images, updates to the community calendar of events, and the creation of three new pages: About Sustainable Streets, Green Infrastructure Design Guide, and Managing PCBs In Building Materials during Demolition. The latter PCBs page was specifically created to support provision C.12.f of the Municipal Regional Stormwater Permit. Regular maintenance and updates were also performed on SMCWPPP’s “members only” pages for subcommittee members, such as the PIP Subcommittee. Work and maintenance on the website included:

- Launched a Green Infrastructure Design Guide page for residents and PIP Subcommittee to have access to the new Design Guide;
- Launched a webpage supporting the Sustainable Streets Master Plans to help residents understand more about green infrastructure and sustainable streets;
- Launched a password-protected Managing PCBs in Building Materials during Demolition page to assist with data collection requirements under MRP Provision C.12.f.
- Provided resources for 14,415 users with a total of 29,102 page views, allowing them to engage with content related to multiple topics (see website metrics in Table 7-5).
- Updated trainings page with latest reports and updates to provide transparent agency updates.
- Updated homepage components that included new blog articles and community events.
- Conducted a full website audit to review and update content and create a plan for a website redesign for FY 2019/20.
- Regularly updated events on the website on a bi-monthly basis.

Additional website activities included:

- Monitored website visits on a bi-weekly basis.
- Used monthly data to inform decisions about which improvements to make to specific pages.

Total statistics for website total visits, unique users, pageviews, and other significant website metrics for FY 2018/19 fiscal year are shown in Table 7-5 (example of website pages are available in Appendix 7).

Table 7-5. Cumulative data for the SMCWPPP website for FY 2018/19

Time Period	Sessions (Total Visits)	Users (Unique)	Page Views (Unique)	New Visitors %	Returning Visitors %	Overall Bounce Rate
July 1, 2018 - June 30, 2019	20,839	14,415	29,102	87.3%	12.7%	54.9%

C.7.d. Public Outreach and Citizen Involvement Events

Overview

SMCWPPP directly participated in 15 public outreach events in FY 2018/19 in order to reach a wide array of residents in different parts of the County. SMCWPPP partnered with the UC Master Gardeners of San Mateo & San Francisco Counties to table 10 events throughout the County's hardware stores. There were also two free community rain barrel workshops held in Bay side and coast side locations, and three additional tabling events to promote the Sustainable Streets Master Plan. SMCWPPP also partnered with the County Office of Sustainability, the San Mateo Resource Conservation District (RCD), and individual San Mateo County Permittees to distribute SMCWPPP's outreach materials and promote these events through their own channels. There were an additional 39 public outreach and citizen involvement events where SMCWPPP materials were distributed by the Office of Sustainability and the RCD. A breakdown of these events is shown in Table 7-6.

SMCWPPP used online channels, such as Facebook, Twitter and the SMCWPPP website, to promote events and gather volunteers. In addition, SMCWPPP collected a total of 91 signups at outreach events from San Mateo County residents to join the email marketing program. There was more of an emphasis, however, on one-on-one conversations about stormwater pollution and how residents can help reduce it with 4,167 total personal interactions. Event metrics are shown below.

Event Goals

- Educate residents through personal interaction and educational materials;
- Build SMCWPPP's existing database of residents interested in stormwater issues;
- Provide a platform for residents to engage with SMCWPPP messages;
- Develop outreach partnerships with County agencies, NGOs and CBOs; and
- Promote local cleanup events, such as Coastal Cleanup Day.

Outreach Materials

The following SMCWPPP items are given out at outreach events and/or by request provided to Permittees, organizations, and residents in San Mateo County (not including the less-toxic pest control items listed in section C.9.h.ii).

- "You Are The Solution To Water Pollution" pamphlet (English and Spanish);
- Stormwater tip card (English, Mandarin, and Spanish);
- Rain barrel tip card;
- BAWSCA Rain barrel rebate card;
- Two children's activity books: "Pest or Pal" (OWOW – Our Water, Our World) and "Discover Storm Water";
- Green Infrastructure Fact Sheet;
- Dog waste bag canister; and
- Branded metal straw with rubber tip and cleaner;
- Recycled water bottle pens;

- Reusable bags;
- Sea animal stickers;
- Fish carabiners; and
- Fish erasers.

Table 7-6. FY 2018-19 Public Outreach and Citizen Involvement Events and Metrics

Dates	Event Location	Event Name	Type of Event	Estimated Event Attendance	Estimated Reach
8/4/18	Pacifica	World Dog Surfing Championship	Public Outreach	5,000	250
8/26/18	Moss Beach - San Vicente Watershed	Coastside Clean-up Event	Citizen Involvement	1	500
9/10/18	Half Moon Bay	First Flush Training	Citizen Involvement + Public Outreach	25	25
9/29/18 & 9/30/18	Pacifica	Pacific Coast Fogfest	Public Outreach	6,000	500
10/13/18 & 10/14/18	Half Moon Bay	Pumpkin Festival	Public Outreach	200,000	10,000
10/13/18	San Mateo	Rain Barrel Workshop	Public Outreach	32	32
Oct-Nov 2018	Coastal San Mateo County	Local Group Engagement	Public Outreach	NA	50
10/20/18	San Mateo	Master Gardener Tabling Event	Public Outreach	300	24
11/03/18	Belmont	Master Gardener Tabling Event	Public Outreach	300	5
11/05/18	San Mateo	Master Gardener Tabling Event	Public Outreach	300	10
11/10/18	Redwood City	Master Gardener Tabling Event	Public Outreach	300	9
11/13/18	East Palo Alto	Master Gardener Tabling Event	Public Outreach	300	8
11/17/18	Daly City	Master Gardener Tabling Event	Public Outreach	300	12
11/21/18	Montara to Half Moon Bay	First Flush Event	Citizen Involvement	14	1,000
12/1/18	Half Moon Bay	Rain Barrel Workshop	Public Outreach	38	38
12/01/18	San Mateo	Master Gardener Tabling Event	Public Outreach	300	17

Dates	Event Location	Event Name	Type of Event	Estimated Event Attendance	Estimated Reach
2/25/19	Half Moon Bay	First Flush Results Presentation	Public Outreach	15	50
3/27/19 & 3/29/19	Half Moon Bay	Half Moon Bay High School Lessons	Public Outreach	35	35
3/29/19	Belmont	San Mateo County Conference – Migrating Through Change	Public Outreach	30	30
3/30/19	Daly City	District 5 Together Community Fair	Public Outreach	NA	46
3/30/19	San Mateo	Master Gardener Tabling Event	Public Outreach	300	41
4/06/19	Daly City	Master Gardener Tabling Event	Public Outreach	300	25
4/13/19	Belmont	Belmont Earth Day	Public Outreach	NA	76
4/13/19	Redwood City	Marine Science Institute Earth Day on the Bay	Public Outreach	NA	400
4/13/19	Half Moon Bay	Coastal Wildflower and Earth Day Festival	Public Outreach	NA	75
4/13/19	San Mateo	City of San Mateo North Central Neighborhood Clean Up	Citizen Involvement	73	73
4/13/19	Redwood City	Sustainable Streets Master Plan Pop-Up: Earth Day on the Bay	Public Outreach	1600	100
4/17/19	San Mateo	College of San Mateo Earth Day	Public Outreach	NA	60
4/18/19	Redwood City	Genomic Health Earth Day	Public Outreach	NA	40
4/18/19	Redwood City	Seaport Center Earth Day	Public Outreach	NA	80
4/19/19	Half Moon Bay	Half Moon Bay Earth Day	Public Outreach	NA	55
4/20/19	Colma	Master Gardener Tabling Event	Public Outreach	300	10
4/20/19	San Mateo	College of San Mateo Farmers' Market Earth Day	Public Outreach	NA	50
4/22/19	Hillsborough	Be Seen Keepin' It Clean	Public Outreach	NA	76
4/23/19	South San Francisco	Health Plan of San Mateo Earth Week	Public Outreach	NA	55
4/27/19	Pacifica	Pacifica Earth Day	Public Outreach	300	170
4/27/19	Pacifica	Sustainable Streets Master Plan Pop-Up: Pacifica Earth Day	Public Outreach	300	150

Dates	Event Location	Event Name	Type of Event	Estimated Event Attendance	Estimated Reach
4/27/19	Redwood City	STEAM Fest on the square	Public Outreach	NA	50
4/27/19	South San Francisco	SSFSC Compost Workshop and Earth Day	Public Outreach	35	35
4/27/19	San Carlos	Rethink Recycling Day	Public Outreach	178	178
4/28/19	North Fair Oaks	Kermes Dia de Los Ninos (Spanish Tabling)	Public Outreach	60	60
4/28/19	Half Moon Bay	Snapshot Day Training	Citizen Involvement	12	12
4/28/19	Half Moon Bay	Pacific Coast Dream Machines	Public Outreach	4,000	500
5/4/19	Pillar Point Harbor	Snapshot Day Event + Hub	Citizen Involvement +Public Outreach	25	1,500
5/04/19	Daly City	Daly City Earth Day	Public Outreach	NA	32
5/04/19	South San Francisco	Sustainable Streets Master Plan Pop-Up: Streets Alive! Parks Alive!	Public Outreach	1000	100
5/04/19	Atherton	Climate Change Symposium	Public Outreach	NA	33
5/14/19	Redwood City	North Star Academy Middle School Lessons	Public Outreach	95	150
5/31/19	Half Moon Bay	Sea Crest School Lessons	Public Outreach	35	50
6/9/19	La Honda	La Honda Fair and Music Festival	Public Outreach	350	40
6/15/19	Hillsborough	Hillsborough Earth Day	Public Outreach	NA	35
6/29/19	San Mateo	Coyote Point Kite Festival Bike Valet	Public Outreach	NA	36
6/28/19	Coastal San Mateo County	Stormwater + Pet Waste Brochure Distribution	Public Outreach	NA	225
6/29/19	Montara to Half Moon Bay	Poop Pollutes Flyer Distribution	Public Outreach	NA	500

Note: events highlighted in grey were attended by the San Mateo Resource Conservation District, and events highlight in blue were attended by the County Office of Sustainability; however, SMCWPPP outreach materials were distributed at these events.

C.7.e. Watershed Stewardship Collaborative Efforts

Rain Barrel Rebate Program

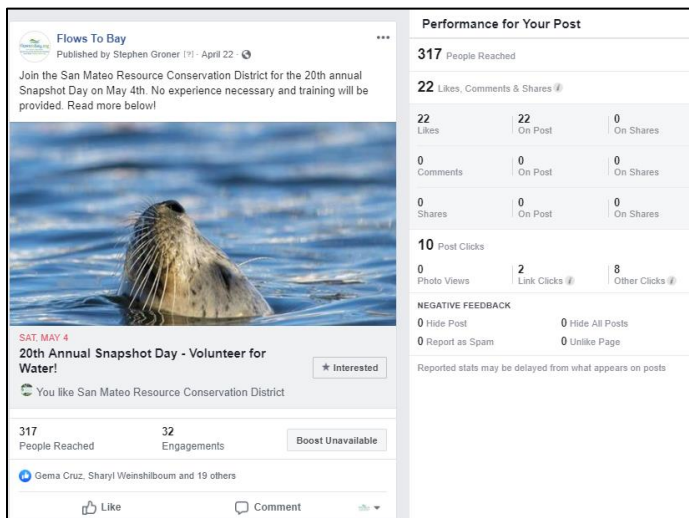
During FY 2018/19, SMCWPPP continued its partnership with BAWSCA to promote a countywide rain barrel rebate program and inspire San Mateo County residents to join the rainwater harvesting

movement. The program subsidizes the cost of purchasing a rain barrel by providing rebates up to \$100. In FY 2018/19 there were a total of 42 rain barrel rebate issued stemming for 32 rain barrel applications. A total of 1,267 rain barrels have been installed to-date in San Mateo County under the rebate program. See Section C.7.b for additional details.

Social Media on Behalf of Partners

As part of our watershed stewardship collaborative efforts, content was posted on SMCWPPP’s Facebook and Twitter social media platforms (Figure 7-9). Requests from partners to post and promote their messaging to our social media platforms included the following:

- Partner Event Promotion: 23 posts;
- Battery Recycling Promotion: 2 posts;
- Wash Water Pollution Prevention: 4 posts; and
- Clean Water Pathways Teacher Fellowship: 4 posts.



Flows To Bay
Published by Stephen Groner [P] · April 22 · 🌐

Join the San Mateo Resource Conservation District for the 20th annual Snapshot Day on May 4th. No experience necessary and training will be provided. Read more below!

SAT, MAY 4
20th Annual Snapshot Day - Volunteer for Water!

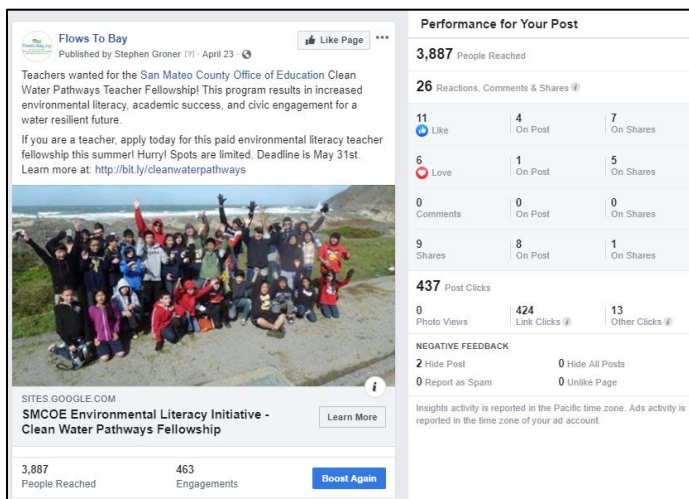
You like San Mateo Resource Conservation District

317 People Reached 32 Engagements Boost Unavailable

Gema Cruz, Sharyl Weinsilboubm and 19 others

Like Comment

Performance for Your Post		
317 People Reached		
22 Likes, Comments & Shares		
22 Likes	22 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares
10 Post Clicks		
0 Photo Views	2 Link Clicks	8 Other Clicks
NEGATIVE FEEDBACK		
0 Hide Post	0 Hide All Posts	
0 Report as Spam	0 Unlike Page	
Reported stats may be delayed from what appears on posts		



Flows To Bay
Published by Stephen Groner [P] · April 23 · 🌐

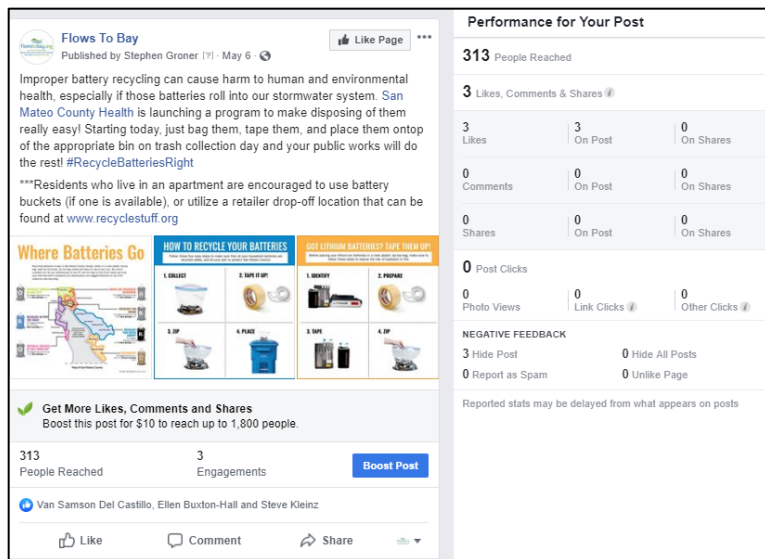
Teachers wanted for the San Mateo County Office of Education Clean Water Pathways Teacher Fellowship! This program results in increased environmental literacy, academic success, and civic engagement for a water resilient future.

If you are a teacher, apply today for this paid environmental literacy teacher fellowship this summer! Hurry! Spots are limited. Deadline is May 31st. Learn more at: <http://bit.ly/cleanwaterpathways>

SITES: GOOGLE.COM
SMCOE Environmental Literacy Initiative - Clean Water Pathways Fellowship

3,887 People Reached 463 Engagements Boost Again

Performance for Your Post		
3,887 People Reached		
26 Reactions, Comments & Shares		
11 Like	4 On Post	7 On Shares
6 Love	1 On Post	5 On Shares
0 Comments	0 On Post	0 On Shares
9 Shares	8 On Post	1 On Shares
437 Post Clicks		
0 Photo Views	424 Link Clicks	13 Other Clicks
NEGATIVE FEEDBACK		
2 Hide Post	0 Hide All Posts	
0 Report as Spam	0 Unlike Page	
Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.		



Flows To Bay
Published by Stephen Groner [?] · May 6

Improper battery recycling can cause harm to human and environmental health, especially if those batteries roll into our stormwater system. San Mateo County Health is launching a program to make disposing of them really easy! Starting today, just bag them, tape them, and place them onto the appropriate bin on trash collection day and your public works will do the rest! #RecycleBatteriesRight

***Residents who live in an apartment are encouraged to use battery buckets (if one is available), or utilize a retailer drop-off location that can be found at www.recyclestuff.org

Where Batteries Go

HOW TO RECYCLE YOUR BATTERIES

1. LOCATE
2. TAP FLAP
3. REMOVE BATTERIES
4. PLACE

DO USUALLY BATTERIES? TAPE THEM UP!

Get More Likes, Comments and Shares
Boost this post for \$10 to reach up to 1,800 people.

313 People Reached 3 Engagements [Boost Post](#)

Van Samson Del Castillo, Ellen Buxton-Hall and Steve Kleinz

Like Comment Share

Performance for Your Post

313 People Reached

3 Likes, Comments & Shares

3 Likes	3 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

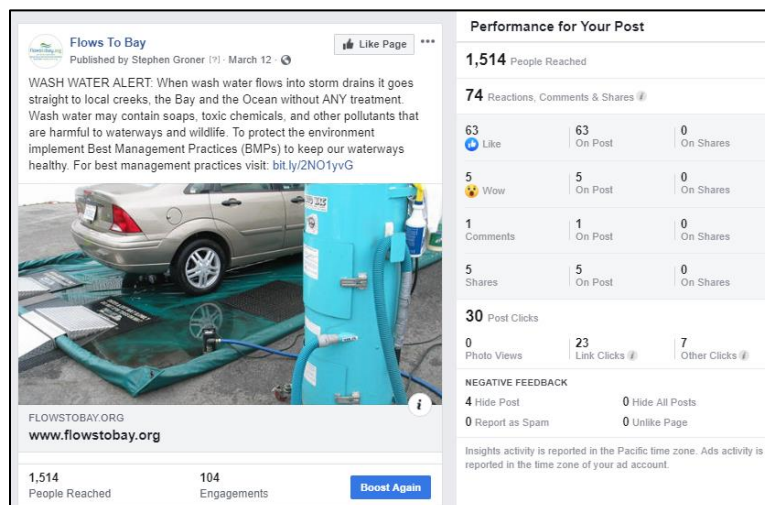
0 Post Clicks

0 Photo Views	0 Link Clicks	0 Other Clicks
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NEGATIVE FEEDBACK

3 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts



Flows To Bay
Published by Stephen Groner [?] · March 12

WASH WATER ALERT: When wash water flows into storm drains it goes straight to local creeks, the Bay and the Ocean without ANY treatment. Wash water may contain soaps, toxic chemicals, and other pollutants that are harmful to waterways and wildlife. To protect the environment implement Best Management Practices (BMPs) to keep our waterways healthy. For best management practices visit: bit.ly/2NO1yvG

FLOWSTOBAY.ORG
www.flowstobay.org

1,514 People Reached 104 Engagements [Boost Again](#)

Performance for Your Post

1,514 People Reached

74 Reactions, Comments & Shares

63 Like	63 On Post	0 On Shares
5 Wow	5 On Post	0 On Shares
1 Comments	1 On Post	0 On Shares
5 Shares	5 On Post	0 On Shares

30 Post Clicks

0 Photo Views	23 Link Clicks	7 Other Clicks
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NEGATIVE FEEDBACK

4 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.

Figure 7-9. Examples of FY 2018/19 Social Media Posts Promoting Watershed Stewardship Collaborative Efforts

C.7.f. School-Age Children Outreach

Overview

During FY 2018/19, SMCWPPP partnered with two San Mateo County agencies to implement school-age children outreach. The first effort was coordinating with the San Mateo County Office of Sustainability and its Youth Exploring Sea Level Rise Science Program (YESS). The schools participating in the YESS program this school year were: Woodside High School, Terra Nova High School, Half Moon Bay High School, Menlo-Atherton High School, Jefferson High School, and Westmoor High School. The team’s goal was to reach 600 students, with 34% from disadvantaged communities.

Through this effort, SMCWPPP staff was included in the pool of speakers that participating YESS program teachers could use as a resource for in-class presentations. These classroom presentations focused on explaining urban runoff and stormwater pollution as well as green infrastructure (GI) and

how it mitigates stormwater pollution. Students were asked to fill out a short post-lesson assessment after the presentation to ensure they comprehended the presentation content and were also given stormwater materials as a reference. Students were able to accurately summarize both what stormwater and green infrastructure were and identify GI benefits. SMCWPPP staff presented to a total of 28 high school students who were members of the Green Academy at Woodside High School.

In addition, the YESS Program partnership allowed SMCWPPP to draft a Next Generation Science Standard lesson plan that will be integrated into the YESS 2019/20 curriculum and made available for teachers to use in their classrooms. The drafted lesson plan aimed to teach high school students about stormwater, water quality, and GI as a means of managing stormwater as a resource in students' communities. The lesson provided background information and helpful resources on stormwater and GI, describing the evolution of pre-urban development to urbanization, and what a balanced development that utilizes green infrastructure may look like. The lesson plan allowed students to get familiar with the major types of GI, such as rain gardens, bioswales, rain barrels/cisterns, green roofs, and permeable pavement. With this information in mind, students would then be asked to do an exploratory assignment on their own school campuses to access possible sites and locations for GI implementation.

The other agency partnership in FY 2018/19 was with the San Mateo County Office of Education (COE). The collaboration between the COE and SMCWPPP formed the Clean Water Pathways Teacher Fellowship. Through this innovative professional development program for teachers grades K-12, SMCWPPP developed and implemented comprehensive, standards-aligned, project-based learning units that focus on the environmental, social, and economic impacts of stormwater pollution and watershed management.

This cohort-based professional learning opportunity was built around four main components:

1. Summer Institute: Three-day professional learning that occurred on June 25-28 centered around building knowledge and skills and beginning to design a unit of study that will evolve and implement during the fall and winter.
2. Community Partnerships: Connections with community-based partners that support clean water pathways efforts in school communities. Our partnerships included the San Mateo County Office of Sustainability, the Marine Science Institute, and the Silicon Valley Clean Water Treatment Plan.
3. Guided Implementation and Practice: Ongoing teacher support through coaching and collaboration to occur between August and December 2019.
4. Final Deliverables: Development of a Unit of Study focused around water issues, and delivery of a capstone presentation that captures how teachers implemented within their classroom and community. This capstone presentation will occur in FY 2019/20.

Benefits to teachers were promoted as the following:

- A \$500 stipend upon completion of the program;
- A deep understanding of the environmental, social, and economic issues related to stormwater pollution prevention;
- The confidence and ability to successfully use problem-based learning strategies, including: inquiry, systems thinking, and civic engagement;

- Connection with local stormwater community-based organizations, and hands-on experiences to enhance classroom teaching;
- Increased student engagement and comprehension, and greater and lasting educational impact on your students;
- The tools and resources to make a significant impact in your school community towards cleaner waterways; and
- The chance to collaborate and share best practices with fellow teachers within their cohort.

Benefits to students with a Clean Water Pathways teacher were promoted as:

- Motivation to learn, including enthusiasm for and interest in school;
- Knowledge gains across multiple disciplines, including environmental topics, science, math, and more;
- Academic skills, critical thinking, oral communication, analytical skills, problem solving, and higher-order thinking;
- Familiarity and comfort with challenging environmental topics, and a sense of stewardship for nature;
- Emotional and social skills, such as self-esteem, character development, team work, and leadership skills; and
- Knowledge, skills, and experiences to act individually and collectively on environmental service and stewardship.

Recruitment for this program successfully enrolled 14 teachers from the region, with nine of them being specifically from San Mateo County. These teachers encompassed a variety of locations, teaching disciplines, and grade levels, as shown in Table 7-7. Participating teachers in the Clean Water Pathways program will be provided with ongoing guidance and support throughout the first half of the school year and will also receive a \$500 stipend upon program completion. As a part of the three-day professional learning session, teachers filled out two exit interviews that provided feedback on the day’s activities and additional comments or questions they might have had, which are listed in Tables 7-8 and 7-9.

The continuation and results of the Clean Water Pathways program will be reported in the FY 2019/20 Annual Report.

Table 7-7. Teachers Who Participated in the Clean Water Pathways Program

Teacher Name	Grades Taught	School Name	School District
Elizabeth McFeeters	7-8 Science	The Bayshore School	Bayshore ESD
James Anderson	6-7 Social Studies	Borel Middle School	San Mateo-Foster City SD
Oceane Stanek	4	George Hall Elementary	San Mateo-Foster City SD
Racquel Fiz	K	Hoover Elementary	Redwood City SD
Barbara Mahoney	TK	Hoover Elementary	Redwood City SD
Christopher Reily	1	Taft Community School	Ravenswood SD
Kristin Duriseti	9-12 Math	Menlo-Atherton High School	Sequoia Union HSD
Charlene Calaunan	4-8 Math	St. Dunstan School	Private – Millbrae
Kelli Swan	K	Sea Crest School	Private – Half Moon Bay

Table 7-8. Summary of Teacher Feedback After Day 1 of Summer Institute

Teacher Name	Reflect back on all the activities from the day, and share 1-2 key takeaways you had from these activities:	Please share any questions, comments, or concerns you have from today's activities.
James Anderson	I learned today that only 3% of water is fresh water, and only 1% of fresh water is drinkable. A connection that I had with today's material and my personal life is I want to test the water quality in my classroom. Students say that the water in my neighbor's classroom is the best water in the school. Hopefully, this water source is not similar to the water pump on Broad Street.	This is the best professional development I have ever attended. I plan on using the John Snow lesson when we learn about diseases.
Charlene Calaunan	I love the impactful way you present your problems through activities. I'm already starting my unit.	NA
Elizabeth McFeeters	I found the claim evidence reason activity that we use for the study of London really helpful in building my awareness and urgency for solving the problem of water contamination.	I enjoyed the activities and experiments. It was fun to mark the X's on the map and I am looking forward to trying it with my students.
Kelli Swan	The water calculator made the biggest impact on me. I am now thinking how I can make this information developmentally appropriate for kindergarten. I was also happy to see that my water consumption is lower than the national average and I plan to decrease it even more.	NA
Kristin Duriseti	Because I am less familiar with this topic, it's more challenging for me to think about the connections to math. I really liked the cholera case study and could see the connections to math pretty easily. I am really thinking about starting my year with statistics both to practice the math skills and to build a need to learn the math. I can imagine ways to explore data presentation, which is important as a communication tool, but often gets jettisoned.	Having a great time! I can feel my brain growing. :-)
Christopher Reilly	I really thought about how scarce usable water is. I have a better understanding of how our water system works. The London case study re-enforces how important it is to develop and maintain a good clean water system. I also really want to do the watershed activity with my class.	NA
Barbara Mahoney	In the beginning I felt overwhelmed about the size of the population and the lack of water but after listening to Susan I feel hopeful of the progress we are making in water recycling.	The day flew by!!!!
Raquel Fiz	I learned a lot about what items we can flush in our toilets, and why. I am planning to talk with my students about it. I have a better understanding about water sources, and water sheds, and the importance of keeping them clean.	NA
Oceane Stanek	I really liked the different activities that were presented to us (Water Cycle game, model with the mapping, the interesting case study). They were all very engaging, very well prepared and planned for. It came to me ideas and inspirations for my own teaching. I love that all the articles and links are there so that we can easily implement or modify for our own use. This is very helpful and interesting. I am very enjoying the chance to think deeply about this topic for our students.	I enjoyed the activities and experiments. It was fun to mark the X's on the map and I am looking forward to trying it with my students.

Table 7-9. Summary of Teacher Feedback After Day 2 of Summer Institute

Teacher Name	Reflect back on all the activities from the day, and share 1-2 key takeaways you had from these activities:	Please share any questions, comments, or concerns you have from today's activities.
James Anderson	Today I learned about engineering practices/techniques to combat rising sea levels. What I found to be most troubling about these numerous solutions was that they are all extremely expensive. In my mind, it is hard to comprehend putting a price on human lives. A connection with today's material and my personal life is that rising sea levels and coastal storms could affect flooding in Foster City where I live. Luckily, I live on the second floor and have an ocean kayak ready to go!	It was awesome to hear the County Office of Sustainability's perspective on possible solutions to combat rising sea levels.
Charlene Calaunan	I have been thinking about how to make environmental solutions to include more skills and cross-curricular based. I had some anxiety from seeing so many problems, but I know I have to scale it down to 1-2 to solve. That thought translates to how my students can perceive a problem and I hope I can keep that momentum with teaching understanding water solutions. Pun intended.	NA
Elizabeth McFeeters	I have realized that our school has implemented a lot of green solutions and I would love for students to explore and find on their own what the school is doing to help with water conservation and stormwater. I would love to implement an art contest for storm drainage.	I really appreciated the opportunity to go and sit by the lagoon to reflect! My emotions were heavy and this was a great pre-activity that lead into solutions design. Thank you so much for your organization and facilitation this week. Can't wait for tomorrow!
Kelli Swan	I am very interested in rain gardens! I would like to investigate this more and see how it would work at my school. I also want to research how climate change/temperature increase is impacting the trout population (which links Trout in the Classroom program).	NA
Kristin Duriseti	Looking at all the maps (great resource!) made me really think about the distribution of water resources, which has important local and global equity issues. We didn't touch on these, but could really tie into social science explorations.	I think it would be helpful to re-norm, if needed, especially around step-up/step-down (not necessarily for tomorrow, but in other workshops).
Christopher Reilly	A year from now it will be important that I am teaching students basic causes and effects of climate change and what students can do to make a difference. Students will be more aware of what to do in a drought, understand about water contamination and how flooding effects the area they live in.	NA
Barbara Mahoney	Learning about the contaminates in the water was a real eye opener.	I enjoy the flow of the day having different speakers and activities instead of lecturing. Thank you
Raquel Fiz	I like the ideas and information that we learn today, on how water is treated and where it goes. I am going to include it in my lesson tomorrow. I am planning to make a map of the origin and distribution of water, so they can see where it comes from and that it takes effort and work to cleaned to waste it.	NA

Teacher Name	Reflect back on all the activities from the day, and share 1-2 key takeaways you had from these activities:	Please share any questions, comments, or concerns you have from today's activities.
Oceane Stanek	I enjoyed the emotional strategies that we experienced and discussed today as more of this traumatic events and emotions that are happening to our students and they need to be exposed and educated on these topics but there are emotional feelings associated with these difficult topics. I also enjoyed the field trip and seeing the real life application and what we can do as part of solutions that would impact our community. Lastly, I enjoyed learning about new facts and information to further my understanding of the environment and the newest ideas in place.	NA

FUTURE ACTIONS

In FY 2019/20, SMCWPPP plans to continue working with the PIP Subcommittee to conduct the following activities to assist San Mateo County Permittees to comply with MRP Provision C.7:

- Continue to grow the reach, engagement, and following of all SMCWPPP social media platforms with posts and advertisements;
- Promote county outreach events through the website and social media;
- Redesign, maintain and update SMCWPPP’s website (flowstobay.org) to revise and update the content, make the site more user friendly, update technical specifications to support the PIP subcommittee, and improve overall user experience and user interface;
- Continue to support the Rain Barrel Rebate Program in partnership with BAWSCA, with C/CAG providing ongoing funding;
- Create a comprehensive program that shares eco-friendly and stormwater pollution prevention practices, rebates and educational workshops with residents; and
- Build upon the partnership with the San Mateo County Office of Education to expand the school outreach program within San Mateo County schools and curriculum.

SECTION 8

C.8 WATER QUALITY MONITORING

On behalf of San Mateo County MRP Permittees, SMCWPPP performs water quality monitoring activities in compliance with MRP Provision C.8. Some of this work is accomplished through participation in BASMAA regional projects.

Per Provision C.8, SMCWPPP will submit an Integrated Monitoring Report (in lieu of the annual Urban Creeks Monitoring Report) to the Regional Water Board by March 31, 2020. SMCWPPP's previous Integrated Monitoring Report was submitted March 2014 and covered water quality monitoring data collected October 1, 2011 through September 30, 2013. The Integrated Monitoring Report (due March 31, 2020) will report on all water quality monitoring data collected since the March 2014 Integrated Monitoring Report and will contain the following:

1. A Water Year Summary Table, as described in Provision C.8.h.iii, containing information pertaining to the fourth year monitoring data;
2. A comprehensive analysis of all data collected pursuant to Provision C.8. since the previous Integrated Monitoring Report (other pertinent studies may be included);
3. For Pollutants of Concern (POCs), the report shall include methods, data, calculations, load estimates, and source estimates for each POC parameter, as applicable; and
4. A budget summary for each monitoring requirement and recommendations for future monitoring.

In addition, in accordance with MRP Provision C.8.f., Pollutants of Concern (POC) Monitoring, SMCWPPP will submit by October 15, 2019 a report describing the POC Monitoring tasks accomplished in WY 2019 and the planned allocation of sampling effort for POC Monitoring in WY 2020. The report will include monitoring locations, number and types of samples collected, a description of the objectives of the sampling (i.e., management question addressed), and the analytes measured. However, per Provision C.8.h., the results of the monitoring will not be included, but instead will be documented in the Integrated Monitoring Report, as described above.

SECTION 9

C.9 PESTICIDE TOXICITY CONTROLS

INTRODUCTION

The primary objective of MRP Provision C.9 Pesticides Toxicity Control is to prevent the impairment of urban streams by pesticide-related toxicity. As such, Provision C.9 helps implement the *TMDL for Diazinon and Pesticide-related Toxicity for Urban Creeks* in the San Francisco Bay region. Permittees are required to implement a pesticide toxicity control program that addresses their own use of pesticides and use by others within their jurisdictions. The focus is on pesticides that pose a threat to water quality, including applications with the potential to enter the municipal stormwater conveyance system.

Most MRP-required Provision C.9 tasks are implemented individually by each San Mateo County Permittee. SMCWPPP helps agency staff to understand MRP requirements and develops various tools that assist agency staff to effectively plan, implement, and report on compliance activities. SMCWPPP's assistance with MRP Provision C.9 is coordinated through SMCWPPP's Parks Maintenance and Integrated Pest Management (IPM) Work Group. The exception is Provision C.9.h, the public outreach portion of Provision C.9, which is implemented through the SMCWPPP Public Information and Participation (PIP) component.

IMPLEMENTATION OF MRP PROVISIONS

During FY 2018/19, SMCWPPP performed a number of tasks to assist San Mateo County Permittees with implementation of Provision C.9, with input and assistance provided by the Parks Maintenance and IPM Work Group. SMCWPPP's accomplishments included the following:

- Held one meeting of the Parks Maintenance and IPM Work Group;
- Presented information on pesticide control requirements in the MRP at a landscape IPM training workshop organized by the San Mateo County Department of Agriculture (County Ag);
- Continued coordinating with County Ag;
- Participated in relevant BASMAA and CASQA activities;
- Continued to maintain retail partnerships at 10 top-tier stores (e.g., Home Depot and Hassett Ace Hardware) within San Mateo County through a partnership with Master Gardeners, including ordering materials, organizing outreach collateral, checking in with store managers, and providing outreach to residents;
- Through a partnership with Master Gardeners, conducted outreach at community events to educate customers about less toxic alternatives to commercial pesticides and fertilizers, including conducting 10 in-store tabling events for store customers;
- Updated a pesticide tracking template to assist San Mateo County Permittees comply with pesticide tracking and reporting requirements in MRP Provision C.9.a.; and

- Prepared the *Pesticides Source Control Actions Effectiveness Evaluation* (Appendix 9).

More information on each of these accomplishments is provided below.

Parks Maintenance and IPM Work Group

The Parks Maintenance and IPM Work Group provides the opportunity for sharing information about MRP Provision C.9 requirements and approaches for achieving compliance. Richard Holtz from the City of Burlingame is the Work Group Chair. The Parks Maintenance and IPM Work Group met one time in FY 2018/19 with good participation by municipal staff, as shown by the attendance list (Appendix 9).

Coordination with San Mateo County Department of Agriculture

County Ag staff attended the meeting of the Parks Maintenance and IPM Work Group and received information on water quality issues and the MRP.

SMCWPPP did not conduct an IPM workshop in FY 2018/19. However, County Ag held a landscape IPM workshop on Tuesday, April 16 at the City of Foster City's Library Community Center. The workshop was attended by 64 municipal staff, pest control and landscape maintenance contractors, and others (e.g., staff from State agencies and farmers). The workshop included the following topics:

- Pesticide storage, transportation and disposal;
- Invasive species and disease;
- Pesticide laws and regulation updates;
- Weed management;
- Pollinator protection;
- IPM in urban settings; and
- Pesticide toxicity control requirements in the MRP.

SMCWPPP staff provided the above presentation on the pesticide toxicity control requirements in the MRP.

Pesticide Tracking Template

In FY 2016/17, SMCWPPP developed a template in Excel to assist with pesticide tracking and reporting requirements in MRP Provision C.9.a. The pesticides tracking template utilizes a lookup list of pesticides and active ingredients compiled from data tables available on the Department of Pesticide Regulation (DPR) website. The template was updated during FY 2018/19 with the current two years of pesticide product data from the DPR website.

Participation in BASMAA and CASQA

MRP Provision C.9.f requires Permittees to track and participate in regulatory processes relevant to pesticide toxicity control. During FY 2018/19, SMCWPPP accomplished this task by working with BASMAA and CASQA. For additional information, see *Pesticides Subcommittee Annual Report and Effectiveness Assessment - 2018-2019, California Stormwater Quality Association, Final Report, August 2019* (Appendix 13). In addition, SMCWPPP staff stayed current with pesticide controls and regulatory efforts by

participating in selected CASQA Pesticide Committee meetings.

Pesticide Source Control Evaluation

MRP Provision C.9.g. requires Permittees to evaluate the implementation of source control actions relating to pesticides, including conducting the following tasks:

- Evaluate the effectiveness of control measures implemented by staff and contractors;
- Evaluate the attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (collected by Permittees, research agencies, and/or State agencies);
- Identify improvements to existing control measures and/or additional control measures, if needed, to attain targets with an implementation time schedule; and
- Discuss improvements made by each Permittee in implementing pesticide source control actions in the preceding five years, and enhancements that each Permittee will focus on in the subsequent permit terms.

SMCWPPP worked with San Mateo County Permittees to conduct this evaluation. The results are described in a report included in Appendix 9.

Point of Purchase Outreach

SMCWPPP conducted point-of-purchase outreach to home improvement store consumers at top-tier stores (e.g., Home Depot and Hassett Ace Hardware) with tips for proper use and disposal of pesticides and other lawn and garden chemicals. Through a partnership with experts at the UC Master Gardeners of San Mateo and San Francisco Counties, SMCWPPP was able to provide the public with credible and reliable information about pesticides and IPM at tabling events. Master Gardeners educated consumers about proper pesticide use, less toxic pesticide options, and effective alternatives to pesticides. Tabling events were held at larger store locations to maximize the outreach effort. Tabling events were promoted via Facebook and municipal staff (e.g., SMCWPPP PIP Subcommittee members).

SMCWPPP's in-store tabling events consisted of educating consumers about: (1) stormwater runoff, (2) the role residents play in reducing pesticide use, (3) the less-toxic pesticides sold in the store, and (4) proper usage of pesticides, current pest problems, and less-toxic solutions to current pest problems. A total of 161 consumers were engaged with directly. Table 9-1 provides information about the 10 tabling events held throughout FY 2018/19.

Program materials were provided directly to the public via point-of-purchase displays and during tabling events, a time that residents may be most receptive to the IPM message. Additionally, shelf talkers were placed next to products certified less toxic by the Our Water Our World (OWOW) program. All of these efforts helped to promote the regional OWOW program. Table 9-2 displays the 10 stores in San Mateo County that currently participate in the OWOW point-of-purchase program.

Table 9-1. FY 2018/19 IPM in-Store Tabling Events in San Mateo County

Store	Date of Tabling Event	Number of People Reached	Number of Surveys Taken
Home Depot, Colma	4/20/2019	10	4
Home Depot, Daly City	4/6/2019	25	5
Home Depot, City of San Mateo	3/30/2019	41	8
Home Depot, City of San Mateo	12/1/2018	17	5
Home Depot, Daly City	11/17/2018	12	2
Home Depot, East Palo Alto	11/13/2018	8	2
Hassett Ace Hardware, Redwood City	11/10/2018	9	8
Hassett Ace Hardware, City of San Mateo	11/5/2018	10	0
Hassett Ace Hardware, Belmont	11/3/2018	5	0
Home Depot, City of San Mateo	10/20/2018	24	9

Table 9-2. San Mateo County Hardware Stores Participating in OWOW during FY 2018/19

Store Name	Address	City
Brisbane Hardware	1 Visitacion Ave.	Brisbane
Hassett Ace Hardware	1029 Alameda de las Pulgas	Belmont
Hassett Ace Hardware	545 1 st Ave.	San Mateo
Hassett Ace Hardware	111 Main St.	Half Moon Bay
Hassett Ace Hardware	282 Woodside Plaza	Redwood City
Home Depot	2 Colma Blvd.	Colma
Home Depot	303 Lake Merced Blvd.	Daly City
Home Depot	1781 E Bayshore Rd.	East Palo Alto
Home Depot	2001 Chess Dr.	San Mateo
Lyngso Garden Materials, Inc.	345 Shoreway Rd.	San Carlos



Figure 9-1. FY 2018/19, San Mateo County IPM Tabling Events and Point-of-Purchase displays; Clockwise from top left: Home Depot literature rack display, Master Gardener tabling event in Redwood City, Our Water Our World shelf-talkers on display in Belmont, and Master Gardener tabling event in the City of San Mateo.

Pest Control Contracting Outreach

During FY 2018/19, SMCWPPP also implemented outreach that directly targeted residents and pest control contractors, to (1) encourage San Mateo County communities to reduce their reliance on toxic pesticides that threaten water quality, (2) encourage public and private landscape irrigation practices that minimize pesticide runoff, (3) promote appropriate disposal of unused pesticides, and (4) encourage residents to hire pest control professionals that use IPM practices.

SMCWPPP conducted this outreach via popular social media platforms Facebook and Twitter. Examples of social media posts are shown in Figure 9-2. The following is a breakdown of posts related to pest control promoted during FY 2018/19:

Facebook

- 33 posts;
- 402 engagements (likes, comments, shares, and link clicks); and
- 11,793 reach.


Twitter

- 24 tweets;
- 40 engagements (likes, replies, retweets, and link clicks); and
- 11,349 impressions.


In addition to social media posts, OWOW fact sheets detailing IPM approaches to various pest-related problems, as well as resources for hiring pest control companies and disposing of pesticides responsibly, were stocked in literature racks at the hardware stores listed in Table 9-2.

Outreach to Pest Control Contractors


To help fulfill the MRP Provision C.9.e.ii.(3) requirement for outreach to pest control operators, the Countywide Program mailed a letter to all licensed and cleared pest control operators in San Mateo County, using the license lookup website for the California Structural Pest Control Board. The letter included information on the linkage between the application of pesticides for structural pest control and water quality impacts via stormwater runoff, referencing recent data that shows pesticide related impacts in local creeks. The letter also included a request for businesses to practice IPM not only to protect local waters, but also to become a certified IPM pest control operator and have individual employees become certified if the business is already certified. Several options for third party certification programs were provided with links to websites for more information. The letter, which was mailed to 47 businesses, is shown in Figure 9-3.

Flows To Bay
Published by Stephen Groner [?] · April 19 · 

Looking to control pests in your garden and home AND keep harmful pesticides from flowing to the bay and ocean? Check out our list of pest control companies servicing SMC that offer IPM strategies: bit.ly/2AMT2aM







FLOWSTOBAY.ORG
IPM Pest Control Operators | Flowstobay: San Mateo Countywide Water Pollution Prevention Program

 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.


233 People Reached **3** Engagements [Boost Post](#)

1 Share

 Like  Comment  Share 



Performance for Your Post

233 People Reached

1 Likes, Comments & Shares 

0 Likes	0 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
1 Shares	1 On Post	0 On Shares


2 Post Clicks

0 Photo Views	1 Link Clicks 	1 Other Clicks 
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NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page


Reported stats may be delayed from what appears on posts

Flows To Bay
Published by Stephen Groner [?] · August 19, 2018 · 


Got pests? Integrated pest management (IPM) can solve your pest problems while minimizing risks to the environment. See a list of San Mateo County IPM pest operators here: <http://bit.ly/FTBIPM>







FLOWSTOBAY.ORG
IPM Pest Control Operators | Flowstobay: San Mateo Countywide Water Pollution Prevention Program

 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.


319 People Reached **5** Engagements [Boost Post](#)

 Shirley Laws and Rainer Specht 1 Comment

 Like  Comment  Share 



Performance for Your Post

319 People Reached

4 Likes, Comments & Shares 

2 Likes	2 On Post	0 On Shares
2 Comments	2 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

1 Post Clicks

0 Photo Views	0 Link Clicks 	1 Other Clicks 
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NEGATIVE FEEDBACK

4 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts



Figure 9-2. Examples of Social Media Posts Promoting Pesticide Pollution Prevention



555 County Center
Redwood City, CA 94063

P 650.599.1406
flowstobay.org

April 22, 2019

Pest Control Professionals:

Help Protect San Mateo County Waterways from Pesticides in Stormwater Runoff

Pest control professionals in San Mateo County play an important role in keeping pesticides out of our local creeks, the San Francisco Bay, and the Pacific Ocean. The City/County Association of Governments of San Mateo County – a joint powers agency of the 20 cities and towns and the County – administers the San Mateo Countywide Water Pollution Prevention Program, which assists local governments with reducing pollution in stormwater runoff. **We need your help to protect our waterways** from pesticides that may be mobilized during storm events after being applied in the urban environment.

Water quality monitoring data in San Mateo County show ongoing toxicity impacts in local creeks related to the application of structural pest control products, including pyrethroids and fipronil, among others. Pesticide toxicity is a critical water quality problem, and we hope you will help minimize the negative effects on water quality and aquatic life by **adopting Integrated Pest Management (IPM) practices and becoming a certified IPM pest control operator**. If your business is already certified, please consider having individual employees certified as well.

There are several options for individual or business certifications of your business exist in San Mateo County:

- **EcoWise Certification** – EcoWise Certified is an independent, third-party certification program that focuses on prevention-based pest control. Learn more: <http://www.ecowisecertified.com>.
- **Green Pro Certification** – Certification offered by the National Pest Management Association (NPMA). Visit <http://www.certifiedgreenpro.org> for more information.
- **Green Shield Certification** - Operated by the IPM Institute of North America. Learn more: <http://www.greenshieldcertified.org>.

If you need more information, please contact Reid Bogert at (650) 599-1433 or rbogert@smcgov.org. You can find more information about IPM practices in San Mateo County at <https://www.flowstobay.org/pestcontrol>.

Sincerely,



Matthew Fabry, P.E.
Manager, Countywide Water Pollution Prevention Program

A program of the City/County Association of Governments (C/CAG)

Figure 9-3. Copy of the Letter Sent to Licensed Pest Control Operators

FUTURE ACTIONS

SMCWPPP activities planned for FY 2019/20 to assist San Mateo County Permittees comply with MRP requirements in Provision C.9 include the following:

- Continue to assist San Mateo County Permittees implement their IPM programs and policies, with input and assistance provided by the Parks Maintenance and IPM Work Group;
- Hold one Parks Maintenance and IPM Work Group meeting;
- Continue to coordinate with County Ag, as needed;
- Conduct a landscape IPM training workshop;
- Continue participating in relevant BASMAA and CASQA activities;
- Continued to maintain retail partnerships at top-tier stores within San Mateo County, using signage and materials developed by BASMAA for the point-of-purchase program;
- Continue conducting outreach at community events to educate customers about less toxic alternatives to commercial pesticides and fertilizers;
- Perform outreach messaging to residents on best practices for hiring pest control contractors certified in IPM via fact sheets, SMCWPPP's website (flowstobay.org), social media posts, and a quarterly newsletter;
- Send direct mailers to pest control professionals that encourage IPM certification and education; and
- Conduct direct outreach to pest control professionals by speaking with them directly regarding their certifications and IPM practices.

SECTION 10

C.10 TRASH LOAD REDUCTION

INTRODUCTION

MRP Provision C.10 Trash Load Reduction tasks are implemented by each San Mateo County Permittee. SMCWPPP helps agency staff to understand trash load reduction requirements and develops various tools needed to effectively plan, implement, and report on compliance with the requirements. Provision C.10 requires Permittees (as applicable) to:

- Reduce trash discharges from 2009 levels by 70% by July 2017 and 80% by July 2019;
- Ensure that lands they do not own or operate but that are plumbed directly to their storm drain systems in Very High, High and Moderate trash generation areas are identified and equipped by full capture systems or managed to a level equivalent to full capture systems;
- Install and maintain full capture systems that treat a mandatory minimum acreage;
- Assess trash reductions associated with control measures other than full capture systems using a visual assessment protocol;
- Develop and implement a receiving waters trash monitoring program plan;
- Annually cleanup and assess a mandatory minimum number of creek/shoreline trash hotspots; and
- Maintain a Long-Term Trash Load Reduction Plan designed to achieve 100% trash reduction by July 2022.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP performs a variety of tasks to assist San Mateo County Permittees with implementation of MRP Provision C.10 and the requirements listed above, with input and assistance provided by the SMCWPPP Trash Subcommittee and Litter Work Group. FY 2018/19 accomplishments included the following:

- Coordinated and facilitated three meetings of SMCWPPP's Trash Subcommittee and two meetings of SMCWPPP's Litter Work Group;
- Assisted San Mateo County Permittees in delineating trash full capture treatment areas and managing trash full capture information in GIS (currently nearly 10,000 acres are treated by full capture systems in San Mateo County);
- Continued to implement SMCWPPP's Trash Assessment Strategy, including conducting roughly 670 On-land Visual Trash Assessments (OVTAs) at about 220 sites and maintaining the Program's online OVTA database to allow San Mateo County Permittees access to timely load reduction estimates;
- Continued providing guidance to San Mateo County Permittees on MRP operation and maintenance requirements and standard operating procedures for trash full capture systems;

- Compiled and standardized data from 38 trash hot spot assessments and cleanups, and entered the data into the SMCWPPP hot spot database;
- Finalized and distributed the *Litter Reduction Toolkit for Multi-family Dwellings* which provides guidance to San Mateo County Permittee staff on BMPs for reducing litter at properties in San Mateo County (flowstobay.org/litter-reduction-toolkit), and began creating a fact sheet for Permittees to use;
- Coordinated with the SMCWPPP Public Information and Participation (PIP) Subcommittee on countywide school outreach and countywide litter campaign branding efforts;
- Responded to Regional Water Board staff requests for information on existing, planned and potential locations for trash full capture systems that are mutually beneficial to San Mateo County Permittees and Caltrans;
- Coordinated with Caltrans on trash capture efforts, including the installation of trash full-capture systems through cooperative implementation agreements;
- Provided guidance to each San Mateo County Permittee on the recommended approach to further characterize trash generation levels in areas >10,000 ft² draining to private inlets connected to its MS4;
- Conducted qualitative trash receiving water monitoring at 30 creek/channel sites and conducted a field training for San Mateo County Permittee staff on protocols included in the *BASMAA Receiving Waters Trash Monitoring Program Plan*;
- Participated in the development and submittal of the *BASMAA Receiving Waters Trash Monitoring Program Plan Preliminary Report*, in compliance with MRP provision C.10.b.v.; and
- Assisted San Mateo County Permittees in developing information necessary for reporting trash load reductions with their FY 2018/19 Annual Reports.

More information on each of these accomplishments is provided below.

Trash Subcommittee

SMCWPPP's Trash Subcommittee assists San Mateo County Permittees with the implementation of new or enhanced trash control measures and actions required by the MRP. The Trash Subcommittee generally meets quarterly. Additional meetings are scheduled as necessary to address high priority issues.

During FY 2018/19, SMCWPPP staff facilitated three Trash Subcommittee meetings, which were chaired by Chris Sommers (EOA, Inc.). The Trash Subcommittee continued to have excellent participation by municipal staff and other stakeholders as shown in the FY 2018/19 attendance list (Appendix 10).

During the Trash Subcommittee meetings in FY 2018/19, Subcommittee members discussed and provided input on the following topics/projects:

- C.10 requirements in the MRP;
- SMCWPPP Litter Work Group activities;
- New or planned installations of trash full capture systems in San Mateo County Permittee jurisdictions;
- BASMAA's Receiving Water Monitoring Plan;

- The FY 2018/19 Annual Report format for Provision C.10;
- Implementation of trash control measures in private drainages >10,000 ft²;
- Opportunities for collaboration with Caltrans;
- SMCWPPP Trash Assessment Strategy, including OVTAs conducted in Trash Management Areas (TMAs); and
- Potential vector control issues with trash full-capture devices.

Demonstration of Trash Load Reductions (C.10.a.ii)

SMCWPPP developed the *Pilot Trash Assessment Strategy* (Strategy) in FY 2013/14 on behalf of San Mateo County Permittees. The Strategy was submitted to the Regional Water Board on February 3, 2014 as part of San Mateo County Permittee Long-Term Trash Load Reduction Plans, and was intended to serve as version 2.0 of the trash tracking method required by the Permit. SMCWPPP began to implement the Strategy in FY 2013/14 and continued to implement it at a full-scale in FY 2018/19 on behalf of (and in collaboration with) all San Mateo County Permittees.

The Strategy is intended to provide information on the magnitude and extent of trash reductions associated with stormwater in the San Mateo County. It is consistent with trash monitoring, assessment and reporting requirements in the MRP and is primarily designed to answer the following core management question:

Have MS4 trash load reduction targets (i.e., 40%, 70%, and No Adverse Impacts) been achieved by San Mateo County Permittees?

The primary environmental and programmatic indicators that SMCWPPP and San Mateo County Permittees currently track to answer this core management question are:

1. **Full Capture Systems** – The extent of areas effectively treated by trash full capture devices and the operation and maintenance of these devices;
2. **Other Trash Controls** – Reductions in the levels of trash observed on-land and available to enter MS4s;
3. **Source Controls** – Reductions in the levels of litter prone items observed in the environment that are subject to source controls, such as ordinances that limit or prohibit the distribution of specific types of items;
4. **Additional Creek and Shoreline Cleanups (Offset)** – The volumes of trash removed via creek and shoreline cleanup events (above and beyond those required by the MRP); and
5. **Direct Discharge Programs (Offset)** – The extent and magnitude of trash removed or prevented from entering a receiving water body from pathways other than stormwater that are directly impacting those water bodies (e.g., illegal dumping or illegal encampments).

In selecting the indicators above, San Mateo County Permittees recognized that no one indicator can provide the information necessary to effectively determine progress made in reducing trash discharged from MS4s. SMCWPPP's methods used to collect or track information on the primary indicators 1 - 4 listed above are briefly described below, along with summaries of associated activities conducted by SMCWPPP in FY 2018/19. Methods used to assess indicator 5 have not been implemented to-date because none of the San Mateo County Permittees has submitted or implemented an optional direct discharge plan as

outlined in the MRP. Additional information and the results of data collected to support indicators 1 - 4 are found in Section 10, Provision C.10.b.ii., Parts A and B, of individual San Mateo County Permittee FY 2018/19 Annual Reports.

1. Full Capture Systems (Including Operation and Maintenance)

Devices and facilities meeting the trash full capture design criteria described in the MRP and certified by the State Water Resources Control Board (State Water Board) are effective trash controls if adequately maintained to ensure their capture efficiency. Consistent with the Long-Term Plan Framework and the State Water Board's Trash Amendments, if a full capture device is maintained effectively then trash from the area draining to the device is effectively reduced to a level of "no adverse impacts" and has achieved the ultimate trash reduction goals outlined in the MRP. Additional trash reductions, therefore, are not needed in areas draining to (and treated by) full capture systems.

From FY 2013/14 through FY 2018/19, SMCWPPP and San Mateo County Permittees have expended considerable time and resources identifying and mapping areas draining to full capture devices, using a combination of fieldwork and desktop Geographical Information System (GIS) analysis. Drainage areas for newly installed full capture devices are delineated and mapped as part of an annual update of individual San Mateo County Permittee full-capture device GIS data layers. As a result, all drainage areas have been delineated for all devices installed to-date in San Mateo County. Nearly 10,000 acres of land area is currently treated by full capture systems in San Mateo County. Trash reductions associated with these areas are calculated based on the baseline trash generation levels established on San Mateo County Permittee baseline trash generation maps.

Additionally, SMCWPPP completed the development of a Model Trash Full Capture Device O&M Verification Program in FY 2015/16. The O&M Verification Program is intended to ensure that devices are operated at a level necessary to maintain their full capture designation. In FY 2018/19, SMCWPPP continued to provide guidance to San Mateo County Permittees on O&M requirements and standard operating procedures developed for San Mateo County Permittees as part of the Model Verification Program. San Mateo County Permittees with full capture devices have an O&M verification program tailored to fit the types of devices in their stormwater conveyance system and the associated maintenance procedures needed to adequately maintain these devices. Individual San Mateo County Permittee Annual Reports provide information regarding O&M of full capture devices and any associated issues with the devices (see Section 10, Provision C.10.b.i).

2. Other Trash Control Measures (via On-land Trash Visual Assessments)

In FY 2013/14, SMCWPPP developed a pilot approach to assess trash reductions on land areas that generate substantial levels of trash (i.e., very high, high or moderate trash generation) and are not treated by full capture devices. The approach uses on-land visual trash assessment (OVTA) protocols developed by EOA, Inc. to record changes in the levels of trash on streets, sidewalks and properties over time. The assessment protocols score sites/areas using a 4-tier system (A - D, A being the least amount of trash). The four OVTA scoring categories correspond with the four trash generation rate categories (i.e., very high, high, moderate and low) and the associated weighting factors included in the MRP.

Consistent with the MRP, OVTAs are conducted at randomly selected street/sidewalk sites representing 10% of the applicable street miles in each trash management area (TMA) where trash reductions are being reported by San Mateo County Permittees. OVTAs are conducted at a frequency necessary to confidently detect reductions in trash levels at these sites. Based on the findings of the *Tracking California's Trash* State Water Resources Control Board funded project, conducting between 4 and 6 assessments at a site will allow improvements in trash levels to be detected with an acceptable level of confidence. Currently, SMCWPPP annually conducts roughly 3 assessments at each site and then averages two years of data to calculate trash load reductions in a given fiscal year. For example, in reporting reductions for FY 2018/19, results from assessments conducted in both FY 2017/18 and FY 2018/19 were averaged and used to represent the “current” levels of trash within the applicable land areas.

During FY 2018/19, SMCWPPP staff conducted roughly 670 OVTAs at about 220 assessment sites (averaging 1,000 feet in length). Nearly all sites were assessed at least three times during FY 2018/19. The results of the assessments were incorporated into San Mateo County Permittee trash reduction estimates reported in Section C.10 (Provision C.10.b.ii., Part B) of FY 2018/19 Permittee Annual Reports. Additional assessments are planned for FY 2019/20, consistent with the SMCWPPP Trash Assessment Strategy. The number and location of sites will likely be adjusted based on the findings of the project completed in FY 2018/19 to identify trash generation status on land areas > 10,000 ft² draining directly to San Mateo County Permittee MS4s. Since June 2014, SMCWPPP staff has conducted over 4,000 OVTAs in San Mateo County.

Assessment results are stored in SMCWPPP's online OVTA Database. In FY 2018/19, SMCWPPP staff entered assessment results within one week of conducting an assessment, which provided San Mateo County Permittee staff with timely access to the results.

3. Source Controls (Via Surveys and Characterization Studies)

San Mateo County Permittees are implementing actions to reduce the sale or distribution of litter-prone items and stop litter at its source. These source controls include the adoption and enforcement of ordinances enacted by San Mateo County Permittees to eliminate the distribution of single-use plastic grocery bags and expanded polystyrene (EPS) food service ware in their jurisdictions. To assist San Mateo County Permittees in determining to what degree these ordinances have reduced the level of these products found in the environment, SMCWPPP utilized the findings of a study conducted in Santa Clara County between March 2015 and July 2017. As part of the study, debris and trash were collected from large and small full-capture treatment systems within jurisdictions that have installed these devices.

Results from the project, which characterized the number of bags and amount of EPS observed in trash full capture systems pre- and post-ordinance, indicate that on average 72% fewer single-use plastic grocery bags and 74% less EPS food service ware was observed in storm drains systems after the ordinances went into effect. Along with other lines of evidence, these observed average reductions are used by San Mateo County Permittees to demonstrate trash load reductions associated with the implementation of these ordinances. For additional details on results of the project, see the *Storm Drain Trash Monitoring and Characterization Project Technical Report* provided in Appendix 10.1 of the Santa Clara Valley Urban Runoff Pollution Prevention Program's FY 2015/16 Annual Report.

4. Additional Creek and Shoreline Cleanups (via volumes of trash removed from waterways)

San Mateo County Permittees are also allowed to claim up to a 10% trash load reduction for conducting trash cleanups in local water bodies above and beyond cleanups required by the MRP. SMCWPPP assists San Mateo County Permittees by calculating load reductions associated with these efforts based on the volumes of trash reported. Load reductions associated with these efforts are calculated based on methods described in the MRP and are reported in Section C.10.c. of individual San Mateo County Permittee Annual Reports.

5. Direct Discharge Programs

To-date, San Mateo County Permittees have not submitted or implemented an optional direct discharge plan as outlined in the MRP.

Identification of Trash Generating Areas Directly Connected to MS4s

Provision C.10.a.ii.(b) of the MRP requires that by July 1, 2018 Permittees identify land areas that are greater than 10,000 ft², have very high, high, or moderate baseline levels of trash generation, and a direct connection to their MS4. Additionally, the trash control status of these areas must also be determined. The MRP also requires that these areas are equipped with full trash capture systems or managed with equivalent trash discharge control actions.

To assist San Mateo County Permittees in identifying land areas applicable to this provision and their trash control status, SMCWPPP conducted a project in FY 2017/18. The project identified over 3,500 acres of land (including rooftops) that drain to storm drain inlets located on land areas >10,000 ft² that are directly connected to Permittee MS4s. Results of virtual OVTAs conducted to identify the current trash control status of these land areas are presented in the SMCWPPP FY 2017/18 Annual Report. Maps that illustrate the land areas and trash control status for each San Mateo County Permittee are found on the SMCWPPP website at flowstobay.org/content/municipal-trash-generation-maps.

The results of the trash control status (i.e., trash generation) on these properties that were presented in the SMCWPPP FY 2017/18 Annual Report should be considered preliminary since they were primarily based on desktop, rather than field-based OVTAs. In FY 2018/19, San Mateo County Permittees began conducting field-based OVTAs on these land areas to validate the current trash control status. The results of the area-based OVTAs will be used by San Mateo County Permittees in FY 2019/20 to either revise baseline trash generation maps or demonstrate progress toward MRP trash load reduction goals.¹ If revised, baseline maps will be provided in future San Mateo County Permittee Annual Reports.

Trash Hot Spot Cleanup and Assessment Guidance

Provision C.10.c.i. of the MRP requires Permittees to clean up trash hot spots to a level of “no visual impact” at least annually over the permit term. To assist Permittees in meeting this requirement, SMCWPPP developed the necessary tools (i.e., guidance memorandum, Trash Hot Spot Cleanup Data Collection Form, and Trash Hot Spot Activity Reports) used to report trash hot spot assessment and

¹The City of San Mateo and the County of San Mateo revised their baseline trash generation maps based on evaluations of these properties and included updated trash generation estimates in their FY 2018/19 Annual Reports. A description of the processes used by these San Mateo County Permittees is included in section C.10 of their Annual Reports.

cleanup activities conducted during the reporting period. Trash Hot Spot Activity Reports for each Permittee are included in individual San Mateo County Permittee Annual Reports.

During FY 2018/19, San Mateo County Permittees continued conducting annual cleanups and assessments required by the MRP. Results from this year's annual cleanups indicated that a total of 38 trash hot spot assessments and cleanups were conducted within San Mateo County Permittee jurisdictions. Approximately 142 cubic yards of trash was removed from these hot spots during FY 2018/19.² The timing of annual assessments and cleanups vary among hot spots due to the location of the hot spot, potential for natural resource impacts, crew availability, and other site-specific factors.

BASMAA Trash Receiving Water Monitoring Plan

The MRP requires that Permittees assess the level of trash in local receiving waters to answer specific monitoring/management questions. In FY 2016/17, SMCWPPP agreed to participate in a BASMAA regional project to develop the monitoring plan, including the monitoring design, protocols, and quality assurance/control procedures. The *BASMAA Trash Receiving Water Monitoring Plan* was developed based on the results of an extensive literature review and input from stakeholders (including Regional Water Board staff and non-governmental organizations) and scientific peer reviewers.

The Plan was submitted to the Regional Water Board on June 30, 2017 as required by the MRP. It includes a robust monitoring design to answer monitoring/management questions outlined in the MRP. A total of 225 creek, river and Bay shoreline sites (region-wide) were proposed for monitoring over two years. Results will help inform development of trash monitoring requirements in subsequent permits and provide valuable knowledge to other regions in California where trash monitoring is currently not conducted.

Regional Water Board staff provided comments on the Plan on July 31, 2017. BASMAA submitted a revised Plan in November 2017. Trash monitoring/assessment began in October 2017 in San Mateo County. The Plan was approved by the Regional Water Board's Executive Officer in January 2018.

Monitoring Approach

The Trash Monitoring Plan incorporates two types of monitoring designs. Trash assessments are conducted at: (1) existing probabilistic (random) monitoring sites that were established for the BASMAA's Regional Monitoring Coalition (RMC) Creek Status Monitoring Program; and (2) targeted sites in creeks and along shorelines where trash regularly deposits and is periodically removed by San Mateo County Permittees and volunteers. Together, probabilistic and targeted sites are intended to represent the full range of trash conditions present in all creeks, rivers and channels flowing through urban areas that are subject to MRP trash reduction requirements and Bay shorelines that may be impacted by contributions of trash from municipal stormwater discharges.

Assessment Methods

Two different methodologies are used to conduct trash assessments: (1) qualitative visual assessments and (2) quantitative monitoring. Qualitative assessments are visual surveys where trained personnel

²Only hot spot cleanups and assessments conducted in compliance with MRP provision C.10.b.iii. are included in this estimate. Some SMCWPPP San Mateo County Permittees conduct cleanups at trash hot spots more frequently than the MRP-required annual cleanup, and/or at more sites than the MRP requires. See Section 10, C.10.e. of San Mateo County Permittee Annual Reports for additional information.

assign a score to a site based on the trash conditions that are observed within a defined area. In addition, the survey includes documenting the site characteristics of assessment area that may affect trash deposition (e.g., vegetated condition) and the relative contribution of trash from different pathways (e.g., litter, illegal dumping) to the site. Qualitative monitoring is conducted at both probabilistic and targeted monitoring sites.

Quantitative monitoring entails removing, sorting and measuring the volume of all trash that is found within the assessment area of a targeted site. Both the qualitative assessment and quantitative monitoring methodologies are used at targeted sites to allow for comparison of the two data types. In addition to the targeted monitoring sites, San Mateo County Permittees are also conducting quantitative trash monitoring at selected locations in creeks, lakes, sloughs and lagoons where trash booms are currently deployed. The goal of the quantitative monitoring at booms is to better understand the utility of data collected from these locations to answer management questions outlined in the MRP.

Monitoring Sites

The Countywide Program is conducting qualitative trash assessments at 30 probabilistic sites in urban creeks and channels within San Mateo County. Additionally, both qualitative assessments and quantitative monitoring is being conducted at 15 targeted sites. These sites were derived from an existing list of creek, channel and shoreline locations where San Mateo County Permittees conduct trash removal activities. Both probabilistic and targeted sites were selected to represent the range of trash conditions in creeks, channels and shorelines within San Mateo County. An existing trash boom location in the City of San Mateo was also selected for periodic monitoring of the amount of trash accumulation.

Monitoring Frequency and Schedule

Trash monitoring/assessment data is being collected during both wet and dry seasons at all probabilistic sites during MRP 2.0. Data collected during both seasons will allow for seasonal comparison between dry and wet season trash conditions and accumulation rates in receiving waters. Dry season monitoring provides information about non-stormwater sources and pathways, such as wind and illegal dumping. Wet season monitoring provides information on the transport and deposition of trash resulting from stormwater runoff.

Monitoring/assessment activities during MRP 2.0 are taking place between October 2017 and February 2020 at the following frequencies:

- Probabilistic sites – 5 times (2 dry seasons and 3 wet season events);
- Targeted sites – 2 times (dry season); and
- Trash booms – varying frequencies during the dry season.

Progress Report

In FY 2018/19, SMCWPPP completed the following activities associated with the implementation of the Trash Monitoring Plan:

- Field Staff Training – Data Quality Objectives for the Trash Monitoring Plan place a strong emphasis on training and oversight, including inter-comparisons among the performance of individual field team members participating in the various assessment and characterization efforts. SMCWPPP conducted field training in July 2019 for San Mateo County Permittee staff to calibrate trash assessment methods at selected trash monitoring locations with high trash levels. SMCWPPP also assisted several San Mateo County Permittees during trash assessments at targeted monitoring locations.
- Trash Monitoring/Assessment – SMCWPPP completed two qualitative assessments during FY 2018/19 at 30 qualitative probabilistic sites. The first assessment was conducted during the dry season in 2018 and the second assessment was conducted during the wet season in 2019. These assessments represented the second and third monitoring events (out of a total of five events) at probabilistic sites during the testing phase of the Trash Monitoring Plan. Additionally, San Mateo County Permittees conducted qualitative assessments and quantitative monitoring events at targeted sites during the dry season of 2018. All trash assessments at targeted sites will be completed by end of September 2019. Coordination of monitoring at trash boom locations continued throughout the year.
- Coordination with Statewide Trash Monitoring Methods Project - In parallel to conducting trash receiving water monitoring per MRP requirements, SMCWPPP is also coordinating with the San Francisco Estuary Institute (SFEI) and the Southern California Coastal Water Research Project (SCCWRP) on the California Trash Monitoring Methods Project, which is funded by the California Ocean Protection Council. The three-year Trash Monitoring Methods Project is attempting to develop and test methods for monitoring trash in California to provide a menu of standardized methods that can be used throughout the state. Field staff from SFEI and SCCWRP attended inter-calibration field events described above and have been involved in the review of the Standard Operating Procedures developed by MRP Permittees. SFEI is implementing trash assessment methods at selected targeted sites monitored by San Mateo County Permittees to test and calibrate additional methods, including the use of unmanned aerial vehicles (i.e., drones) to assess trash conditions. Coordination this permit term between SMCWPPP and SFEI/SCCWRP is planned to continue at least through 2020.
- Data Analysis, Management and Reporting – In FY 2018/19, BASMAA conducted preliminary data analysis and developed a preliminary report on trash assessment data collected through March 2019. The Preliminary Report was submitted to the Regional Water Board on July 1, 2019 by BASMAA, on behalf of all Permittees. During FY 2019/20, BASMAA is planning the following tasks associated with the regional project: (1) develop standard data management formats so that data can be made publicly-available via the on-line *Contaminant Data Display and Download (CD3)* tool, which is compatible with the California Environmental Data Exchange Network (CEDEN); (2) conduct a final comprehensive data analysis and develop a draft report for review; and (3) facilitate a peer review process and develop a final report for submittal to the Regional Water Board by July 2020.

Coordination with San Mateo Countywide Recycling Committee

To increase coordination among solid waste and recycling programs and SMCWPPP San Mateo County Permittee MS4 trash reduction activities, SMCWPPP staff began attending Countywide Recycling Committee meetings in FY 2012/13. SMCWPPP continued to coordinate with the Recycling Committee in FY 2018/19, specifically targeting outreach and coordination with municipal solid waste/recyclable haulers in San Mateo County to reduce trash impacts associated with inadequate waste container management.

Litter Work Group

SMCWPPP's Litter Work Group, which was formed in March of 2014, coordinates litter reduction efforts among SMCWPPP, waste and stormwater program staff from San Mateo County municipalities, the San Mateo Countywide Recycling Committee, and waste collection and processing companies serving those jurisdictions. The Litter Work Group met two times in fiscal year 2018/19. Attendees included representatives from San Mateo County municipalities (especially stormwater and trash program staff), the local hauling community, Rethink Waste (the South Bayside Waste Management Authority), and community members working on litter reduction efforts both in Santa Clara and San Mateo Counties. The goals of the Litter Work Group include developing a litter reduction program for San Mateo County related to waste issues and specific to its needs, developing BMPs for the waste collection industry, educating the public and those involved with litter control efforts, and coordinating and sharing information with the Zero Litter Initiative in Santa Clara County.

The Litter Work Group completed the following tasks in FY 2018/19:

- Held meetings on the following dates: February 4 and May 8, 2019. Participation by municipal staff was good as shown by the FY 2018/19 attendance list (Appendix 10). In addition to municipal staff, attendees included staff from Recology - San Mateo County and South San Francisco Scavenger.
- Finalized and distributed the *Litter Reduction Toolkit for Multi-family Dwellings* (Toolkit). The Toolkit is a detailed guide for municipal and private sector design community professionals compiling best practices and tools for reducing litter and waste at existing and new multi-family residential properties in San Mateo County. The Toolkit includes information and recommendations for the design of new multi-family buildings and tools for working with existing properties such as tenant/management communication, hauler coordination, right-sizing of containers, tenant/management education, behavior change practices, signage examples, and tenant/management incentives. The compilation included associated appendices and links to other materials. The Toolkit was posted on the Countywide Program's website (flowstobay.org/litter-reduction-toolkit).
- Began development of a fact sheet for the Toolkit. The fact sheet targets architects and developers that apply for building permits.
- Coordinated with Caltrans on trash capture efforts, including the installation of trash full-capture systems through cooperative implementation agreements.
- Coordinated with SMCWPPP's PIP Subcommittee on public outreach efforts targeting litter reduction.

- Developed the FY 2019/20 Litter Work Group Work Plan (included in Appendix 10) which includes the following tasks:
 - Supporting ongoing Litter Work Group meetings;
 - Conducting the 4th Litter Roundtable to share information and perspectives with Caltrans and other transportation agencies on litter reduction and potential collaboration on projects;
 - Developing a sampling and analysis plan (SAP) for assessing the types of trash found in stormwater and informing future source control actions;
 - Assisting SMCWPPP's PIP Subcommittee with outreach efforts to reduce litter; and
 - Conducting other countywide coordination efforts.

Identification of Existing, Planned and Potential Locations for Trash Full Capture Systems Mutually Beneficial to San Mateo County Permittees and Caltrans

On February 13, 2019, the Regional Water Board adopted a Cease and Desist Order (CDO) against Caltrans, requiring it to significantly increase the rate and extent of control measure implementation to address trash discharges from its right-of-way (ROW). To meet the CDOs required targets, Caltrans is attempting to identify trash full capture systems that would be mutually beneficial to Caltrans and MRP Permittees. In an effort to assist Caltrans in identifying these systems, on April 24, 2019, Regional Water Board staff requested that all MRP Permittees identify the following:

- Mapped drainage areas of municipal jurisdiction that abut Caltrans ROW; and
- A list of already completed, planned, or potential projects in municipal drainage areas that abut Caltrans ROW that control or would control trash from the adjacent Caltrans ROW.

In response to this request, SMCWPPP conducted a preliminary analysis and worked with San Mateo County Permittees to develop a list and series of maps illustrating completed, planned, and potential trash full capture projects in municipal drainage areas in San Mateo County that also address trash in stormwater that is generated on Caltrans ROW. The list included the following preliminary information:

- Estimated Caltrans ROW addressed by San Mateo County Permittees' existing or planned Trash Capture Systems (large and small);
- Whether the Permittee has an existing Cooperative Implementation Agreement with Caltrans on Trash Capture System(s);
- Caltrans ROW within Permittee boundaries that is not addressed by existing systems;
- Estimated Caltrans ROW that may be addressed by potential (future) trash capture systems and should be evaluated further; and
- San Mateo County Permittee contact Information.

This information was submitted to Regional Water Board staff in June 2019, in response to the request. In FY 2019/20, San Mateo County Permittees plan to continue discussing potential cooperative agreements and reimbursements with Caltrans for existing, planned and potential full capture systems that are mutually beneficial to Caltrans and San Mateo County Permittees.

FUTURE ACTIONS

FY 2019/20 activities that are planned by SMCWPPP to assist San Mateo County Permittees comply with MRP requirements in Provision C.10 include the following:

- Continued facilitation of SMCWPPP Trash Subcommittee meetings;
- Continued implementation of the SMCWPPP trash assessment strategy designed to demonstrate progress towards MRP trash load reduction goals;
- Continued maintenance of the SMCWPPP online OVTA database;
- Continued support for long-term plan implementation and control actions for trash management;
- Continued calculation and reporting on trash load reductions for each San Mateo County Permittee;
- Continued calculation and reporting on the amount and types of trash removed via creek and/or shoreline cleanups required by the MRP;
- Continued update/revision of trash generation and full capture system maps and GIS data layers in preparation for the FY 2019/20 Annual Report submittal;
- Continued implementation of the Litter Work Group FY 2019/20 Work Plan tasks, including supporting ongoing Litter Work Group meetings, conducting the 4th Litter Roundtable, developing a sampling and analysis plan for assessing the types of trash found in stormwater, and informing future source control actions;
- Continued coordination and information sharing with the SMCWPPP PIP Subcommittee on countywide litter reduction efforts;
- Continued coordination and information sharing with the Zero Litter Initiative in Santa Clara County;
- Continued Implementation of the Trash Receiving Waters Monitoring Program Plan in San Mateo County creeks and shorelines;
- Continued assessment of trash generation levels (i.e., current trash control status) on applicable land areas >10,000 ft² that connect directly to San Mateo County Permittee MS4s;
- Receiving water monitoring data scoring/collection training for municipal staff;
- Continued coordination with Caltrans for trash capture device design review, purchase, installation, and maintenance agreements; and
- Continued coordination with the New Development Subcommittee (and State Water Resources Control Board) on trash load reduction credits for LID facilities.

SECTION 11

C.11 MERCURY CONTROLS

INTRODUCTION

MRP Provision C.11 Mercury Controls implements stormwater runoff-related actions described in the San Francisco Bay mercury Total Maximum Daily Load (TMDL) water quality restoration program. SMCWPPP performs a variety of activities to address mercury in stormwater runoff in compliance with MRP Provision C.11. Some of this work is accomplished through participation in BASMAA regional projects.

Efforts that address PCBs in addition to mercury are described in this section rather than Section 12 (PCBs Controls). Section 12 focuses on efforts that address PCBs only.

IMPLEMENTATION OF MRP PROVISIONS

C.11/12.a. Implement Control Measures to Achieve Mercury/PCBs Load Reductions

Efforts by SMCWPPP and San Mateo County municipalities to address MRP Provisions C.11/12.a., Implement Control Measures to Achieve Mercury/PCBs Load Reductions, are described in a separate report (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*) that is presented in Appendix 11.

C.11/12.b. Assess Mercury/PCBs Load Reductions from Stormwater

MRP Provisions C.11/12.b., Assess Mercury/PCBs Load Reductions from Stormwater, required Permittees to submit in their 2015/16 Annual Report for Executive Officer approval an assessment methodology. The purpose of the assessment methodology is to quantify in a technically sound manner mercury and PCBs loads reduced through implementation of a variety of pollutant controls, including pollution prevention, source control, and stormwater runoff treatment measures such as green infrastructure. SMCWPPP and San Mateo County municipalities helped develop the assessment methodology through participation in a BASMAA regional project. The methodology developed via the BASMAA regional project is referred to as the Interim Accounting Methodology and has been approved by the Executive Officer of the Regional Water Board.

Permittees must report on the use of the methodology to demonstrate progress toward achieving the mercury and PCBs load reductions required in stormwater runoff this permit term. San Mateo County load reductions are described in the separate report mentioned in the previous section (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*). Appendix 11 contains the report.

C.11/12.c. Plan and Implement Green Infrastructure to Reduce Mercury/PCBs Loads

Permittees are required to implement green infrastructure projects during the term of the MRP to achieve the mercury and PCBs load reductions required by the permit. San Mateo County load reductions via green infrastructure during this permit term are described in a separate report (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*). Appendix 11 contains the report.

Permittees are required to conduct a Reasonable Assurance Analysis (RAA) to demonstrate quantitatively that mercury and PCBs load reductions specified in the MRP will be achieved by 2040 through implementation of green infrastructure.

Initial steps in the RAA development process included development of a baseline model of all County watersheds to simulate existing hydrology and sediment and pollutant loads to the Bay. The baseline model is based on USEPA's Loading Simulation Program C++ (LSPC), a recoded version of the Hydrology Simulation Program – FORTRAN (HSPF) into C++, with architectural improvements that allow efficient simulation of the many watersheds of San Mateo County, as well as tools for summarizing sediment and pollutant loads. The model provides hourly simulation of flows, sediment loads, and pollutant concentrations for each of the individual model subwatersheds in the County (Figure 11-1). The model was configured based on HSPF parameters established through previous model development efforts of the Bay Area Hydrologic Model (BAHM) and Santa Clara Valley Water District modeling of the Guadalupe River, with significant upgrades that utilized recent monitoring efforts to provide model calibration and validation.

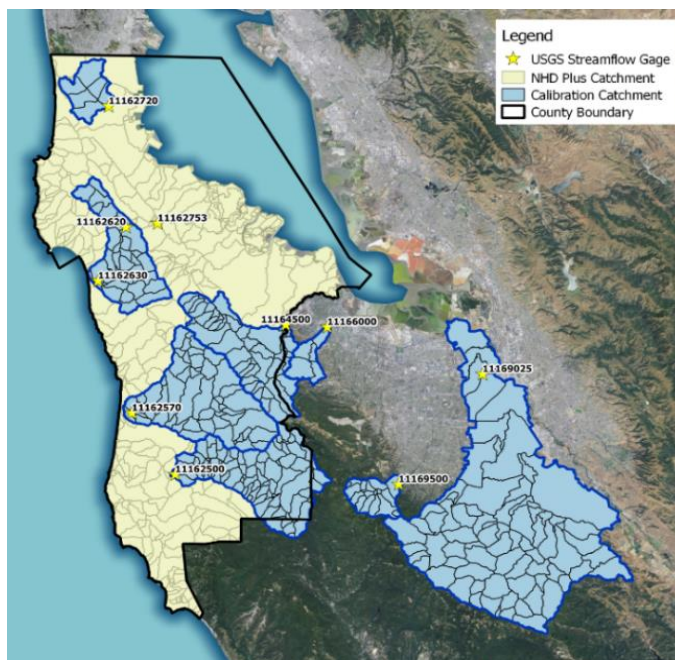


Figure 11-1. Model Domain of San Mateo County RAA

The model was configured based on HSPF parameters established through previous model development efforts of the Bay Area Hydrologic Model (BAHM) and Santa Clara Valley Water District modeling of the Guadalupe River, with significant upgrades that utilized recent monitoring efforts to provide model calibration and validation.

SMCWPPP linked the baseline LSPC model with EPA's System for Urban Stormwater Treatment and Analysis Integration (SUSTAIN), which provides simulation of green infrastructure and estimation of pollutant load reductions. The model has been configured based on the project opportunities identified in the San Mateo Countywide Stormwater Resource Plan (SWRP) for LID retrofit, Green Streets, and regional stormwater capture projects, as well as additional conceptualized regional projects, projected LID projects for new and redevelopment (per Provision C.3), and green infrastructure projects currently constructed (primarily C.3 regulated projects implemented since 2005). SUSTAIN was used to model various alternative strategies for achieving countywide mercury and PCBs load reduction targets for green infrastructure. SMCWPPP also developed methods for reporting RAA output that will inform each Permittee on the goals for green infrastructure to be considered during the efforts to plan control measures for mercury and PCBs in coordination with green infrastructure planning. Additional description of the baseline LSPC and SUSTAIN green infrastructure model was provided in Appendix 11 to SMCWPPP's

FY 2017/18 Annual Report (see memorandum entitled *Quantitative Relationship between Green Infrastructure Implementation and PCBs/Mercury Load Reduction*).

SMCWPPP's initial RAA modeling for San Mateo County Permittee review and feedback resulted in some modifications for a final modeling run that provided targets for each Permittee in terms of the amount of green infrastructure needed to meet MRP requirements, associated volume of stormwater runoff managed, and associated area of impervious surface treated. In 2018 SMCWPPP developed its *San Mateo County-Wide Reasonable Assurance Analysis Addressing PCBs and Mercury: Phase I Baseline Modeling Report* and in August 2019, an initial draft of its *San Mateo County-Wide Reasonable Assurance Analysis Addressing PCBs and Mercury: Phase II Green Infrastructure Modeling Report*. These documents are being submitted for peer review, per MRP requirements, in September/October 2019, and will be submitted to the Regional Water Board in 2020.

During FY 2018/19, SMCWPPP continued to participate in the regional BASMAA RAA Workgroup, which supports and coordinates Permittee efforts to plan control measures for mercury and PCBs in coordination with green infrastructure planning. Following completion of the BASMAA Bay Area RAA Guidance in 2017, the BASMAA RAA Workgroup has continued to meet to discuss opportunities to share information among countywide RAA efforts, present the status of RAAs to Regional Water Board staff, and identify regional studies or approaches for peer review to support Permittee efforts to perform the RAA. The RAA Workgroup confirmed multiple peer reviewers and developed associated documents to guide the peer review process that began in August 2019 and will finish in November 2019. SMCWPPP has presented to the RAA Workgroup, the regional Pollutants of Concern (POC) Steering Committee, and the MRP 3.0 Steering Committee on the status of the San Mateo Countywide RAA.

C.11/12.d. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

MRP Provisions C.11/12.d require that Permittees prepare a plan and schedule for mercury and PCBs control measure implementation and a corresponding RAA demonstrating quantitatively that sufficient control measures will be implemented to attain the mercury and PCBs TMDL wasteload allocations by 2028 and 2030, respectively. The plan must:

1. Identify all technically and economically feasible mercury and PCBs control measures to be implemented (including green infrastructure projects).
2. Include a schedule according to which these technically and economically feasible control measures will be fully implemented.
3. Provide an evaluation and quantification of the mercury and PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

The plan and schedule are due in September 2020. As described in the previous section, SMCWPPP has developed modeling approaches for quantifying mercury and PCBs loads in San Mateo County and conducting the RAA. SMCWPPP will continue these efforts in FY 2019/20, along with developing the control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations, per the requirements in MRP Provisions C.11/12.d.

C.11.e./C.12.h. Risk Reduction Program

MRP Provisions C.11.e and C.12.h require Permittees to conduct an ongoing risk reduction program to address public health impacts of mercury and PCBs in San Francisco Bay fish. The fish risk reduction program is required to include actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The program is required to have the potential to reach 3,000 individuals annually (Bay Area-wide total for all MRP 2.0 Permittees) who are likely consumers of San Francisco Bay-caught fish. Permittees are required to report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish.

SMCWPPP is assisting San Mateo County municipalities comply with the risk reduction program requirements by coordinating with and reporting on the Fish Smart program conducted by San Mateo County Environmental Health Services (EHS). Fish Smart builds upon the San Francisco Bay Fish Project (sfei.org/sfbfp#sthash.eOcfwrhA.dpbs), a risk reduction framework developed regionally in the previous permit term. The Fish Project funded Bay Area community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities about how to reduce their exposure to mercury and PCBs from consuming San Francisco Bay fish.

During FY 2018/19, EHS conducted a variety of activities that target at-risk populations (e.g., subsistence fisherman) via the Fish Smart program. These efforts are summarized in the following sections.

Sign Maintenance and Installation

There are currently 17 Fish Smart program signs posted in San Mateo County. In FY 2018/19, EHS staff maintained signs posted along the San Francisco Bay shore (e.g., at fishing piers) in the Cities of Brisbane, South San Francisco, San Mateo, Burlingame, and Redwood City. In addition, two new Fish Smart in San Francisco Bay signs were installed in FY 2018/19, one at the Point San Bruno Park fishing pier in South San Francisco, and the other at the Seaport Centre Office Complex (along Redwood Creek) in Redwood City (Figure 11-2). Fishing has been observed at both of these locations.



Figure 11-2. New Fish Smart Sign Installed October 2018, Seaport Centre Office Complex, Redwood City

The Office of Environmental Health Hazard Assessment (OEHHA) updated its statewide advisory for the California Coast in FY 2018/19. EHS provided signs in English, Spanish, Tagalog, and Chinese to City of Pacifica staff to post at the Pacifica Pier and printed the advisories in four languages to distribute in flyer format.

Community Outreach

In FY 2018/19, EHS expanded the Fish Smart Program to promote the updated OEHHA California Coast advisory in various languages through flyer distribution at community events as well as at Pillar Point Harbor and select Half Moon Bay and Pacifica locations. EHS provided San Francisco Bay fish consumption

guidelines in various languages to local marinas and some retail stores that sell bait and tackle. In addition to Coast and Bay consumption advisory outreach, EHS also promoted Monterey Bay Aquarium’s Seafood Watch Guides. The Seafood Watch Guides help consumers and businesses choose seafood that is fished or farmed in ways that support a healthy ocean. EHS staff spoke with 2,500 residents at 10 events and provided information on about how to reduce exposure to toxins from consuming San Francisco Bay and Pacific Ocean fish, along with other pollution prevention topics:

1. San Mateo - County Fair
2. Redwood City - County Employee Wellness Fair
3. Millbrae - Millbrae Machines
4. Pacifica - Fog Fest
5. San Mateo - College of San Mateo Health Fair
6. Daly City - District 5 Health Fair
7. Millbrae - Senior Showcase Health Fair
8. San Carlos - Elder Care Resource Fair
9. Pacifica - Senior Earth Day Celebration
10. Half Moon Bay – Pacific Coast Dream Machines

Social Media and Website

In FY 2018/19, EHS continued to maintain the smchealth.org/fishsmart website, which had over 2,700 visits. In addition, EHS created 10 social media posts about safe fish consumption guidelines for the Bay and Ocean (see Figure 11-3 for an example post). Posts combined totaled over 110,000 impressions (number of times a post was on-screen), and over 9,800 engagements (e.g., a link in the post was clicked on). Boosted posts were geo targeted to San Mateo County, and some posts targeted people with fishing interests specifically. County Health communications staff notified EHS that one of these Facebook posts had the greatest reach of any post on facebook.com/smchealth since this social media site was created.



Figure 11-3. Social Media Post Example

FUTURE ACTIONS

SMCWPPP activities that are planned for FY 2019/20 to assist San Mateo County municipalities comply with MRP requirements in Provision C.11/12 to reduce mercury and PCBs loads in stormwater runoff and report on the load reductions are described in the separate report mentioned earlier (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*). Appendix 11 contains the report.

During FY 2019/20, SMCWPPP also plans to continue to:

- Complete the RAA to support green infrastructure planning and demonstration of mercury and PCBs load reductions to meet goals set by the MRP. The modeling system supporting the RAA will be used to test various combinations of green infrastructure projects within each city and unincorporated county jurisdiction, and will provide output that will support decision-making and green infrastructure planning. SMCWPPP will also submit the RAA for peer review and address any comments received.
- Develop a control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations, per the requirements in MRP Provisions C.11/12.d.
- Assist San Mateo County municipalities comply with the MRP risk reduction program requirements by coordinating with and reporting on the Fish Smart program conducted by EHS:
 - EHS will continue to maintain signs and scout new locations to place signs to reach subsistence fishermen. Fish consumption messaging via social media has garnered relatively high engagement and will also continue. Discussions with fishermen and their families at local events will continue as well as providing consumption guidelines to marinas and targeted retail locations. EHS also plans to conduct surveys at local marinas during FY 2019/20 to better understand Bay and Coast fish consumption patterns.
 - SMCWPPP will continue to work with EHS staff to conduct an evaluation of the effectiveness of the risk reduction program, and report on the results of the evaluation in the SMCWPPP FY 2019/20 Annual Report.

SECTION 12

C.12 PCBS CONTROLS

INTRODUCTION

MRP Provision C.12, PCBs Controls, implements stormwater runoff-related actions required by the San Francisco Bay PCB Total Maximum Daily Load (TMDL) water quality restoration program. SMCWPPP performs a variety of activities to address PCBs in stormwater runoff in compliance with MRP Provision C.12. Many of these activities address mercury in addition to PCBs and are described in the previous chapter (Section 11, Mercury Controls) rather than this section.

IMPLEMENTATION OF MRP PROVISIONS

C.12.a. Implement Control Measures to Achieve PCBs Load Reductions

Efforts by SMCWPPP and San Mateo County municipalities to address MRP Provisions C.11/12.a., Implement Control Measures to Achieve Mercury/PCBs Load Reductions, are described in a separate report (*Updated Control Measures Plan for Mercury and PCBs in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*) that is presented in Appendix 11.

C.12.b. Assess PCBs Load Reductions from Stormwater

For a description of efforts by SMCWPPP and San Mateo County municipalities to address MRP Provisions C.11/12.b., Assess PCBs Load Reductions from Stormwater, please see Section 11 (C.11 Mercury Controls) and the separate report mentioned previously (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*). Appendix 11 contains the report.

Please note that per the documentation in SMCWPPP's FY 2017/18 Annual Report, the estimated PCBs load reduction across the permit area over the time period of FY 2013/14 through FY 2017/18 was 691 g/yr, indicating that the MRP regional performance criterion of 500 g/yr of PCBs load reduced by July 2018 was achieved.¹

C.12.c. Plan and Implement Green Infrastructure to Reduce PCBs Loads

For a description of efforts by SMCWPPP and San Mateo County municipalities to address MRP Provisions C.11/12.c., Plan and Implement Green Infrastructure to Reduce PCBs Loads, please see Section 11 (C.11 Mercury Controls) and the separate report mentioned in the previous sections (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*). Appendix 11 contains the report.

¹It is important to note that the MRP allows Permittees to meet the regional criterion as a group – criteria for individual counties would only apply when the regional group criterion was not met.

C.12.d. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

As described in more detail in Section 11 (C.11 Mercury Controls), MRP Provisions C.11/12.d require that Permittees prepare a plan and schedule for mercury and PCBs control measure implementation and a corresponding RAA demonstrating quantitatively that sufficient control measures will be implemented to attain the mercury and PCBs TMDL wasteload allocations by 2028 and 2030, respectively. The plan and schedule are due in September 2020. As described in Section 11, SMCWPPP has developed modeling approaches for quantifying mercury and PCBs loads in San Mateo County and conducting the RAA. SMCWPPP will continue these efforts in FY 2019/20, along with developing the control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations, per the requirements in MRP Provisions C.11/12.d.

C.12.e. Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way

MRP 2.0 Provision C.12.e requires that Permittees collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. BASMAA has completed a regional investigation that addresses this requirement. SMCWPPP reported on the results of the investigation in its FY 2017/18 Annual Report.

C.12.f. Manage PCB-Containing Materials and Wastes during Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains

MRP Provision C.12.f. requires that Permittees develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs concentrations of 50 parts per million or greater in applicable structures² at the time such structures undergo demolition, so that PCBs do not enter municipal storm drain systems. A Permittee is exempt from this requirement if it provided evidence acceptable to the Executive Officer in its FY 2016/17 Annual Report that the only buildings that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame buildings.³

Permittees were required to develop a protocol by June 30, 2019 that includes each of the following components, at a minimum:

- The necessary authority to ensure that PCBs do not enter municipal storm drains from PCBs-containing materials in applicable structures at the time such structures undergo demolition;
- A method for identifying applicable structures prior to their demolition; and,
- Method(s) for ensuring PCBs are not discharged to the municipal storm drain from demolition of applicable structures.

² Applicable structures are buildings built or remodeled from January 1, 1950 through December 31, 1980, with the following exemptions: single-family residential buildings, wood-framed buildings, and partial building demolitions.

³The City of Clayton in Contra Costa County provided acceptable evidence and is exempt from this provision.

By July 1, 2019 and thereafter, Permittees are required to:

- Implement or cause to be implemented the PCBs management protocol for ensuring PCBs are not discharged to municipal storm drains from demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff; and,
- Develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

On behalf of MRP Permittees, BASMAA conducted a multi-year regional project to assist MRP Permittees to address Provision C.12.f. The BASMAA project, which began in FY 2016/17 and was completed in March 2019, assisted Permittees in developing local programs to manage PCBs-containing materials during building demolition. It developed guidance materials, tools and training materials and conducted outreach. SMCWPPP actively participated in the project, including providing BASMAA's project manager.

At the outset of the project, a BASMAA Steering Committee was convened to provide project oversight and guidance during the project. The Steering Committee included BASMAA Directors, countywide stormwater program staff, and Permittee staff from various relevant municipal departments. The Steering Committee met periodically throughout the project. In addition, a project TAG, a small balanced advisory group formed from industry, regulatory, and Permittee representatives to provide review and input on selected project work products, was convened. The TAG was comprised of representatives from industry and state/federal regulatory agencies, and Permittees. Other efforts to engage key stakeholders included an industry stakeholder roundtable meeting (August 2017) and two larger stakeholder group meetings (December 2017 and May 2018) that included industry, regulatory and municipal representatives. During FY 2018/19, Permittees tailored the BASMAA products for local use, adopted the program (e.g., via local policy or ordinance), and trained local staff to implement the new program starting July 1, 2019.

Key BASMAA project deliverables provided to each Permittee to use as appropriate given local procedures and needs included:

- A protocol for pre-demolition building survey for priority PCBs-containing building materials;
- Model language for municipal adoption (e.g., ordinance) of the new program to manage PCBs materials during building demolition and model supporting staff report and resolution;
- CEQA strategy and model notice of exemption;
- Supplemental demolition permit model application materials, including forms, process flow charts, and applicant instructions; and
- An analysis to assist municipalities that pursue cost recovery.

Other project deliverables included:

- A coordination/communication strategy for the project;
- A technical memorandum summarizing any new information & decisions needed by BASMAA at outset, including an annotated table of regulatory drivers and relevant requirements;

- A technical memorandum with the state of the practice for identifying PCBs-containing building materials (developed to inform development of the pre-demolition building survey protocol listed below);
- Industry stakeholder outreach materials and a fact sheet for municipal staff;
- A spreadsheet tool used to develop the prioritized list of potential PCBs-containing building materials that the demolition program will focus on;
- A conceptual approach for an assessment methodology and data collection program to quantify PCBs loads reduced through managing PCBs-containing materials during building demolition.

During FY 2018/19, the BASMAA project concluded by conducting the following outreach and training tasks:

- Prepared training materials for municipal staff on adoption and implementation of the new program;
- Developed outreach materials and a standard presentation to inform industry stakeholders including developers, planning firms, urban planning non-governmental organizations, demolition firms, property owners, property managers, and realtors about the new program to manage PCBs in building materials during demolition;
- Using the above training materials, conducted training workshops (in-person and a webinar) for key municipal and countywide stormwater program staff;
- Conducted a webinar for industry stakeholders; and
- Developed a list of Bay Area opportunities, including contact information and dates, for municipal and/or stormwater program staff to conduct additional outreach to industry stakeholders using the above industry outreach materials.

In addition, during FY 2018/19 MRP Permittees worked together through the BASMAA Monitoring and Pollutants of Concern Committee (MPC) to begin developing a framework to comply with data collection/evaluation and reporting requirements under Provision C.12.f. As mentioned previously, these requirements include developing an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the new program. The preliminary regional process developed to-date includes the following steps:

1. The municipality informs demolition permit applicants that their projects are subject to the MRP Provision C.12.f requirements, necessitating, at a minimum, an initial screening for priority PCBs-containing materials.
2. For every demolition project, applicants complete and submit a version of BASMAA's model "PCBs Screening Assessment Form" (Screening Form) or equivalent to the municipality.
3. The municipality reviews the Screening Form to make sure it is filled out correctly and is complete and works with the applicant to correct any deficiencies.
4. The municipality then issues the demolition permit or equivalent, according to its procedures.⁴

⁴ Municipalities should require that applicants fill out and certify a Screening Form for every demolition. For non-Applicable Structures, applicants simply check the boxes, certify, and submit to municipality. Then the municipality can authorize the demolition (e.g., issue a demolition permit). In general, municipalities should have a completed and certified Screening Form

5. For Applicable Structures only, the municipality submits completed Screening Forms and any supporting documents (consultant's report from PCBs building survey, QA/QC checklist, and lab reports) to its countywide program; forms for exempt sites need not be submitted. Forms should be submitted to the countywide programs electronically if feasible, and at a minimum annually, but quarterly is preferred.
6. The countywide programs compile the completed Screening Forms and any supporting documents. The countywide program then works with the other MRP countywide programs through BASMAA to manage and evaluate the data, and to assist Permittees with associated MRP reporting requirements.

Permittees began implementing the program on or before July 1, 2019.

C.12.g. Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

MRP Provision C.12.g requires Permittees to conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas. This requirement is being addressed through a multi-year project by the San Francisco Bay Regional Monitoring Program (RMP) to develop a series of conceptual models of PCBs in Priority Margin Units (PMUs). SMCWPPP's FY 2016/17 Annual Report included a workplan developed by BASMAA that describes how these information needs will be accomplished, including the studies to be performed and a preliminary schedule. SMCWPPP's FY 2017/18 Annual Report included a write-up developed by BASMAA that described the status of the studies. The MRP requires Permittees to report in the March 30, 2020, Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of the studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.12.h. Risk Reduction Program

SMCWPPP is assisting San Mateo County municipalities comply with the risk reduction program requirements by coordinating with and reporting on the Fish Smart program conducted by San Mateo County Environmental Health Services (EHS). Please see Section 11 for additional details.

FUTURE ACTIONS

SMCWPPP activities that are planned for FY 2019/20 to assist San Mateo County municipalities comply with MRP requirements in Provision C.11/12 to reduce mercury and PCBs loads in stormwater runoff and report on the load reductions are described in the separate report mentioned earlier (*Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019*). Appendix 11 contains the report.

before authorizing a demolition, unless they are a small community that is exempt or has some other arrangement with Regional Water Board staff. But there is no need to track non-Applicable Structures otherwise.

SMCWPPP also plans to:

- Complete the RAA to support green infrastructure planning and demonstration of mercury and PCBs load reductions to meet goals set by the MRP. The modeling system supporting the RAA will be used to test various combinations of green infrastructure projects within each city and unincorporated county jurisdiction, and will provide output that will support decision-making and green infrastructure planning. SMCWPPP will also submit the RAA for peer review and address any comments received.
- Develop a control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations, per the requirements in MRP Provisions C.11/12.d.
- Continue to work with other Bay Area stormwater management programs through the BASMAA MPC to develop a system for managing data during the new programs to manage PCBs materials during building demolition in compliance with Provision C.12.f., and refine, document and report on the data collection and assessment methodology currently under development. SMCWPPP will also assist San Mateo County Permittees with other closely related Provision C.12.f. reporting requirements (e.g., Permittees must submit with their FY 2019/20 Annual Reports a running list of applicable structures that applied for a demolition permit and those that had materials with PCBs at 50 ppm or greater).
- Continue to participate in the RMP PCBs Work Group to help oversee RMP studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas. A continued focus will be the conceptual model under development for Steinberger Slough in San Mateo County and associated monitoring fieldwork by the RMP.
- Assist San Mateo County municipalities to comply with the risk reduction program requirements by coordinating with and reporting on the Fish Smart program conducted by EHS, and working with EHS to conduct an evaluation of the program (see Section 11).

SECTION 13

C.13 COPPER CONTROLS

INTRODUCTION

Provision C.13 of the MRP addresses copper control measures identified in the San Francisco Bay Basin Water Quality Control Plan (commonly referred to as the Basin Plan). The Regional Water Board has deemed these controls are necessary to support copper site-specific objectives in San Francisco Bay. C.13 includes the following sub-provisions:

- C.13.a. Manage waste generated from cleaning and treating copper architectural features, including copper roofs, during construction and post-construction;
- C.13.b. Manage discharges from pools, spas and fountains that contain copper-based chemicals; and
- C.13.c. Industrial Sources.

In FY 2018/19, Permittees and the Countywide Program continued to conduct activities related to complying with Provision C.13. Local actions are documented in each Permittee's individual Annual Report. This section summarizes copper control activities conducted by the Countywide Program.

IMPLEMENTATION OF MRP PROVISIONS

C.13.a. Copper Architectural Features

Provision C.13.a requires Permittees to manage waste from cleaning and treating copper architectural features, including copper roofs, during construction and post-construction.

During 2018/19, SMCWPPP continued to train municipal inspectors on the MRP requirements and BMPs for architectural copper installation, cleaning, and treating. The trainings utilized a SMCWPPP factsheet entitled "Requirements for Architectural Copper: Protect water quality during installation, cleaning, treating, and washing!" which targets suppliers and installers of copper materials and is available on the SMCWPPP website (flowstobay.org). Construction site inspectors received the information during the March 11, 2019 SMCWPPP Construction Site Inspection Workshop and building inspectors received the information from a SMCWPPP staff presentation at the California Building Inspectors Group (CALBIG) meeting on October 10, 2018 (see Section 6).

C.13.b. Manage Discharges from Pools, Spas and Fountains

Provision C.13.b requires Permittees to manage discharges from pools, spas and fountains that contain copper-based chemicals by adopting local ordinances. These requirements are implemented by individual Permittees and are reported on in their Annual Reports. Guidance on these requirements for illicit discharge inspectors is provided through SMCWPPP's CII Subcommittee and public outreach on related

BMPs is provided through SMCWPPP's PIP Subcommittee. A fact sheet entitled *Best Management Practices for Pools, Hot Tubs, and Fountain Water Discharges* was developed in FY 2018/19 and includes information on avoiding the use of copper-based algaecides. The fact sheet is available on the SMCWPPP website (flowstobay.org) and is included in Appendix 5. In addition, the fact sheet is discussed further in Section 15, along with related public outreach by SMCWPPP to promote pool, spa and fountain discharge BMPs through social media posts.

C.13.c. Industrial Sources

Provision C.13.c requires Permittees to ensure through routine industrial facility inspections that proper BMPs are in place at industrial facilities likely to use copper or have sources of copper. SMCWPPP's CII Subcommittee assists San Mateo County municipal agency staff with understanding this MRP requirement and SMCWPPP develops MRP compliance support materials as necessary. In addition, in June 2010 BASMAA developed pollutants of concern commercial/industrial inspector training materials and a guidance manual that address industrial sources of copper. These materials are available on SMCWPPP's website (flowstobay.org). Industrial inspectors recently received information on this topic in a guidance document prepared by SMCWPPP entitled *Stormwater Inspector Guidance on Meeting Annual MRP C.4.d Training Requirements* (June 1, 2019).

FUTURE ACTIONS

FY 2019/20 activities planned by SMCWPPP to assist San Mateo County Permittees comply with MRP requirements in Provision C.13 include the following:

- Continue to provide information on MRP requirements regarding architectural sources of copper to construction site and building inspectors at New Development Subcommittee meetings, SMCWPPP's FY 2019/20 Construction Site Inspector Workshop, and at presentations to CALBIG or other partner organizations;
- Provide guidance to San Mateo County Permittees via SMCWPPP's CII Subcommittee and/or SMCWPPP's FY 2019/20 Stormwater Business Inspector Training Workshop to assist them with conducting routine industrial facility inspections that ensure proper BMPs are in place at industrial facilities likely to use copper or have sources of copper; and
- Continue to provide outreach material and guidance via SMCWPPP's CII and PIP Subcommittees regarding pool, spa and fountain discharge BMPs.

SECTION 15

C.15 EXEMPTED AND CONDITIONALLY EXEMPTED DISCHARGES

INTRODUCTION

The objective of MRP Provision C.15, Exempted and Conditionally Exempted Discharges, is to exempt unpolluted non-stormwater discharges from the MRP's general non-stormwater discharge prohibition (Provision A.1) and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. This section describes SMCWPPP's countywide activities conducted to help San Mateo County Permittees implement this provision. SMCWPPP helps municipal staff understand the MRP's requirements and makes various MRP compliance support materials available for their use. The SMCWPPP CII Subcommittee, discussed in Section 4, facilitates and coordinates providing this assistance to San Mateo County Permittees for a variety of different types of non-stormwater discharges that may be conditionally exempted.

In addition, SMCWPPP's PIP component conducts selected activities to assist San Mateo County Permittees comply with outreach requirements in Provision C.15.b.iv. (Individual Residential Car Washing Discharge), C.15.b.v (Swimming Pool, Hot Tub, Spa and Fountain Water), and Provision C.15.b.vi. (Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering).

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP performs a variety of activities to assist San Mateo County Permittees with implementation of Provision C.15, with input and assistance provided by the SMCWPPP CII and PIP Subcommittees as appropriate and needed. SMCWPPP's FY 2018/19 accomplishments included the following:

- Continued outreach efforts through social media posts to encourage residents to use car washes rather than washing their cars at home;
- Conducted targeted outreach to mobile car wash businesses to educate them on the hazards of dumping their used wash waters down storm drains and related BMPs;
- Conducted a countywide Google Ad campaign targeting residents who may use mobile wash services;
- Created a BMP fact sheet for swimming pools, hot tubs, spas, and fountain water discharges and promoted these types of BMPs through social media posts;
- Continued conducting outreach to San Mateo County residents, via social media, the SMCWPPP e-newsletter and blog, and through SMCWPPP's point-of-purchase program, to support and promote eco-friendly alternatives to toxic pesticides;

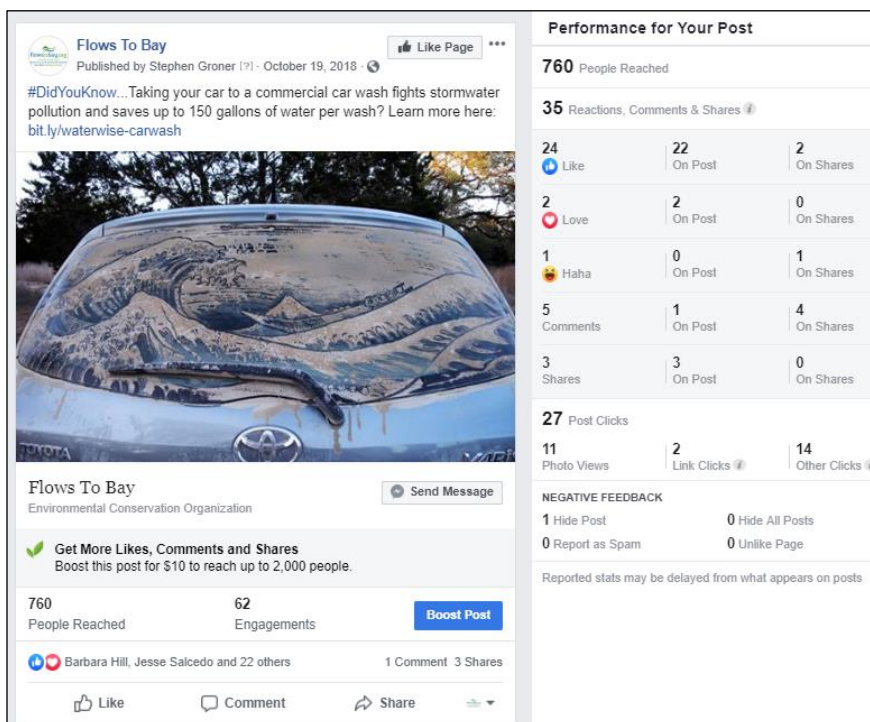
- Promoted planting of drought tolerant, native vegetation via social media, and the SMCWPPP e-newsletter and blog; and
- Continued to promote water-saving tips via social media.

More information on each of these accomplishments is provided below.

Provision C.15.b.iv. Individual Residential Car Washing

During FY 2018/19, SMCWPPP continued outreach efforts through social media posts to encourage residents to use car washes rather than washing their cars at home, as shown in Figure 15-1. The practice of using commercial car washes helps keep soaps, automotive pollutants, and environmental toxins from washing into San Mateo County storm drains. SMCWPPP also targeted mobile car wash businesses to educate them about the hazards of dumping their used wash waters down storm drains, and related BMPs. More details regarding the mobile car wash business media post are discussed in Section 5.

SMCWPPP also conducted a countywide Google Ad campaign targeting residents who may use mobile wash services. Campaign details are discussed in Section 5.



Flows To Bay
Environmental Conservation Organization

Published by Stephen Groner [?] · October 19, 2018 · [Like Page](#) [...](#)

#DidYouKnow... Taking your car to a commercial car wash fights stormwater pollution and saves up to 150 gallons of water per wash? Learn more here: bit.ly/waterwise-carwash

Performance for Your Post




760 People Reached		
35 Reactions, Comments & Shares		
24 Like	22 On Post	2 On Shares
2 Love	2 On Post	0 On Shares
1 Haha	0 On Post	1 On Shares
5 Comments	1 On Post	4 On Shares
3 Shares	3 On Post	0 On Shares
27 Post Clicks		
11 Photo Views	2 Link Clicks	14 Other Clicks
NEGATIVE FEEDBACK		
1 Hide Post	0 Hide All Posts	
0 Report as Spam	0 Unlike Page	
Reported stats may be delayed from what appears on posts		


760 People Reached **62** Engagements [Boost Post](#)

Barbara Hill, Jesse Salcedo and 22 others 1 Comment 3 Shares


[Like](#) [Comment](#) [Share](#) [...](#)

Flows To Bay
Published by Stephen Groner [?] · November 30, 2018 · Like Page


   Commercial car washes are better for the environment than the DIY approach. If you choose to wash your car at home, make sure water drains to grass, gravel, or landscaped areas, so it soaks into the ground and doesn't enter stormdrains! It's also a good idea to first clean your wheels with a rag to remove any dust from break pads, which can contain copper — a hazardous metal.



Flows To Bay
Environmental Conservation Organization Send Message

 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,000 people.


497 People Reached **27** Engagements Boost Post

 Stephen Weekley, Igor Kondratov and 7 others 5 Shares

Like Comment Share More



Performance for Your Post

497 People Reached

14 Likes, Comments & Shares 

9 Likes	9 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
5 Shares	5 On Post	0 On Shares

13 Post Clicks

4 Photo Views	0 Link Clicks 	9 Other Clicks 
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NEGATIVE FEEDBACK

4 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

Flows To Bay
Published by Stephen Groner [?] · March 12 · Like Page

WASH WATER ALERT: When wash water flows into storm drains it goes straight to local creeks, the Bay and the Ocean without ANY treatment. Wash water may contain soaps, toxic chemicals, and other pollutants that are harmful to waterways and wildlife. To protect the environment implement Best Management Practices (BMPs) to keep our waterways healthy. For best management practices visit: bit.ly/2NO1yvG




FLOWSTOBAY.ORG
www.flowstobay.org

1,514 People Reached **104** Engagements Boost Again

Boosted on Mar 12, 2019 By Stephen Groner Completed

People Reached	946	Post Engagement	86
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[View Results](#)



 Perez Ruth, Renate Holbrook and 60 others 1 Comment 5 Shares

Like Comment Share More



Performance for Your Post

1,514 People Reached

74 Reactions, Comments & Shares 

63 Like 	63 On Post	0 On Shares
5 Wow 	5 On Post	0 On Shares
1 Comments	1 On Post	0 On Shares
5 Shares	5 On Post	0 On Shares


30 Post Clicks

0 Photo Views	23 Link Clicks 	7 Other Clicks 
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NEGATIVE FEEDBACK

4 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.



Flows To Bay
Published by Stephen Groner [?] · May 31 · 🌐

⋮

Don't burst their bubbles! Some air-breathing-beetles spend their entire adult lives underwater by using surface tension to carry little air bubbles around with them. They're like scuba divers, but their bubbles burst when they come in contact with soap. Washing your car on a lawn, or taking it to a professional car washer with a water-capture system in place will prevent soap from entering the stormwater system and bursting a beetle's bubble!! Want to know more? Check out these Best Management Practices: bit.ly/2VXY3Xg #themoreyouknow

Performance for Your Post

226 People Reached

94 3-Second Video Views

6 Reactions and Comments 🗨️

4 👍 Like

1 😂 Haha

0 Comments

6 Post Clicks

0 Link Clicks 🗨️	6 Other Clicks 🗨️
-------------------------	--------------------------

NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

Deep Look • PBS
Nature's Scuba Divers: How Beetles Breathe Underwater Follow

312,059 Views

KQED posted an episode of a show.
May 3 · 🌐

Bugs and beetles can't hold their breath underwater like we do. But some aquatic insects can spend their whole adult lives underwater. How do they do it? Meet nature's Scuba divers. They carry their air with them—in some cases, for a lifetime.

226 People Reached

11 Engagements

Boost Unavailable

👍👍👍 Linda Barraza, Samantha Aiasa and 3 others 1 Share

👍 Like
💬 Comment
➦ Share
⋮

Figure 15-1. Examples of Car Wash Facebook Posts

Provision C.15.b.v. Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges

During FY 2018/19, SMCWPPP, created a BMP fact sheet for swimming pools, hot tubs, spas, and fountain water discharges (Figure 15-2) and conducted public outreach to promote these types of BMPs through social media posts (Figure 15-3).



**BEST MANAGEMENT PRACTICES FOR
SWIMMING POOLS, HOT TUBS &
FOUNTAIN WATER DISCHARGES**
Homeowners | Landscapers | Swimming Pool/Spa Service Workers | Contractors

Information about using Best Management Practices (BMPs) to prevent swimming pool, hot tub, and fountain waters from entering storm drain systems and polluting local waterways.

WHY SHOULD WE BE CONCERNED WITH POOL, HOT TUBS, AND FOUNTAIN WATER DISPOSAL?
Water from pools, hot tubs, and fountains is NOT just water. It also may contain potential pollutant sources such as chlorine, copper, algaecides, colored dye, chemicals/salts that are harmful to our creeks and waterways. You may never drain your pool water in the street or storm drain system, even if the water is dechlorinated.

Federal, State, and local regulations prohibit discharge of anything but rain water in the storm drain.
Implementing the proper Best Management Practices (BMPs) is easy and is required for compliance with stormwater pollution prevention regulations.

CLEANING

- Never clean a filter in the street, gutter, or storm drain.
- Rinse cartridge filters onto a dirt area and spade filter residue into the soil.
- Keep backwash discharges out of the street and storm drain. Backwash sand and diatomaceous earth filters onto a dirt area. Dispose of spent filter materials in the trash.
- If you don't have a suitable dirt area, contact your wastewater treatment authority listed on the back of this filer for instructions on discharging to the sanitary sewer.

DRAINING

- Never drain into a street, gutter or storm drain.
- Discharge water to a sanitary sewer clean-out.
- If you are on a septic system or have no sanitary sewer clean-out, contact your wastewater treatment authority listed in this brochure for guidance.

MATERIAL STORAGE & HANDLING

- Store chemicals in a clean, dry and covered area.
- If landscaping materials are left outside, cover with a tarp or plastic sheeting to protect from urban runoff.

A PROPERLY MAINTAINED POOL, HOT TUB, AND FOUNTAIN WILL REDUCE THE NEED FOR DRAINING

MAINTAINING

- Clean regularly, maintain proper chlorine levels and maintain water filtration and circulation.
- Manage pH and water hardness to minimize copper pipe corrosion that can stain your pool and end up in our creeks and the Bay.
- Minimize algae buildup to prevent the need for toxic algaecides.
- Ask your pool maintenance service for help resolving persistent algae problems without using copper algaecides.

DID YOU KNOW...?
Copper is a pollutant that threatens aquatic life in our creeks and the Bay. It is used as an algaecide in pools, spas and fountains, and copper pipes are commonly used in pool plumbing.

flowstobay.org For More Information About Stormwater Pollution Prevention email info@flowstobay.org
UPDATED APRIL 2013



**BEST MANAGEMENT PRACTICES FOR
SWIMMING POOLS, HOT TUBS &
FOUNTAIN WATER DISCHARGES**
Homeowners | Landscapers | Swimming Pool/Spa Service Workers | Contractors

Protect the Bay, the Ocean, and Yourself! Keep swimming pools, hot tub, and fountain water out of storm drains, creeks, and the Bay.

DOING THE JOB RIGHT: CHECKLIST OF BMPs

- Never drain your pool water into the street or storm drain system, even if the water is dechlorinated.
- Always drain your residential pool water into a sewer line. For convenience, use the sewer clean-out connection in your yard.
- You can also access the sewer system drain in your toilet, bathtub or sink inside your home. Be cautious that you do not flood your home if you use this option.
- If you are on a septic system or have no sanitary sewer clean-out, contact your wastewater treatment authority listed in this filer for guidance.
- Filters should be cleaned and rinsed over a dirt area or all rinse water should be captured and filtered to remove any solids prior to being discharged into the sewer system.
- Keep backwash discharges out of the street and storm drain. Backwash sand and diatomaceous earth filters onto a dirt area. Dispose of spent filter materials in the trash.
- Rinse cartridge filters onto a dirt area and spade filter residue into the soil.
- If you don't have a suitable dirt area, contact your wastewater treatment authority listed in this brochure for instructions on discharging to the sanitary sewer.

Wastewater Treatment Plants

Burlingame Waste Water Treatment Facility	(650) 342-3727
Millbrae Water Pollution Control Plant	(650) 259-2388
North San Mateo County Sanitation District	(650) 991-8200
Pacifica's Calera Creek Water Recycling Plant	(650) 738-4660
San Mateo Waste Water Treatment Plant	(650) 522-7300
Sewer Authority Mid Coastside	(650) 726-0124
Silicon Valley Clean Water	(650) 832-6243
South San Francisco/San Bruno Water Quality Control Plant	(650) 877-8555

4 TIPS FOR FINDING YOUR CLEAN-OUT

Sanitary sewer clean-outs are most often found along the sewer line, which is usually aligned with the sewer lines for the house. However, not all cities use the same method to mark their sewer systems. If you have trouble locating your clean-out, contact your local wastewater treatment authority. See the "Local Pollution Control Agencies" below.

1. Look for an "S" stamped into the curb or sidewalk near your house. It marks where the sewer line is. Your clean-out may be along it.
2. Look for a slight linear depression in your yard between your house and the street. This is often an indicator of the location of a sewer line, and your clean-out may be on it.
3. If your kitchen or bathroom is on an exterior wall, look outside along that wall for the clean-out.
4. Stand on the sidewalk looking toward your house. Line up the main water sources in your house (bathrooms, kitchens, washers, etc.) The clean-out is often located on that line, in front of or behind your house.


flowstobay.org The San Mateo Countywide Water Pollution Prevention Program acknowledges the Santa Clara Valley Urban Runoff Pollution Prevention Program for developing and sharing the content of this brochure.

Figure 15-2. Swimming Pool, Hot Tub, Spa, and Fountain Water Discharge BMP Fact Sheet

Flows To Bay Like Page

Published by Stephen Groner [?] · May 29 ·

#DidYouKnow... That water in fountains MUST be discharged into sanitary sewers. If you are on a septic system or have no sanitary sewer clean-out, contact your wastewater treatment authority to see what you should do. Chemicals in fountains can kill the organisms that live in our water-bodies and keep our ecosystems healthy! To learn more, click here: bit.ly/2GBSJTI



FLOWSTOBAY.ORG
www.flowstobay.org

✔ **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,000 people.

222 People Reached **2** Engagements Boost Post

Like Comment Share ⋮

Performance for Your Post

222 People Reached

0 Likes, Comments & Shares

0 Likes	0 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

2 Post Clicks

0 Photo Views	2 Link Clicks	0 Other Clicks
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NEGATIVE FEEDBACK


1 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

Flows To Bay Like Page

Published by Stephen Groner [?] · June 7 ·

Did you know it's illegal to discharge swimming pool or hot tub water into storm drains? To learn more about this and for best management practices, click here: bit.ly/2GBSJTI



FLOWSTOBAY.ORG
www.flowstobay.org

✔ **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,000 people.

284 People Reached **6** Engagements Boost Post

Like Comment Share ⋮

Performance for Your Post

284 People Reached

2 Likes, Comments & Shares

2 Likes	2 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

4 Post Clicks

0 Photo Views	3 Link Clicks	1 Other Clicks
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NEGATIVE FEEDBACK

1 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

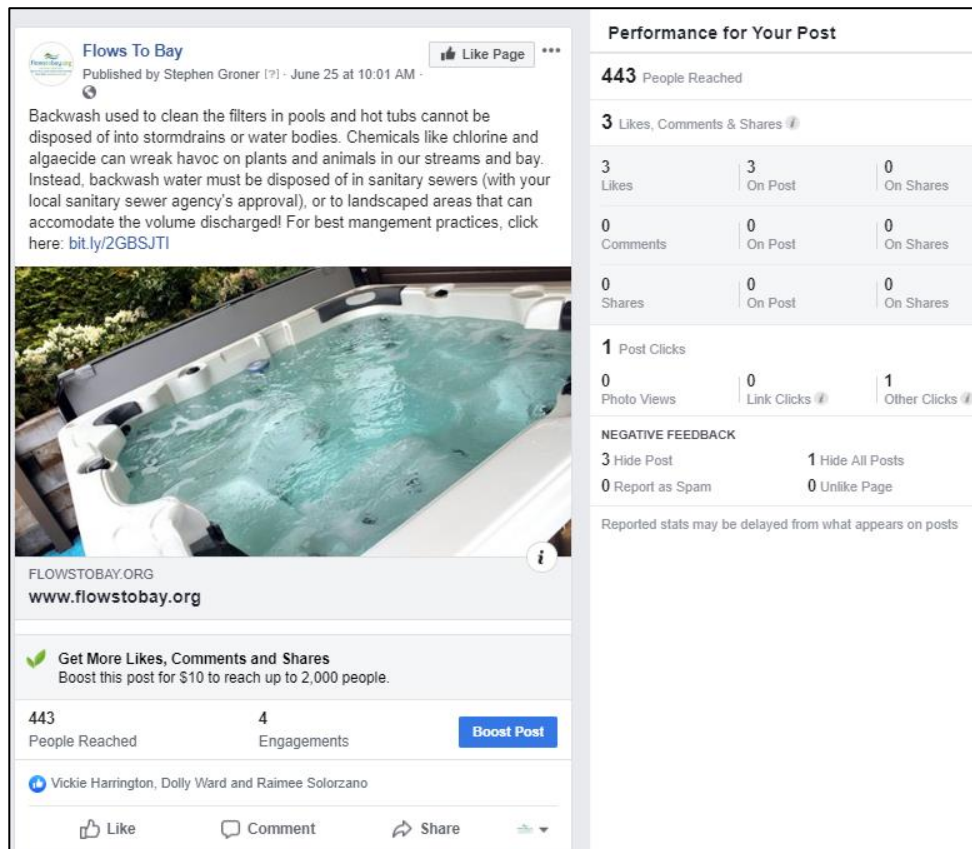


Figure 15-3. Examples of Swimming Pool, Hot Tub, Spa, and Fountain Water Discharge Facebook Posts

Provision C.15.b.vi. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering


In FY 2018/19, SMCWPPP implemented the following outreach activities to promote the use of less-toxic options for pest control and landscape management, and the use of drought tolerant, native vegetation to minimize landscape irrigation demands:

- Conducted outreach to San Mateo County residents to support and promote eco-friendly alternatives to toxic pesticides. This promotion took place on social media and the SMCWPPP e-newsletter and blog. Additional messaging was provided through SMCWPPP’s point-of-purchase program, where Our Water Our World (OWOW, see Section 9) materials were distributed that educate residents about eco-friendly pesticide alternatives. Example posts are shown in Figure 15-4. Table 15-1 summarizes the reach of the Facebook posts made on pesticide pollution prevention.
- Promoted planting of drought tolerant, native vegetation through SMCWPPP’s online media channels, including social media and the SMCWPPP e-newsletter and blog. Messaging focused on the environmental benefits of planting native plant species, including their tolerance to drought. Information was included to help identify native plants and guidance provided on how to plant and maintain them. Example posts are shown in Figure 15-5.

- Continued to promote water-saving tips via social media.


Table 15-1. Summary Statistics for Facebook Posts on Pesticide Pollution Prevention Topics

Post Focus	Reach	Engagements (likes, comments, or shares)	Clicks
Integrated Pest Management (12 posts)	5,480	213	45
Hiring a Pest Control Operator (8 posts)	2,086	21	9
Promotions of Community Partners (6 posts)	2,175	50	10
Links Between Pesticides & Water Quality (7 posts)	2,677	58	11
Totals:	12,418	342	75



Flows To Bay
Published by Stephen Groner [?] · June 17 at 9:00 AM · Like Page

Less than 2% of the insects you encounter in the garden will be pests. The vast majority of insects in your yard are not harmful - they're either beneficial or neutral. In the interest in keeping them alive, take a targeted, selective approach to dealing with the insects that are pests. Learn more about IPM best management strategies on our website: bit.ly/2Sq5Yya



✔ **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.

522
People Reached

23
Engagements

Boost Post

Rob McKeen, Kelly Heinsohn and 9 others 6 Shares

Like
Comment
Share

Performance for Your Post

522 People Reached

18 Reactions, Comments & Shares

11 Like	10 On Post	1 On Shares
1 Love	1 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
6 Shares	6 On Post	0 On Shares


5 Post Clicks

2 Photo Views	0 Link Clicks	3 Other Clicks
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NEGATIVE FEEDBACK


1 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts





Flows To Bay

Published by Stephen Groner [?] · March 29 · 

 Like Page ***

Spraying pesticides willy-nilly is a bandaid solution. Luckily, targeted solutions are not only easy, but they're cheaper and result in less water pollution and other environmental harm. Our good friends at "Our Water Our World" have put together a whole host of intuitive information to guide you through the process of Integrated Pest Management (IPM). Check out their incredible pest control database: bit.ly/2u6dAHw



 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.


682

People Reached


65


Engagements


Boost Post


 Barbara Wellman, Mike Campbell and 13 others

2 Comments 6 Shares

 Like


 Comment

 Share





Performance for Your Post

682 People Reached

26 Likes, Comments & Shares 

18 Likes	16 On Post	2 On Shares
2 Comments	2 On Post	0 On Shares
6 Shares	6 On Post	0 On Shares

39 Post Clicks

8 Photo Views	9 Link Clicks 	22 Other Clicks 
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NEGATIVE FEEDBACK

2 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

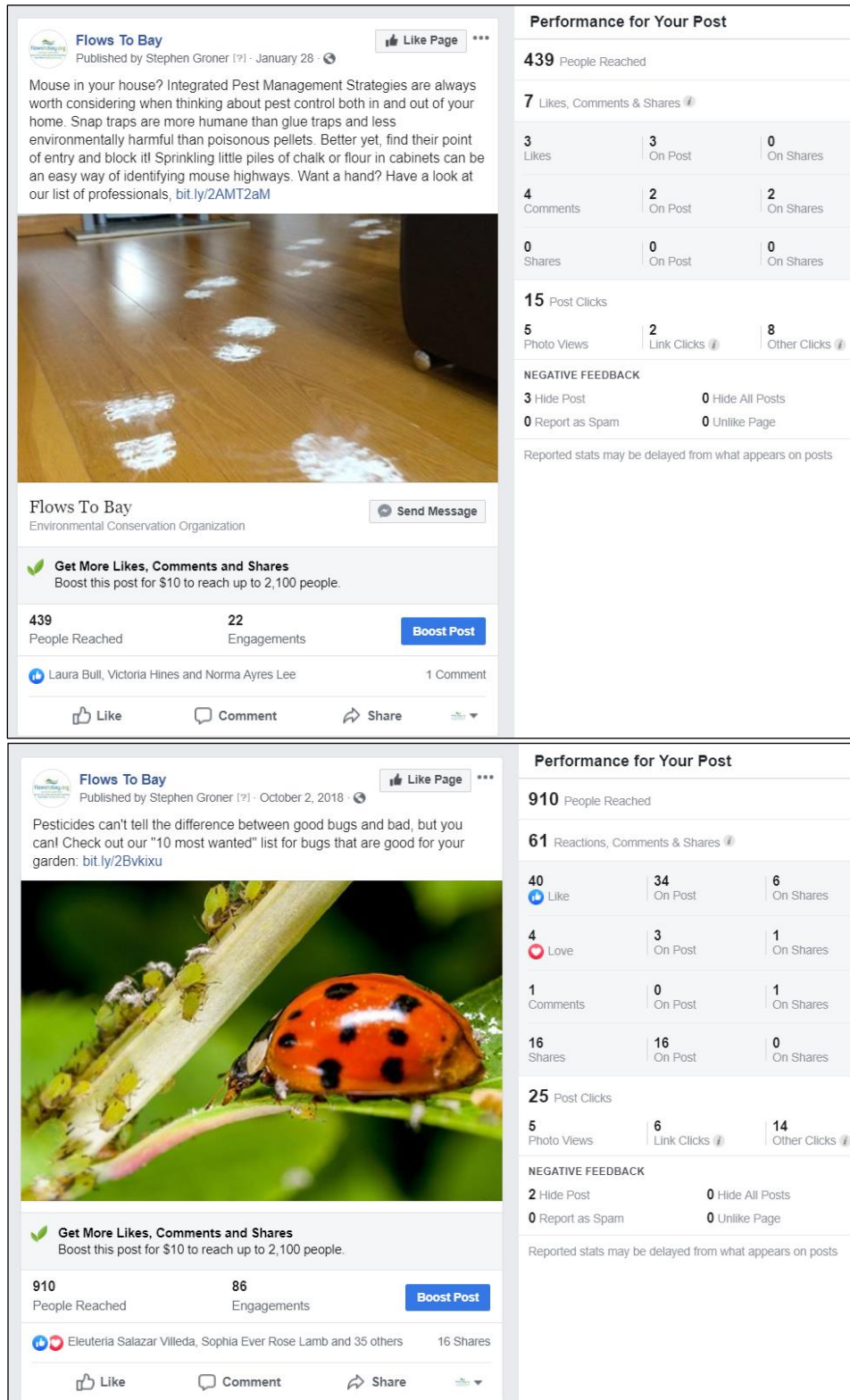





Figure 15-4. Social Media Posts Promoting Eco-Friendly Alternatives to Pesticides.

Flows To Bay
Published by Stephen Groner [?] · May 19 · 


Interested in saving water and creating habitat by planting a native garden? Join landscape architect, Juanita Salisbury, on May 22 at the Burlingame Public Library to put pencil to paper and learn the principles of garden design from start to finish! Signup information here: bit.ly/2LMueYr







FLOWSTOBAY.ORG
Design Your Own Native Plant Landscape (Burlingame) | Flowstobay: San Mateo Countywide Water Pollution...

 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.


378 People Reached **19** Engagements [Boost Post](#)

 Melissa Perez, Victoria Hines and 3 others 1 Share

 Like  Comment  Share 



Performance for Your Post

378 People Reached

6 Likes, Comments & Shares 

5 Likes	5 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
1 Shares	1 On Post	0 On Shares


13 Post Clicks

0 Photo Views	10 Link Clicks 	3 Other Clicks 
----------------------	---	---


NEGATIVE FEEDBACK

1 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page


Reported stats may be delayed from what appears on posts

Flows To Bay
Published by Stephen Groner [?] · March 28 · 


Soil with lots of healthy root structures locks in dirt and decreases the chance of sediment polluting our local waterways when heavy rain is overhead. If you like the idea of a landscaped yard as tasty as it is beautiful, you might be interested in Foodscaping! Learn more here: bit.ly/2XS5mdV







GARDENCULTUREMAGAZINE.COM
Foodscaping: A New Way To Create A Garden | Garden Culture Magazine

 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.


934 People Reached **76** Engagements [Boost Post](#)

 Barbara Wellman, Audrey Solarfan and 16 others 1 Comment 7 Shares

 Like  Comment  Share 



Performance for Your Post

934 People Reached

37 Reactions, Comments & Shares 

25 Like	16 On Post	9 On Shares
3 Love	2 On Post	1 On Shares
2 Comments	1 On Post	1 On Shares
7 Shares	7 On Post	0 On Shares

39 Post Clicks

0 Photo Views	20 Link Clicks 	19 Other Clicks 
----------------------	---	--


NEGATIVE FEEDBACK

2 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

Flows To Bay
Published by Stephen Groner [?] · November 16, 2018 · Like Page ⋮

#DidYouKNOW...grass clippings left on the lawn will quickly decompose and return valuable nutrients to the soil! #GrassCycling can help keep your lawn lush while reducing your fertilizer and water needs, which minimizes chemical runoff entering storm drains and polluting our waterways. Learn more at CalRecycle: bit.ly/2F4hcSJ



Flows To Bay
Environmental Conservation Organization Send Message

✓ **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.

439 People Reached **16** Engagements Boost Post

👤 Jj Valenzuela, Jaime Blue and 5 others 1 Share

Like Comment Share ⋮

Performance for Your Post

439 People Reached

8 Likes, Comments & Shares 👤

7 Likes	7 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
1 Shares	1 On Post	0 On Shares

8 Post Clicks

5 Photo Views	0 Link Clicks 👤	3 Other Clicks 👤
----------------------	-------------------------------------	--------------------------------------


NEGATIVE FEEDBACK

5 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

Flows To Bay
Published by Stephen Groner [?] · October 16, 2018 · Like Page ⋮

Live on a hill? Hiring a landscaper might not seem like a big deal, but small decisions can have a big impact on water quality. Native plants with fibrous root structures will slow down water as it moves through the ground, and terracing steep slopes will do wonders to prevent runoff. More resources on our website: bit.ly/2mzYIS



✓ **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 2,100 people.

716 People Reached **99** Engagements Boost Post

👤 Barbara Hill, Lisa Lee and 26 others 1 Comment 8 Shares

Like Comment Share ⋮

Performance for Your Post

716 People Reached

40 Reactions, Comments & Shares 👤

27 Like	26 On Post	1 On Shares
3 Love	2 On Post	1 On Shares
1 Wow	0 On Post	1 On Shares
1 Comments	1 On Post	0 On Shares
8 Shares	8 On Post	0 On Shares

59 Post Clicks

20 Photo Views	4 Link Clicks 👤	35 Other Clicks 👤
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NEGATIVE FEEDBACK

2 Hide Post	1 Hide All Posts
0 Report as Spam	0 Unlike Page

Reported stats may be delayed from what appears on posts

Figure 15-5. Social Media Posts Promoting Landscape Management and the Use of Drought-Tolerant, Native Vegetation.

FUTURE ACTIONS

In FY 2019/20, SMCWPPP will continue to assist San Mateo County Permittees to comply with MRP Provision C.15 requirements related to conditionally exempt non-stormwater discharges, including conducting selected types of related outreach.

Appendix 1

- Stormwater Committee – Attendance List for FY 2018/19

2018-19 Stormwater Committee Attendance			July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Agency	Representative	Position												
Atherton	Robert Ovidia	Public Works Director				X						X		
Belmont	Afshin Oskoui	Public Works Director				X				X		X		
Brisbane	Randy Breault	Public Works Director/City Engineer				X				O		X		
Burlingame	Syed Murtuza	Public Works Director				X				X		O		
Colma	Brad Donohue	Director of Public Works and Planning	C	C	C	X	C	C	C	X	C	X	C	C
Daly City	Richard Chiu	Public Works Director	A	A	A	O	A	A	A		A	X	A	A
East Palo Alto	Kamal Fallaha	City Engineer	N	N	N		N	N	N	X	N		N	N
Foster City	Jeff Moneda	Public Works Director	C	C	C		C	C	C	X	C		C	C
Half Moon Bay	Maziar Bozorginia	City Engineer	E	E	E		E	E	E	X	E		E	E
Hillsborough	Paul Willis	Public Works Director	L	L	L	X	L	L	L	X	L	X	L	L
Menlo Park	Justin Murphy	Public Works Director	E	E	E	X	E	E	E	O	E	X	E	E
Millbrae	Khee Lim	Public Works Director	D	D	D		D	D	D		D		D	D
Pacifica	Van Ocampo	Public Works Director/City Engineer										O		
Portola Valley	Howard Young	Public Works Director				X								
Redwood City	Saber Sarwary	Supervising Civil Engineer				X				X		X		
San Bruno	Jimmy Tan	City Engineer				X						X		
San Carlos	Steven Machida	Public Works Director								X		X		
San Mateo	Brad Underwood	Public Works Director				O				X		X		
South San Francisco	Eunejune Kim	Public Works Director								X				
Woodside	Sean Rose	Public Works Director												
San Mateo County	Jim Porter	Public Works Director				X						O		
Regional Water Quality Control Board	Tom Mumley	Assistant Executive Officer												

"X" - Committee Member Attended

"O" - Other Jurisdictional Representative Attended

Appendix 2

- Municipal Maintenance Subcommittee – Attendance List for FY 2018/19

SMCWPPP Municipal Maintenance Subcommittee Attendance – FY 2018/19

NAME	MUNICIPALITY	09/26/18
Rick Locke	Belmont	✓
Marcus Escobedo	Belmont	✓
Tim Murray	Belmont	✓
Rick Horne	Burlingame	✓
Louis Gotelli	Colma	✓
Jeff Fornesi	Daly City	✓
Joe Stabile Sr.	Daly City	✓
Anthony Andrews	Daly City	✓
Robert Halvelson	Daly City	✓
Lenin Malgar	East Palo Alto	✓
Frank Schoering	Foster City	✓
Mike Zapata	Foster City	✓
Kelly Carroll	Half Moon Bay	✓
Gary Francis	Hillsborough	✓
Hugo Torres	Menlo Park	✓
Carlos Robledo	Millbrae	✓
Shawn Murray	Millbrae	✓
Manny Marquez	Millbrae	✓
Chris Martin	Pacifica	✓
Paul Lavorini	Pacifica	✓
Michael Patolo	Redwood City	✓
Vicki Sherman	Redwood City	✓
Robin Kim	Redwood City	✓
Ted Chapman	San Bruno	✓
Ted Rutledge	San Carlos	✓
Argel Noriega	San Carlos	✓
Kristin Kerr	EOA, Inc.	✓

Appendix 3

- New Development Subcommittee – Attendance List for FY 2018/19
- Green Infrastructure Technical Advisory Committee Attendance Record
- SMCWPPP Biotreatment Soil Mix Supplier List
- Annual “C.3” Workshop: Green Infrastructure Guidance and Stormwater Controls for Regulated Projects
 - Workshop Registration Flyer
 - Workshop Agenda
 - Attendance List
 - Evaluations Summary



SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
 Clean Water. Healthy Community.

New Development Subcommittee
FY 2018/19 Meeting Attendance

Representing	Name	Phone Number	Meetings Attended			
			Aug	Nov	Feb	May
Atherton	Nestor Delgado	650-752-0544	X	X		X
	David Huynh					
Belmont	Gilbert Yau	650-595-7467	X			X
	Jana Cadiz	650-595-7468			X	
Brisbane	Ken Johnson	415-508-2120	X	X	X	X
Burlingame	Jennifer Lee	650-558-7381	X	X	X	X
Colma	Brandon DeLucas/ Catherine Chan	650-757-8898	X	X	X	X
	Muneer Ahmed	650-757-8894				
County of San Mateo	Camille Leung	650-363-1826	X			X
	Breann Liebermann	650-599-1514				
	Sherry Liu			X		
	John Allan		X	X		
	Melody Eldridge				X	X
C/CAG – SMCWPPP	Matt Fabry	650-599-1419				
	Reid Bogert	650-599-1433	X	X		X
Daly City	Sibely Calles	650-991-8054	X	X	X	
	Carmelisa Morales				X	X
East Palo Alto	Tiffany Deng	650-853-3126				
EOA-SMCWPPP	Jill Bicknell	408-720-8811 x1	X	X	X	X
	Peter Schultze-Allen	510-832-2852 x128	X	X	X	X
Foster City	Vivian Ma	650-286-3270	X	X	X	X
Half Moon Bay	Kelly Carroll	650-522-2506	X	X	X	X
Hillsborough	Natalie Asai/ Catherine Chan	650-375-7444	X	X	X	X
Menlo Park	Clarence Li/Michael Fu	650-330-6740/6797	X			X
	Rambod Hakhamaneshi	650-330-6740	X	X	X	X
Millbrae	Andrew Yang	650-259-2339				
	Sam Fielding	650-522-2506				
	Michael Cully	650-259-2403			X	
	Kelly Carroll	650-522-2506		X	X	X
Pacifica	Christian Murdock	650-738-7444	X		X	X
	Helen Gannon			X		
Portola Valley	CheyAnne Brown	650-851-1700	X	X		
Redwood City	James O'Connell	650-780-5923	X	X	X	X
San Bruno	Matt Neuebaumer	650-616-7042		X		
	Jason Tang					
San Carlos	Kathryn Robertson	650-802-4212	X	X	X	X
San Mateo	Ken Pacini	650-522-7333			X	X
	Grant Ligon/Sven Edlund		X	X	X	
South S.F.	Daniel Garza	650-829-3840	X	X	X	
	Andrew Wemmer		X	X		X
Woodside	Dong Nguyen	650-851-6790				

BIOTREATMENT SOIL MEDIA SUPPLIER LIST

Company	Contact Name	Phone	Address	City	Zip	E-mail	Website
American Soil & Stone Products Inc.	Ryan Hoffman	510-292-3018	Richmond Annex, 2121 San Joaquin Street, Building A	Richmond	94804	ryan@americansoil.com	www.americansoil.com
California Landscape Supply	Ryan Thornberry	209-538-8493	4107 Morgan Road	Ceres	95307	ryan@californialandscapesupply.com	www.californialandscapesupply.com
L.H. Voss Materials, Inc.	Nyoka Corley	925-676-7910 x102	5965 Dougherty Road	Dublin	94568	nyoka@lhvoss.com	www.lhvoss.com
Lehigh Hanson Aggregates	Chris Stromberg	510-246-0393	4501 Tidewater Avenue	Oakland	94601	chris.stromberg@lehighhanson.com	www.lehighhanson.com
Lyngso Garden Materials, Inc.	Kan Parthiban Erik Aichelen	650-257-9836 650-333-1044	345 Shoreway Road	San Carlos	94070	kparthiban@lyngsogarden.com eaichelen@lyngsogarden.com	www.lyngsogarden.com
Marshall Brothers Enterprises, Inc.	Phillip Marshall	925-449-4020	P.O. Box 2188	Livermore	94551	phillip@mbenterprises.com	www.mbenterprises.com
Pleasanton Trucking Inc.	Tom Bonnell	925-449-5400	P.O. Box 11462	Pleasanton	94588	Tom@ptisoils.com	www.pleasantontrucking.com
Recology Blossom Valley Organics	Jake Oosterman	209-872-0734 209-545-7718	6133 Hammett Court	Modesto	95358	joosterman@recology.com	www.recology.com/blossom-valley-organics-modesto
Soiland Company	Willie Leuzinger	707-889-7800	7171 Stony Point Rd.	Cotati	94931	WLeuzinger@SoilandRocks.com	www.SoilandRocks.com
TMT Enterprises, Inc.	Matt Moore	408-432-9040	1996 Oakland Road	San Jose	95131	info@tmtenterprises.net	www.tmtenterprises.net

As of: 7/1/2019

Disclaimer: SMCWPPP provides this list of biotreatment soil media suppliers for the use of its member agencies, contractors, designers and others in finding suppliers for their projects. Suppliers are listed based on a general review of their soil media product including test results, adherence to the BASMAA Biotreatment Soil Media specification (required in the MRP) and knowledge of the specification. Therefore users of this SMCWPPP list must make the final determination as to the products and adherence to the BASMAA specification and the MRP. Users of the list assume all liability directly or indirectly arising from use of this list. The listing of any soil supplier is not be construed as an actual or implied endorsement, recommendation, or warranty of such soil provider or their products, nor is criticism implied of similar soil suppliers that are not listed. This disclaimer is applicable whether the information is obtained in hard copy or downloaded from the Internet. Check the SMCWPPP website for the "Biotreatment Soil Mix Verification Checklist" and "Biotreatment Soil Mix Supplier Verification Statement" for assistance in reviewing and approving soil mix submittals. www.flowstobay.org/newdevelopment



SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.



Annual New Development (C.3) Workshop

Tuesday, June 18th, 2019

9:00am – 3:30pm

San Mateo Public Library (Oak Room)

55 West 3rd Avenue

San Mateo, CA 94402

WHO SHOULD ATTEND:

Municipal stormwater program coordinators, planning, building and public works staff, and consultants who develop, review/approve stormwater control plans for development projects, and/or manage stormwater programs or regulatory compliance.

The workshop will include presentations on the following:

- ✓ A refresher presentation on the basics of MRP Provision C.3
- ✓ Update on Green Infrastructure Plan (Provision C.3.j) requirements, status & implementation
- ✓ Presentation on the new SMCWPPP Green Infrastructure Design Guide
- ✓ Presentation on the updated SMCWPPP C.3 Regulated Projects Guide
- ✓ Presentation on the design and operation of buildings to reduce litter and waste

Click on the link below to register for the workshop:

<https://smcwppp-new-development-c3-workshop.eventbrite.com>

Questions? Contact Yadira Diaz at 510-832-2852 ext. 101 or ydiaz@eoainc.com

Please pass this flyer along to appropriate staff within your organization.

This training is FREE and will include morning coffee, refreshments and lunch.



Annual “C.3” Workshop:

Green Infrastructure Guidance and Stormwater Controls for Regulated Projects

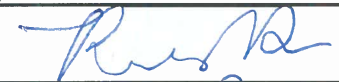






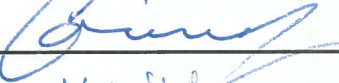
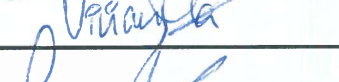




Tuesday, June 18, 2019, 9:00 AM – 3:00 PM

City of San Mateo Library, Oak Room, 55 W. 3rd Ave, City of San Mateo


AGENDA

Registration and Coffee	9:00 am – 9:10 am
Welcome	<i>Matt Fabry/Reid Bogert, SMCWPPP</i> 9:10 am – 9:15 am
C.3 Regulated Projects Basic Training on MRP Provision C.3	<i>Kristin Kerr, EOA</i> 9:15 am – 10:00 am
BREAK	10:00 am – 10:10 am
Green Infrastructure Design Guide Overview	<i>Connie Goldade, CD+A</i> 10:10 am – 10:30 am
Green Infrastructure Design Guide Buildings and Sites	<i>Kevin Robert Perry, Urban Rain Design</i> 10:30 am – 11:15 am
Green Infrastructure Design Guide Sustainable Streets	<i>Connie Goldade, CD+A</i> 11:15 am – 12:00 pm
LUNCH	12:00 pm – 12:45 pm
Green Infrastructure Design Guide Operations and Maintenance	<i>Kevin Robert Perry, Urban Rain Design</i> 12:45 pm – 1:30 pm
C.3 Regulated Projects Guide Update on revisions to the new C3RPG	<i>Jill Bicknell, EOA</i> 1:30 pm – 1:50 pm
GI Plan Implementation Panel Discussion of GI implementation approaches	<i>Peter Schultze-Allen, EOA</i> 1:50 pm – 2:30 pm
Designing Buildings for Litter & Waste Reduction Using the SMCWPPP Multi-Family Toolkit	<i>Peter Schultze-Allen, EOA</i> 2:30 pm – 3:00 pm
Adjourn	3:00 pm

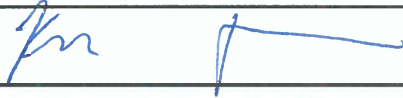
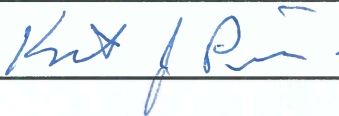











SMCWPPP
San Mateo Library
June 18, 2019

	LAST NAME	FIRST NAME	AGENCY	SIGNATURE
1	Bogert	Reid	C/CAG	
2	Fabry	Matt	C/CAG	
3	Goldade	Connie	CD + A	
4	Mirza	Anwar	City of Belmont	
5	Yau	Gilbert	City of Belmont	
6	Johnson	Ken	City of Brisbane	
7	Lee	Jennifer	City of Burlingame	
8	Calles	Sibely	City of Daly City	
9	Morales	Carmelisa	City of Daly City	
10	Ma	Vivian	City of Foster City	
11	Magno	Francine	City of Foster City	
12	Tam	Lawrence	City of Foster City	
13	Sheehan	Katherine	City of Half Moon Bay	
14	Fu	Michael	City of Menlo Park	
15	Hakhamaneshi	Rambod	City of Menlo Park	

**SMCWPPP
San Mateo Library
June 18, 2019**

16	Li	Clarence	City of Menlo Park	
17	Rangeen	Edress	City of Menlo Park	
18	Giang	Bill	City of Millbrae	BG.
19	Kao	Jane	City of Millbrae	
20	Pacumio	Angelo	City of Millbrae, Public Works	
21	Baltar	Paolo	City of Redwood City	PSB
22	Chan	Alex	City of Redwood City	AC
23	O'Connell	James	City of Redwood City	JO
24	Schrotenboer	Patti	City of Redwood City	PATTI SA
25	Bui	Dan	City of San Bruno	
26	Kwok	Joanna	City of San Bruno	
27	Liang	Jacinta	City of San Bruno	
28	Ritchie	Hae Won	City of San Bruno	
29	Hannigan	John	City of San Bruno, Engineering	JH
30	Chan	Otis	City of San Mateo	
31	Kenyon	Michelle	City of San Mateo	

**SMCWPPP
San Mateo Library
June 18, 2019**

32	Magallanes	Karen	City of San Mateo	
33	Murray	Roxanne	City of San Mateo	
34	Pacini	Kenneth	City of San Mateo	
35	Raj	Jai	City of San Mateo	
36	Scheidt	Sarah	City of San Mateo	
37	Scramaglia	Tracy	City of San Mateo	
38	Tom	Jeffrey	City of San Mateo	
39	Vo	Jimmy	City of San Mateo	
40	Zammit	Cathi	City of San Mateo	
41	Garza	Daniel	City of South San Francisco	
42	Tai	Christina	City of South San Francisco	
43	Yuk	Nelson	City of South San Francisco	
44	Ng	Peniel	CSG Consultants Inc.	
45	Caronongan	Cesar	CSG Consultants, Inc.	
46	Kimia	Arash	CSG Consultants, Inc.	
47	Lee	Jeffry	CSG Consultants, Inc.	

**SMCWPPP
San Mateo Library
June 18, 2019**

48	Navarro	Frank	CSG Consultants, Inc.	
49	O'Connell	Kevin	CSG Consultants, Inc.	
50	Truong	Sophie	CSG Consultants, Inc.	
51	Uppal	Paramjit	CSG Consultants, Inc.	Paramjit Kaur Uppal 
52	Khaila	Mehdi	CSG Consultants, Inc.	
53	Madera	Yvette	Recology San Mateo County	
54	Rossi	Mia	Recology San Mateo County	
55	Lee	Nicole	Republic Services of Daly City	
56	Allan	John	San Mateo County	
57	Eldridge	Melody	San Mateo County	
58	Pena	Tiare	San Mateo County	
59	Velasquez	Alan	San Mateo County	
60	Wright	Susan	San Mateo County	
61	Azzari	Zack	San Mateo County, DPW	
62	Casagrande	Julie	San Mateo County, DPW	
63	Ananda	Renee	San Mateo County, Planning	

**SMCWPPP
San Mateo Library
June 18, 2019**

64	Brennan	John	San Mateo County, Planning	
65	Lang	Kelsey	San Mateo County, Planning	<i>Kelsey Lang</i>
66	Richstone	Laura	San Mateo County, Planning	<i>Laura Richstone</i>
67	Burlison	Summer	San Mateo County, Planning	<i>Summer Burlison</i>
68	Belli	Victoria	Schaaf & Wheeler	<i>V Belli</i>
69	Harms	Kiel	Schaaf & Wheeler	<i>Kiel Harms</i>
70	Lee	Robin	Schaaf & Wheeler	<i>Robin Lee</i>
71	Ahmed	Muneer	Town of Colma	<i>Muneer Ahmed</i>
72	Carroll	Kelly	Town of Colma	<i>Kelly Carroll</i>
73	Lau	Lawrence	Town of Colma	<i>Lawrence Lau</i>
74	Asai	Natalie	Town of Hillsborough	<i>Natalie Asai</i>
75	Perry	Kevin	Urban Rain Design	



SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

EVALUATION SUMMARY

Attendance: 63

Evaluations: 37

SMCWPPP NEW DEVELOPMENT C.3 WORKSHOP
Tuesday, June 18, 2019

1. C.3 Regulated Projects – Basic Training on MRP Provision C.3

Kristin Kerr, *EOA*

Very helpful **25** Somewhat helpful **9** Not helpful **1**

Comments

- Not helpful because I have seen it 7 times.
- Helpful for new staff.
- Always a good introduction and refresher on C.3 basics.
- Good for new individuals.
- Good overview especially for new staff.
- I would like to see more detail and interesting sites. Perhaps an on-hand exercise. I think since this training has been on-going it should be 1-hour Basic, 1-hour Advance.
- Good overall review of MRP.
- Would be a benefit to have an expanded version of this presentation that is very design/technically focused (step through designs, common design issues, confusions, construction issues).
- Could use more time for Q&A, discuss some case studies.
- I wish I had this presentation last year when I was introduced to the MRP.
- It would help to have a master diagram to show how things like LID, GI, etc. relate to each other.
- Clear and thorough.
- As someone who didn't have much prior knowledge of the MRP backstory, I think this was very useful.
- Good overview on basics for stormwater treatment measures.
- Great presentation.
- Good solid overview. Every two years is fine.
- Clear.

- Well done overview.
- Very well organized. Great presentation and speaking skills. Really appreciate the “big picture” orientation and how everything fits together.

2. Green Infrastructure Design Guide - Overview

Connie Goldade, *CD+A*

Very helpful **10** Somewhat helpful **22** Not helpful **4**

Comments

- Not very helpful. While I understand that you wanted to introduce us to the new Green Infrastructure document, I feel there is no need to go over the Table of Contents.
- This just felt like a reading of the Table of Contents. Could be more technical and detail the choices that went into the development of the Green Infrastructure Design Guide.
- Mostly a review of the Table of Contents. Felt like I did not get much from the presentation. Would rather hit some key highlights, examples, and inspiration like Kevin Perry’s presentations.
- Suggest speaking a little louder.
- Unfortunately, the speaker had to rush due to time constraints. For an “overview” would be helpful to have more emphasis on “big picture”, who publishes, where to find, status of document, relationship to other documents, etc.
-
- Need more detailed clarification.
- Unable to read slides. (6)
- Good overview.
- Really quick. (4)
- If packet is printed in portrait format it would be easier to follow along.
- Until projects really go into design and we start using Green Infrastructure Design Guide, this overview is not as helpful
- Hard to follow presentation of slides and information to obtain from presentations without a copy of the guide or being familiar. Hard to clearly hear and understand presenter. Understandably I think some of the problem was that she was trying to make up time.
- Good overview. Will need to read through the Design Guide myself for a better understanding.
- Seemed a little unnecessary.
- I did not know what GI was very well, as an overview this was helpful in later slides.
- Good to have an overview of the Green Infrastructure Design Guide.

3. Green Infrastructure Design Guide – Buildings and Sites

Kevin Robert Perry, *Urban Rain Design*

Very helpful **24** Somewhat helpful **11** Not helpful **1**

Comments

- It was good to see how existing spaces can be changed for Green Infrastructure. Would like real world examples/programs that offer Green Infrastructure retrofit incentives. It is one thing to show us conceptually how Green Infrastructure retrofit could work but it would be more helpful to have examples of programs that implement Green Infrastructure so that we can take that back to our jurisdiction.
- Interesting, but as a public employee not involved in design of these types of projects, it was not very relevant to my daily activities.
- Breezed through very quickly.
- Would recommend Green Infrastructure and C3 are separate.
- Good but does not really acknowledge other city requirements that may exist for parking.
- Good graphics to show what can be done.
- Perhaps the next presentation can be more about the design details of Green Infrastructure. The overview is great for new staff however.
- Great content but the wrong audience. Attendees are municipal staff. This presentation should be provided to local developers, engineers, and landscape architects.
- Municipalities have very little say over schools.
- Great examples. (6)
- Helpful to see impact from before and after photos.
- It would be great if you could put fewer things on each slide, and have more slides, so each photo or chart could be bigger.
- Provided a lot of ideas on how I can communicate GI concepts more effectively.
- Slides difficult to read.
- Appreciated the site-specific cases used to help illustrate the approaches and ideas of the building and sitedesign strategies.
- Liked the pictures with thumbs up/down for examples of what to do and not do.

4. Green Infrastructure Design Guide – Sustainable Streets

Connie Goldade, CD+A

Very helpful **13** Somewhat helpful **20** Not helpful **4**

Comments

- Would have liked some more guidance on how/when to apply alternative sizing criteria.
- Would appreciate the level of detail provided by Kevin Perry in the previous presentation.
- Speaks too quickly even when no time crunch.
- Did not really talk about cost implications.
- A little bit long for information given.
- Could have explained sustainable streets better and in more detail.
- Slides are hard to read – maybe zoom in to the titles to show what is available. Could use some concrete examples/details, discussion of special/tricky situations. This seems more

of an outline, maybe go into more detail with the how and why, rather than referring to the Green Infrastructure chapter/section.

- A bit hard to follow; graphics too small; more street examples would have made Powerpoint more interesting.
- Sort of hard to follow without any familiarity or without seeing the Guide document. A few specific case studies to help illustrate what each chapter covers may have helped.
- Kind of confusing how it is laid out.
- Would have liked a few more examples and clearer slides would have been nice.

5. C.3 Regulated Projects Guide – Update on revisions to the new C3RPG

Jill Bicknell, *EOA*

Very helpful **22** Somewhat helpful **13** Not helpful **1**

Comments

- Not very helpful to me because I did not know what was in the previous C.3 RPG; not really needed.
- LID fact sheets seem very useful for selecting what works best at a site. Also, good overviews to send to developers before they put plans together (incorrectly).
- I would have liked to hear more about detailed changes.
- Would be better if cut down and just went over major points.
- More information on expansion of alternative compliance would be helpful.
- Looking forward to receiving draft. (3)
- Helps explain relationship of documents. Good speaking skills.
- Appreciated the overview.
- Good info on updates. (2)
- Very clear and efficient presentation of information (2)

6. GI Plan Implementation – Panel Discussion of GI implementation approaches

Very helpful **27** Somewhat helpful **7** Not helpful

Comments

- Very informative to hear what other jurisdictions are doing. Would like to hear more about issues/troubles they have encountered. (6)
- Need to have more time for audience to generate questions, and possibly put this panel towards the end of the workshop.
- It was helpful hearing about implementation from different agencies and hearing about their processes and conflicts.
- Very interesting to hear how other jurisdictions are approaching Green Infrastructure.
- I wish we had more time for this piece. (3)

- We need some more tools at the county wide level to both keep special projects in the permit but require a more rigorous feasibility analysis.

7. Designing Buildings for Litter & Waste Reduction – SMCWPPP Multi-Family Toolkit
Peter Schultze-Allen, *EOA*

Very helpful **20** Somewhat helpful **9** Not helpful **1**

Comments

- Good information. (4)
- Good pictures.
- Interesting; we already have a discard collection plan COA for large developments.
- Interesting information; had not really considered implications of this.
- Didn't feel very relevant to Provision C.3 though audience (plan reviewers) might be similar. Sometimes hard for plan reviewers to affect policy though. Would be better suited to audience of waste haulers or policy makers.
- Liked it a lot. Not a subject that is necessarily deeply considered during the permit process.
- Pays more attention to details that we never thought of before.
- Great overview of the issues and toolkit. Good images and main points.

8. Did this workshop meet your expectations? Yes **32** No **1**

9. What topics would you recommend for future training?

- More about expectations – what to look for during C.3 inspections.
- Allow more time for GI Implementation. Bring more projects - review of successful projects.
- Ongoing evolution of Green Infrastructure Plans.
- Ways to pay for these facilities – full life cycle costs. Public safety – tripping hazards – suggested design approaches.
- Some technical guidance. Talk about inspection needs.
- I would like to see C.3 and GI in separate trainings as staff reviewing C.3 are not same as those designing GI. Title of training misleading as 10% was really new redevelopment.
- GI implementation, GI requirements for the project applicant/developer. Specific language for the agencies to be required in conditions of approval.
- Examples, case studies are always helpful.
- How to design a municipal maintenance program. We have little capacity for this and any support from SMCWPPP would be much appreciated.
- Alternative sizing criteria. Feasibility review (detailed) for incorporation of GI on public projects. Alternative compliance.
- Cost estimates and funding approaches for implementing GI projects in the community.

- Discuss more on inspection procedures, maintenance program on surface plants and underground drainage pipes.
- MRP 3.0.
- Spend more time on topics, narrow down as much as possible to what is important.
- The inspection of GI during construction to confirm all GI are installed correctly.
- GI implementation.
- Very focused on design – which is great but would also like to see more policy implementation examples.
- Topics on who to seek for professional help; i.e. native plants specialist, etc. Also tell what is being done to inform the public about GI so they can help support the movement.
- Design and construction examples. Funding and building GI. Planning and prioritization.
- A separate workshop for the details and construction methods for the design guidelines.
- Operation and Maintenance

10. General Comments

- I prefer no sauces on my sandwiches.
- Slides and handouts – font size way too small – unreadable. Good practical discussion of actual experiences.
- More hands-on reviewing C.3. Pervious pavement details. To line or not to line. Tree credits. Sizing. Treatment in lieu. Under drain or no underdrain. Multiple treatment for one drainage.
- O&M presentation was most useful; also, panel discussion (but too long.)
- Would be great if there were some more opportunities for interaction with the material. We should find ways to incentivize housing in MRP 3.0.
- It would be helpful to have the presentation available to download at the beginning of the workshop. That is much preferred to printing the slides.
- Thank you for lunch. There would be less waste if you had a buffet rather than individual boxes. Extra food can be donated to Peninsula Food Runners.
- Great presentation.
- A lot of information that is helpful but may evolve into more detail than needed (i.e., how to trim a tree.)
- Very nice! Thanks for a thorough program.
- Appreciate the boxed lunches. Makes it easy and convenient. Would be helpful and more comfortable to have the tables out so you don't have to juggle folder and documents on lap. Kevin Perry – O&M presentation very helpful. Very informative, easy to follow and understand points. Structure of presented materials was good.
- Use of slides with photos of real sites and infrastructure locations would be helpful overall. Last topic had good use of photos.
- Name plates for panelists would be helpful; great addition to the workshop; it was beneficial and applicable.
- Good location for holding the workshop.

Appendix 4

- CII Subcommittee – Attendance List for FY 2018/19
- Tips for a Cleaner Bay and Ocean: How Your Business Can Prevent Stormwater Pollution
- BMP Brochure for Food Service Facilities
- Landscape Maintenance Postcard

SMCWPPP Commercial/Industrial/Illicit Discharge (CII) Subcommittee Attendance – FY 2018/19

Name	Agency	9/19/18	12/19/18	3/20/19	6/19/19
Bozhena Palatnik	City of Belmont	✓	✓	✓	✓
Henry Wu	City of Belmont	✓			
Keegan Black	City of Brisbane		✓	✓	
Jennifer Lee	City of Burlingame	✓	✓	✓	✓
Bridgette Gandy	City of Burlingame (Veolia)	✓			
Dan Ferah	City of Burlingame (Veolia)				✓
Louis Gotelli	City of Colma	✓			
Ward Donnelly	City of Daly City	✓	✓	✓	✓
Sibely Calles	City of Daly City	✓	✓	✓	✓
Stephanie MacDonald	City of Foster City		✓	✓	✓
Vivian Ma	City of Foster City	✓	✓	✓	
Pam Lowe	City of Menlo Park	✓	✓		
Clarence Li	City of Menlo Park				✓
Kevin Cesar	City of Millbrae		✓	✓	✓
Cliff Ly	City of Millbrae	✓	✓	✓	✓
Lawrence Henriquez	City of Pacifica	✓	✓	✓	✓
Vicki Sherman	City of Redwood City	✓		✓	
Kathryn Robertson	City San Carlos	✓	✓		✓
Mark Swenson	City of San Mateo	✓		✓	
Sven Edlund	City of San Mateo	✓		✓	
Daniel Garza	South San Francisco	✓	✓	✓	✓
Pat Ledesma	County of San Mateo	✓	✓	✓	
Breann Liebermann	County of San Mateo	✓	✓	✓	
Ben Padua Jr	Silicon Valley Clean Water (SVCW)	✓	✓	✓	✓
Reid Bogert	SMCWPPP Staff		✓		✓
Kristin Kerr	EOA, Inc.	✓	✓	✓	✓
Kelly Carroll	CSG/ Half Moon Bay/ Colma/Portola Valley	✓	✓	✓	✓
Catherine Chan	CSG/Hillsborough		✓		
Dale Bowyer	RWQCB		✓		
Zach Rokeach	RWQCB		✓		
Maggie Monahan	RWQCB			✓	

TIPS FOR A CLEANER BAY AND OCEAN

How Your Business Can Prevent Stormwater Pollution



SAN MATEO COUNTYWIDE
Water Pollution Prevention Program

Clean Water. Healthy Community.

SMCWPPP gratefully acknowledges the Alameda Countywide Clean Water Program for developing and sharing the content and artwork of this booklet

YOU CAN PREVENT WATER POLLUTION!

Storm drains flow directly into creeks, the Bay and Ocean without any treatment. Because of this direct connection, water and other wastes that flow into a storm drain can easily cause pollution. **It is the responsibility of your business to ensure that only rainwater enters the stormdrains near your operation.** If wastes and wash waters from your business practices enter the storm drain system, you may have to pay for clean up costs and fines, have permits revoked, or even go to jail for causing stormwater pollution.

The pollution prevention practices outlined in this booklet will help your business stay in compliance with laws designed to protect stormwater and the environment. The Pollution Prevention Program's friendly and knowledgeable staff make it easy for businesses to understand the water pollution regulations that affect them. If you have questions, contact your local stormwater agency (See Local Regulatory Contacts, page 7).



Storm Drain: An outdoor drain that flows directly to creeks, the Bay and Ocean.



Sanitary Sewer Drain: An indoor drain that flows to the sewage treatment plant.

Sewer or Storm Drain?

In order to choose the most appropriate practice, it is important to determine whether a drain is a storm drain or a sanitary sewer drain. In general, drains inside the building are connected to the sanitary sewer, and outside drains (except for capped sanitary sewer "cleanouts") are connected to the storm drain system. Sanitary sewer cleanouts are usually 6 inches in diameter or smaller, and storm drain inlets are larger, but there are exceptions.

If your business has floor drains, contact your local sanitary sewer treatment agency for requirements for discharging to the sanitary sewer.

GENERAL POLLUTION PREVENTION



** Absorbent that was used on a small spill is being swept up for disposal. Used absorbents may be hazardous waste and must be disposed of properly.*

Perform work indoors or under cover whenever possible, to avoid exposure to rainfall, runoff, and wind. If outdoor work generates small particles or dust, the particles must be contained and vacuumed.

The best practices listed below are critical to protecting our water quality:

- Label/stencil each storm drain inlet to remind workers and customers that dumping is prohibited.
- Routinely inspect and clean outdoor areas:
 - Storm drain inlets (grates and sumps),
 - Loading docks and shipping/receiving areas,
 - Work areas,
 - Chemical storage areas,
 - Waste storage and recycling areas, and
 - Treatment devices for proper functioning.
- Keep surfaces clean by sweeping, vacuuming or mopping – never wash down surfaces to gutter, storm drain inlet, street, or waterway.
- For pressure washing of pavement or other surfaces hire a cleaning contractor trained to use pollution prevention practices. Make sure all wash water is collected for proper disposal.
- Pick up litter and trash daily.
- Sweep parking areas and gutters at least monthly and before it rains
- Prevent spills when transferring liquids by using drip pans, secondary containment, and absorbents.
- Clean up spills immediately with rags, absorbents*, or wet/dry vacuum. Do not allow fluids to accumulate or run across surfaces. Never wash spills down or allow spills to flow into a storm or sanitary sewer drain inlet. Clean up absorbents immediately following their use.
- Mobile washing of some types of equipment, such as roof exhaust equipment or shopping carts, is acceptable if all washwater is contained, vacuumed up, and directed to the sanitary sewer.
- Wash equipment indoors, at a utility or mop sink or location where washwaters drain to the sanitary sewer. Contact your local sanitary sewer treatment authority for approval (See page 7).

FIVE IMPORTANT THINGS TO REMEMBER:

1. Keep your business neat and clean – it saves time and money and prevents pollution.
2. Protect your storm drain inlets from pollution of any kind. Remember, only rain down the storm drain.
3. Be prepared! Keep spill cleanup materials easily accessible.
4. Use dry methods to clean up spills whenever possible. Never wash spills down the storm drain.
5. Train staff regularly on these practices.

MATERIAL STORAGE



- Store materials indoors if possible.
- If stored outdoors, store materials on a paved surface, in a fully enclosed container, and covered to prevent contact with rainfall and runoff.
- Keep containers out of pooled or standing water. Regularly inspect containers for cracks, corrosion, or leaky seams.
- Use secondary containment when storing fluids outside. Keep container lids, caps, and openings closed when not in use.
- Apply caution and control when transferring liquids to minimize spill potential.
- Have clean up materials easily accessible. Regularly train employees on spill clean up procedures.
- Store all items as far as possible from storm drain inlets.
- Use drip pans under outdoor work or storage areas where there is the potential for spills and leaks.

IF YOU MUST STORE MATERIALS OUTDOORS:

1. Protect materials from rain and runoff.
2. Place primary containers of liquids within secondary containment.
3. Do not place near storm drain inlets.
4. Keep spill cleanup materials in easily accessible areas.
5. Check with local municipality for compliance with the fire and building codes.

TIP

EDUCATION AND TRAINING

- Train new employees upon hiring to use these practices and have annual refresher trainings.
- Post signs to remind employees to properly store materials and clean spills

OUTDOOR WASTE STORAGE AND RECYCLING



WASTE DISPOSAL AND RECYCLING:

1. Don't dispose of any liquids or solids in storm drain. Recycle, whenever possible.
2. Divide wastes by type and store separately in sealed containers.
3. Use a big enough dumpster so you can keep the lids closed.
4. Replace leaking dumpsters.
5. Schedule regular pickups.

- Inspect the garbage and recycling area *daily* for dropped wastes, overfilled or leaking dumpsters and trash compactors, and dumpsters with open lids.
- Pick up dropped wastes and sweep the dumpster area.
- Make sure dumpsters are not overfilled and lids are kept closed.
- Prevent and clean up any trash compactor leachate drippings.
- Replace or repair leaking dumpster.
- Use a licensed company to haul and recycle or dispose of wastes.
- Rinse waste containers in areas that drain to sanitary sewer.
- When available, keep dumpsters inside the enclosure at all times when not being serviced by the garbage company.
- Provide recycle and green waste dumpsters whenever possible.

LITTER

Litter and trash are bad for business and harm the health of creeks, the Bay and Ocean.

- Provide enough trash and cigarette receptacles for customers and employees. All outdoor receptacles must be covered.
- Pick up litter *daily*. Maintain the sidewalk and parking lots in front of your business so that they are free of litter and dirt. Don't wash into the street or storm drain.
- Encourage your customers to bring their own reusable bags instead of using polystyrene containers and plastic bags. These types of disposables are increasingly being banned because of the pollution they create.



LANDSCAPING AND SAFER ALTERNATIVES TO PESTICIDES

- Know whether your landscaping is specifically designed to minimize and treat stormwater runoff, and, if it is, make sure it is maintained as designed.
- Follow Bay-Friendly Landscaping and Gardening Program practices. Visit www.bayfriendly.org.
- Use less toxic alternatives to pesticides. For more information on integrated pest management, visit www.ourwaterourworld.org.
- Do not overwater– maintain sprinklers to avoid pavement watering.
- Clean up fallen leaves and remove prunings for composting or disposal with green wastes. Don't dispose of these materials in the street, a storm drain or creek.

LOCAL REGULATORY CONTACTS

Local Stormwater Agencies

Atherton	(650) 752-0555
Belmont	(650) 637-2972
Brisbane	(415) 508-2130
Burlingame	(650) 342-3727
Colma	(650) 757-8888
Daly City	(650) 991-8208
East Palo Alto	(650) 372-3189
Foster City	(650) 286-3270
Half Moon Bay	(650) 726-7177
Hillsborough	(650) 375-7444
Menlo Park	(650) 330-6740
Millbrae	(650) 259-2392
Pacifica	(650) 738-3769
Portola Valley	(650) 851-1700
Redwood City	(650) 780-7477
San Bruno	(650) 616-7020
San Carlos	(650) 802-4212
San Mateo	(650) 522-7349
San Mateo County, unincorporated	(650) 464-6661
South San Francisco	(650) 877-8555
Woodside	(650) 851-6790

Local Hazardous Waste Agencies

Household Hazardous Waste Program	(650) 363-4718
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Local Sanitary Sewer Treatment Agencies

Burlingame Waste Water Treatment Facility	(650) 342-3727
<i>(Burlingame, Burlingame Hills, and Hillsborough)</i>	
Millbrae Water Pollution Control Plant	(650) 259-2388
North San Mateo County Sanitation District	(650) 991-8200
<i>Wastewater Treatment Plant</i>	
<i>(Daly City and parts of Westborough)</i>	
Pacifica's Calera Creek Water Recycling Plant	(650) 738-4660
Palo Alto Regional Water Quality Control Plant	(650) 329-2598
<i>(East Palo Alto, Los Altos, Los Altos Hills, Mountain View, Palo Alto, Stanford University, and the East Palo Alto Sanitary District)</i>	
San Francisco's Southeast Treatment Plant	(415) 920-4600
San Mateo Wastewater Treatment Plant	(650) 522-7380
<i>(Foster City, Hillsborough, and San Mateo)</i>	
Sewer Authority Mid Coastside Wastewater	(650) 726-0124
<i>Treatment Facility</i>	
<i>(Half Moon Bay, El Granada, Miramar, Moss Beach, Montara, Princeton by the Sea)</i>	
Silicon Valley Clean Water	(650) 591-7121
<i>(Belmont, Redwood City, San Carlos, Woodside, and service area of West Bay Sanitation District)</i>	
South San Francisco/San Bruno Water	(650) 877-8555
<i>Quality Control Plant</i>	
<i>(Colma, San Bruno, South San Francisco, and southern Daly City)</i>	
West Bay Sanitary District	(650) 321-0384
<i>(Menlo Park, Atherton, Portola Valley, and areas of East Palo Alto, Woodside, and unincorporated San Mateo county)</i>	

Your business may need to be regulated by several State and Local agencies for environmental compliance. In addition to following these stormwater pollution prevention practices, you may need to obtain coverage under the State Water Resources Control Board's Stormwater Industrial General Permit.

Call (916) 341-5538 for more information.

CONSIDER BECOMING A GREEN BUSINESS

The Bay Area Green Business Program certifies small to medium-sized businesses as green and recognizes Green Businesses through promotion and public recognition. To become a certified green business, Program staff will verify that your business is complying with environmental regulations and taking actions to conserve resources and prevent pollution. For more information:

www.GreenBusinessCA.org

POLLUTION PREVENTION PROGRAM

Simple changes to your operations and maintenance can help you comply with local regulations. The San Mateo Countywide Water Pollution Prevention Program makes it easy.

Learn more about the program and preventing water pollution:

www.flowstobay.org
(650) 599-1406



SAN MATEO COUNTYWIDE
**Water Pollution
Prevention Program**

Clean Water. Healthy Community.

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Storm drains flow directly into creeks, San Francisco Bay and the Pacific Ocean without any treatment. Non-stormwater and other wastes that flow into a storm drain cause pollution. Food handling facilities can cease stormwater pollution through proper cleanup practices that ensure food particles, oil and grease, litter, wash water and cleaning products flow to interior sewer connections, which ensures the water is treated prior to being released.

NEVER RINSE OUTDOOR AREA WITH HOSE

Only rain water is allowed down the storm drains, because storm drains connect directly to local creeks.

It is the responsibility of your business to use appropriate Best Management Practices (BMPs) to keep wind or rain from carrying pollution into the street.



Roofed trash enclosure with doors closed. Bilingual sign reminds staff to keep area tidy.



Dumpster lid is closed, and there is no loose trash on ground.



Outdoor seating area is swept frequently, is covered, and has fencing to keep debris from blowing into the street.

GENERAL BEST MANAGEMENT PRACTICES

Keep Dumpster Area Clean

- Close dumpster lids.
- Routinely inspect dumpster area for cleanliness.
 - If dumpsters overfill, consider having more dumpsters, or increasing trash pick-up service.
 - Replace leaking or cracked dumpsters.
 - If loose waste is on the ground, then sweep up.
- Educate all staff on keeping dumpster areas tidy. With high rates of employee turnover, or when sharing a dumpster area, post signs or have routine meetings on proper BMPs.

Cooking Oil & Grease

- Store oil and grease properly in permitted tallow bins; never pour oil or grease in the trash, storm drain, street, sinks or floor drains.
- Keep tallow bins clean & lids sealed.
- Have tallow bin collection scheduled to maintain adequate storage capacity.
- Check rooftop exhaust fans at least monthly. Place tray under exhaust fan shrouds to collect oil; empty weekly at a minimum.
- Clean up spills right away (See back of this sheet).

Manage Outdoor Areas (Parking Lots, Outdoor Seating, Staff Break Areas, Outdoor Storage)

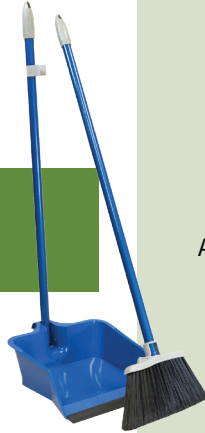
- Empty trash bins into dumpster regularly.
- Sweep frequently in trash-prone places.
- If frequent litter issues, consider adding trash cans.
- Place ash trays in cigarette-prone areas.

Properly cleaning and disposing of wash waters helps prevent pollution.

CLEANING BEST MANAGEMENT PRACTICES

Use Dry Cleaning Methods

- ❑ Sweep up dust, debris, and trash.
- ❑ Vacuum floor mats. If water is needed, rinse mats in dishwasher or mop utility sink. Never wash floor mats outdoors or allow wash water to flow to outdoor areas.
- ❑ Do not clean equipment outdoors.
- ❑ When hiring cleaning companies (e.g. for cleaning hood/roof equipment), make sure the company uses dry cleaning methods. If wet methods are used, block off gutters & use a pump/wet-vac, so no water spills off roof.



Sweeping is an example of a dry cleaning method.

Contain and Manage Spills Promptly

- ❑ Keep a spill kit near high risk areas (e.g. near oil tallow bins, loading dock). Kit may include: Barrier/Sock, Storm Drain Inlet Protection; Absorbent granules or kitty litter, Towels, Pads; Dustpan, Broom, Gloves, Trash Bags.
- ❑ Contain the spill and protect nearby storm drains immediately.
- ❑ Use absorbents/towels to manage spill. Sweep up and dispose of properly.
- ❑ Make sure staff know spill plan and spill kit location.




Never rinse water down storm drains.

STORM DRAINS VS. SANITARY SEWERS:

Do your employees know the difference?

All **outdoor drains** are storm drains. Pollution that enters storm drains flows directly to creeks and San Francisco Bay or the Ocean, not treated or properly cleaned.

Indoor drains (such as sink, toilet, mop sink, kitchen floor drain) lead to the sanitary sewer system, which is connected to a wastewater treatment plant.



Mop sinks go to the sanitary sewer and wastewater treatment plant.

LOCAL STORMWATER AGENCIES:

Atherton (650) 752-0555
Belmont. (650) 637-2972
Brisbane (415) 508-2130
Burlingame. . . . (650) 342-3727
Colma (650) 757-8888
Daly City (650) 991-8208
East Palo Alto. . (650) 372-3189

Foster City. (650) 286-3270
Half Moon Bay (650) 726-7177
Hillsborough (650) 375-7444
Menlo Park (650) 330-6750
Millbrae (650) 259-2392
Pacifica (650) 738-3769
Portola Valley (650) 851-1700

Redwood City (650) 780-7477
San Bruno (650) 616-7020
San Carlos (650) 802-4212
San Mateo (650) 522-7349
San Mateo County (650) 464-6661
South San Francisco . . (650) 877-8555
Woodside. (650) 851-6790

SI • NÊN LÀM • YES



NO • ĐỪNG LÀM



Mantenimiento de jardines

- No arroje los desechos del jardín hacia la calle ni los deje en la cuneta o en áreas de la calle en las que puedan ser arrastrados por la lluvia hacia los drenajes pluviales.
- Elimine los desechos de acuerdo con el programa de desechos verdes de su ciudad.
- Los jardineros deben cumplir con estos reglamentos. Los residentes son responsables de su cumplimiento.

Bảo trì Vườn Tựợc

- Ờừng thổi rác lá ở vườn vào đường xá hay bỏ rác vườn chỗ rãnh nước hay trên mặt đường nơi chúng có thể trôi xuống cống nước mưa.
- Bỏ rác vườn theo cách thức của chương trình cây xanh thành phố mình.
- Người làm vườn phải tuân theo; cư dân chịu trách nhiệm.

Landscape Maintenance

- Do not blow yard waste into street or leave yard waste in the gutter or street where it can be washed by rains into the storm drain.
- Dispose of yard waste in accordance with your city's green waste program.
- Landscapers must comply; residents are liable.

SMCWPPP gratefully acknowledges the Santa Clara Valley Urban Runoff Pollution Prevention Program for developing and sharing the content and artwork of this card.

July 2018



SAN MATEO COUNTYWIDE

**Water Pollution
Prevention Program**

For more information:
www.flowstobay.org
650-599-1406

Appendix 5

- Countywide Mobile Cleaner Business Inventory
- Wash Water Ad Campaign Summary
- BMP Brochure for Mobile Businesses
- BMP Brochure for Swimming Pools, Hot Tubs and Fountain Water Discharges

Google Ads

Overview of Strategy




We began by splitting the \$200 ad budget equally between the search and display campaigns but reallocated the money to favor the search campaign after observing that most of the ad placements for the display campaign were happening in gaming apps. It is likely that link clicks stemming from these types of placements would most likely be accidental and opted for the more expensive, but meaningful conversions within the search campaign. Search campaign conversions are more “meaningful” for our purposes in that the ads are only shown to people searching specific keywords related to wastewater pollution, as we have defined them, whereas the display campaigns are shown to a more general audience. What follows is a summary of our campaign results.

Display Campaign

The display campaign ran from May 14th through May 22nd and targeted internet users in San Mateo County that fell within the following audiences:

- Vehicles & Transportation, Concrete Cleaning, Professional Cleaning Service, Pet Washing Services, Dog Grooming Services, Dog Pet Care, Steam Cleaners, Carpet Cleaners, Carpet & Furniture Cleaning, Car Wash Services, Car Cleaning Tips & Products, Car Detailing Wax & Polishes, Truck Washing, Pressure Washers & Pressure Cleaning Services, Exterior House Cleaning Services, Pressure Washers, Window Cleaning Services, Window Cleaner.

Each audience listed above is defined by a series of keywords generated by Google, that when searched by internet users triggers the display of the below ad concepts.

<p>Example of your image ad at 300x250</p>  <p>Avoid Wash Water Fines</p> <p>Want eco-friendly solutions to avoid water pollution? Check out our best practices!</p> 	<p>Example of your text ad at 300x250</p> <div><p>Hiring a Steam Cleaner?</p><p>Flows To Bay</p><p>Wash water from mobile businesses can pollute local waterways. Use our best practices!</p><p>OPEN</p></div>	<p>Example of your native ad at 300x250</p>  <p>Mobile cleaning produces water that can pollute Bay and Ocean...</p> <p>Flows To Bay Visit Site ></p>
--	--	---

The display campaign led to the following results:

- 81,497 impressions (i.e. the number of times our ad was shown on a search result page or another site on the Google Network).
- 81 clicks (i.e. the number of times people who were shown our ad clicked it and were taken to [our landing page](#)).
- Average Click Through Rate = 0.10%
- Avg. Cost Per Click = \$0.49

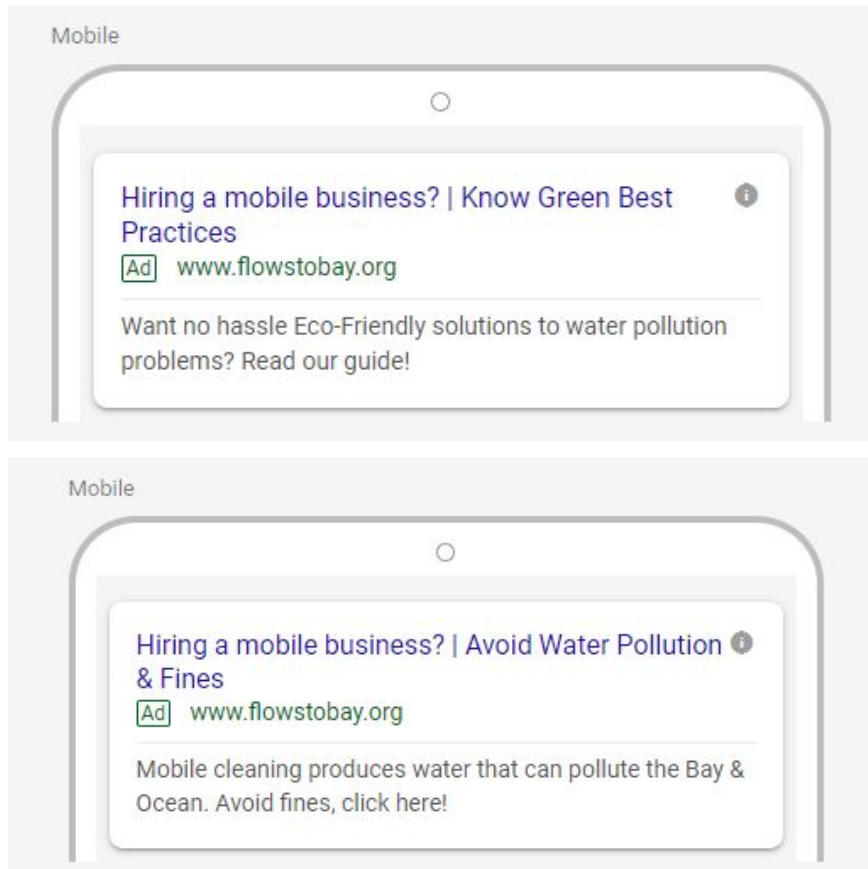
- Total Cost = \$39.59

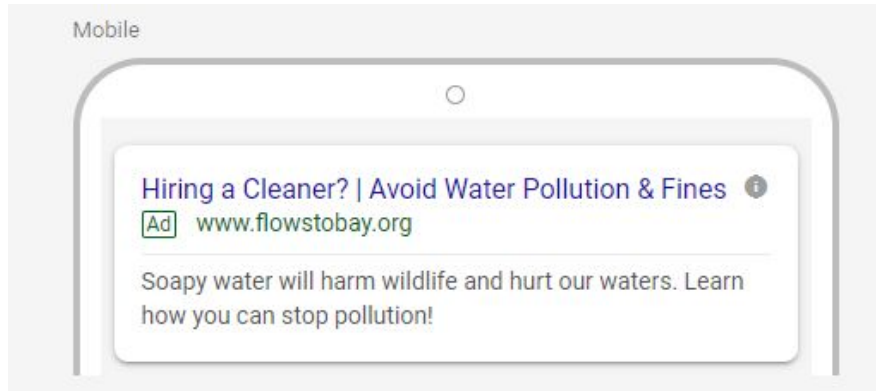
Search Campaign

Our search campaign ran from May 14th through May 22nd and was shown to internet users in San Mateo County who searched for the following specific keywords:

- Auto detail, mobile cleaner, pet care services, carpet, pet grooming, steam cleaners, mobile pet, power washers, carpet cleaners, vehicle detailer, surface cleaner, engine degrease, vehicle washers, mobile auto detailing, mobile carpet cleaners, pet cleaning, fleet washer, fleet cleaner, pet washing, mobile surface cleaner, transportation cleaning, transportation washing.

When those keywords were searched by a Google user, one of the 3 below ads would appear at the top of the results page:





The search campaign led to the following results:

- 16,438 impressions (i.e. the number of times our ad was shown on a search result page).
- 45 clicks (i.e. the number of times people who were shown our ad clicked it and were taken to [our landing page](#)).
- Average Click Through Rate = 0.27%
- Avg. Cost Per Click = \$3.51
- Total Cost = \$157.90

Search Terms Used

- Pet cremation cost uk, phone cleaner, clean master, mobile service dog, mobile cleaner, car washing jack, mobile detailing, all detail price, anti virus cleaning app download, pet cremation, virus cleaner app, extractor machine auto detailing, carpet price to clean carpet cleaner rental mountain view ca, mobile cleaner apps, android device cleaner, automatic car wash franchise opportunities, automobile cleaner, car interior detailing, car wash menu, cheapest carpet shampooer rental, clean, could you tell me what hibbet detail shop at, diesel pressure washer pump, dog pound san jose monterey i want to see puppies, formula 90 shampoo cleaner, high pressure car interior cleaner, how much is a tornado detailing cleaning machine, how to convert my van into dog grooming, hydroshot portable shower cleaner, master cleaner app, mobile groomer van for sale, mobile pet grooming sprinter, nicole miller flammable rugs ff2 70, steam vapor car wash business, detailing cars, auto detailing training, la carpets a sn.

Facebook

Overview of Strategy

We ran a series of 3 posts in March, April, and May, 2019. The March and May posts were boosted with \$40 each to increase their reach. Below are the results.

March Ad:

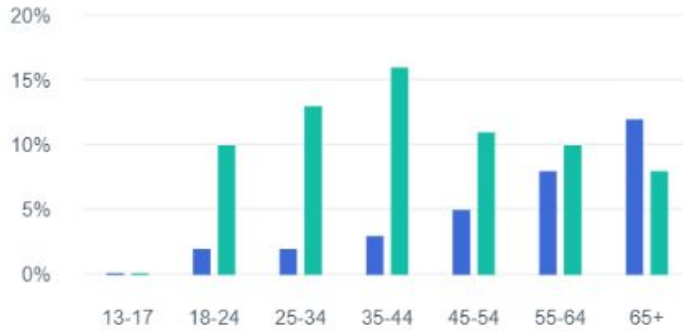
The screenshot shows a Facebook post from the page 'Flows To Bay', published by Stephen Groner on March 12, 2019. The post text reads: "WASH WATER ALERT: When wash water flows into storm drains it goes straight to local creeks, the Bay and the Ocean without ANY treatment. Wash water may contain soaps, toxic chemicals, and other pollutants that are harmful to waterways and wildlife. To protect the environment implement Best Management Practices (BMPs) to keep our waterways healthy. For best management practices visit: bit.ly/2NO1yvG". The image shows a silver car at a car wash with a blue water recycling machine. The post has 1,514 people reached and 104 engagements. A 'Boost Again' button is visible. The 'Performance for Your Post' sidebar shows: 1,514 People Reached; 74 Reactions, Comments & Shares; 63 Likes (63 On Post, 0 On Shares); 5 Wow reactions (5 On Post, 0 On Shares); 1 Comment (1 On Post, 0 On Shares); 5 Shares (5 On Post, 0 On Shares); 30 Post Clicks; 0 Photo Views; 23 Link Clicks (7 On Post, 16 Off Post); 7 Other Clicks (7 On Post, 0 Off Post). Under 'NEGATIVE FEEDBACK', there are 4 Hide Post, 0 Hide All Posts, 0 Report as Spam, and 0 Unlike Page. At the bottom, it says 'Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.'

Metric	Value
People Reached	1,514
Reactions, Comments & Shares	74
Likes	63
Wow	5
Comments	1
Shares	5
Post Clicks	30
Photo Views	0
Link Clicks	23
Other Clicks	7

Metric	Value
People Reached	946
Post Engagement	86

- Ad boosted with \$40
- 15 link clicks
- 1,514 people reached
- Gender & Age breakdown of ad viewers:

31.4% Women 68.6% Men



April Ad:

Post Details
✕

Flows To Bay

Published by Stephen Groner [?] · April 12 · 🌐

👍 Like Page

⋮

WASH WATER ALERT: When wash water flows into storm drains it goes straight to local creeks, the Bay and the Ocean without ANY treatment. Wash water may contain soaps, toxic chemicals, and other pollutants that are harmful to waterways and wildlife. When hiring a mobile cleaner, such as power washers, pet groomers or carpet cleaners, make sure they are implementing proper Best Management Practices (BMPs) to keep our waterways healthy. For best management practices visit: bit.ly/2NO1yVG

FLOWSTOBAY.ORG

www.flowstobay.org

✔ **Get More Likes, Comments and Shares**

Boost this post for \$10 to reach up to 1,800 people.

366

People Reached

19

Engagements

Boost Post

👍 6

1 Comment 1 Share

👍 Like

💬 Comment

➦ Share

⋮

Performance for Your Post

366 People Reached

8 Likes, Comments & Shares 📊

6 Likes	6 On Post	0 On Shares
1 Comments	1 On Post	0 On Shares
1 Shares	1 On Post	0 On Shares

11 Post Clicks

0 Photo Views	3 Link Clicks 📊	8 Other Clicks 📊
-------------------------	--	---

NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts	
0 Report as Spam	0 Unlike Page	


Reported stats may be delayed from what appears on posts

- Post not boosted
- 3 link clicks
- 367 people reached

May Ad:

Flows To Bay
 Published by Stephen Groner [?] · May 13 at 9:00 AM · [Like Page](#)

WASH WATER ALERT: When wash water flows into storm drains it goes straight to local creeks, the Bay and the Ocean without ANY treatment. Wash waters may contain soaps, toxic chemicals, and other pollutants that are harmful to waterways and wildlife. Keep wash waters, pest control fluids, and animal hair OUT of storm drains. To protect the environment implement Best Management Practices (BMPs). For best management practices visit: bit.ly/2NO1yvG



FLOWSTOBAY.ORG
www.flowstobay.org

3,094 People Reached **68** Engagements [Boost Again](#)

Boosted on May 13, 2019 By Stephen Groner Completed

People Reached	2.9K	Landing Page Views	0
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[View Results](#)

👍👎👏 19 4 Comments 4 Shares

[Like](#) [Comment](#) [Share](#)

Performance for Your Post

3,094 People Reached

32 Reactions, Comments & Shares

17 Like	17 On Post	0 On Shares
1 😂 Haha	1 On Post	0 On Shares
1 😮 Wow	1 On Post	0 On Shares
1 😞 Sad	1 On Post	0 On Shares
8 Comments	5 On Post	3 On Shares
4 Shares	4 On Post	0 On Shares

36 Post Clicks

0 Photo Views	27 Link Clicks	9 Other Clicks
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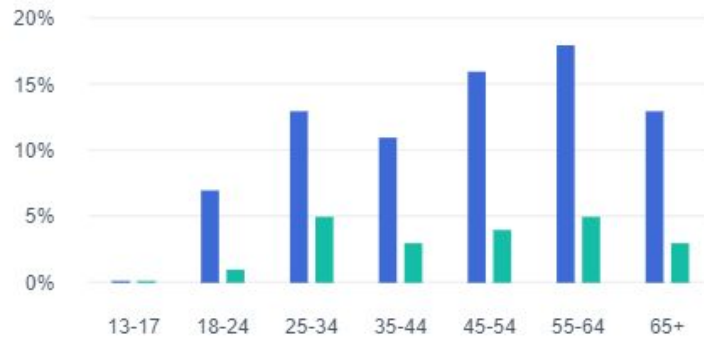
NEGATIVE FEEDBACK

2 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.

- **Post boosted with \$40**
- 24 link clicks
- 2,885 people reached
- Gender & Age breakdown of ad viewers:

77.6% **Women** 22.4% **Men**



Information about using Best Management Practices (BMPs) to prevent wash and rinse waters from entering storm drain systems and polluting local waterways, the San Francisco Bay, and the Pacific Ocean.

WHY SHOULD WE BE CONCERNED WITH WASH WATER DISPOSAL?

Wash water from mobile cleaning is NOT just dirt and water. It also may contain soaps, toxic chemicals, heavy metals, oil, and/or grease that are harmful to our creeks and waterways. Pollutants draining from mobile cleaning activities are washed into the street and into the storm drain system which then flows to our creeks, Bay, and Ocean without any cleaning or filtering.

Federal, State, and local regulations prohibit discharge of anything but rain water in the storm drain.

Implementing the proper Best Management Practices (BMPs) is easy and is required for compliance with stormwater pollution prevention regulations.

WHAT ABOUT BIODEGRADABLE & NON-TOXIC CLEANING PRODUCTS?

Cleaning products labeled “non-toxic” and “biodegradable” can still harm wildlife if they enter a storm drain system. Fish, for example, are affected by both regular and biodegradable soap! However, if disposed of in the sanitary sewer system, wastewater treatment plants prefer biodegradable products over toxic cleaners.

All soaps—even biodegradable ones—are harmful to fish!

PLAN AHEAD

- Determine where you will discharge wastewater before starting a new job.
- Be sure to have equipment on hand (i.e. long hoses, sump pump, etc.) for directing discharge to sanitary sewer access points.
- Ensure hoses are long enough to reach access points that are far from your holding tank.
- Contact your local hardware or construction material stores for available tools and materials for mobile businesses including wet/dry vacuums and sump pumps, mats, sand or gravel bags, wattles, etc.

4 STEPS TO REMEMBER BEFORE YOU CLEAN

1. Be a BASMAA Recognized Mobile Cleaner

Take the online “mobile surface cleaning” training from BASMAA (Bay Area Stormwater Management Agencies Association). This program will train you on how to clean different surfaces in an environmentally acceptable way and publish your name as a trained cleaner. Visit www.basmaa.org.

2. Identify Storm Drain Locations

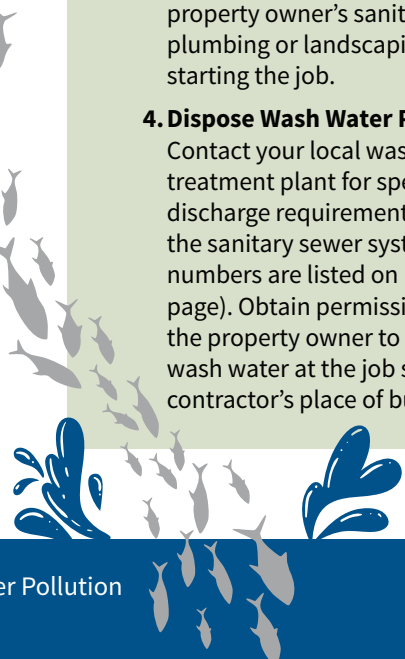
Walk around the job site and identify where all storm drains are located. Wash water must not be allowed to flow into the storm drains.

3. Protect Drains and Collect Water

Contact your local City stormwater inspector to determine specific discharge requirements. Obtain permission to discharge to the property owner’s sanitary sewer plumbing or landscaping before starting the job.

4. Dispose Wash Water Properly

Contact your local wastewater treatment plant for specific discharge requirements entering the sanitary sewer system (phone numbers are listed on next page). Obtain permission from the property owner to discharge wash water at the job site or the contractor’s place of business.



Protect the Bay, the Ocean, and Yourself! When wash water flows into storm drains it goes straight to local creeks and the San Francisco Bay or Pacific Ocean without any cleaning or filtering.

DOING THE JOB RIGHT: CHECKLIST OF BMPS

- Walk the area to identify storm drains.
- Sweep the wash area to remove debris.
- If feasible, wash on a vegetated or gravel surface where wash water can infiltrate into the ground without runoff.
- Contain wash area so that water does not drain down streets and gutters– use sand bags, plugs, containment mats or berms.
- Block or seal off any storm drain inlets and sloping areas that release water to the gutter to prevent wash water from entering the storm drain.
- Put storm drain protection in place before starting the washing process and remove before you leave the site.
- Vacuum or shake floor mats into a trash can.
- Minimize water use; use nozzles on hoses.
- Use less-toxic cleaning products (or wash without soaps and solvents, if possible).
- Use a “wet-vac” to vacuum up the contained wash water for proper disposal.
- Remove all debris or sediment accumulated during washing activities and put in the trash, or if it is hazardous, dispose of it properly.



OPTIONS FOR DISPOSAL

- 1. Never drain wash or rinse water into streets, gutters, parking lots, or storm drains.**
2. Wash and rinse waters can usually be discharged to the sanitary sewer through a drain at the property owner’s home or business, such as a utility sink, floor drain, mop sink, cleanout or toilet. Take precautions to prevent debris, hazardous materials or anything that can clog from entering sinks, toilets or sanitary drains.
3. Direct water to landscaping or gravel surfaces. Wash water must completely soak into vegetation before you leave the site.



IF YOU DISCHARGE WASH WATER GENERATED BY MOBILE CLEANING ACTIVITIES TO THE STORM DRAIN, YOU ARE VIOLATING MUNICIPAL STORMWATER ORDINANCES AND MAY BE SUBJECT TO A FINE.

Wastewater Treatment Plants

Burlingame Waste Water Treatment Facility <i>Burlingame, Burlingame Hills, and Hillsborough</i>	(650) 342-3727
Millbrae Water Pollution Control Plant	(650) 259-2388
North San Mateo County Sanitation District <i>Daly City and parts of Westborough</i>	(650) 991-8200
Pacifica’s Calera Creek Water Recycling Plant	(650) 738-4660
San Mateo Waste Water Treatment Plant <i>Foster City, Hillsborough, and San Mateo</i>	(650) 522-7300
Sewer Authority Mid Coastside Wastewater Treatment Facility <i>Half Moon Bay, El Granada, Miramar, Moss Beach, Montara, Princeton by the Sea</i>	(650) 726-0124
Silicon Valley Clean Water <i>Belmont, Redwood City, San Carlos, Woodside, and service area of West Bay Sanitation District</i>	(650) 832-6243
South San Francisco/San Bruno Water Quality Control Plant <i>Colma, San Bruno, South San Francisco, and southern Daly City</i>	(650) 877-8555

Information about using Best Management Practices (BMPs) to prevent swimming pool, hot tub, and fountain waters from entering storm drain systems and polluting local waterways.

WHY SHOULD WE BE CONCERNED WITH POOL, HOT TUBS, AND FOUNTAIN WATER DISPOSAL?

Water from pools, hot tubs, and fountains is NOT just water. It also may potential pollutant sources such as chlorine, copper, algaecides, colored dye, chemicals/salts that are harmful to our creeks and waterways. You may never drain your pool water in the street or storm drain system, even if the water is dechlorinated.

Federal, State, and local regulations prohibit discharge of anything but rain water in the storm drain.

Implementing the proper Best Management Practices (BMPs) is easy and is required for compliance with stormwater pollution prevention regulations.

CLEANING

- Never clean a filter in the street, gutter, or storm drain.
- Rinse cartridge filters onto a dirt area and spade filter residue into the soil.
- Keep backwash discharges out of the street and storm drain. Backwash sand and diatomaceous earth filters onto a dirt area. Dispose of spent filter materials in the trash.
- If you don't have a suitable dirt area, contact your wastewater treatment authority listed on the back of this flier for instructions on discharging to the sanitary sewer.

DRAINING

- Never drain into a street, gutter or storm drain.
- Discharge water to a sanitary sewer clean-out.
- If you are on a septic system or have no sanitary sewer clean-out, contact your wastewater treatment authority listed in this brochure for guidance.

MATERIAL STORAGE & HANDLING

- Store chemicals in a clean, dry and covered area.
- If landscaping materials are left outside, cover with a tarp or plastic sheeting to protect from urban runoff.

A PROPERLY MAINTAINED POOL, HOT TUB, AND FOUNTAIN WILL REDUCE THE NEED FOR DRAINING

MAINTAINING

- Clean regularly, maintain proper chlorine levels and maintain water filtration and circulation.
- Manage pH and water hardness to minimize copper pipe corrosion that can stain your pool and end up in our creeks and the Bay.
- Minimize algae buildup to prevent the need for toxic algaecides.
- Ask your pool maintenance service for help resolving persistent algae problems without using copper algaecides.

DID YOU KNOW...?

Copper is a pollutant that threatens aquatic life in our creeks and the Bay. It is used as an algaecide in pools, spas and fountains, and copper pipes are commonly used in pool plumbing.

Protect the Bay, the Ocean, and Yourself! Keep swimming pools, hot tub, and fountain water out of storm drains, creeks, and the Bay.

DOING THE JOB RIGHT: CHECKLIST OF BMPS

- Never drain your pool water into the street or storm drain system, even if the water is dechlorinated.
- Always drain your residential pool water into a sewer line. For convenience, use the sewer clean-out connection in your yard.
- You can also access the sewer system drain in your toilet, bathtub or sink inside your home. Be cautious that you do not flood your home if you use this option.
- If you are on a septic system or have no sanitary sewer clean-out, contact your wastewater treatment authority listed in this flier for guidance.
- Filters should be cleaned and rinsed over a dirt area or all rinse water should be captured and filtered to remove any solids prior to being discharged into the sewer system.
- Keep backwash discharges out of the street and storm drain. Backwash sand and diatomaceous earth filters onto a dirt area. Dispose of spent filter materials in the trash.
- Rinse cartridge filters onto a dirt area and spade filter residue into the soil.
- If you don't have a suitable dirt area, contact your wastewater treatment authority listed in this brochure for instructions on discharging to the sanitary sewer.

Local Pollution Control Agencies

Burlingame Waste Water Treatment Facility	.....	650) 342-3727
Millbrae Water Pollution Control Plant	.....	(650) 259-2388
North San Mateo County Sanitation District	.....	(650) 991-8200
Pacifica's Calera Creek Water Recycling Plant	.....	(650) 738-4660
San Mateo Waste Water Treatment Plant	.....	(650) 522-7300
Sewer Authority Mid Coastside	.....	(650) 726-0124
South Bayside System Authority	.....	(650) 594-8411 ext. 140
South San Francisco/San Bruno Water Quality Control Plant	...	(650) 877-8555

4 TIPS FOR FINDING YOUR CLEAN-OUT

Sanitary sewer clean-outs are most often found along the sewer line, which is usually aligned with the sewer lines for the house. However, not all cities use the same method to mark their sewer systems. If you have trouble locating your clean-out, contact your local wastewater treatment authority. See the "Local Pollution Control Agencies" below.

1. Look for an "S" stamped into the curb or sidewalk near your house. It marks where the sewer line is. Your clean-out may be along it.
2. Look for a slight linear depression in your yard between your house and the street. This is often an indicator of the location of a sewer line, and your clean-out may be on it.
3. If your kitchen or bathroom is on an exterior wall, look outside along that wall for the clean-out.
4. Stand on the sidewalk looking toward your house. Line up the main water sources in your house (bathrooms, kitchens, washers, etc.) The clean-out is often located on that line, in front of or behind your house.

Appendix 6

- CALBIG Meeting: Construction Site Stormwater Compliance – October 11, 2018
 - Announcement flyer
 - Agenda
- Construction Site Stormwater Inspections Training for Municipal Inspectors – March 11, 2019
 - Announcement Flyer
 - Agenda
 - Attendance List
 - Summary of Workshop Evaluations



CALBIG MEETING ANNOUNCEMENT

2018 Stormwater Requirements for Construction and Demolition Sites

(See Below)

This month's CALBIG meeting will be held on Wednesday, October 10, 2018 from 11:30am to 1pm (**please note**) at the Redwood Shores Public Library; 399 Marine Parkway, Redwood City, CA 94063.

For directions see map below:



Directions: Take US 101; exit east to Marine Parkway; 399 Marine Parkway is at intersection of Marine and Bridge Parkways. Free parking.

Fee: \$20 in cash or check payable to CALBIG

Lunch: Bay Area Corporate Catering ... \$20.00 Fee @ Door ... Free Lunch for CSM Students.

Please RSVP to both Leonard Matchniff and Michael Gorman at their e-mail addresses:
lmachniff@fostercity.org & thegormanfamily@earthlink.net - (please note the earlier deadline)
by 5:00-PM; Friday, October 5th.



Speaker: Peter Schultze-Allen (CPSWQ), EOA, Inc.

Topic: Stormwater Requirements for Construction and Demolition Sites

Highlights: Review of stormwater requirements for construction sites; documenting and tracking inspections; when to take enforcement actions and when to escalate enforcement; tips for keeping your stormwater program in compliance; and mandatory / updated SMCWPPP guidelines / resources.

**The Redwood Shores Library
399 Marine Parkway
Redwood City, CA
October 10, 2018**

Agenda

Registration/Seating	11:30 - 11:45
Leonard Matchniff, President - Welcome and Pledge of Allegiance	11:45 - 11:48
Will Racanelli, Vice President - Upcoming, 2018 -Topic Schedule	11:48 - 11:51
Nick Alaimo, Secretary - Motion to Approve: Sept. 19th Mins.	11:51 - 11:54
David Brakebill, Treasurer - CALBIG's Account Balance: Sept. 30th	11:54 - 11:57
Michael Gorman, Board Director - Upcoming ICC Training	11:57 - 12:00
Keynote Speaker: Peter Schultze-Allen (CPSWQ), EOA, Inc.	12:00 - 1:00
Leonard Matchniff, President - Coming Attractions & Adjournment	1:00

Out of consideration for our catering commitment and the potential size of our group, it is imperative that we have an accurate head count.

Please RSVP to both Leonard Matchniff and Michael Gorman, at both of their following e-mail addresses ...lmatchniff@fostercity.org and thegormanfamily@earthlink.net ... (please note the earlier deadline) ... **5:00 PM, Friday, October 8th.**

Thank you!

COMING ATTRACTIONS
Consult our web-site @ www.calbig.org
SAVE THESE DATES!!!

Upcoming 2018 California Building Inspector Group Meeting / Seminar Dates

November 14, 2018 ... Richard "Rick" Halloran ... "ADA – Public Housing"
Venue: Santa Clara's Council Chambers; East Wing of City Hall; 1500-Warburton Avenue, Santa Clara, CA 95050

December 13, 2018 Annual Catered Free Luncheon ... "Walters & Wolf – Fire Doors" + 2019 Officers & Board Directors Nominations
Venue: Redwood City's Main Library; 1044 – Middlefield Road; Redwood City

Upcoming 2019 California Building Inspector Group Meeting / Seminar Dates

Currently, the Officers and Board Members are formulating the Key Note Speakers and the Topics that will be brought forth for the memberships' December 12, 2018, ICC / Local Chapter vote.

CALBIG requests your individual input, as members, in choosing the speakers & topics. If applicable, the dates with your suggestions:

- January 9, 2019
- February 13, 2019
- March 13, 2019
- April 10, 2019
- May 8, 2019
- June 12, 2019
- July 10, 2019
- August 14, 2019
- September 11, 2019
- October 9, 2019
- November 13, 2019
- December 11, 2019

As CALBIG celebrates its Twenty-Sixth Anniversary; thank you for the timely participation and continued support.



Construction Site Stormwater Inspections Training for Municipal Inspectors

Monday, March 11th, 2019

Coyote Point Recreation Area

Captain's House

1701 Coyote Point Drive, San Mateo

9:00am – 1:00pm

This workshop is for municipal staff who inspect construction sites for compliance with stormwater requirements in MRP Provision C.6. The workshop attendees will be broken up into two groups and will switch locations half way through the morning. An agenda will be emailed to those registered before the workshop with exact times and location details. Workshop sessions and topics include:

- ✓ Classroom session on the Municipal Regional Stormwater Permit (MRP) requirements for construction site inspections including BMP types and recognizing issues, using the site inspection form and the State Construction General Permit.
- ✓ Field session on installation and inspection of products used on construction sites such as those for sediment and erosion control and stormdrain inlet protection.

Click on the link below to register for the workshop:

<https://smcwpppconstruction2019.eventbrite.com>

Questions? Call Lillian Quinata at 510-832-2852 ext. 101

Please pass this flyer along to appropriate staff within your organization.

This training is FREE and will include lunch.

Construction Site Stormwater Inspections Training for Municipal Inspectors

Monday, March 11, 2019

Coyote Point Recreation Area, Captain's House
 1701 Coyote Point Drive, San Mateo

AGENDA

8:45 AM	Registration	
9:00 AM	Break Into Field & Classroom Groups 1 and 2	
9:05 AM	Welcome and Introductions	Peter Schultze-Allen <i>EOA, Inc.</i>
9:10 AM	Session 1	
10:25 AM	Break - Groups 1 and 2 Switch Locations	
10:40 AM	Session 2	
12:00 PM	Lunch and Evaluation Form Completion	
1:00 PM	Adjourn	

GROUP 1 AGENDA

9:10 AM	Field Session - Break Into subgroup 1A and 1B	
	Field Station A: Inlet Protection	Dan Toda <i>Reed & Graham, Inc.</i>
	Field Station B: Sediment and Erosion Control	Bryan Hoffman and David Franklin <i>Filtrexx Inc.</i>
9:45 AM	Field Groups Switch Stations	
10:25 AM	Break	
10:40 AM	Classroom: Construction Site Regulations and BMPs	Peter

GROUP 2 AGENDA

9:10 AM	Classroom: Construction Site Regulations and BMPs	Kristin Kerr <i>EOA, Inc.</i>
10:25 AM	Break	
10:40 AM	Field Session - Break Into Subgroups 2A and 2B	
	Field Station A: Inlet Protection	Dan
	Field Station B: Sediment and Erosion Control	Bryan and David
11:15 AM	Field Groups Switch Stations	

** Attendance at this workshop is acceptable for 2.5 PDUs toward maintaining CPESC, CESSWI and/or CPSWQ certifications. **

**CONSTRUCTION SITE STORMWATER INSPECTIONS
 TRAINING FOR MUNICIPAL INSPECTORS
 Coyote Point Recreation Area
 Captains House
 March 11, 2019**

	LAST NAME	FIRST NAME	AGENCY
1	Aburabi	Husam	CSG Consultants Inc.
2	Ananda	Renee	County of San Mateo
3	Ansari	Suhail	City of Redwood City
4	Arabi	Kareem	CSG Consultants Inc.
5	Arellano	John	City of Daly City
6	Asai	Natalie	Town of Hillsborough
7	Azzari	Zack	County of San Mateo
8	Boo	Olivia	County of San Mateo
9	Bui	Dan	City of San Bruno
10	Burklin	Scott	San Mateo County
11	Burlison	Summer	County of San Mateo
12	Camacho	Patty	San Mateo County
13	Carlos	Armando	San Mateo County
14	Carroll	Kelly	CSG Consultants Inc.
15	Clowers	Clifton	REED & GRAHAM
16	Delgado	Nestor	Town of Atherton
17	Engle	Theresa Engle	San Mateo County

**CONSTRUCTION SITE STORMWATER INSPECTIONS
 TRAINING FOR MUNICIPAL INSPECTORS
 Coyote Point Recreation Area
 Captains House
 March 11, 2019**

	LAST NAME	FIRST NAME	AGENCY
18	Evora	Joel	City of Redwood City
19	Francis	Aaron	San Mateo County
20	Franklin	David	EnviroTech NPDES Services
21	Garza	Daniel	SSF WQCP
22	Gonzalez	Mauricio	City of San Mateo
23	Hathaway	Mark	City of San Mateo
24	Huynh	Michael	County of San Mateo
25	Iwan	Calvin	City of San Mateo
26	Jackson	Emmett	County of San Mateo
27	Kelley	Kanoa	County of San Mateo
28	Khaila	Mehdi	CSG Consultants Inc.
29	Kim	Kathy	Town of Hillsborough / CSG Consultants
30	Kimtani	Yash	CSG Consultants Inc.
31	Lang	Kelsey	County of San Mateo
32	Lee	Jeffrey	CSG Consultants Inc.
33	Lee	Jennifer	City of Burlingame
34	Leung	Camille	County of San Mateo

**CONSTRUCTION SITE STORMWATER INSPECTIONS
 TRAINING FOR MUNICIPAL INSPECTORS
 Coyote Point Recreation Area
 Captains House
 March 11, 2019**

	LAST NAME	FIRST NAME	AGENCY
35	Lowrie	Mik	City of Burlingame
36	MacDonald	Stephanie	City of Foster City
37	McAllister	Chuck	Town Of Portola Valley
38	Moran	Evelyn	City of Half Moon Bay
39	Morris	Greg	City of Brisbane
40	Rai	Iqbal	City of Daly City
41	Rawley	Joshua	San Mateo County
42	Richstone	Laura	San Mateo County
43	Schrotenboer	Patti	City of Redwood City
44	Sheehan	Greg	CSG Consultants Inc.
45	Stabile Sr	Joseph S	City of Daly City
46	Suarez	Laura	Veolia - Burlingame
47	Tai	Christina	SSF WQCP
48	Varela	Carlos	City Of Redwood City
49	Young	Johnson	County of San Mateo
50	Yuk	Nelson	SSF WQCP
51	Zhen	Erik	City of Redwood City



**Construction Site Stormwater Inspections
Training for Municipal Inspectors
Monday, March 11, 2019
9:00 a.m. – 1:00 p.m.**

Group #1: 15 Evaluations

1. Field Station A - Inlet Protection – *Dan Toda, Reed & Graham, Inc.*

15 very helpful **0** somewhat helpful **0** not helpful

- Very helpful to have/see how different types of inlet protection interact with each other and water flow effectiveness

2. Field Station B – Sediment and Erosion Control – *Bryan Hoffman and David Franklin, Filtrexx, Inc.*

14 very helpful **1** somewhat helpful **0** not helpful

3. Classroom - Construction Site Regulations and BMPs – *Peter Schultze-Allen and Kristin Kerr, EOA Inc.*

14 very helpful **1** somewhat helpful **0** not helpful

4. Did this workshop meet your expectations? **14** Yes **0** No

- Much better than previous sessions
- Class lecture was too dry.
- Short class lecture very good
- Thank you

5. Suggestions for future workshop topics:

- Loved the on hands experience
- Case study examples of good and bad installations
- Nothing to add, Keep up the good work!
- I like the ability to see the BMPs
- Perhaps if there is a City project in the future a session can be held at the “live” construction site

6. General Comments:

- Everyone is super nice
- Very helpful to see all the different product options available

- Maybe different table configuration for presentation to try and fit more people at tables. Overall appreciated session breakups
- I liked Ikes better than Panera
- Very helpful to see different kinds of tools and great to have refresher of the general regulations.

Group #2: 14 Evaluations

1. Field Station A - Inlet Protection – *Dan Toda, Reed & Graham, Inc.*

13 very helpful **1** somewhat helpful **0** not helpful

- More time on morning demonstration

2. Field Station B – Sediment and Erosion Control – *Bryan Hoffman and David Franklin, Filtrexx, Inc.*

13 very helpful **1** somewhat helpful **0** not helpful

3. Classroom - Construction Site Regulations and BMPs – *Peter Schultze-Allen and Kristin Kerr, EOA Inc.*

11 very helpful **3** somewhat helpful **0** not helpful

- Higher resolution images on construction presentation

4. Did this workshop meet your expectations? **13** Yes **0** No

5. Suggestions for future workshop topics:

- Needed more time at each of the field stations to allow for questions. Primarily station A
- Handouts showing how to apply BMPs
- Construction entrance field demo various situations
- Have it before rain season starts perhaps!

6. General Comments:

- Good balanced approach to class, i.e. lecture and field
- Thank you all!
- Longer time at field stations would be helpful (5-10 mins more)
- Proctor rushed through classroom presentation
- Maybe a price guide for the protection measures
- Very good!

Group Not Identified: 4 Evaluations

1. Field Station A - Inlet Protection – *Dan Toda, Reed & Graham, Inc.*

2 very helpful **2** somewhat helpful **0** not helpful

2. Field Station B – Sediment and Erosion Control – *Bryan Hoffman and David Franklin, Filtrexx, Inc.*

3 very helpful **1** somewhat helpful **0** not helpful

3. Classroom - Construction Site Regulations and BMPs – *Peter Schultze-Allen and Kristin Kerr, EOA Inc.*

3 very helpful **1** somewhat helpful **0** not helpful

4. Did this workshop meet your expectations? **3** Yes **0** No

5. General Comments:

- Splitting the groups into indoor and outdoor is great!

Appendix 7

- Public Information and Participation Subcommittee – Attendance List– FY 2018/19
- Blog Posts Examples and Metric Analytics
- Rain Barrel Workshop
 - Facebook Event Online Media
 - Facebook Ad
 - Eventbrite page – Coast side - San Mateo
 - Eventbrite page – Bay side – Half Moon Bay
 - Workshop surveys
- Flows to Bay Newsletter Examples
- Flows to Bay Web Page Examples

Public Information and Participation Subcommittee						FY 18-19	FY 18-19
AGENCY	NAME	ALTERNATE	ALTERNATE	ALTERNATE	PHONE	10/3/2018	3/19/2019
C/CAG	Matt Fabry						
C/CAG	Reid Bogert					X	X
Atherton	Nestor Delgado	Stephanie Bertollo-Davis			650-752-0544		
Belmont	Diane Lynn				650-595-7425		
Belmont	Julie Freitas					X	X
Brisbane	Shelley Romriell	Keegan Black			415-508-2130		
Burlingame	Jennifer Lee	Carolyn Critz			650-558-7381	X	X
Colma	Katherine Sheehan				650-522-2506		
Colma	Muneer Ahmed	Jason Chen			650-757-8888		
Colma	Kelly Carroll					X	X
Daly City	Ward Donnelly	Sibely Calles			650-991-8200	X	X - 1st alternate
Daly City	Stephen Stolte						
East Palo Alto	Michelle Daher				650-853-3197		
East Palo Alto	Jorge Luna						X
East Palo Alto	June Canter						X
Foster City	Jack Shulze	Norm Dorais	Jack S. LL		650-286-3543		
Half Moon Bay	Katherine Sheehan				650-522-2506		
Half Moon Bay	Mark Lander				650-522-2562		
Half Moon Bay	Kelly Carroll					X	X
Hillsborough	Sara Bachmann						X
Menlo Park	Candice Almendral	Rebecca Lucky			650.330.6768		
Menlo Park	Alexandria Skoch						
Millbrae	Shelly Reider				650-259-2444	X	X
Pacifica	Yessika Dominguez	Raymond Donquines	Michelle Trayjer		650-738-3767		X - 2nd alternate
Pacifica	Kevin Sandberg (intern)						X
Portola Valley	Ali Taghari				650-851-1700		
Portola Valley	Brandi de Garmeaux	Howard Yound	Adrienne Smith		650-851-1700		
Redwood City	Vicki Sherman	Christopher Fajikos	Adrian Lee		650-780-7472		
San Bruno	Jim Burch	Ted Chapman	William Li				
San Carlos	Kathryn Robertson					X	
San Mateo City	Grant Ligon (Chair)	Sven Edlund	Mark Swenson/ Sarah Schedit		650-522-7296	X	X - Swenson
San Mateo Co	Aaron Francis				650-599-1457	X	X
San Mateo Co	Andrea Chow						
San Mateo Co	Breann Liebermann	Edelzar Garcia			650-599-1514	X	
So. San Francisco	Daniel Garza				650-829-3880	X	
So. San Francisco	Andrew Wemmer						
So. San Francisco	Nelson Yuk						X
So. San Francisco	Christina Tai						X
Woodside	Dong Nguyen				650-851-6790		
SGA	Suzi Senna				415-606-5080	X	X
SGA	Sacha Pfeufer				510-224-5086	X	X
EOA	Peter Schultz-Allen	Kristin Kerr	Jon Konnan		510-832-2852 x 128		
CSG Committee	Paramjit Uppal						

Appendix 7:

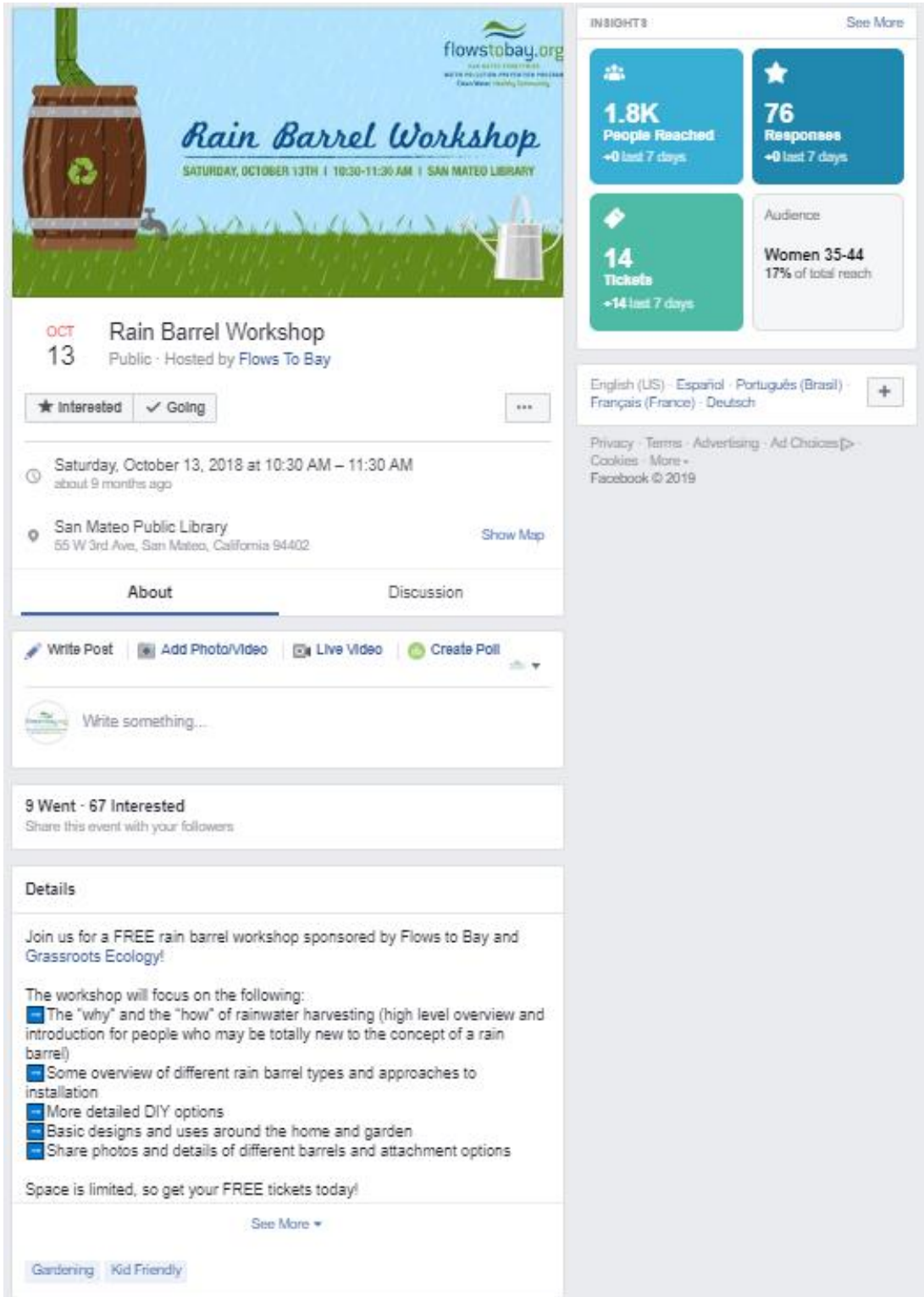
FY 2018/19 Subcommittee Attendance List

Public Information and Participation Subcommittee						FY 18-19	FY 18-19
AGENCY	NAME	ALTERNATE	ALTERNATE	ALTERNATE	PHONE	10/3/2018	3/19/19
C/CAG	Matt Fabry						
C/CAG	Reid Bogert					X	X
Atherton	Nestor Delgado	Stephanie Bertollo-Davis			650-752-0544		
Belmont	Diane Lynn				650-595-7425		
Belmont	Julie Freitas					X	X
Brisbane	Shelley Romriell	Keegan Black			415-508-2130		
Burlingame	Jennifer Lee	Carolyn Critz			650-558-7381	X	X
Colma	Katherine Sheehan				650-522-2506		
Colma	Muneer Ahmed	Jason Chen			650-757-8888		
Colma	Kelly Carrol					X	
Daly City	Ward Donnelly	Sibely Calles			650-991-8200	X	X - 1st alternate
Daly City	Stephen Stolte						
East Palo Alto	Michelle Daher				650-853-3197		
East Palo Alto	Jorge Luna						X
East Palo Alto	June Canter						X
Foster City	Jack Shulze	Norm Dorais	Jack S. LL		650-286-3543		
Half Moon Bay	Katherine Sheehan				650-522-2506		
Half Moon Bay	Mark Lander				650-522-2562		
Half Moon Bay	Kelly Carrol					X	
Hillsborough	Sara Bachmann						X
Menlo Park	Candice Almendral	Rebecca Lucky			650.330.6768		
Menlo Park	Alexandria Skoch						
Millbrae	Shelly Reider				650-259-2444	X	X
Pacifica	Yessika Dominguez	Raymond Donquines	Michelle Trayjer		650-738-3767		X - 2nd alternate
Pacifica	Kevin Sandberg (intern)						X
Portola Valley	Ali Taghari				650-851-1700		
Portola Valley	Brandi de Garmeaux	Howard Yound	Adrienne Smith		650-851-1700		
Redwood City	Vicki Sherman	Christopher Fajikos	Adrian Lee		650-780-7472		
San Bruno	Jim Burch	Ted Chapman	William Li				
San Carlos	Kathryn Robertson					X	
San Mateo City	Grant Ligon (Chair)	Sven Edlund	Mark Swenson/ Sarah Schedit		650-522-7296	X	X - Swenson
San Mateo Co	Aaron Francis				650-599-1457	X	X
San Mateo Co	Andrea Chow						
San Mateo Co	Breann Liebermann	Edelzar Garcia			650-599-1514	X	
So. San Francisco	Daniel Garza				650-829-3880	X	
So. San Francisco	Andrew Wemmer						
So. San Francisco	Nelson Yuk						X
So. San Francisco	Christina Tai						X
Woodside	Dong Nguyen				650-851-6790		
SGA	Suzi Senna				415-606-5080	X	X
SGA	Sacha Pfeufer				510-224-5086	X	X
EOA	Peter Schultz-Allen	Kristin Kerr	Jon Konnan		510-832-2852 x 128		
CSG Committee	Paramjit Uppal						
CSG Committee	Kelly Carrol						X

SMCWPPP Blog Analytics (Example Table):

Blog Post Title	Page Views	Page Views (Unique)	Average Time on Page	Bounce Rate
The Final Straw	187	133	0:03:04	66%
County Stormwater Efforts Praised in State Report	28	26	0:01:00	80%
Coastal Cleanup Day 2018 in San Mateo County	51	47	0:01:57	40%
Rain, Rain, Don't Go Away!	99	84	0:03:55	47.37%
To Half Moon Bay and Beyond!	124	115	0:02:16	87.38%
Test Your Pesticide Knowledge With Our Quiz	84	82	0:04:10	93.06%
The Future is Green (Infrastructure)	61	56	0:01:13	64.52%
Pollutants of Concern & Solutions You Can Learn!	123	119	0:05:05	72.22%
Water-wise Photo Contest	75	62	0:02:28	71.79%
Top Tips to Help Our Waters Win Big in 2019	48	44	0:02:22	66.67%
Braving the Rain for a Barrel of Fun: Workshop Recap	7	7	0:01:14	100%
4 Wise-Ways You Can Protect Our Waters This Spring	56	52	0:02:15	68.97%
A Litter Campaign in Brisbane Leaves a Cleaner Bay	116	111	0:04:02	57%
Sustainable Streets: Where We Are & Where We're Going	23	22	0:03:31	44.44%
Shining a Spotlight on Water-Wise Community Champions	11	11	0:00:00	50%
From Lawn to Bay: Water-Wise Ways To Be A Good Neighbor	17	17	0:01:27	86%

Rain Barrel Workshop Facebook event pages:



flowstobay.org
San Mateo Countywide Water Pollution Prevention Program
FlowstoBay Healthy Community

Rain Barrel Workshop

SATURDAY, OCTOBER 13TH | 10:30-11:30 AM | SAN MATEO LIBRARY

OCT 13 Rain Barrel Workshop
Public · Hosted by Flows To Bay

★ Interested ✓ Going

Saturday, October 13, 2018 at 10:30 AM – 11:30 AM
about 9 months ago

San Mateo Public Library
55 W 3rd Ave, San Mateo, California 94402 [Show Map](#)

About Discussion

Write Post Add Photo/Video Live Video Create Poll

Write something...

9 Went · 67 Interested
Share this event with your followers

Details

Join us for a FREE rain barrel workshop sponsored by Flows to Bay and Grassroots Ecology!

The workshop will focus on the following:

- The "why" and the "how" of rainwater harvesting (high level overview and introduction for people who may be totally new to the concept of a rain barrel)
- Some overview of different rain barrel types and approaches to installation
- More detailed DIY options
- Basic designs and uses around the home and garden
- Share photos and details of different barrels and attachment options

Space is limited, so get your FREE tickets today!

[See More](#)

Gardening Kid Friendly

INSIGHTS [See More](#)

- 1.8K People Reached
+0 last 7 days
- 76 Responses
+0 last 7 days
- 14 Tickets
+14 last 7 days
- Audience
Women 35-44
17% of total reach

English (US) · Español · Português (Brasil) · Français (France) · Deutsch

Privacy · Terms · Advertising · Ad Choices · Cookies · More

Facebook © 2019

Rain Barrel Workshop Facebook event pages:



The image shows a Facebook event page for a "Rain Barrel Workshop: Oceanside Edition". The event is scheduled for Saturday, December 1, 2018, from 10 AM to 12 PM at the Half Moon Bay Library, located at 820 Correas St, Half Moon Bay, CA 94019-1908. The event is hosted by "Flows To Bay" and is public. The page features a banner with a rain barrel illustration and the text "Rain Barrel Workshop" and "flowstobay.org". The event has 603 people reached, 28 responses, and 8 tickets. The audience is primarily women aged 45-54. The page includes a "Details" section with a description of the workshop, which is sponsored by Flows to Bay and includes a raffle for a rain barrel. The workshop topics include the San Mateo County rebate program, rainwater harvesting overview, rain barrel types, and DIY options. The page also has a "Write something..." section and a "3 Went - 25 Interested" status.

Rain Barrel Workshop
SATURDAY, DEC 1ST | 10 AM -12 PM | HALF MOON BAY LIBRARY
flowstobay.org
SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

DEC 1 Rain Barrel Workshop: Oceanside Edition
Public · Hosted by Flows To Bay

★ Interested ✓ Going

Saturday, December 1, 2018 at 10 AM – 12 PM
about 7 months ago

820 Correas St, Half Moon Bay, CA 94019-1908, United States [Show Map](#)

About Discussion

[Write Post](#) [Add Photo/Video](#) [Live Video](#) [Create Poll](#)

Write something...

3 Went - 25 Interested
Share this event with your followers

Details

Join us for a FREE rain barrel workshop sponsored by Flows to Bay, WE'RE GIVING AWAY A RAIN BARREL to one lucky attendee, courtesy of Hassett ACE Hardware!!

The workshop will focus on the following:

- Discussion of the San Mateo County rain barrel rebate program
- The "why" and the "how" of rainwater harvesting (high level overview and introduction for people who may be totally new to the concept of a rain barrel)
- Some overview of different rain barrel types and approaches to installation
- More detailed DIY options
- Focus on basic designs and uses around the home and garden
- Share photos and details of different barrels and attachment options

[See More](#)

[Home](#) [Kid Friendly](#) [Home improvement](#)

INIGHTS [See More](#)

603 People Reached
+0 last 7 days

28 Responses
+0 last 7 days


8 Tickets
+8 last 7 days

Audience
Women 45-54
16% of total reach


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Facebook © 2019

Rain Barrel Workshop Facebook promotional posts:

Flows To Bay
Published by Stephen Groner [?] · September 4, 2018 · 


Rain, rain, come our way! Save the date for the FREE Flows To Bay Rain Barrel Workshop on Saturday, Oct. 13th. SPACE IS LIMITED! Learn details about San Mateo County's rain barrel rebate and everything you need to jumpstart your rain barrel ownership. Event details and registration can be found here: <https://bit.ly/2P1hMB0>







Rain Barrel Workshop - Flows to Bay

Get More Likes, Comments and Shares
Boost this post for \$10 to reach up to 1,800 people.


223 People Reached 4 Engagements **Boost Post**

 Val XJord

Flows To Bay
Published by Stephen Groner [?] · September 14, 2018 · 


Become your block's shining beacon of environmental stewardship (and earn a rebate check in the process) with your very own rain barrel. Not sure where to start? We'll help you at our Oct 13th rain barrel workshop with DIY tips and discussion of the San Mateo County rain barrel rebate program! Register here: <https://bit.ly/2oYQXIV>.







309 People Reached 16 Engagements **Boost Again**

Boosted on Sep 14, 2018 By Stephen Groner **Not Approved**


People Reached: 0 Post Engagement: 0 **View Details**

 Lalitas Chaudhary and 4 others 1 Share

Flows To Bay
Published by Stephen Groner [?] · September 25, 2018 · 


We're obsessed with rain barrels, but can you blame us? They're easy to own and SMC's rain barrel rebate program can cover the cost of up to \$100! Come to our free rain barrel workshop at the San Mateo Library on October 13th and we'll help you get you started! Sign up here: bit.ly/2P1hMB0







947 People Reached 40 Engagements **Boost Again**

Boosted on Sep 25, 2018 By Stephen Groner **Completed**


People Reached: 466 Post Engagement: 268 **View Results**

 Flows To Bay, Eleuteria Salazar Villeda, Lavinia Quintana and 11 others 5 Shares

Flows To Bay
Published by Stephen Groner [?] · October 8, 2018 · 


In case you haven't heard, our FREE Rain Barrel Workshop is less than a week away and almost full! Sign up while you still can! We'll see you there on Oct 13th: bit.ly/2P1hMB0






1,069 People Reached 128 Engagements **Boost Again**

Boosted on Oct 8, 2018 By Stephen Groner **Completed**

People Reached: 498 Post Engagement: 59 **View Results**

 Judy Pierce, Ricardo Rodriguez and 58 others 1 Comment 7 Shares

Flows To Bay
Published by Stephen Groner [?] · October 17, 2018 ·  Like Page 

Thank you to all those who came out to our rain barrel workshop this Saturday—your energy and questions were terrific!! Don't forget to keep us updated as your projects come to fruition, we ❤️ photos!





#flowstobay Rain Barrel Workshop, 2018
00:03


 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 1,800 people.

258 People Reached **11** Engagements [Boost Post](#)

 Like  Comment  Share 

Flows To Bay
Published by Stephen Groner [?] · November 6, 2018 ·  Like Page 

Hey coastside San Mateo County residents! Flows To Bay is hosting a rain barrel workshop at the lovely Half Moon Bay Library on Saturday, Dec. 1st. This event is free, so bring your friends and family. Just make sure you register today before all the spots are taken! bit.ly/dec1workshop








740 People Reached **32** Engagements [Boost Again](#)



Boosted on Nov 6, 2018
By Stephen Groner Completed

People Reached	380	Post Engagement	75
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[View Results](#)

 Glenda Wahl, Michelle Bakken and 16 others 3 Shares

 Like  Comment  Share 

Flows To Bay
Published by Stephen Groner [?] · November 21, 2018 ·  Like Page 

We're giving away a FREE RAIN BARREL to one lucky attendee of our Dec 1st Workshop at the Half Moon Bay Library. Have you signed up yet? Register here: bit.ly/dec1workshop



EVENTBRITE.COM
Rain Barrel Workshop with Flows to Bay [Learn More](#)


Date: Saturday, December 1st Time: 10:00am-12:00pm...





2,022 People Reached **31** Engagements [Boost Again](#)



Boosted on Nov 21, 2018
By Stephen Groner Not Approved

People Reached	1.7K	Link Clicks	15
----------------	-------------	-------------	-----------


[View Details](#)

 Ann Marie Gazzano, Suz Kulovsky and 4 others 2 Shares

 Like  Comment  Share 


Flows To Bay
Published by Stephen Groner [?] · November 29, 2018 ·  Like Page 

LAST CALL!! Will you be the one who walks away from our workshop this Saturday with a FREE RAIN BARREL? See you in Half Moon Bay!! Register here: bit.ly/2FJs34Z








Flows To Bay + HASSETT HARDWARE
RAIN BARREL GIVEAWAY

Flows To Bay
Environmental Conservation Organization [Send Message](#)

 **Get More Likes, Comments and Shares**
Boost this post for \$10 to reach up to 1,800 people.

696 People Reached **60** Engagements [Boost Post](#)

 Elizabeth Char, Jean Laird and 13 others 1 Comment 8 Shares

 Like  Comment  Share 

Rain Barrel Workshop Facebook Ad:



Flows To Bay
Sponsored · 

Join us for a free Rain Barrel Workshop in Half Moon Bay!



Rain Barrel Workshop
SATURDAY, DEC 1ST | 10 AM -12 PM | HALF MOON BAY LIBRARY

 **flowstobay.org**
SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

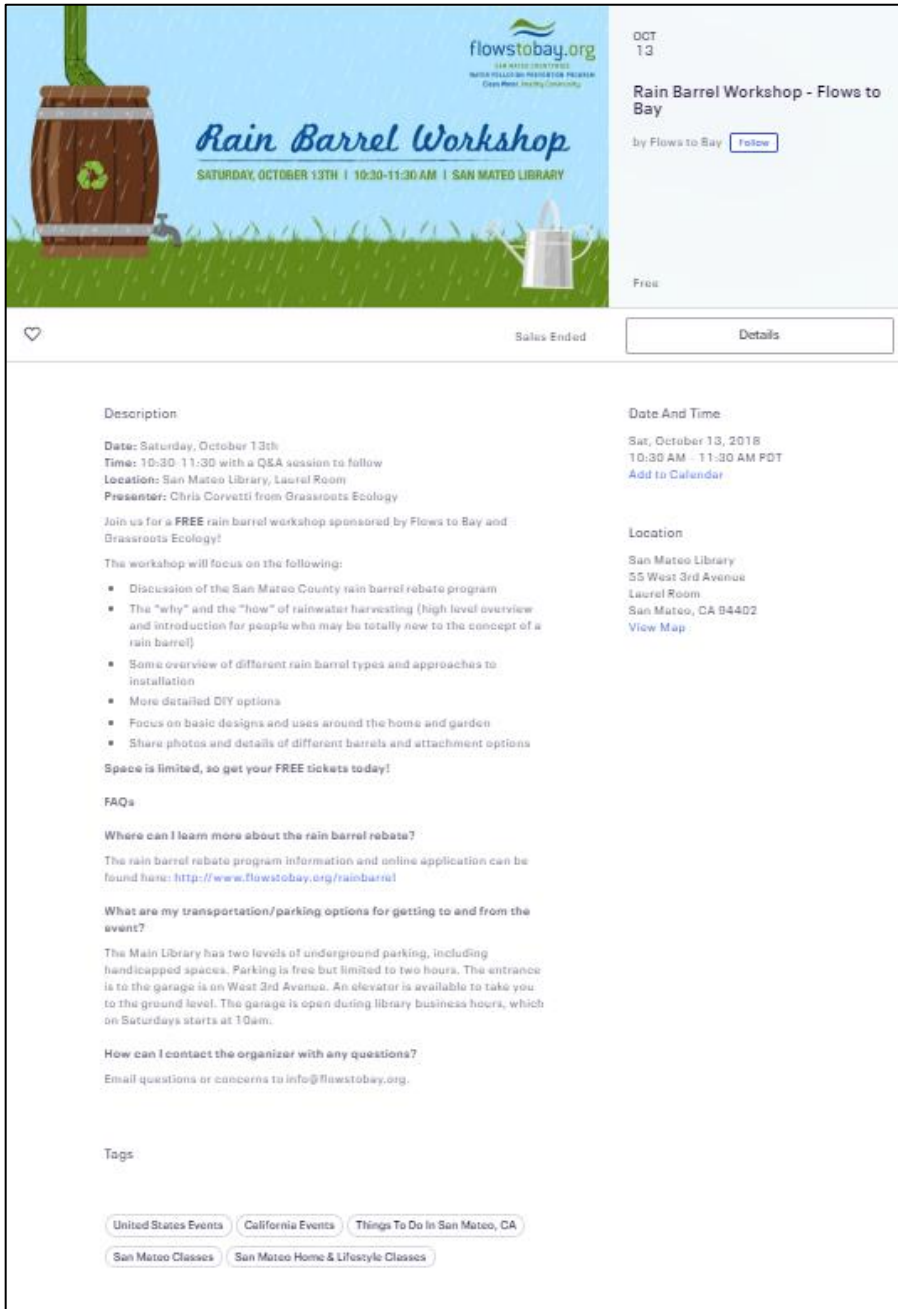
EVENTBRITE.COM


Rain Barrel Workshop with Flows to Bay
Date: Saturday, December 1stTime: 10:00am-12:00pm with a Q&A sessio...

  JoAnna Sablan, Val XJord and 49 others 2 Comments · 17 Shares

 Like  Comment  Share

Rain Barrel Workshop Eventbrite event page, Coast side-San Mateo:





Rain Barrel Workshop
SATURDAY, OCTOBER 13TH | 10:30-11:30 AM | SAN MATEO LIBRARY

OCT 13

Rain Barrel Workshop - Flows to Bay

by Flows to Bay

Free

Sales Ended

Description

Date: Saturday, October 13th
Time: 10:30 - 11:30 with a Q&A session to follow
Location: San Mateo Library, Laurel Room
Presenter: Chris Corvetti from Grassroots Ecology

Join us for a **FREE** rain barrel workshop sponsored by Flows to Bay and Grassroots Ecology!

The workshop will focus on the following:

- Discussion of the San Mateo County rain barrel rebate program
- The "why" and the "how" of rainwater harvesting (high level overview and introduction for people who may be totally new to the concept of a rain barrel)
- Some overview of different rain barrel types and approaches to installation
- More detailed DIY options
- Focus on basic designs and uses around the home and garden
- Share photos and details of different barrels and attachment options

Space is limited, so get your **FREE** tickets today!

FAQs

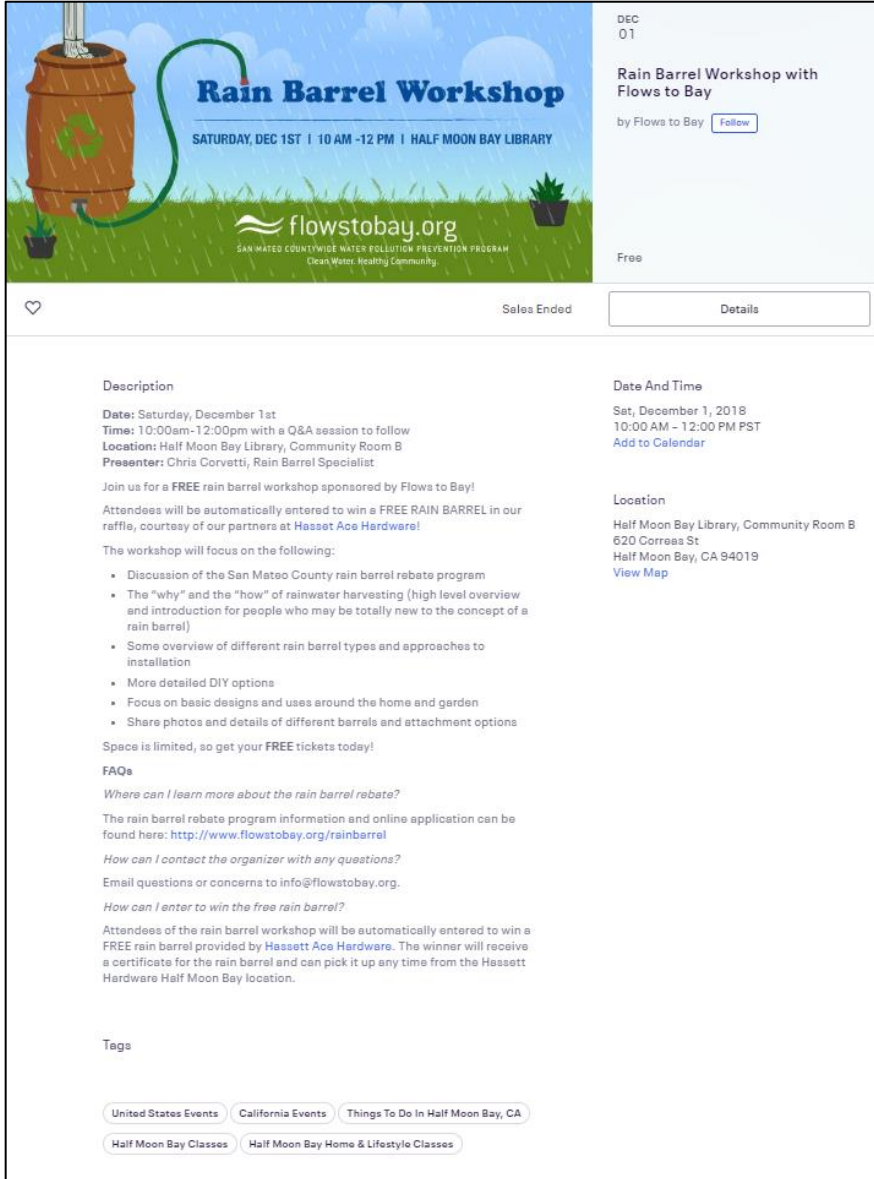
Where can I learn more about the rain barrel rebate?
 The rain barrel rebate program information and online application can be found here: <http://www.flowstobay.org/rainbarrel>

What are my transportation/parking options for getting to and from the event?
 The Main Library has two levels of underground parking, including handicapped spaces. Parking is free but limited to two hours. The entrance is to the garage is on West 3rd Avenue. An elevator is available to take you to the ground level. The garage is open during library business hours, which on Saturdays starts at 10am.

How can I contact the organizer with any questions?
 Email questions or concerns to info@flowstobay.org.

Tags

Rain Barrel Workshop Eventbrite event page, Bay side-Half Moon Bay:



DEC 01

Rain Barrel Workshop with Flows to Bay

by Flows to Bay [Follow](#)

Free

Heart icon Sales Ended Details

Description

Date: Saturday, December 1st
Time: 10:00am-12:00pm with a Q&A session to follow
Location: Half Moon Bay Library, Community Room B
Presenter: Chris Corvetti, Rain Barrel Specialist

Join us for a **FREE** rain barrel workshop sponsored by Flows to Bay!

Attendees will be automatically entered to win a **FREE RAIN BARREL** in our raffle, courtesy of our partners at **Hassett Ace Hardware!**

The workshop will focus on the following:

- Discussion of the San Mateo County rain barrel rebate program
- The "why" and the "how" of rainwater harvesting (high level overview and introduction for people who may be totally new to the concept of a rain barrel)
- Some overview of different rain barrel types and approaches to installation
- More detailed DIY options
- Focus on basic designs and uses around the home and garden
- Share photos and details of different barrels and attachment options

Space is limited, so get your **FREE** tickets today!

FAQs

Where can I learn more about the rain barrel rebate?
The rain barrel rebate program information and online application can be found here: <http://www.flowstobay.org/rainbarrel>

How can I contact the organizer with any questions?
Email questions or concerns to info@flowstobay.org.

How can I enter to win the free rain barrel?
Attendees of the rain barrel workshop will be automatically entered to win a **FREE** rain barrel provided by **Hassett Ace Hardware**. The winner will receive a certificate for the rain barrel and can pick it up any time from the **Hassett Hardware Half Moon Bay** location.

Date And Time

Sat, December 1, 2018
10:00 AM - 12:00 PM PST
[Add to Calendar](#)

Location

Half Moon Bay Library, Community Room B
620 Correas St
Half Moon Bay, CA 94019
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Tags

[United States Events](#) [California Events](#) [Things To Do In Half Moon Bay, CA](#)
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Rain Barrel Workshop Survey:

Questions Key:

1. What were you hoping to learn at the workshop today?
2. What was your level of knowledge of rain barrels *prior* to the workshop (circle one)
3. Did the workshop's content help you with the following? (circle all that apply)?
4. How would you rate the workshop on the following subjects (1=poor, 5=great)
5. What are areas of improvement or topics you would like to see covered in our next event?
6. What is/was the biggest obstacle you faced when deciding to install a rain barrel? (circle one)

Half Moon Bay Workshop

Question Number	Response	Amount of Respondents who Answered
Q1	<p><i>What were you hoping to learn at the workshop today?</i></p> <ul style="list-style-type: none"> • About rain barrels - beginner info • How to buy, install, use, and maintain a rain barrel system • What kind of rain barrels are available and how to install them • Benefits of rain barrels • Cost of rain barrels • # of rain barrels I might need for 2,000 sq. ft. house • Whether I wanted to get a rain barrel for my home • Rain collection info • How to use a rain barrel properly • How to use rain barrels • About rain barrel • How to set it up • How to install a rain barrel and how to use it to irrigate a low-water garden • How to collect water • How rain barrels will benefit my life • General information about rain barrels • How to install a rain barrel • All about setting up a rain barrel/how to use it in veg + flower garden • Water conserve • Info on harvesting water • Purpose of rain barrel • The best way to set them up • Feasibility of using rain barrels • General info in available gear and rebate info • Find out what is available • Rain catchment • Generally what they're used for (and what not) and how to obtain and install • Set up reclaim of rain water and different ways • To learn more about set-up and whatever we might not know • Practicality of collecting rainwater for landscaping • How it works, what i can use it for installation • How to install rain barrels • If it was practical 	31
Q2	<p><i>What was your level of knowledge of rain barrels prior to the workshop (circle one)</i></p> <ul style="list-style-type: none"> • No knowledge = 16 • Some knowledge = 11 • Well informed, but haven't installed yet = 2 • Good, I have a rain barrel installed = 3 	31 (Some respondents circled more than 1)

Question Number	Response	Amount of Respondents who Answered
Q3	<p>Did the workshop's content help you with the following? (circle all that apply)?</p> <ul style="list-style-type: none"> • Basic understanding of functionality of a rain barrel = 28 • Preparing you to install your own rain barrel = 23 • Environmental benefits of utilizing a rain barrel = 27 • Knowledge of local rebates that can be used to purchase a rain barrel = 29 	31
Q4	<p>Environmental information provided:</p> <p>1 = 0 2 = 0 3 = 0 4 = 10 5 = 21</p> <p>Rain barrel installation instructions:</p> <p>1 = 2 2 = 1 3 = 3 4 = 9 5 = 16</p> <p>Rain barrel rebate information provided:</p> <p>1 = 0 2 = 0 3 = 5 4 = 8 5 = 18</p> <p>Information was presented in an interesting/fun format:</p> <p>1 = 0 2 = 0 3 = 4 4 = 7 5 = 20</p>	31
Q5	<p>How would you rate the workshop on the following subjects (1=poor, 5=great)</p> <ul style="list-style-type: none"> • Maybe - more on installing (for the non-gifted) • More hands on with examples/pictures for connections, maybe have a downspout example • Seeing the fittings together, not in pieces on the table, such as filters. Show a ball valve. • Didn't know since I had no knowledge going in • N/A • All covered • Any company that can help us? • Show actual photos of all the parts assembled together (in relation to the gutter, input, etc.) 	27

Question Number	Response	Amount of Respondents who Answered
	<ul style="list-style-type: none"> • The rain barrel presentation could spend more time on specifics and separating out the different forms of installation. More time to let people estimate their roof size and gallons collectable! • All good • N/A - a lot was covered, thank you! • I felt everything was covered for me • Greywater • solar/battery pump installation • Price of barrels • More free coupon • See actual rain barrel • Greywater • Greywater systems • Present level good for 1.5 hours present • None • N/A • N/A • It was good • More actual props - actual rain barrel to show install • more/better info on types of contamination from first flush on various roof materials. Bio + chemical • None • If it was practical 	
Q6	<p>What is/was the biggest obstacle you faced when deciding to install a rain barrel? (circle one)</p> <ul style="list-style-type: none"> • No interest in owning a rain barrel = 0 • The cost of a rain barrel was too high = 9 • I didn't have the room for it in my home = 3 • I didn't want to deal with maintenance/upkeep = 4 • It seems like too much work = 11 <p>Other (please write in answer below):</p> <ul style="list-style-type: none"> • I'm closer to being ready to try • These are the biggest potential obstacles, but I'm still very interested in purchasing at least one rain barrel • Can I hire someone to install one? • Thank you very much! • Aesthetics and making it fit well with my house • They are more affordable than I thought and plan on installing one • No obstacle • No obstacle • I needed to bridge from the downspout to the barrel across the sidewalk. Found an excellent not at all/able ___ that fit the bottom of the spout to elevated barrel [1 word was difficult to read and is signified by “___”] 	29

Question Number	Response	Amount of Respondents who Answered
	<ul style="list-style-type: none"> • Not having enough knowledge about what is available • Limited time. Would be interested in a service to install one on our property • Using materials good for the environment • How to do • No obstacles. I'm going for it • Where to put them 	

San Mateo Workshop


Question Number	Response	Amount of Respondents who Answered
Q1	<p>What were you hoping to learn at the workshop today?</p> <ul style="list-style-type: none"> • How to install a rain barrel • Latest info which complies with San Mateo → very happy with Chris' [the instructor] information on the latest hardware • How to decide if I can do it myself • New ways to use rainwater + incentives • How to put in a rain barrel system • Installation and maintenance of rain barrel system • I started out with no knowledge - I appreciate learning today • How to make a rain barrel - if it was possible to DIY or better to have someone else do it • What is a rain barrel system and how is it used, maintained, and installed • About installing a rain barrel in our yard • How rain barrels work • Rain barrel • Basics of rain barrel • Basic information + ideas • Didn't have expectations. Motivated by "free barrel" ad • Support my brother • About rain barrel system basics • General knowledge of rain harvesting & some specifics of things to be aware of • Where to buy and how to install • To learn how to capture rain water and to use it to save money for home gardening needs • Ideas for feeding a swale...add new barrels • How rain barrel systems work and whether it makes sense for me • Installing and using rain barrel system • Options for installing rain barrels, as well as general info • Exactly what was covered 	25

Question Number	Response	Amount of Respondents who Answered
Q2	<p>What was your level of knowledge of rain barrels <i>prior</i> to the workshop (circle one)</p> <ul style="list-style-type: none"> • No knowledge = 11 • Some knowledge = 12 • Well informed, but haven't installed yet = 2 • Good, I have a rain barrel installed = 2 	25 (Some respondents circled more than 1)
Q3	<p>Did the workshop's content help you with the following? (circle all that apply)?</p> <ul style="list-style-type: none"> • Basic understanding of functionality of a rain barrel = 23 • Preparing you to install your own rain barrel = 20 • Environmental benefits of utilizing a rain barrel = 23 • Knowledge of local rebates that can be used to purchase a rain barrel = 24 	25
Q4	<p>How would you rate the workshop on the following subjects (1=poor, 5=great)</p> <p>Environmental information provided: 1 = 0 2 = 0 3 = 2 4 = 4 5 = 19</p> <p>Rain barrel installation instructions: 1 = 0 2 = 0 3 = 3 4 = 7 5 = 15</p> <p>Rain barrel rebate information provided: 1 = 0 2 = 1 3 = 0 4 = 3 5 = 18</p> <p>Information was presented in an interesting/fun format: 1 = 0 2 = 1 3 = 0 4 = 5 5 = 18</p>	25
5	<p>What are areas of improvement or topics you would like to see covered in our next event?</p> <ul style="list-style-type: none"> • I'm happy :) More is always better! 	17

Question Number	Response	Amount of Respondents who Answered
	<ul style="list-style-type: none"> • Price for typical home installation • incentives/rebates + organizing citizens to help each other • Provide list of places to buy stuff - name, address, phone • Provide list of people/contractors who will provide/build rainwater recovery system • Garden maintenance • Irrigation system maintenance • Tailored info based on water districts - I know it's hard to do because of the number of attendees • N/A • Great presentation/appropriate slides • Larger room • Can't think of anything now but will when i start to actually do one • Good to go! • Make it longer! 2 hours • Include a slideshow or video of setting up an actual system • Hands on! • I am waiting to hear a lecture regarding planting native plants in Belmont + San Mateo area - I don't want to travel to another city for this lecture. Thanks! • Longer time for talk! • More copies of handouts • Installing and using rain barrel system • Excellent coverage 	
Q6	<p>What is/was the biggest obstacle you faced when deciding to install a rain barrel? (circle one)</p> <ul style="list-style-type: none"> • No interest in owning a rain barrel = 0 • The cost of a rain barrel was too high = 2 • I didn't have the room for it in my home = 7 • I didn't want to deal with maintenance/upkeep = 2 • It seems like too much work = 7 <p>Other (please write in answer below):</p> <ul style="list-style-type: none"> • Lack of specific info - best brands, etc. • Where to start • Rainy season is when I don't need irrigation water • Lack of knowledge on how to do, where to get equipment, and builders + contractors • Finding reputable installation company • I haven't decided yet because I just started learning about them • HOA rules • Don't know how to install • Installation itself - more confident after presentation • No rain gutter on my condo balcony • Design and location 	21

Question Number	Response	Amount of Respondents who Answered
	<ul style="list-style-type: none">• Looking forward to doing it• Not sure how to handle overflow...did not want to mess with our current gutter/overflow system• My late husband installed my barrel. I need to maintain it now and would like to add 1 or 2• But now that there are more options in barrels, plan to install	


eNewsletter: Summer 2019:



flowstobay.org
SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

SUMMER 2019 NEWSLETTER


Meet Your Eco-Neighbors | A Look Into Sustainable Streets | Inspiring Local Landscapes



San Mateo County Residents Are Water Champions

It certainly does take a village to help prevent stormwater pollution, and in San Mateo County many residents have made strides to protect our water quality and environment. Read below as these water-wise community champions share their stories, tips, and tricks on how simple it is to make a difference.


[Meet Your Eco-Neighbors?](#)



Water-Wise Ways To Be A Good Neighbor

Lawns degrade nature. Here are simple solutions that will help you transition to a more natural, less demanding landscape.

[Water-Wise is the Way](#)



Sustainable Streets in Action

Learn how Sustainable Streets built in communities near you have already experimented with Green Infrastructure.

[Sustainable Streets Near You](#)

Summer Events in San Mateo County *

View our calendar of events and find some great things to do. See you out there San Mateo County!

[CALENDAR OF EVENTS](#)

eNewsletter: Spring Gardening Tips:



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SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

Spring Gardening Tips



Bay-Friendly Gardening Guide

Learn the ways you can help protect local creeks, the San Francisco Bay, and the Pacific Ocean with this gardening guide.

LEARN MORE



EXCLUSIVE DISCOUNT
20% OFF*
EXCLUSIONS APPLY*
HASSETT HARDWARE

Enjoy an exclusive 20% discount for Flows To Bay email subscribers with our partner, Hassett Hardware—just in time for your Spring gardening! [Click here](#) for the coupon and usage details. **Discount valid now through May 31, 2019.**



Managing Pest In An Eco-Friendly Way

Did you know that less than 2% of insects you encounter in the garden are considered pests? Integrated pest management can help you manage pests without harming the environment.

LEARN MORE



Compost Happens!

Join Master Gardeners of San Mateo & San Francisco in a workshop about composting to produce healthier and more disease-resistant plants. **June 1st, 10AM - 12PM** at the RWC Veterans Memorial Senior Center.

REGISTER TODAY



Get \$\$\$ for helping prevent stormwater pollution!

San Mateo County residents can receive a **rebate of up to \$100** with the purchase of a rain barrel! [Click here](#) to get the details.

eNewsletter: Clean Water Pathways:



The Clean Water Pathways Teacher Fellowship



Are you a teacher or know one working in San Mateo County? Then sign up for the Clean Water Pathways Teacher Fellowship. This program results in increased environmental literacy, academic success, and civic engagement for a water resilient future.

Teachers will be provided a \$500 stipend for attending the training, developing and implementing their unit, and sharing their journey and units at a capstone event at the completion of the semester.

[LEARN MORE AND APPLY HERE!](#)

Hurry! Space is limited. Deadline is May 31, 2019.

Benefits Teachers Receive for Participating:

- A \$500 stipend upon completion of the program
- A deep understanding of the environmental, social, and economic issues related to stormwater pollution prevention
- The confidence and ability to successfully use problem-based learning strategies, including: inquiry, systems thinking, and civic engagement
- Connection with local stormwater community-based organizations, and hands-on experiences to enhance classroom teaching
- Increased student engagement and comprehension, and greater and lasting educational impact on your students
- The tools and resources to make a significant impact in your school community towards a cleaner waterways
- The chance to collaborate and share best practices with fellow teachers within their cohort

eNewsletter: Earth Day Events:



SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

**EARTH DAY EVENTS IN AND AROUND
SAN MATEO COUNTY**



View our Earth Day events happening throughout the months of April and May across the county. There's everything from FREE fun family-friendly events to hands-on workshops and volunteer opportunities.

[VIEW OUR CALENDAR OF EVENTS HERE](#)



Help us imagine how your neighborhood streets could better protect pedestrians and prevent flooding!

The City/County Association of Governments of San Mateo County is developing a countywide Sustainable Streets Master Plan. This plan will identify how climate change will affect future rainfall, and determine how to sustainably capture and clean runoff in our roadways and **WE WANT YOUR FEEDBACK & IDEAS!** 🙌🧠

Join us at these Earth Day events to learn more and share your thoughts with us.

Saturday, April 13th
[Earth Day On The Bay - Redwood City](#)

Saturday, April 27th
[EcoFest - Pacifica](#)

Saturday, May 4th
[Streets Alive! Parks Alive! - South San Francisco](#)

eNewsletter: Spring 2019



SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

SPRING 2019 NEWSLETTER
Brisbane Eco-Hero | How Our Waters Can Win Big in 2019 | Earth Day Events



Community Hero Tackles Litter Problem in Brisbane

Last month, the Frito-Lay Factory in Brisbane saw a lot of attention from local news outlets and members of the San Mateo County community. The source of this hubbub was Jake Scussel. If you hadn't heard of him before now, you're not alone. He started popping up on a lot of radars after discovering a treasure-trove of trash behind the Frito-Lay factory.

READ HOW THE STORY ENDS



Get \$\$\$ for helping prevent stormwater pollution!

Did you know that San Mateo County residents can receive a rebate of up to \$100 with the purchase of a rain barrel? [Click here](#) to get the details or email us at info@flowstobay.org.



Top Tips To Help Our Waters Win Big In 2019
Our individual actions matter! Here are four ways you can step to the plate and make great plays for clean water this season.


LEARN MORE




4 Ways You Can Protect Our Waters This Spring
All it really takes to protect the beautiful ecosystems we have in SMC is a little bit of care and a community to help you along the way.

HERE'S HOW

eNewsletter: Water Wise Photo Contest:


SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water, Healthy Community.



The banner features the text 'WATER WISE PHOTO CONTEST' in large white letters on a blue background. Below this, three panels illustrate the contest process: 'SNAP' shows hands holding a smartphone; 'SUBMIT' shows a laptop; 'AND YOU MIGHT JUST WIN!' shows a Starbucks gift card and a \$30 Amazon gift card.


Do you have...


- A drought-tolerant, native, or water-wise landscape?
- Rain barrels installed to capture and reuse stormwater?
- Rain gardens or other bioretention areas?
- Creative drawings or plans in the making for some water-wise awesomeness?

If so, we want to hear from you!

Submit a photo of your project and inspire others to take on their own water-wise home project. When you submit, you'll be ENTERED TO WIN a feature on our Facebook page and a \$30 Amazon Gift Card for first place, or a \$10 gift card to Starbucks for the runner up.

Show us what you've got, San Mateo County! Submit your photo today!

 **SUBMIT VIA
FACEBOOK**

 **SUBMIT VIA
EMAIL**

CONTEST RULES: No purchase necessary. Winners must reside within San Mateo County, but anyone is welcome to submit. Photos must be submitted by 11:59PM on Friday, February 15, 2019. Flows To Bay judges will review all contest entries and select one first place winner and two runners up. Winners will be contacted via email by end of day on February 22.

eNewsletter: Winter 2018



SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

WINTER 2018 NEWSLETTER
Water Pollution Solutions | Rain Barrel Event Recap | Green Infrastructure



A photograph of a white warning sign with a red 'X' over a fish icon. The sign also shows a fork and a knife icon. The text reads 'WARNING' at the top and 'FISH CONTAMINATED' at the bottom.

Water Pollution Solutions

Can you name 4 big stormwater pollutants that impact our waters? Read about San Mateo County's most wanted pollutants, the harm they cause to our community, and solutions for tackling them.

[LEARN MORE](#)



Get \$\$\$ for helping prevent stormwater pollution!

Did you know that San Mateo County residents can receive a rebate of up to \$100 with the purchase of a rain barrel? [Click here](#) to get the details or email us at info@flowstobay.org.



A photograph of a man and a woman standing together indoors, holding a certificate or document.

Braving the Rain for a Barrel of Fun: Workshop Recap

Our workshop taught residents the many benefits of installing a rain barrel at home. In case you missed it, here's a rain barrel rundown.

[LEARN MORE](#)



A photograph of a person kneeling next to a green infrastructure project, possibly a rain garden or bio-retention area.

The Future Is Green (Infrastructure)

It's officially the rainy season! Read about different projects that help soak up all that rain and how the cities in San Mateo County are preparing for a green future.

[LEARN MORE](#)

eNewsletter: Rain Barrel



Rain, rain come our way (so we may capture and reuse you someday!)

Rain barrels help prevent stormwater pollution and can reduce your water bills. And with the countywide rain barrel rebate program, owning one costs less than you might think.

Our workshop will discuss the basics of owning and maintaining a rain barrel of your own and walk you through what you need to know to get started. We'll also have light refreshments and giveaways!


WHERE: Half Moon Bay Library, Community Room B

WHEN: December 1st starting at 10AM.

Don't miss this opportunity! Register for the rain barrel workshop today—space is limited!


REGISTER TODAY AND SAVE YOUR SPOT!

eNewsletter: Fall 2018



flowstobay.org
SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM
Clean Water. Healthy Community.

FALL 2018 NEWSLETTER
Sign up for our Rain Barrel Workshop | Pesticide Quiz Results
The Final Straw! | Half Moon Bay's New Library Developments



Rain Barrel Workshop
SATURDAY, OCTOBER 13TH | 10:30-11:30 AM | SAN MATEO LIBRARY

[Flows To Bay Rain Barrel Workshop](#)


Want to own a rain barrel but don't know where to start? Register for our FREE workshop on Oct. 13th starting at 10:30am at the San Mateo Library and learn how to get started. [Space is limited! Register today.](#)

REGISTER TODAY AND SAVE YOUR SPOT!

Rain barrels not only help conserve water, they are a great way to help prevent stormwater pollution. Learn about the benefits of rain barrels and more by [clicking here](#)


The votes have been tallied and the winner has been selected! Did you win our pesticide quiz? Click below to find the quiz answers and winner!

PESTICIDE FACEBOOK QUIZ ANSWERS & WINNER



The Final Straw
Straws, straws everywhere— but do you really need them in your drink? Straws are one of those items that most of us take for granted. Read on to see the big impact even a single plastic straw can make.

LEARN MORE



To Half Moon Bay and Beyond!
The brand new Half Moon Bay Library has some stellar eco-friendly features which include green infrastructure to protect local waterways from stormwater pollutants.

LEARN MORE

eNewsletter: September Volunteer Events:



Ready to make a difference?

Join the community in helping to keep the waterways in San Mateo County clean by participating in the upcoming September water-related volunteer events below.



**First Flush Training
Monday, Sept. 10 | 6PM**

First Flush is an annual stormwater monitoring event occurring during the first significant rain storm of the season. Monitoring is conducted at storm drain outfalls that drain into the Monterey Bay National Marine Sanctuary.

- No experience needed.
- Training and equipment provided.

Training Location: [80 Stone Pine Road, Suite #100, Half Moon Bay, CA](#)

For more information, contact:
[Julian Carroll](#) | 650-712-7765 x117

[CLICK FOR MORE INFORMATION](#)

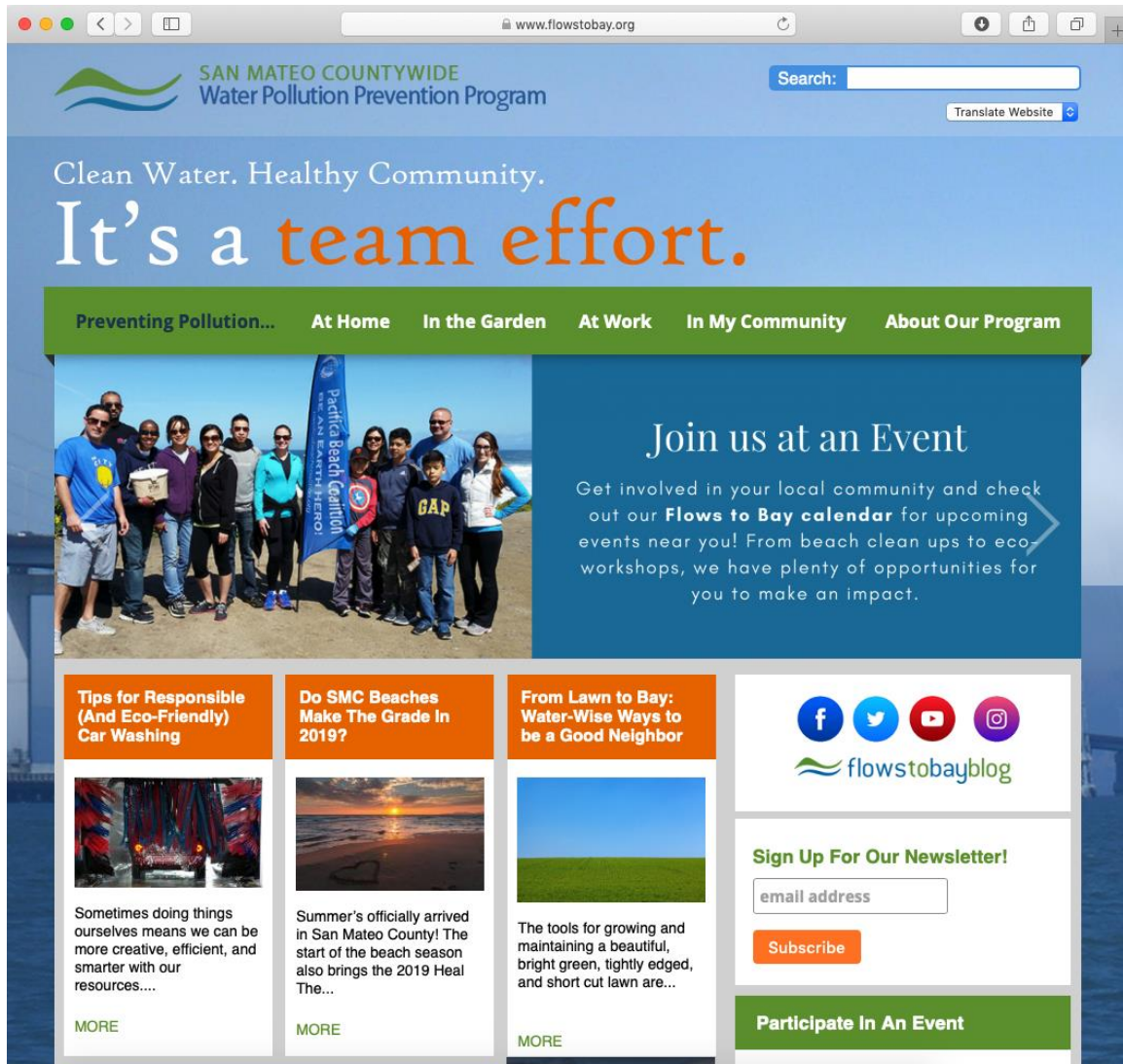


**Coastal & Bay Cleanup Day
Saturday, Sept. 15 | 9am - Noon**

This annual waterway and land cleanup brings together tens of thousands of people across the state to help make our communities cleaner and healthier for people and animals. Cleanups are held all over San Mateo County at beaches, creeks, waterways, parks and neighborhoods. Families are encouraged to bring their children, as this family-friendly event is a great opportunity to learn about litter and how to prevent it from ending up in our local streets and waterways.

[CLICK HERE FOR VOLUNTEER LOCATIONS & MORE INFO](#)

Website: Home Page



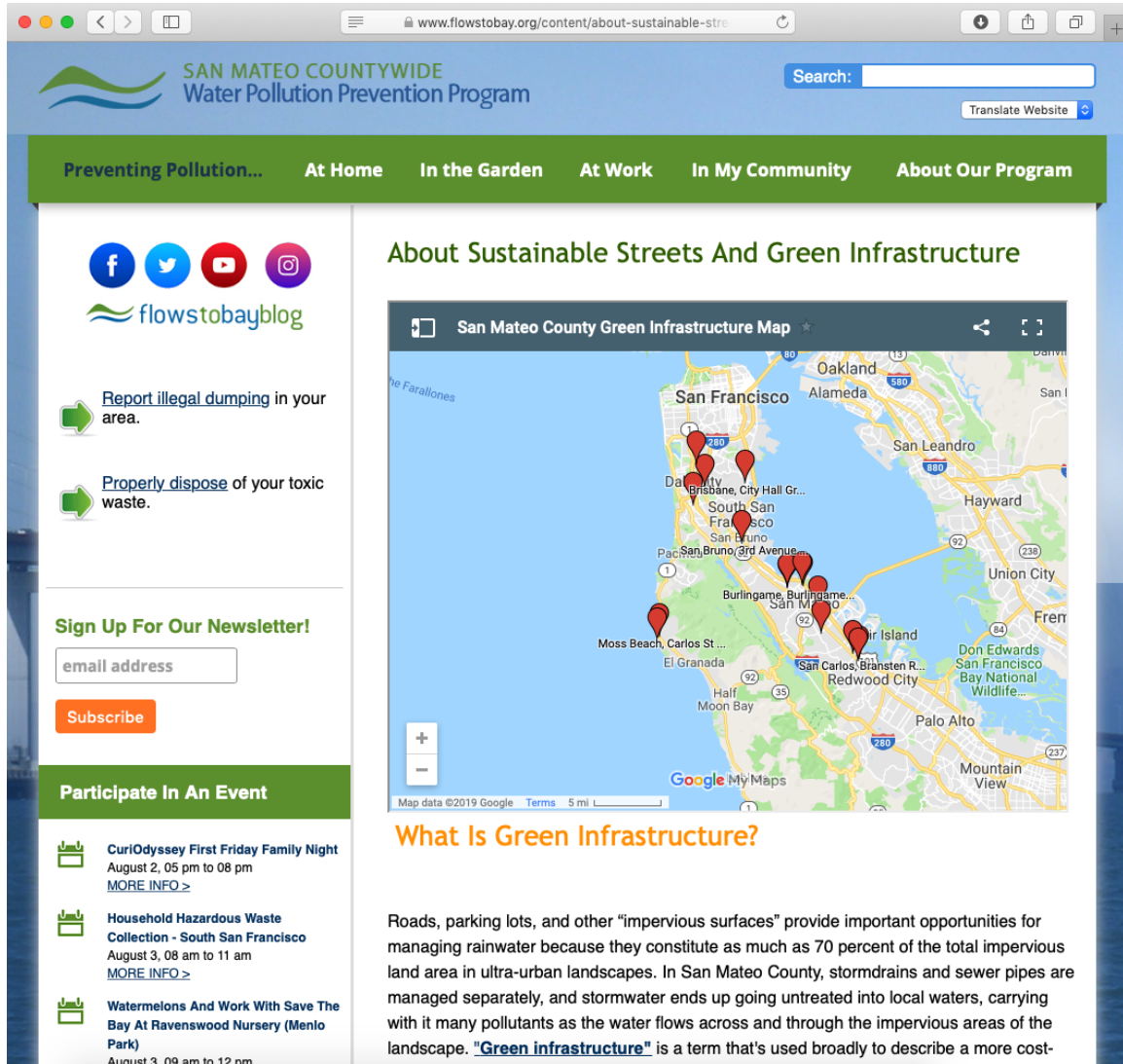
The screenshot shows a web browser window with the URL www.flowstobay.org. The website header features the program's logo and a search bar. The main banner reads "Clean Water. Healthy Community. It's a team effort." Below this is a navigation menu with links: "Preventing Pollution...", "At Home", "In the Garden", "At Work", "In My Community", and "About Our Program". The central content area includes a group photo of volunteers at a beach cleanup and a call to action: "Join us at an Event". To the right, text encourages users to check the "Flows to Bay calendar" for events. Below the main content are three article teasers: "Tips for Responsible (And Eco-Friendly) Car Washing", "Do SMC Beaches Make The Grade In 2019?", and "From Lawn to Bay: Water-Wise Ways to be a Good Neighbor". A sidebar on the right contains social media icons for Facebook, Twitter, YouTube, and Instagram, the "flowstobayblog" logo, a "Sign Up For Our Newsletter!" form with an email address field and a "Subscribe" button, and a "Participate In An Event" button.

Website: Green Infrastructure Design Guide



The screenshot shows a web browser window with the URL www.flowstobay.org/gidesinguide. The website header includes the logo for the San Mateo Countywide Water Pollution Prevention Program, a search bar, and a 'Translate Website' button. A green navigation bar contains the following menu items: 'Preventing Pollution...', 'At Home', 'In the Garden', 'At Work', 'In My Community', and 'About Our Program'. On the left side, there are social media icons for Facebook, Twitter, YouTube, and Instagram, followed by the 'flowstobayblog' logo. Below this, there are two green arrows pointing right with text: 'Report illegal dumping in your area.' and 'Properly dispose of your toxic waste.' Further down is a 'Sign Up For Our Newsletter!' section with an 'email address' input field and a 'Subscribe' button. A green bar titled 'Participate In An Event' lists three events: 'CuriOdyssey First Friday Family Night' (August 2, 05 pm to 08 pm), 'Household Hazardous Waste Collection - South San Francisco' (August 3, 08 am to 11 am), and 'Watermelons And Work With Save The Bay At Ravenswood Nursery (Menlo Park)' (August 3, 09 am to 12 pm). The main content area features the title 'Green Infrastructure Design Guide' and a paragraph explaining that the guide is a comprehensive design guide to help agencies, developers, design professionals, and construction firms design, build, and maintain green infrastructure in San Mateo County. It mentions an update on the earlier 'Green Streets and Parking Lots Design Guide (2009)'. A note states that the guide does not provide technical guidance for meeting regulatory requirements for new and redevelopment green infrastructure designs. Below the text is a link to download the 'full guidebook in book layout format, with updated and revised graphics' (note: large file, 55 mb). At the bottom right, there is a photograph of a modern building with a landscaped courtyard featuring trees and people walking.

Website: About Sustainable Streets And Green Infrastructure



The screenshot shows a web browser window displaying the website www.flowstobay.org/content/about-sustainable-streets. The page header includes the organization's logo and name, a search bar, and a 'Translate Website' button. A green navigation bar contains links for 'Preventing Pollution...', 'At Home', 'In the Garden', 'At Work', 'In My Community', and 'About Our Program'. The main content area is titled 'About Sustainable Streets And Green Infrastructure' and features a map of San Mateo County with red pins indicating green infrastructure locations. To the left of the map is a sidebar with social media icons, a newsletter sign-up form, and a list of events. Below the map is a section titled 'What Is Green Infrastructure?' with introductory text.

SAN MATEO COUNTYWIDE Water Pollution Prevention Program

Search:

Translate Website

Preventing Pollution... At Home In the Garden At Work In My Community About Our Program

About Sustainable Streets And Green Infrastructure

San Mateo County Green Infrastructure Map

San Francisco, Oakland, Alameda, San Leandro, Hayward, Union City, Fremont, Palo Alto, Mountain View, Redwood City, San Carlos, Brisbane, City Hall Gr..., Burlingame, Burlingame..., Moss Beach, Carlos St..., El Granada, Half Moon Bay, San Bruno, 3rd Avenue, San Bruno, San Francisco, San Bruno, Burlingame, Burlingame..., San Carlos, Brisbane R..., Redwood City, Don Edwards San Francisco Bay National Wildlife...

What Is Green Infrastructure?




Roads, parking lots, and other "impervious surfaces" provide important opportunities for managing rainwater because they constitute as much as 70 percent of the total impervious land area in ultra-urban landscapes. In San Mateo County, stormdrains and sewer pipes are managed separately, and stormwater ends up going untreated into local waters, carrying with it many pollutants as the water flows across and through the impervious areas of the landscape. "**Green infrastructure**" is a term that's used broadly to describe a more cost-

Sign Up For Our Newsletter!

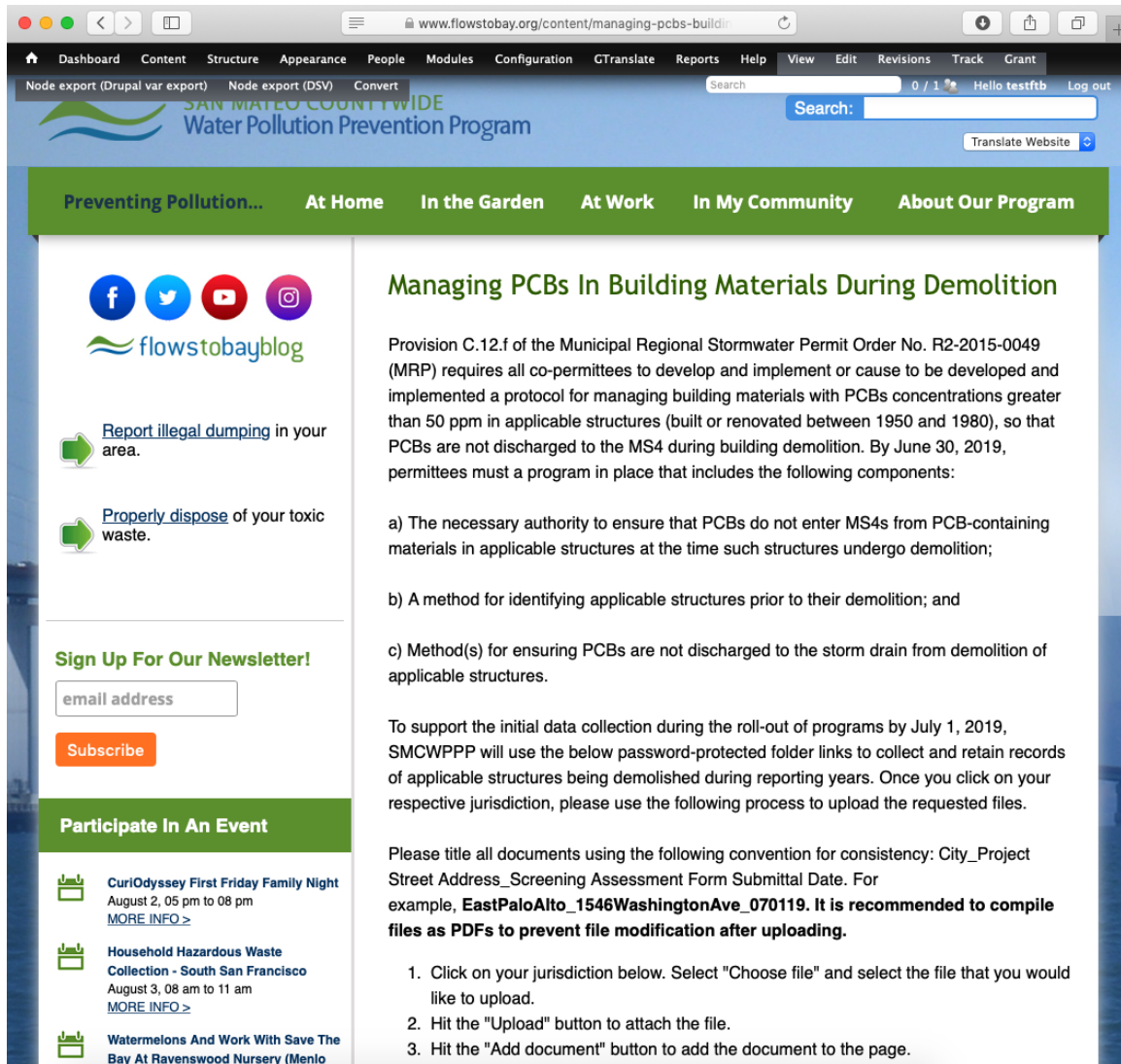
email address

Subscribe

Participate In An Event

-  **CuriOdyssey First Friday Family Night**
August 2, 05 pm to 08 pm
[MORE INFO >](#)
-  **Household Hazardous Waste Collection - South San Francisco**
August 3, 08 am to 11 am
[MORE INFO >](#)
-  **Watermelons And Work With Save The Bay At Ravenswood Nursery (Menlo Park)**
August 3, 09 am to 12 pm

Website: Managing PCBs in Building Materials During Demolition



The screenshot shows a web browser window displaying the website www.flowstobay.org/content/managing-pcbs-buildin. The page features a green navigation bar with links: [Preventing Pollution...](#), [At Home](#), [In the Garden](#), [At Work](#), [In My Community](#), and [About Our Program](#). The main content area is titled "Managing PCBs In Building Materials During Demolition".

On the left sidebar, there are social media icons for Facebook, Twitter, YouTube, and Instagram, followed by the [flowstobayblog](#) logo. Below this, there are two call-to-action buttons: "Report illegal dumping in your area." and "Properly dispose of your toxic waste." Further down is a "Sign Up For Our Newsletter!" section with an "email address" input field and a "Subscribe" button. At the bottom of the sidebar is a "Participate In An Event" section listing three events: "CuriOdyssey First Friday Family Night" (August 2, 05 pm to 08 pm), "Household Hazardous Waste Collection - South San Francisco" (August 3, 08 am to 11 am), and "Watermelons And Work With Save The Bay At Ravenswood Nursery (Menlo)".

Managing PCBs In Building Materials During Demolition

Provision C.12.f of the Municipal Regional Stormwater Permit Order No. R2-2015-0049 (MRP) requires all co-permittees to develop and implement or cause to be developed and implemented a protocol for managing building materials with PCBs concentrations greater than 50 ppm in applicable structures (built or renovated between 1950 and 1980), so that PCBs are not discharged to the MS4 during building demolition. By June 30, 2019, permittees must a program in place that includes the following components:

- The necessary authority to ensure that PCBs do not enter MS4s from PCB-containing materials in applicable structures at the time such structures undergo demolition;
- A method for identifying applicable structures prior to their demolition; and
- Method(s) for ensuring PCBs are not discharged to the storm drain from demolition of applicable structures.

To support the initial data collection during the roll-out of programs by July 1, 2019, SMCWPPP will use the below password-protected folder links to collect and retain records of applicable structures being demolished during reporting years. Once you click on your respective jurisdiction, please use the following process to upload the requested files.

Please title all documents using the following convention for consistency: City_Project Street Address_Screening Assessment Form Submittal Date. For example, **EastPaloAlto_1546WashingtonAve_070119**. **It is recommended to compile files as PDFs to prevent file modification after uploading.**

- Click on your jurisdiction below. Select "Choose file" and select the file that you would like to upload.
- Hit the "Upload" button to attach the file.
- Hit the "Add document" button to add the document to the page.

Appendix 9

- Parks Maintenance & IPM Work Group Attendance List FY 2018/19
- Pesticide Source Control Actions Effectiveness Evaluation, September 30, 2019

**San Mateo Countywide Water Pollution Prevention Program
Parks Maintenance IPM Work Group Attendance List - FY 2018/19**

Contact Information			Attendance
MUNICIPALITY	REPRESENTATIVE	EMAIL	5/21/2019
Atherton	Sally Bentz-Dalton	sbentz@ci.atherton.ca.us	
Belmont	Daniel Ourtiague	dourtiague@belmont.gov	
	Matt Ward	mward@belmont.gov	
Brisbane	Keegan Black	kblack@ci.brisbane.ca.us	
Burlingame	Rich Holtz	Rholtz@burlingame.org	
	Bob Disco	bdisco@burlingame.org	
Colma	Louis Gotelli	Louis.Gotelli@colma.ca.gov	
	Brian Dossey	brian.dossey@colma.ca.gov	
Daly City	Chris Caliendo	ccaliendo@dalycity.org	X
	Jeff Fornesi	jfornesi@dalycity.org	
	Sibely Calles	scales@dalycity.org	X
	Dennis Bray	dbray@dalycity.org	X
	Nicholas Crescenzi	ncrescenzi@dalycity.org	
	Paul Thompson	pthompson@dalycity.org	
	Jeff Templin	jtemplin@dalycity.org	X
	Dennis Bray	dbray@dalycity.org	
East Palo Alto	Jay Farr	jfarr@cityofepa.org	
	Lenin Mecgar	lmelgar@cityofepa.org	X
	Mario Pulido	pulidomario@sbcglobal.net	X
	Michelle Daher	mdaher@cityofepa.org	
Foster City	P Chiamos	pchiamos@fostercity.org	
	Frank Fanara	Ffanara@fostercity.org	X
Half Moon Bay	Katherine Sheehan	katherines@csgengr.com	
	Maziar Bozorginia	MBozorginia@hmbcity.com	
Hillsborough	Garry Francis	gfrancis@hillsca.org	
	Natalie Asai	nasai@HILLSBOROUGH.NET	
Menlo Park	Sheena Ignacio	smignacio@menlopark.org	
Millbrae	Ken Crosetti	kcrosetti@ci.millbrae.ca.us	
	John Gianoli	jgianoli@ci.millbrae.ca.us	
Pacifica	A. Clark	clarka@ci.pacifica.ca.us	
	Estevan Renteria	Lavorinip@ci.pacifica.ca.us	
	Raymond Donguines	donguinesr@ci.pacifica.ca.us	
Portola Valley	Howard Young	hyoung@portolavalley.net	
Redwood City	Lucas Wilder	LWilder@redwoodcity.org	X
	Terence Kyaw	TKyaw@redwoodcity.org	
	Francisco Espinoza	fespinoza@redwoodcity.org	
San Bruno	Rene Walsh	rwalsh@ci.sanbruno.ca.us	
	Danielle Brewer	DBrewer@sanbruno.ca.gov	
	Dan Venezia	Dvenezia@sanbruno.ca.gov	

**San Mateo Countywide Water Pollution Prevention Program
Parks Maintenance IPM Work Group Attendance List - FY 2018/19**

Contact Information			Attendance
MUNICIPALITY	REPRESENTATIVE	EMAIL	5/21/2019
San Carlos	Arturo Burgueno	aburgueno@cityofsancarlos.org	
	Chris Zanoni	czanoni@cityofsancarlos.org	
	Jean St. Martin	jsaintmartin@cityofsancarlos.org	X
	Luis Estrada	lestrada@cityofsancarlos.org	X
	Kathryn Robertson	kr Robertson@cityofsancarlos.org	
City of San Mateo	Mike Blondino	mblondino@cityofsanmateo.org	
	Mark Hulett	mhulett@cityofsanmateo.org	
	Sarah Scheidt	sscheidt@cityofsanmateo.org	
	Jim Burch	JBurch@sanbruno.ca.gov	
	Dennis Pawl	dpawl@cityofsanmateo.org	
San Mateo Co. Parks	Sam Herzberg	SHerzberg@co.sanmateo.ca.us	
	Scott Lombardi	slombardi@co.sanmateo.ca.us	
	Julie Casagrande	jcasagrande@co.sanmateo.ca.us	
	Kim Springer	kspringer@smcgov.org	
	Suzanne Bontempo	suzannebontempo@gmail.com	
	Dan Krug	dkrug@smcgov.org	
San Mateo Co. Office of Sustainability	Ramona Arechiga	RArechiga@smcgov.org	
	Breann Liebermann	bliebermann@smcgov.org	
SM County PW	Jeff Pacini	JPacini@co.sanmateo.ca.us	
	Kevin Lu	khlu@smcgov.org	
County Agriculture Weights and Measures	Richard Garcia	rgarcia@co.sanmateo.ca.us	X
	Jeremy Wagner	JWagner@smcgov.org	
	M Marelich	mmarelich@smcgov.org	
	Fred Crowder	fcrowder@co.sanmateo.ca.us	
	Jenny Gossett		X
	Avneet Kakkar	akakkar@smcgov.org	X
	Maria Mastrangelo	MMastrangelo@smcgov.org	
SSF	Donald Louie	douald.louie@ssf.net	X
	Greg Mediati	Greg.Mediati@ssf.net	
Woodside	Dong Nguyen		
	Sean Rose	srose@woodsidetown.org	
UCCE/UC IPM	Andrew Sutherland	amsutherland@ucanr.edu	
EOA	Jon Konnan	jkonnann@eoainc.com	
	Vishakha Atre	vatre@eoainc.com	X
SMCWPPP	Matt Fabry	mfabry@smcgov.org	
	Reid Bogert	rbogert@smcgov.org	
Other Attendees			
	Dorte Drastrup	dortedrastrup@gmail.com	
Kelly Carrol	CSG/Half Moon Bay/Colma	kellyc@csgengr.com	X



SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Pesticide Source Control Actions Effectiveness Evaluation

Submitted by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), on behalf of all San Mateo County Permittees, in compliance with Provision C.9.g of the Municipal Regional Permit (Order R2-2015-0049).

September 30, 2019

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List of Abbreviations

303(d) List	List of Impaired Waters under Section 303(d) of the Federal Clean Water Act
BASMAA	Bay Area Stormwater Management Agencies Association
BMP	Best Management Practice
CASQA	California Stormwater Quality Association
DPR	California Department of Pesticide Regulation
HHW	Household Hazardous Waste
IFMA	International Facility Management Association
LC ₅₀	Lethal Concentration 50% - i.e., the dose required to kill half the members of a tested population after a specified test duration
MRP	Stormwater NPDES Municipal Regional Permit (Order R2-2015-0049)
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OSH	Orchard Supply Hardware
O&M	Operation and Maintenance
OWOW	Our Water Our World
PCO	Pest Control Operator
RMC	BASMAA Regional Monitoring Coalition
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SFEI	San Francisco Estuary Institute
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SOP	Standard Operating Procedure
SPoT	Stream Pollutant Trend Monitoring Project (Statewide SWAMP)
SWAMP	California Surface Water Ambient Monitoring Program
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
VSQG	Very Small Quantity Generator (VSQG)
WQAS	Water Quality Attainment Strategy
WQOs	Water Quality Objectives

1.0 INTRODUCTION

This *Pesticide Source Control Actions Effectiveness Evaluation* addresses the requirements of Provision C.9.g of the Municipal Regional Stormwater NPDES Permit (MRP) (SFBRWQCB 2015) - Evaluate Implementation of Source Control Actions Relating to Pesticides. This provision requires Permittees to:

- Evaluate the effectiveness of the control measures implemented by staff and contractors (per MRP Provisions C.9.a - e and g);
- Evaluate the attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (collected by MRP Permittees, research agencies, and/or State agencies) and any changes in water quality regarding pesticide toxicity in urban creeks; and,
- Identify improvements to existing control measures and/or additional control measures, if needed, to attain targets with an implementation time schedule, including a brief description of one or more pesticide-related area(s) the Permittee will focus on enhancing during the subsequent permit term.

The MRP includes requirements associated with pesticides because regulatory agencies have previously identified pesticides as causing water and/or sediment toxicity and impairing beneficial uses of San Francisco Bay Area (Bay Area) creeks and determined that urban stormwater is a likely cause or contributor to the impairment (SFBRWQCB 2015). This report describes the source control measures implemented by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) and the 22 MRP Permittee municipal agencies in San Mateo County¹ and provides an evaluation of the effectiveness of the control measures using effectiveness assessment outcomes developed by the California Stormwater Quality Association (CASQA) (CASQA 2015). The effectiveness of pesticide control measures is assessed using both implementation and water quality outcomes, including a comparison to receiving water quality targets.

This evaluation of pesticide source control actions is based on available data from (including Permittee activities during) approximately the preceding five years (FY 2013-14 to FY 2017-18²). Per MRP requirements, it includes a discussion of improvements made by each San Mateo County Permittee in implementing pesticide source control actions in about the preceding five years, and enhancements that each Permittee plans to make during the next permit term.

2.0 BACKGROUND

2.1. Water Quality Impairment and Bay Area Urban Creeks TMDL

During the early 1990s, organophosphate pesticides were identified as causing water column toxicity in Bay Area urban creeks (SWRCB et al. 1997). The toxicity was observed via bioassays using *Ceriodaphnia dubia*, an indicator organism used in laboratory tests to assess surface water toxicity and evaluate

¹The 22 MRP Permittee municipal agencies in San Mateo County are comprised of 20 cities/towns, the County of San Mateo, and the San Mateo County Flood Control District.

²When available, data for FY 2018-19 are also generally included.

biological community responses. The concentration of diazinon in water samples from urban creeks throughout the Bay Area was often high enough to account for the observed water column toxicity and diazinon was identified as the primary cause of the toxicity.

In May 1999, the U.S. Environmental Protection Agency (USEPA) listed San Francisco Bay and 35 Bay Area urban creeks as impaired by diazinon under Section 303(d) of the federal Clean Water Act (USEPA 1998). In 2000, because of growing concerns about the effects organophosphate chemicals have on human health, the USEPA announced an agreement with pesticide manufacturers to remove most products containing diazinon and chlorpyrifos from retail store shelves and end most residential and professional uses by the end of 2004. As a result, urban uses of diazinon and chlorpyrifos declined substantially. These pesticides have generally not been detected in San Mateo County creeks since 2005 (see Section 4.0). The phase-out of diazinon, however, resulted in increased use of alternative pesticides and new pesticides entering the market place. Replacements for organophosphate pesticides included pyrethroids, carbamates and fipronil.

In 2005, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) adopted the Total Maximum Daily Load (TMDL) and Water Quality Attainment Strategy (WQAS) for diazinon and pesticide-related toxicity in San Francisco Bay area urban creeks (SFRBWQCB 2005). Because it was anticipated that the phase-out of diazinon could lead to the use of other pesticides that could potentially cause toxicity, the TMDL/WQAS targeted diazinon specifically, while concurrently addressing the potential for other pesticide-related toxicity in urban creeks. The following water and toxicity targets were established through the TMDL/WQAS:

- **Toxicity Targets** - no pesticide-related acute or chronic toxicity in urban creeks in excess of 1.0 TU_a or 1.0 TU_c :

where:

$TU_a = 100 / \text{No Observable Adverse Effects Concentration (NOAEC)}$

$TU_c = 100 / \text{No Observable Effects Concentration (NOEC)}$

NOAEC = statistically significant differences between acute endpoints in sample and control

NOEC = statistically significant differences between chronic endpoints in sample and control

NOAEC and NOEC are both expressed as the percentage of a sample in a test container (e.g., an undiluted sample has a concentration of 100%). In both cases, an observable effect must be statistically significant. An undiluted ambient water or sediment sample that does not exhibit an acute or chronic toxic effect that is significantly different from control samples on a statistical basis shall be assumed to meet the relevant target.

- **Diazinon Target** - The one-hour average concentration of diazinon in freshwater shall not exceed 100 ng/l.

As described in the TMDL/WQAS, the goal of the implementation strategy is to eliminate and prevent pesticide-related toxicity in Bay Area urban creeks. The overarching strategy to reach this goal is to encourage pest management alternatives that do not threaten water quality and to discourage the use of pesticides that run off and threaten water quality, which can best be accomplished through the application of Integrated Pest Management (IPM) techniques and the use of less toxic pest control methods (SFBRWQCB 2005). The TMDL includes proposed actions that focus on effective IPM implementation, proactive regulation, education and outreach, and research and monitoring. Requirements included in Provision C.9 of the MRP are consistent with the actions outlined in TMDL/WQAS.

2.2. Pesticide Regulation and Oversight

Several agencies and organizations oversee pesticide use and pesticide discharges. Those with the broadest authorities include the USEPA and the California Department of Pesticide Regulation (DPR). Gaps in pesticide regulatory program implementation allow pesticides to be used in ways that result in discharges that impair beneficial uses in San Francisco Bay Area urban creeks. The role of the Regional Water Board in reducing pesticide-related toxicity in urban creeks is to encourage, monitor, and enforce implementation actions, and to lead by example (SFBRWQCB 2005). Local governments in the Bay Area are responsible for managing urban runoff discharges through Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) permits, but California law generally prohibits these agencies from regulating the registration, sale, transportation, or non-municipal use of pesticides. MRP Permittees are therefore limited to controlling their own practices when striving to reduce pesticides in MS4 discharges. Pesticide control measures implemented by Permittees are focused primarily on practicing and encouraging IPM and participating in regulatory processes to ensure water quality impacts are considered during the pesticide re-registration and approval process. These control measures are described later in this document.

2.3. Current Urban-use Pesticides of Concern

The MRP identifies the following as the pesticides of concern³ to water quality in Bay Area urban creeks.

- Organophosphate products (example active ingredients: diazinon, chlorpyrifos, malathion);
- Carbamate products (example active ingredients: carbaryl and aldicarb⁴);
- Pyrethroid products (example active ingredients: bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and metofluthrin);
- Fipronil and its degradates
- Diamides (example active ingredients: chlorantraniliprole and cyantraniliprole)
- Diuron
- Indoxacarb

³The pesticides of concern list was updated in 2015 to include diamides, diuron, and indoxacarb.

⁴Currently, there are no registered pesticides in California containing the active ingredient aldicarb. EPA banned the primary aldicarb containing pesticide, Temik, in 2010, requiring an end to distribution by 2017.

While not mentioned as a pesticide of concern in Provision C.9, the MRP requires that Permittees monitor for imidacloprid (see Section 2.4.2).

2.4. MRP Requirements

Provision C.9 of the MRP requires Permittees to implement pesticide toxicity control programs based on the concepts of Integrated Pest Management (IPM) to address the use of pesticides that pose a threat to water quality and have a potential to enter their MS4.

Consistent with the requirements of Provision C.9, San Mateo County Permittees implement source control and pollution prevention actions that can potentially reduce the use of the pesticides of concern. These include robust outreach efforts to residents and businesses, providing training to municipal staff on IPM practices, and requiring municipal contractors to implement IPM. Local training and regional outreach efforts have been supplemented by monitoring studies to define the problem and track trends, participation in regional efforts to address pesticide regulations (e.g., related to registration) and other issues, and development of local municipal IPM plans.

2.4.1. Source Control Measures

SMCWPPP and San Mateo County Permittees have implemented source control measures to control pesticide pollution for over 15 years. Source control measures were enhanced, as needed, to meet MRP requirements to reduce pesticide-related toxicity in urban creeks. Currently, source control measures include the following:

- Adopting and implementing IPM policies/ordinances and establishing Standard Operating Procedures;
- Training municipal staff on IPM techniques;
- Requiring contractors to implement IPM;
- Coordinating with the County Agricultural Commissioner;
- Participating in regulatory processes to ensure water quality impacts are considered in the pesticide re-registration and approval process;
- Conducting outreach to residents and pest control professionals to promote IPM; and,
- Minimizing pesticide use at new development and redevelopment project sites.

These source control measures are described in detail later in this report.

2.4.2. Monitoring Program

Before the adoption of the MRP 1.0 in 2009, SMCWPPP implemented a creek water quality monitoring program (beginning in the early 2000s) that included collecting grab samples from selected urban creeks and analyzing for organophosphate pesticides and water column toxicity. The results of this monitoring were summarized in several technical reports submitted to the Regional Water Board (e.g., SMCWPPP 2005a, 2005b, 2006, 2007).

MRP Monitoring

With the adoption of the MRP, SMCWPPP began implementing new monitoring requirements as a participant in the Bay Area Stormwater Management Agencies Association (BASMAA) Regional Monitoring Coalition (RMC). From 2012 through 2015, per Provision C.8.c of MRP 1.0, SMCWPPP conducted annual dry season monitoring at two locations for toxicity in water and sediments and pesticides in sediments. Water column samples were collected from same two locations each year during a storm event for toxicity testing. The sampling locations were designated through a probabilistic monitoring design (BASMAA 2011a) and sampling was conducted using standard protocols (BASMAA 2012). The suite of parameters monitored included legacy pesticides such as DDT and dieldrin as well as pyrethroid pesticides in sediment. Water column toxicity was assessed using three test organisms, *Pimephales promelas* (fathead minnow), *Ceriodaphnia dubia* (a crustacean), and *Selenastrum capricornutum* (a green algae), and sediment toxicity was assessed using *Hyalella azteca* (an amphipod).

In 2016, with the adoption of MRP 2.0, SMCWPPP continued conducting pesticides and toxicity monitoring in compliance with Provision C.8.g. Dry weather monitoring is conducted at one location per year and includes:

- Toxicity testing in water using five species: *Ceriodaphnia dubia* (chronic survival and reproduction), *Pimephales promelas* (larval survival and growth), *Selenastrum capricornutum* (growth), *Hyalella azteca* (survival) and *Chironomus dilutus* (survival).
- Toxicity testing in sediment using two species: *Hyella azteca* (survival) and *Chironomus dilutus* (survival).
- Sediment chemistry analytes include pyrethroids, fipronil, carbaryl, total polycyclic aromatic hydrocarbons (PAHs), metals, Total Organic Carbon (TOC), and sediment grain size.

Wet weather monitoring under MRP 2.0 includes collection of water samples during storm events for toxicity testing (using the same five organisms required for dry weather toxicity testing) and analysis of pyrethroids, fipronil, and imidacloprid. Although indoxacarb is included on the list of constituents, there is currently no available analytical method. As part of the RMC, SMCWPPP was required to collect a total of two wet weather samples, which were collected during a single storm event in Water Year (WY) 2018 (i.e., October 1, 2017 through September 30, 2018).

Toxicity and chemistry data collected as part of MRP monitoring are analyzed to evaluate potential stressors (including pesticides) that may impact water quality. The monitoring results are compared to Water Quality Objectives (WQOs) and monitoring trigger thresholds specified in the MRP. Results that exceed WQOs or monitoring trigger thresholds may lead to additional monitoring to confirm or identify stressors and/or sources of impacts and their spatial extents, and/or the implementation of management actions to minimize the impacts associated with urban runoff.

Statewide Monitoring Program

Under Objective 6 of the Strategy to Optimize Resource Management of Storm Water (STORMS), adopted by the State Water Board in January 2016, the State Water Board is developing a statewide framework for urban pesticides reduction (Urban Pesticides Amendments). The primary goal of the statewide Urban Pesticides Amendments is to improve collaboration among regulators, leading to

better management of pesticides in urban runoff. The Amendments will also organize coordinated pesticides and toxicity monitoring and data sharing.

The Urban Pesticides Amendments team is proposing a statewide monitoring program that will substitute for pesticides and toxicity monitoring requirements in MS4 permits, such as the MRP. The goal is to generate useful data at minimal cost. The Draft Amendments will likely be released for public review in early 2020 with adoption anticipated in mid-2020. At this time, the mechanism for implementing the statewide monitoring program is uncertain.

2.5. Effectiveness Evaluation

This report evaluates the effectiveness of source control measures implemented by SMCWPPP and San Mateo County Permittees. The evaluation uses “Outcome Levels” described by CASQA (2015) in *A Strategic Approach to Planning for an Assessing the Effectiveness of Stormwater Program* (Guidance Manual). Information on the level of implementation and associated data (e.g., local implementation of IPM Policy, trends in use of pesticides impacting water quality, and number of staff trained in IPM) used to assess the effectiveness of pesticide source controls were obtained from SMCWPPP and Permittee Annual Reports. Water quality monitoring data collected by SMCWPPP and other agencies (e.g., Regional Water Board) were also compiled and summarized to assess progress towards achieving the TMDL/WQAS targets described in Section 2.1.

2.6. Evaluation Methodology

The CASQA effectiveness assessment approach utilizes a general model that relates three primary components to the six outcome levels and associated, general outcome types. The three primary components are:

- Stormwater Programs (Outcome Level 1) – Stormwater programs are the road map for the improvements that managers wish to attain in receiving waters. Their immediate purpose is to describe programs that will facilitate changes in the behaviors of key target audiences. This component is typically assessed on a short-term basis.
- Target Audiences (Outcome Levels 2-3) – This component focuses on understanding the behaviors of the people responsible for source contributions. It explores the factors that determine existing behavioral patterns and looks for ways to replace polluting behaviors with non-polluting behaviors. This component is typically assessed on a short- and/or long-term basis.
- Sources and Impacts (Outcome Levels 4-6) – This component addresses the generation, transport, and fate of urban runoff pollutants. It includes sources (sites, facilities, areas, etc.), stormwater conveyance systems, and the water bodies that ultimately receive the source discharges (receiving waters). This component is typically assessed on a long-term and/or regional basis.

The six categories of outcome levels establish a logical and consistent organizational scheme for assessing and relating individual outcomes. According to the CASQA Guidance Manual, “outcomes” are the results of implementing a stormwater control measure, program activity or element, or overall

program. Each control measure or activity can lead to one or more “Outcome Levels.” The six Outcome Levels described in the Guidance Manual are summarized below:

1. **Outcome Level 1: Stormwater Program Activities** – Many specific activities are either prescribed by or established under stormwater permits. The most basic means of assessing effectiveness is to determine compliance with activity-based permit requirements. Level 1 Outcomes may take the form of a simple yes/no answer.
2. **Outcome Level 2: Barriers and Bridges to Action** – A goal of most stormwater management programs is to increase the level of knowledge and awareness among target audiences. Measuring Level 2 Outcomes is a useful way of gauging whether outreach, training, or other program activities are producing changes in awareness, knowledge, or attitudes of target audiences. Various methods and tools, both quantitative and qualitative, are currently utilized to measure changes in knowledge and awareness. These methods generally take the form of surveys and quizzes.
3. **Outcome Level 3: Target Audience Actions** – Water quality improvements are achieved only when specific actions have occurred in one or more target audiences. Building on increases in knowledge and awareness, a key focus of stormwater management programs is to change behavior in target audiences. Level 3 Outcomes measure the effectiveness of programs in motivating target audiences to change their behaviors and implement appropriate control measures. Methods used to measure behavioral changes include those described above for Level 2 Outcomes, direct observation via site visits, and reporting by dischargers or third parties.
4. **Outcome Level 4: Source Contributions** – Many activities implemented through stormwater management programs are intended to reduce the loading of pollutants or runoff volumes from targeted sources. A source is anything with the potential to generate urban runoff flow or pollutants prior to their introduction to the storm drain system. Load reductions should in turn result in improvements to discharge and receiving water quality. Load reductions quantify changes in the amounts of pollutants associated with specific sources before and after one or more control measures are employed.
5. **Outcome Level 5: MS4 Contributions** – A primary focus of stormwater management programs is to reduce pollutants in stormwater and non-stormwater discharges to the maximum extent practicable, and to ensure that these discharges do not cause or contribute to violations of WQOs in receiving waters. Level 5 Outcomes may be measured as reductions in one or more specific pollutants in MS4 discharges, and may reflect effectiveness at a variety of scales ranging from site-specific to programmatic.
6. **Outcome Level 6: Receiving Water Conditions** – The ultimate objective of stormwater management programs is the protection of water bodies receiving discharges from MS4s. Changes to receiving water and environmental quality may be expressed through a variety of outcomes such as achievement of WQOs and TMDL targets, protection of biological integrity, and beneficial use attainment.

Once the desired outcomes of program implementation have been defined, specific assessment measures are used to determine whether or how successfully a programmatic or water quality outcome has been achieved. They may be qualitative (e.g., yes/no) or quantitative (e.g., % of targeted audience

reached, % reduction in a constituent level). All priority outcomes have at least one assessment measure associated with them, but some may have multiple measures.

On a broader scale, there are two general categories of effectiveness assessments: 1) Implementation Assessments; and 2) Water Quality Assessments. These categories of assessments are differentiated by whether the type of outcome is implementation-based or water quality-based. Implementation assessments include those evaluations conducted at levels 1 - 4, and water quality assessments are those conducted at levels 5 and 6. Section 3.0 and Section 4.0 discuss the results of both implementation and water quality assessments conducted to evaluate the effectiveness of pesticide source control measures implemented by SMCWPPP and San Mateo County MRP Permittees.

3.0 IMPLEMENTATION ASSESSMENT RESULTS (LEVELS 1 - 4)

This section evaluates the effectiveness of the source control measures described in Section 2.4.1. These measures are consistent with the requirements in Provision C.9 of the MRP.

3.1. Maintaining and Implementing IPM Policies/Ordinances and Standard Operating Procedures (SOPs)

The goal of this control measure is to establish structural and landscape pest control guidelines for municipal staff and pest control contractors. Adopting an IPM policy/ordinance demonstrates a local agency's commitment to reducing pesticide use. The effectiveness of this source control measure is assessed at Outcome Levels 1, 2, 3 and 4.

Outcome Level 1 - Stormwater Program Activities

All San Mateo County Permittees have adopted IPM policies/ordinances and established pesticide application Standard Operating Procedures (SOPs). Many San Mateo County MRP Permittees adopted IPM Policies in 2003. After MRP 1.0 was adopted, SMCWPPP developed the SMCWPPP Model IPM Policy and a template of pesticide application SOPs. Both of these were used by Permittee agencies to update their local IPM Policies and SOPs. The date of adoption of IPM Policies by San Mateo County MRP Permittees is below:

- Atherton – 2003
- Belmont, Brisbane, Daly City, Portola Valley – 2010
- Burlingame, Colma, Foster City, Redwood City, San Bruno, Half Moon Bay, San Carlos, San Mateo – adopted 2003, revised and adopted in 2011
- East Palo Alto – 2012
- Hillsborough – adopted 2003, revised and adopted in 2011, updated in 2019
- Menlo Park – 1998
- Millbrae - 2004
- Pacifica - 2011

- San Mateo County and San Mateo County Flood Control District – adopted 2010, revised and adopted in 2012
- San Mateo – adopted 2003
- South San Francisco – adopted 2010, revised and adopted 2011
- Woodside – adopted 2004, updated 2011

Outcome Level 2 - Barriers and Bridges to Action

Staff trainings are used to raise the awareness of and update municipal staff on IPM policies/ordinances and the agency’s commitment to using less-toxic pest management techniques. All contractors are made aware of and required to apply pesticides in a manner consistent with IPM policies/ordinances. Additionally, pesticide application SOPs describe the pest control procedures that municipal staff and contractors must follow.

Outcome Level 3 - Target Audience Actions and Outcome Level 4 - Source Contributions

One indicator of behavior change and source reduction associated with municipal use of pesticides of concern is the amount of pesticides applied annually by San Mateo County Permittees. Another measure is demonstration of IPM tactics that Permittees have implemented. San Mateo County Permittees report both of these via their Annual Reports to the Regional Water Board. Available use data were reviewed and a preliminary evaluation conducted to better understand whether pest control practices have changed. The results of the evaluation indicated that Permittees are using pesticides of concern sparingly, and generally only as a last resort:

- 14 Permittees reported that they have not used any pesticides of concern from FY 2013-14 to FY 2017-18⁵. Four Permittees reported using a pesticide of concern in only one fiscal year from FY 2013-14 to FY 2017-18. Four Permittees reported using a pesticide of concern in more than one fiscal year.
- The Permittees that reported using pesticides of concern generally did so only as a last resort and provided a reason for the use. In most cases, the pesticides of concern were applied in small quantities, and the agency indicated that staff was working with the pesticide applicators to reduce or eliminate the use.
- The pesticides of concern that Permittees generally reported using are pyrethroids, fipronil, and indoxacarb. Fipronil was used by only one Permittee, in one fiscal year.
- Permittees did not report using any of the other pesticides of concern (carbamates, organophosphates, diuron, and diamides) from FY 2013-14 – FY 2017-18.

Table 3-1 summarizes the pesticides of concern usage reported by San Mateo County Permittees from FY 2015-16 to 2017-18.

⁵Data for FY 2018-19 were not available at the time of writing this report.

Table 3-1. Summary of pesticide of concern use by San Mateo County Permittees that reported using pesticides of concern between FY 2013-14 and FY 2017-18¹

Permittee	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18
Atherton	None used	None used	0.09 oz of lambda-cyhalothrin; 1 oz of deltamethrin	0.08 oz of lambda-cyhalothrin; 0.005 oz of deltamethrin	0.17 oz of lambda-cyhalothrin
Belmont	None used	None used	None used	None used	None used
Brisbane	None used	None used	None used	None used	None used
Burlingame	None used	None used	None used	None used	None used
Colma	1.5oz of Talstar P Professional ² (bifenthrin)	None used	None used	None used	None used
Daly City	None used	None used	None used	None used	None used
East Palo Alto	1.1oz (concentrated) of Cy-Kick CS ² .05% (pyrethroid)	None used	None used	None used	None used
Foster City	None used	None used	None used	8.46 grams of indoxacarb	6.55 grams of indoxacarb
Half Moon Bay	None used	None used	None used	None used	None used
Hillsborough	None used	None used	None used	0.1 gallon of indoxacarb	None used
Menlo Park	None used	None used	None used	None used	None used
Millbrae	None used	None used	None used	None used	None used
Pacifica	None used	None used	None used	None used	None used
Redwood City	None used	None used	None used	None used	None used
San Bruno	None used	None used	None used	None used	None used
San Carlos	None used	None used	None used	None used	None used
San Mateo	0.045 oz of cyfluthrin	None used	None used	0.234 oz of cyfluthrin; 0.02912oz of fipronil; 0.48 oz of indoxacarb; and 120 mg of indoxacarb	None used

Permittee	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18
County of San Mateo	0.5 oz of Suspend SC ² (deltamethrin)	0.025 oz of Suspend SC ² (deltamethrin)	0.01 oz of deltamethrin; 0.12 oz of pyrethrin; 0.03 oz of esfenvalerate	0.51 oz of deltamethrin; 3.42 oz of indoxacarb	0.21 oz of deltamethrin; 0.43oz of indoxacarb
San Mateo County Flood Control District	None used	None used	None used	None used	None used
South San Francisco	None used	None used	None used	None used	0.35 oz of permethrin
Woodside	None used	None used	None used	None used	None used

¹Prior to FY 2015-16, reporting the quantity of active ingredients was not required, and Permittees reported the total quantity of the pesticide product used.

²Total quantity of product used, not total quantity of active ingredient.

3.2. Municipal Staff Training

The intent of trainings for municipal staff is to: 1) raise awareness of all municipal employees about IPM, and 2) train employees who apply pesticides about the municipality’s IPM Policy and/or IPM techniques as appropriate. The effectiveness of this source control measure is assessed at Outcome Levels 1, 2, 3, and 4.

Outcome Level 1 - Stormwater Program Activities

All San Mateo County Permittees ensure that staff responsible for applying pesticides is familiar with their agency’s IPM Policy, SOPs and new and current IPM techniques. Staff attends trainings held by individual Permittees and/or the annual IPM trainings conducted by SMCWPPP, including the following recent trainings:

- A total of 90 municipal staff attended SMCWPPP’s Annual Landscape Maintenance IPM Training Workshop held on March 7, 2018, and 87 municipal staff attended SMCWPPP’s Annual Landscape Maintenance IPM Training Workshop on March 8, 2017.

Some Permittees also sent staff to trainings held by other organizations (e.g., Pesticide Applicators Professional Association IPM Trainings). An evaluation of Annual Report data the following:

- Five San Mateo County Permittees do not have employees that apply pesticides.
- All San Mateo County Permittees that have employees that apply pesticides conduct annual trainings to ensure that municipal employees that apply pesticides are trained on the Permittee’s IPM policy/ordinance, and IPM techniques.

Table 3-2 summarizes the training data from FY 2015-16 to FY 2017-18.⁶

⁶Prior to FY 2015-16, Permittees were not required to report on annual training.

Table 3-2. Summary of SMCWPPP Permittee Employee Trainings

Metric	FY 2015-16	FY 2016-17	FY 2017-18
Total number of San Mateo County Permittee employees that applied or used pesticides	146	141	129
Total number of Permittee employees that received trainings on the IPM policy and procedures	146	140	129
Percentage of Permittee employees that apply pesticides and have received training on the IPM policy and procedures	100%	99%	100%

Level 2 - Barriers and Bridges to Action

The IPM trainings help increase the awareness on IPM techniques. Generally, training content includes topics such as overview of IPM techniques, using IPM for managing pest problems, plant selection to avoid pest problems, and available less-toxic pest control products. By attending IPM and other trainings, municipal staff’s awareness of IPM and the use of less toxic pesticides was raised.

The IPM trainings cover a wide range of topics that help increase attendees’ awareness of IPM techniques. After each workshop attendees are requested to complete an evaluation form. The positive feedback provided indicated that attendees found the workshops helpful, supporting the notion that the workshops increase awareness among municipal staff. For example:

- SMCWPPP 2018 Annual Landscape Maintenance IPM Training Workshop - 93% of respondents to the evaluation form said that the workshop met their expectations, 93% said that they found the presentation on “Controlling White Grubs and Yellowjackets” very helpful, and 90% of respondents said that they found the presentation on “Gopher, Raccoon, and Bee Control” very helpful.
- SMCWPPP 2017 Annual Landscape Maintenance IPM Training Workshop - 96% of the respondents to the evaluation form said that the workshop met their expectations, 84% of the respondents said that they found the presentation on “IPM for Phytophthora diseases and emerging pests” very helpful, and 76% of respondents said that they found the presentation on “Bay Friendly Landscaping” very helpful.

Level 3 - Target Audience Actions and Level 4 - Source Contributions

As discussed earlier, a preliminary analysis of the reported pesticide use data indicates that San Mateo County Permittees are using minimal amounts of pesticides of concern.

3.3. Requiring Contractors to Implement IPM

The goal of this control measure is to ensure that all pest control contractors retained by San Mateo County Permittees are familiar with the Permittee’s IPM policy and are able to address pest problems using IPM techniques. The effectiveness of this source control measure is assessed at Outcome Levels 1, 2, 3 and 4.

Outcome Level 1 - Stormwater Program Activities

All Permittees that use contractors to apply pesticides have either 1) hired contractors that are IPM-certified (e.g., Eco-wise, Green Pro and Green Shield) and/or have taken the Bay-Friendly Landscaper Training, or 2) have contract specifications in place that require contractors to follow the IPM Policy and implement IPM. Of the 20 San Mateo County Permittees that hire contractors, 17 require that contractors obtain permission from the Permittee prior to applying pesticides. All Permittees work closely with the contractors to ensure that IPM techniques are implemented. Contractor compliance is ensured via regular meetings and review of pest management techniques.

To educate municipal staff on managing pest control contractors, SMCWPPP held a workshop titled *Working with Pest Control Contractors to Ensure Stormwater Permit Compliance* on May 14, 2018. The workshop was geared toward municipal IPM coordinators, municipal staff that hire and supervise structural or landscape pest control contractors, municipal facilities managers, and municipal staff responsible for completing the pesticides section of the stormwater permit annual report. The workshop was attended by 28 municipal staff and contractors.

Outcome Level 2 – Barriers and Bridges to Action

The *Working with Pest Control Contractors to Ensure Stormwater Permit Compliance* workshop educated attendees about permit requirements and contract management. After the workshop, attendees were requested to complete an evaluation form, and 88% of the respondents said that the workshop met their expectations, 59% of the respondents said that they found the presentation on “Ins and Outs of IPM Contract Management” very helpful.

Outcome Level 3 - Target Audience Actions and Outcome Level 4 - Source Contributions

As discussed earlier, a preliminary analysis of the reported pesticide use data indicates that Permittees are using minimal amounts of pesticides of concern.

3.4. Participation in Regulatory Processes

The goal of this source control measure is to actively participate in regulatory processes to increase the level of consideration given to water quality by regulatory agencies during the pesticide approval and registration process. Improvements to the registration process (e.g., requiring formulations that minimize pesticides of concern to water quality) will reduce the impact that registered pesticides have on Bay Area water bodies. Active participation by SMCWPPP and San Mateo County Permittees includes working with regional and state stormwater management organizations (BASMAA and CASQA) to communicate with the USEPA Office of Pesticide Programs (OPP) and California Department of Pesticide Regulation (DPR) the need to improve the pesticide registration process.

To address the problems caused by pesticides in California’s urban waterways, CASQA collaborates with the State Water Board and its Regional Water Quality Control Boards (Water Boards) in a coordinated statewide effort, referred to as the Urban Pesticides Pollution Prevention (UP3) Partnership. By working with the Water Boards and other water quality organizations, CASQA helps to address the water quality impacts of pesticides efficiently and proactively through the statutory authority of the DPR and OPP. The effectiveness of this source control measure is assessed at Outcome Levels 1, 2, 3, and 4.

Outcome Level 1 - Stormwater Program Activities

Since the early 2000s, SMCWPPP has provided funding (via BASMAA) to a CASQA project to track and participate in pesticide-related regulatory processes, with an emphasis on protecting water quality. This project tracks regulatory efforts, comments on pesticide re-registrations, and maintains other relevant communications with USEPA and DPR through meetings and letters. Implementation of this project has resulted in significant changes in pesticide regulation.

Outcome Level 2 - Barriers and Bridges to Action and Outcome Level 3 - Target Audience Action

CASQA efforts, which have been supported and partly funded by SMCWPPP and BASMAA, have raised awareness about water quality-related pesticide issues and led to improvements in the pesticide approval and registration processes at USEPA and DPR. Recent achievements include:

- In direct response to continued communication from CASQA and UP3 regarding pyrethroid and fipronil water pollution in urban areas, DPR has implemented mitigation measures and is currently monitoring their effectiveness. If successful, DPR's mitigation actions could address water quality concerns and preclude the need for fipronil TMDLs for those water bodies.
- In response to a partner request based on information provided by CASQA, DPR routed a deltamethrin (a pyrethroid) registration application to its Surface Water Protection Program for review. The results of the review did not support registration, leading to the applicant removing all urban uses to the product label.
- CASQA commented on the indoxacarb product label modification. CASQA noted that an important part of the label (stipulating outdoor clean-up practices) was omitted from the proposed revised label. DPR pulled the product from the registration process.
- Based on urban use data provided by CASQA, USEPA agreed to incorporate urban uses (rights-of-way and outdoor building paints, caulks, and sealants) in the registration review process for diuron, which is a water quality pesticide of concern identified in the MRP.
- During the indoxacarb registration review process, CASQA and its partners sought to prohibit application of granular products to any impervious surface or in locations where product may contact surface water, storm drain, or gutter. USEPA fully incorporated this comment. CASQA and its partners also sought requirements that no outdoor application be made when rainfall is forecast within 48 hours. Future labels will contain voluntary wording specifying a 24-hour window. CASQA requested efficacy data to reduce the area receiving treatments (building "perimeter band") to the minimum required for effective pest control. While it is not clear whether efficacy data were applied, the perimeter band was changed from a maximum of 10 feet to 7 feet. Lastly, CASQA requested a requirement of immediate sweep back from accidental application to impervious surfaces; future labels will include this as a guidance.
- In direct response to communication from CASQA and its partners, USEPA agreed that construction site applicators take steps to prevent pollution from pre-construction termiticide treatments with the insecticide chlorfenapyr. The requirements are identical to ones for pyrethroid insecticides that were developed by USEPA at CASQA's suggestion.

Outcome Level 4 - Source Contributions

The modifications to pesticide labels and changes to application guidelines are expected to reduce the quantities of pesticides of concern applied on outdoor impervious surfaces by professional applicators. This will reduce the quantity of these pesticides that can be washed directly into gutters and storm drains when it rains or when water (e.g., irrigation overflow) runs across treated surfaces.

3.5. Interface with the San Mateo County Agricultural Commissioner

The goal of this source control measure is to coordinate with County Agricultural Commissioner staff to update them on water quality issues related to pesticides, get their input and assistance on pest management practices, and report to them any observed or citizen-reported violation of pesticide regulations. The effectiveness of this source control measure is assessed at Outcome Level 1.

Outcome Level 1 - Stormwater Program Activities

Staff from San Mateo County Agriculture/Weights and Measures regularly participates in meetings of the SMCWPPP Parks and IPM Work Group. MRP compliance and water quality and pest management issues are discussed at these meetings. In addition, SMCWPPP works closely with San Mateo County Agriculture/Weights and Measures staff to provide Department of Pesticide Regulations Continuing Education Units (CEUs) for participants in SMCWPPP's landscape IPM workshops. San Mateo County Agriculture/Weights and Measures present regulatory and pest management information to attendees at these workshops.

3.6. Public Outreach

SMCWPPP's pesticide outreach efforts generally fall into the following three categories:

1. **Point-of-Purchase Outreach** – SMCWPPP implements the BASMAA IPM Store Partnership Program (also known as the *Our Water Our World* program or the OWOW program) in local retail stores and nurseries. The aim of the OWOW program is to partner with retail stores and nurseries to provide less-toxic pest control information to residents at the point of purchase. This involves visiting participating stores regularly (at least three times per year) to stock literature racks with "Less-Toxic Pest Management" fact sheets and update "shelf-talkers." Shelf-talkers are product identification tags that are placed on store shelves to help customers identify less-toxic products. In addition, the SMCWPPP contracts with an IPM consultant to conduct store employee training. These trainings educate store employees on IPM and selling less-toxic products.
2. **Outreach to Residents** – SMCWPPP utilizes media advertising, website postings and distribution of outreach materials at events to educate residents about IPM.
3. **Outreach to Pest Control Professionals** – SMCWPPP conducts targeted outreach to structural Pest Control Operators (PCOs) on IPM.

The effectiveness of the SMCWPPP public outreach program and its components is assessed at Outcome Levels 1, 2, 3, and 4. Results of the effectiveness assessment are grouped below by the above three pesticide outreach categories.

Point-of-Purchase Outreach

Outcome Level 1 - Stormwater Program Activities

Since 1999, SMCWPPP has participated in the regional effort for the OWOW program by attending all Public Information and Participation meetings with BASMAA and participating jurisdictions to coordinate the program in San Mateo County. From FY 2013-14 through FY 2017-18, SMCWPPP sponsored 44 store employee trainings and trained 390 employees. Table 3-3 summarizes employee training information from FY 2013-14 to FY 2017-18.

Table 3-3. Summary of Store Employees Trained

Fiscal Year	Number of Employees Trained
FY 2013-14	93 employees representing 10 stores
FY 2014-15	106 employees representing 14 stores
FY 2015-16	48 employees representing 5 stores
FY 2016-17	54 employees representing 5 stores
FY 2017-18	89 employees representing 10 stores

Outcome Level 2 - Barriers and Bridges to Action and Outcome Level 3: Target Audience Actions

The trainings educate store employees on IPM, stormwater pollution problems and how to direct customers toward buying less-toxic products. Since FY 2017-18, SMCWPPP has included a pre-training and post-training survey to assess the increase in employee awareness. A total of 89 employees were trained in FY 2017-18, and 75 employees completed the pre-training survey, and 83 employees completed the post-training survey. Highlights of survey responses are provided below, and indicate an increase in awareness:

- After the training, 100% of survey respondents knew that water flowing into storm drains is not treated, compared to 65% of survey respondents before the training.
- After the training, 99% of survey respondents knew pesticides are not removed at the sewage treatment plant, compared to 36% of respondents before the training.
- After the training, 95% of survey respondents knew the location of the Household Hazardous Waste (HHW) collection facility, compared to 32% of respondents before the training.

The willingness of store managers to participate in the OWOW program and send employees to trainings reflects the changing attitude of pesticide sellers toward IPM and the use of less-toxic pest control methods. Regional OWOW program leaders report an overall increase in sales of less toxic products as a result of the OWOW program’s implementation.

Outcome Level 4 Source Contributions

As mentioned above, there is an overall increase in sales of less toxic products as a result of the OWOW program’s implementation. This increase is expected to result in a reduction in the quantity of pesticides of concern being used, and ultimately flowing into storm drains.

Outreach to Residents

Outcome Level 1 - Stormwater Program Activities and Outcome Level 2 - Barriers and Bridges to Action

Information on less-toxic pest control is posted on SMCWPPP's website (flowstobay.org).

In addition, SMCWPPP utilizes social media posts, social media advertising, and distribution of outreach materials at events to educate residents about IPM, proper disposal of Household Hazardous Waste, and hiring IPM certified pest control professionals. As an example, in FY 2018-19, SMCWPPP conducted the following outreach on pesticide related topics:

- Made 32 posts of Facebook which received 12,418 impressions.
- Made 24 posts on twitter, which received 11,349 impressions.
- Posted 9 blogs on the Flows to Bay website, which received 485 page views.

During FY 2016-17, SMCWPPP implemented outreach to encourage residents to hire pest control professionals that use IPM practices. SMCWPPP distributed the OWOW fact sheet entitled "Finding a Company That Can Prevent Pest Problems." The fact sheet describe the steps residents can take once they've identified that they have a pest problem, including the hiring of a pest control operator and evaluating the types of toxic chemicals they use. The fact sheets were distributed to hardware stores, at 10 community events, and to PIP Subcommittee members to distribute throughout their municipalities. SMCWPPP's web site also has a new web page dedicated to helping the public find IPM certified contractors. The web page also contains links to the OWOW program, the EcoWise Certified program, and other pest-control resources. SMCWPPP also sends newsletters to a list of opt-in subscribers with topics covering eco-friendly gardening practices and stormwater pollution prevention information and tips.

Outcome Level 3 - Target Audience Actions and Outcome Level 4 - Source Contributions

SMCWPPP's various efforts to educate residents about pesticides and IPM, including media advertising, website postings and distribution of outreach materials at events, raise awareness among residences on IPM and less-toxic pest control.

While data are lacking regarding to what extent residents are implementing IPM techniques, data from the San Mateo County Health Department's Household Hazardous Waste (HHW) Collection Program and Very Small Quantity Generator (VSQG) Business Collection Program indicate that residents and small businesses in San Mateo County are continuing to properly dispose of household hazardous waste, including pesticides. Table 3-4 provides the total quantities of toxic solids and toxic liquids, including pesticides that these programs collected from FY 2013-14 to FY 2017-18.

Table 3-4. Quantity of total poisons (including pesticides) collected at by the County HHW and VSQGs Programs from FY 2013-14 to FY 2017-18.

Fiscal Year	Total Poisons Collected (pounds)
FY 2013-14	64,229
FY 2014-15	83,987
FY 2015-16	83,406
FY 2016-17	94,916
FY 2017-18	94,289
Total	420,827

From FY 2013-14 through FY 2017-18, the HHW and VSQG program collected 420,827 pounds of poisons. If not properly disposed, these HHW materials could lead to urban runoff pollution. The HHW and VSQG Programs are effective at reducing the amount of pesticides available as a potential source to urban runoff.

Outreach to Pest Control Operators (PCOs)

Outcome Level 1 - Stormwater Program Activities

Annually, SMCWPP mails an informational letter to all licensed and cleared pest control operators in San Mateo County, using the license lookup website for the California Structural Pest Control Board. The letter includes information on the linkage between the application of pesticides for structural pest control and water quality impacts via stormwater runoff, referencing recent data that shows pesticide related impacts in local creeks. The letter also includes a request for businesses to become a certified IPM pest control operator, and to have individual employees become certified if the business is already certified. To-date, seven IPM certified contractors have agreed to be listed on SMCWPPP’s web page that promotes IPM-certified pest control professionals.

3.7. Minimizing Pesticide Use at New and Redevelopment Sites

The primary goal of this source control measure is to reduce pesticide use by encouraging pest-resistant landscaping and design features in the design, landscaping, and environmental reviews of proposed development projects. Project designs that use efficient irrigation systems to minimize runoff are also encouraged. The effectiveness of this type of source control is assessed at Outcome Levels 1, 2, and 3.

Outcome Level 1 – Stormwater Program Activities

SMCWPPP’s *Model Conditions of Approval - Permanent Stormwater Control Requirements for C.3 Regulated and Non-C.3 Regulated Projects* (July 2016), which is used by San Mateo County Permittees to review development project applications, describes measures that projects can implement to reduce pesticide pollution. San Mateo County Permittees have incorporated these types of measures into their project review and approval processes. In addition, the SMCWPPP C.3 and C.6 Development Review Checklist lists the following sustainable landscaping techniques:

- Retain existing vegetation as practicable.

- Select diverse species appropriate to the site. Include plants that are pest and/or or disease-resistant, drought-tolerant, and/or attract beneficial insects.
- Minimize use of pesticides and quick-release fertilizers.
- Use efficient irrigation system and design to minimize runoff.

The SMCWPPP C.3 Regulated Projects Guide and Green Infrastructure Design Guide (GI Design Guide) include information on the Operation and Maintenance (O&M) of stormwater treatment measures. Resources for sustainable landscaping practices and information, such as the Bay-Friendly program developed by ReScape California and recommended in the MRP, are cited and the guidance summarized. The SMCWPPP Guides contain templates with guidance on using IPM to maintain these O&M treatment measures. The templates are posted on the SMCWPPP website and San Mateo County Permittees use them as exhibits to their stormwater treatment measure maintenance agreements. The C.3 Regulated Projects Guide includes a list of plants that can be used for stormwater treatment measures, and guidance on planting and maintaining these plants. The recommended plants are non-invasive, California natives and other climate-appropriate species that require less water and minimum use of pesticides. The C.3 Regulated Projects Guide and the plant list are available on the SMCWPPP website (flowstobay.org).

SMCWPPP developed the GI Design Guide to help agencies, developers, construction firms, and design professionals design, build and maintain green infrastructure in San Mateo County. The GI Design Guide includes information on plant palettes for stormwater treatment measures, and guidance on maintaining these measures using sustainable landscaping techniques.

Outcome Level 2 – Barriers and Bridges to Action

SMCWPPP conducts an annual workshop to educate municipal staff about the MRP requirements for new and redevelopment projects. Information on Low Impact Development (LID), green streets, landscaping with native plants, and selecting plants for stormwater treatment measures is typically included in these workshops. This ensures that staff reviewing development projects are familiar with the sustainable landscaping techniques, and encourage developers to include these features in their projects. ReScape California also holds regularly scheduled workshops to train public and private sector professionals on the holistic practices of Bay-Friendly landscaping. Some San Mateo County Permittees, such as the City of South San Francisco and City of Menlo Park, have adopted Bay-Friendly Principles into their planning processes and training requirements for municipal maintenance staff.

Outcome Level 3 – Target Audience Actions

Table 3-5 summarizes data from Permittee Annual Reports on the number of regulated projects that incorporate at least one sustainable landscaping technique as a source control measure.

Table 3-5. Number of Approved Regulated Projects that Include at least one Sustainable Landscaping Technique

Year	Number of Regulated Projects Approved by San Mateo County Permittees	Number of Approved Regulated Projects that Include at least one Sustainable Landscaping Technique	Percentage of Approved Regulated Projects that Include Beneficial Landscaping
FY 2013-14	52	31	60%
FY 2014-15	62	35	56%
FY 2015-16	71	49	69%
FY 2016-17	57	38	67%
FY 2017-18	59	39	66%

The data indicate that a large number of regulated projects are including at least one sustainable landscaping technique as a source control measure. The data suggest that municipal staff that review projects are continuing to encourage project applicants to include beneficial landscaping in their projects. Project applicants and developers are also willing to incorporate these measures into their landscape plans.

4.0 WATER QUALITY ASSESSMENT (LEVEL 6)

Water quality assessments are conducted using monitoring and assessment data that characterize the quality of discharges from stormwater conveyance systems (Level 5) or the chemical, physical or biological condition of receiving waters (Level 6). The available applicable water quality monitoring data in San Mateo County is generally from receiving waters (i.e., pesticide concentrations and toxicity in water and sediment collected from urban creeks). Collecting useful data from stormwater conveyances is problematic for a number of reasons and as a result these types of data are generally not available. Thus the effectiveness of source control measures is assessed at Outcome Level 6 (Protecting Receiving Water Quality). The origins of the data used in the Level 6 water quality assessment are described below.

4.1. Pesticide and Toxicity Creek Monitoring Programs in the San Mateo County Urban Creeks

Over the course of the past two decades a number of monitoring programs have tested for pesticides and toxicity in water and sediment from San Mateo County urban creeks:

- SMCWPPP has monitored urban creeks since the early 2000s, consistent with NPDES municipal stormwater permit requirements. This includes measuring the concentrations of pesticides in water and sediment from urban creeks and assessing the degree of toxicity to test organisms exposed to water and sediment.

- California’s Surface Water Ambient Monitoring Program (SWAMP) has collected pesticide and toxicity data in San Mateo County urban creeks since 2002. These data have been collected through a number of projects implemented at the regional and statewide scales, including the Regional Water Board’s regional SWAMP program, the SWRCB’s Statewide Stream Pollutant Trend (SPoT) program and a project conducted by the San Francisco Estuary Institute (SFEI) funded through a California Proposition 13 Pesticide Research and Investigation of Source and Mitigation (PRISM) grant (Lowe et al. 2007).
- The concentration of pesticides and extent of toxicity in Bay Area urban creeks were monitored by the Clean Estuary Partnership (CEP) in 2005, including one site in San Mateo County (Ruby 2005).

4.2. Pesticides of Concern in San Mateo County Urban Creek Water and Sediment

Each program described above has measured various parameters in water and/or sediment collected from San Mateo County urban creeks. Decisions regarding parameters and sample matrices are informed by project/program objectives, the chemical characteristics of the pesticides of interest, and available resources. For example, water soluble organophosphate pesticides such as diazinon (and more recently imidacloprid) are monitored for in water samples from urban creeks. Concentrations of pyrethroid pesticides, carbaryl and fipronil, however, are generally measured in creek bedded sediment sampled from urban creeks since these types of pesticides have a higher affinity to adsorb to particles.

Since the early 2000s, the primary focus of pesticide and toxicity monitoring in urban San Mateo County has shifted from presence and effects of chlorpyrifos, diazinon, and legacy pesticides (e.g., DDT) to pyrethroids and fipronil. This shift was in response to the declining use of chlorpyrifos and diazinon following the cancellation of these chemicals for residential uses in 2004 and their subsequent replacement with pyrethroids and other newer chemicals.

4.2.1. Concentrations in Water

Table 4-1 summarizes the numbers of water samples collected in San Mateo County urban creeks and analyzed for pesticides from 2002 to 2018. These data were generated from the programs described in the previous section. During this timeframe, a total of 45 water samples collected from various sites in urban creeks were analyzed for pesticides. Samples were collected during both storm events and dry weather conditions. An additional 27 water samples were collected from non-urban creeks from 2002 to 2004.

Table 4-1. Number of water samples collected from San Mateo County urban creeks and analyzed for pesticides from 2002 to 2018

Monitoring Program	Data Points Collected in San Mateo Urban Creeks per Year																
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SMCWPPP Monitoring Program																	
Pre-MRP Monitoring	-	4	6	3	6	-	-	-	-	-	-	-	-	-	-	-	-
BASMAA RMC Monitoring (MRP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
POC Loads Monitoring	-	-	-	-	-	-	-	-	-	-	-	1	6	-	-	-	-
Surface Water Ambient Monitoring Program (SWAMP)																	
Region 2 (SF Bay Region) Monitoring	2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statewide Stream Pollution Trends (SPoT) Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PRISM Grant Program	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Clean Estuary Partnership (CEP)																	
Urban Pesticide Monitoring Project	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	2	14	7	5	6	0	0	0	0	0	0	1	6	0	0	0	2

Figure 4-1 compares concentrations of diazinon in these San Mateo County urban creek water samples (2002 – 2012) to the diazinon concentration target described in the TMDL/WQAS for diazinon and pesticide-related toxicity in San Francisco Bay area urban creeks (SFRBWQCB 2005). Diazinon has not been sampled in San Mateo County urban creeks since 2006. The data indicate that diazinon concentrations measured were well below the TMDL/WQAS target. As described previously, in 2000 USEPA announced an agreement with pesticide manufacturers to remove most products containing diazinon and chlorpyrifos from retail store shelves and end most residential and professional uses by the end of 2004. Diazinon concentrations dropped quickly after this date.

In 2018, SMCWPPP analyzed two storm water samples collected from urban creeks for imidacloprid, a neonicotinoid pesticide that has rapidly become commonly used in recent years for indoor and outdoor pest control, pet treatments, and in construction materials. Imidacloprid was detected in one of the two samples at a concentration of 0.066 µg/L. This concentration exceeds the USEPA proposed chronic exposure benchmark for aquatic insects in freshwater of 0.01 µg/L but not the acute exposure benchmark of 0.385 µg/L, nor the current acute and chronic invertebrate benchmarks of 34.5 and 1.05 µg/L, respectively (USEPA 2017). The presence of neonicotinoids is of concern due to their persistence in the environment and potential consequences for non-target insect pollinators.

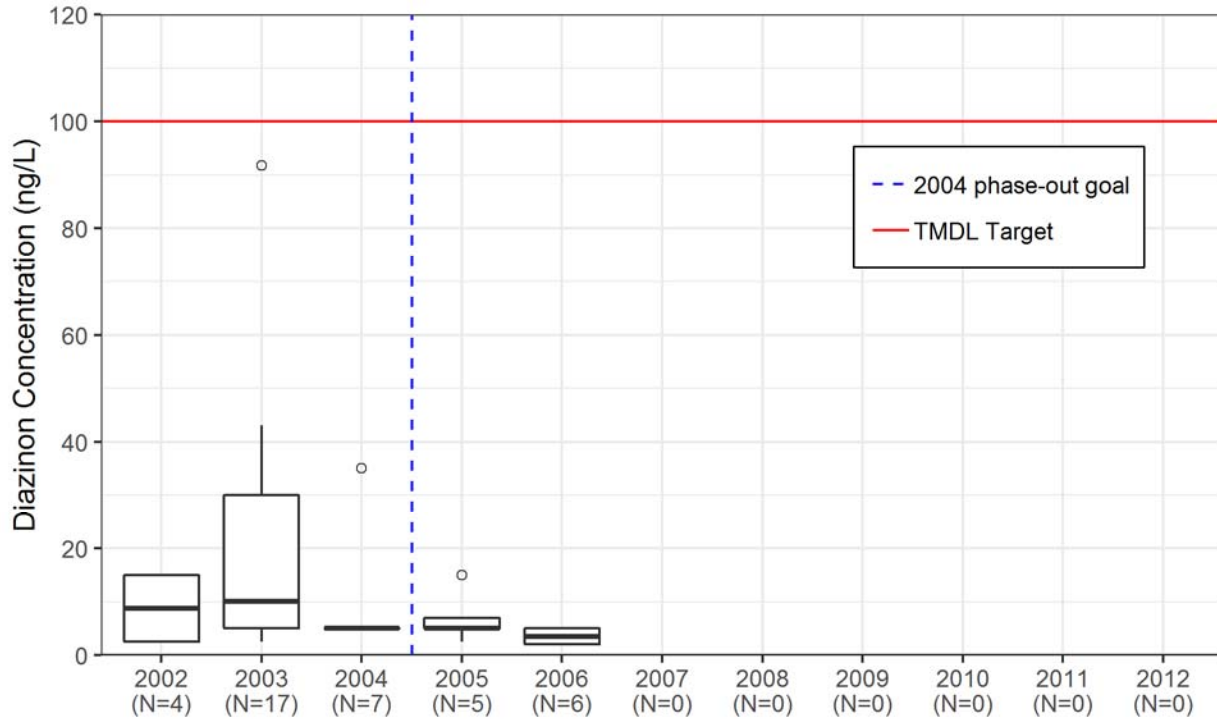
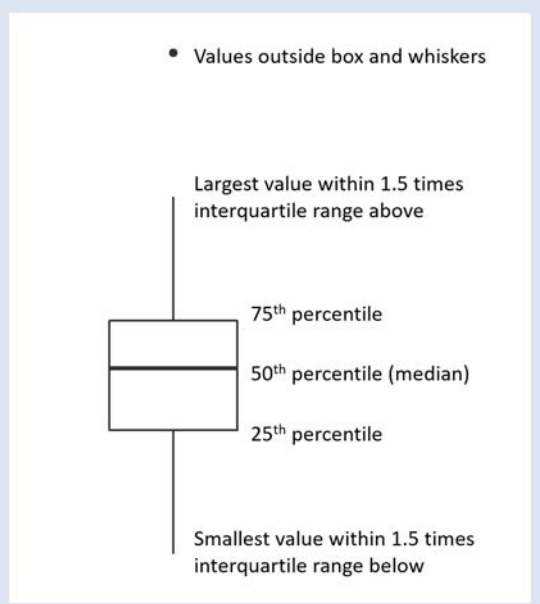


Figure 4-1. Diazinon concentrations in water samples collected from San Mateo County urban creeks from 2002 to 2012. Redline is the TMDL target for diazinon (SFRBWQCB 2005). Note: concentrations reported as non-detect (ND) are plotted as ½ method detection limit (MDL) (0.0025 – 0.015 ug/L).

Explanation of Box and Whisker Plots

Figures 4-1 through 4-4 present data in “box and whisker” plots. These plots help visualize the distribution of the data and provide a simple way to compare groups of data, such as all data collected within a given year. Box and whisker plots show the 50th percentile (median), 25th percentile, 75th percentile, largest value within 1.5 times the interquartile range above the 75th percentile, smallest value within 1.5 times the interquartile range below the 25th percentile, and outliers above and below these values.



4.2.2. Concentrations in Sediment

Table 4-2 summarizes the numbers of bedded sediment samples collected in San Mateo County urban creeks and analyzed for pesticides from 2002 to 2018. These data were generated by the programs described in Section 4.1; however, the primary data sources include the SPoT Program which has sampled San Mateo Creek every year since 2004, and SMCWPPP which has sampled urban creeks throughout the County since 2012 per MRP monitoring requirements (see Section 2.4.2 for a description of MRP monitoring requirements). During this timeframe, a total of 32 sediment samples collected from various sites in urban creeks were analyzed for concentrations of pyrethroids and other current use or emerging pesticides (such as fipronil). All bedded sediment samples were collected during dry weather conditions.

Figures 4-2 through 4-5 compare concentrations of commonly detected pyrethroids in San Mateo County urban creek sediment samples to adverse effects LC₅₀ thresholds⁷ identified in the literature (Amweg et al. 2005, Maund et al. 2002, Weston et al. 2013). Figures 4-6 through 4-8 compare concentrations of the non-pyrethroid pesticide fipronil and two of its degradates in sediment samples to adverse effects thresholds proposed by Maul et al. (2008). Data presented are normalized to total organic carbon (TOC) since pyrethroids and fipronil are found primarily in the organic carbon fraction of sediments and because the LC₅₀ thresholds are given as TOC-normalized concentrations. Only those data with values measured above method detection limits are presented in the figures.

Based on the sediment data compiled, it appears that pyrethroid concentrations in sediment have decreased since 2011/2012. These trends are relatively clear in the station 204SMA020 (San Mateo Creek at Gateway Park) dataset which has been sampled every year by the SPoT program. Samples from station 204SMA020 are called out in Figures 4-2 through 4-8. Although the other stations provide a wider geographic resolution to the San Mateo dataset, none has been sampled more than once, and therefore are less informative of long-term trends. Fipronil concentrations appear to have decreased since 2014; however, the fipronil dataset is much smaller as monitoring did not begin until 2013.

Pesticide concentrations in the dataset rarely exceed adverse effects thresholds. The only exceptions are two bifenthrin samples (collected from San Mateo Creek (station 204SMA020) in 2004 and Laurel Creek in 2016) with TOC-normalized concentrations exceeding the bifenthrin LC₅₀ (Figure 4-2). Bifenthrin is considered to be the leading cause of pyrethroid-related toxicity in urban areas (Ruby 2013).

⁷Lethal Concentration 50% - the dose required to kill half the members of a tested population after a specified test duration.

Table 4-2. Number of bedded sediment samples collected from San Mateo County urban creeks and analyzed for pesticides, 2002 to 2018

Monitoring Program	Data Points Collected in San Mateo Urban Creeks per Year																
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SMCWPPP Monitoring Program																	
Pre-MRP Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BASMAA RMC Monitoring (MRP)	-	-	-	-	-	-	-	-	-	-	2	2	2	2	1	1	1
POC Loads Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Water Ambient Monitoring Program (SWAMP)																	
Region 2 (SF Bay Region) Monitoring	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statewide Stream Pollution Trends (SPoT) Program ¹	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PRISM Grant Program	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Clean Estuary Partnership (CEP)																	
Urban Pesticide Monitoring Project	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	3	1	2	2	1	1	1	1	1	1	3	3	3	3	2	2	2

¹ SPoT data are only available through 2016.



Figure 4-2. Bifenthrin concentrations in bedded sediment collected from San Mateo County urban creeks from 2004 to 2018. The red line is the adverse effects concentration (i.e., LC50) for *Hyalella azteca* (Amweg et al. 2005). Only samples with concentrations above the detection limit are included

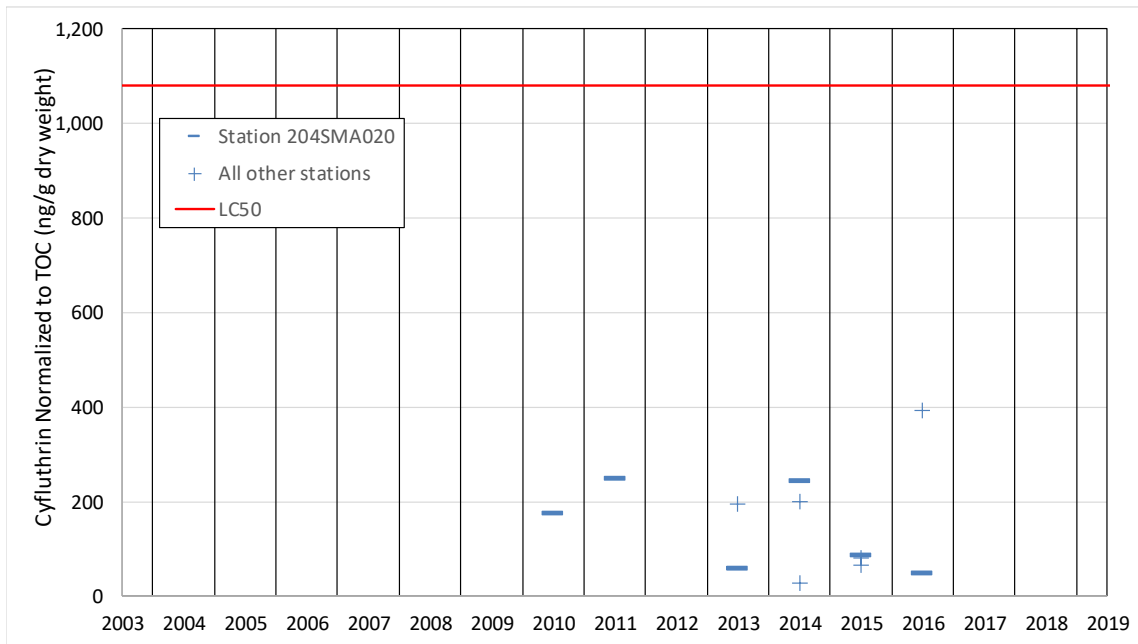


Figure 4-3. Cyfluthrin concentrations in bedded sediment collected from San Mateo County urban creeks from 2002 to 2018. The red line is the adverse effects concentration (i.e., LC50) for *Hyalella azteca* (Amweg et al. 2005). Only samples with concentrations above the detection limit are included.

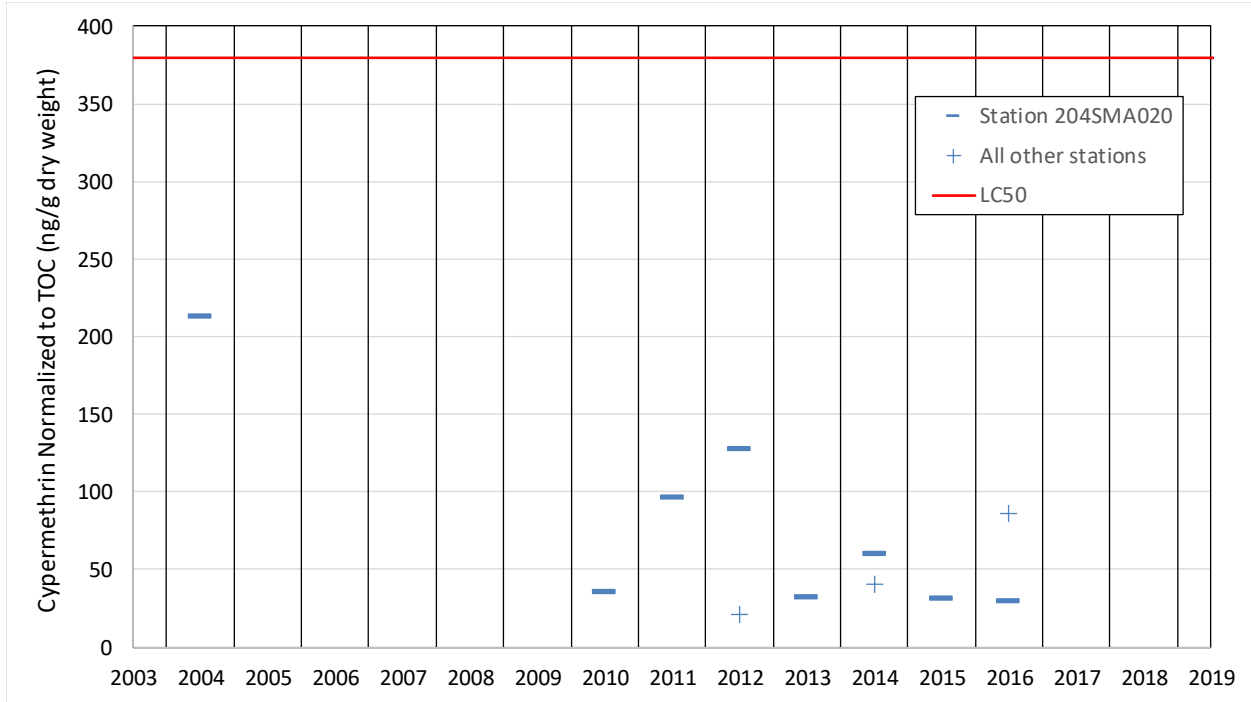


Figure 4-4. Cypermethrin concentrations in bedded sediment collected from San Mateo County urban creeks from 2002 to 2018. The red line is the adverse effects concentration (i.e., LC₅₀) for *Hyaella azteca* (Weston et al. 2013). Only samples with concentrations above the detection limit are included

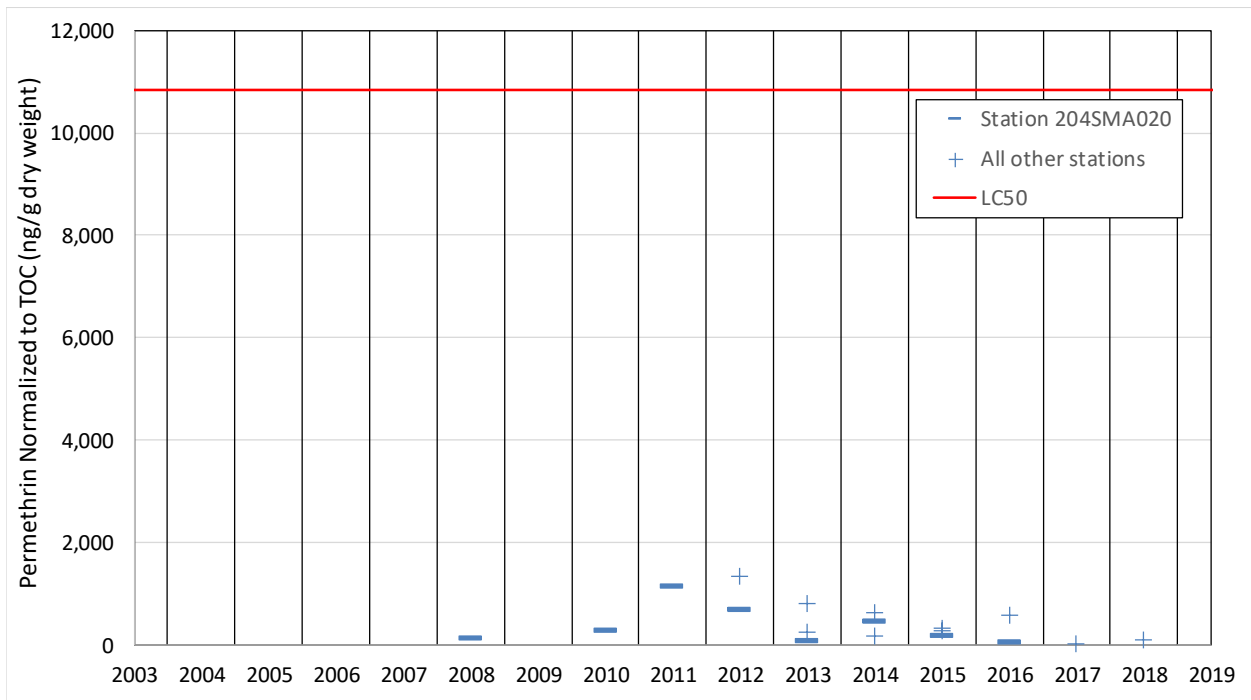


Figure 4-5. Permethrin concentrations in bedded sediment collected from San Mateo County urban creeks from 2002 to 2012. The red line is the adverse effects concentration (i.e., LC₅₀) for *Hyaella azteca* (Amweg et al. 2005). Only samples with concentrations above the detection limit are included

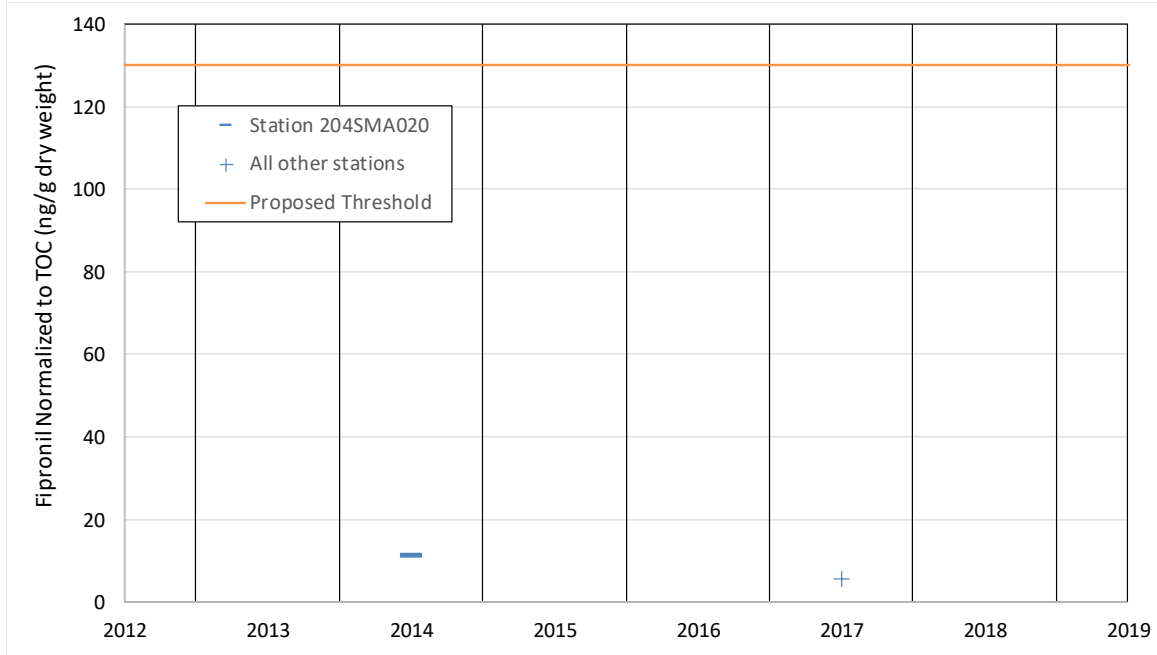


Figure 4-6. Fipronil concentrations in bedded sediment collected from San Mateo County urban creeks from 2013 to 2018. The orange line is the proposed adverse effects threshold (i.e., LC50) for *Chironomus tentans* (Maul et al. 2008). Only samples with concentrations above the detection limit are included.

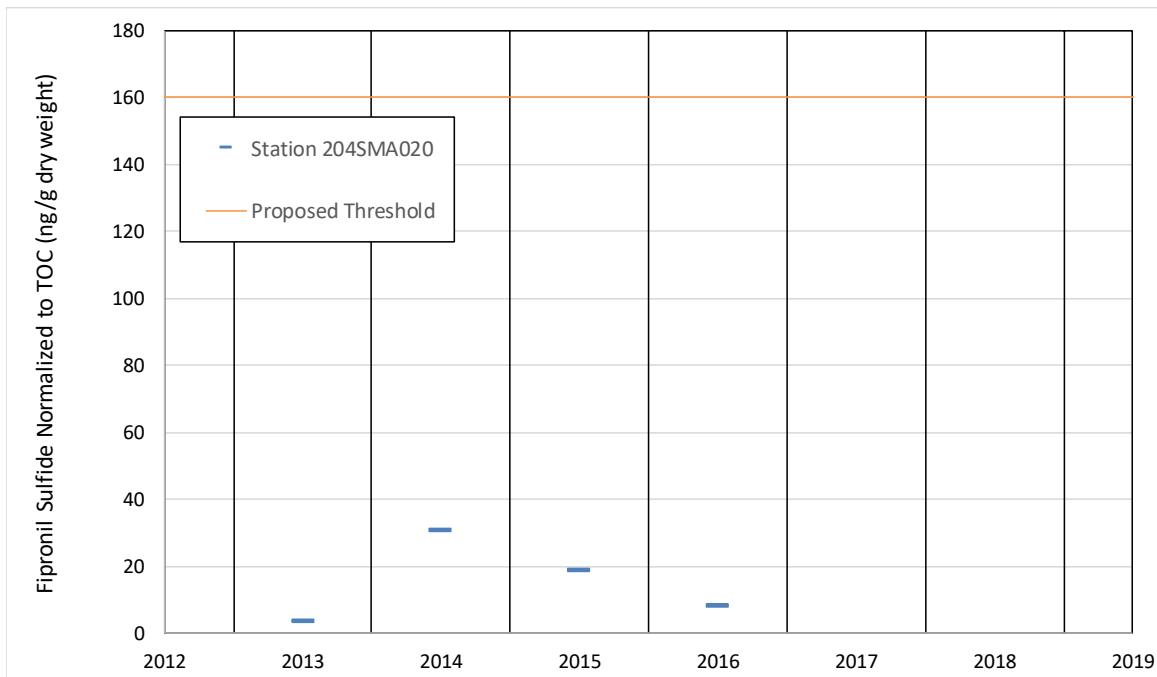


Figure 4-7. Fipronil sulfide concentrations in bedded sediment collected from San Mateo County urban creeks from 2013 to 2018. The orange line is the proposed adverse effects threshold (i.e., LC50) for *Chironomus tentans* (Maul et al. 2008). Only samples with concentrations above the detection limit are included.

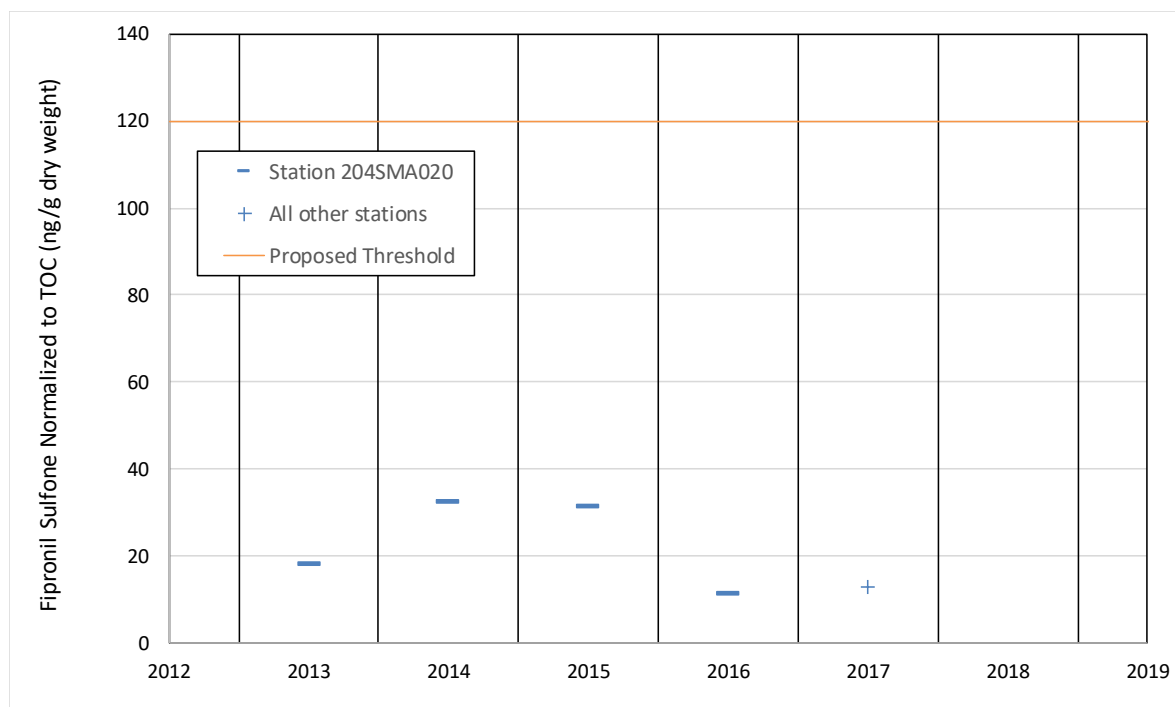


Figure 4-8 Fipronil sulfone concentrations in bedded sediment collected from San Mateo County urban creeks from 2013 to 2018. Orange line is the proposed adverse effects threshold (i.e., LC50) for *Chironomus tentans* (Maul et al. 2008). Only samples with concentrations above the detection limit are included.

4.3. Toxicity in San Mateo County Urban Creek Water and Sediments

The types of test organisms used in toxicity testing differ between water and sediment and responses vary with exposure to different pesticides. Test organisms *Ceriodaphnia dubia* (a crustacean), *Hyalella azteca* (an amphipod), *Pimephales promelas* (fathead minnow), and *Selenastrum capricornutum* (a green algae) are typically utilized for testing for acute and chronic toxicity in the water column. *Ceriodaphnia dubia* is highly sensitive to diazinon. *Hyalella azteca* and *Chironomus dilutus* are typically the only organisms used to evaluate toxicity in sediments from fresh water creeks. *Hyalella azteca* is highly sensitive to pyrethroid pesticides. *Chironomus dilutus* (a midge) is sensitive to fipronil, its degradates, and neonicotinoids (i.e., imidacloprid); it was added to the SPoT program in 2015 and to MRP monitoring in 2016.

A two-tiered approach is typically applied to determine toxicity. First, organism responses from ambient samples are compared to responses from appropriate control samples using a statistical comparison. This is followed by a comparison to a “threshold value” that indicate the magnitude of the difference in response. The SWAMP database applies a threshold value of 20 percent. Both criteria must be met for a sample to be considered toxic.

4.3.1. Toxicity in Water

Table 4-3 summarizes the numbers of water samples collected in San Mateo County urban creeks and tested for toxicity to laboratory test organisms between 2002 and 2018. These data were generated by the programs described in Section 4.1.

Table 4-3. Number of water samples collected from San Mateo County urban creeks and analyzed for toxicity to *C. dubia* from 2002 to 2018.

Monitoring Program	Data Points Collected in San Mateo Urban Creeks per Year																
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SMCWPPP Monitoring Program																	
Pre-MRP Monitoring	-	4	6	2	6	-	-	-	-	-	-	-	-	-	-	-	-
BASMAA RMC Monitoring (MRP)	-	-	-	-	-	-	-	-	-	-	4	5	4	4	1	1	3
POC Loads Monitoring	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Surface Water Ambient Monitoring Program (SWAMP)																	
Region 2 (SF Bay Region) Monitoring	2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statewide Stream Pollution Trends (SPoT) Program ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PRISM Grant Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clean Estuary Partnership (CEP)																	
Urban Pesticide Monitoring Project	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	2	14	6	3	7	0	0	0	0	0	4	6	4	4	1	1	3

Figure 4-9 shows that toxicity (assessed by the two-tiered approach) to *Ceriodaphnia dubia* was not observed in water samples collected from San Mateo County urban creeks from 2002 to 2018. These results correspond to the timeframe when diazinon and chlorpyrifos were phased out of use in urban areas and support the hypothesis that *Ceriodaphnia dubia* toxicity exhibited in the 1990s was attributable to these organophosphate pesticides.

Toxicity tests in water using *Chironomus dilutus* (which is sensitive to neonicotinoids) conducted by SMCWPPP in 2016 – 2018 also did not show acute toxicity using the two-tiered approach.

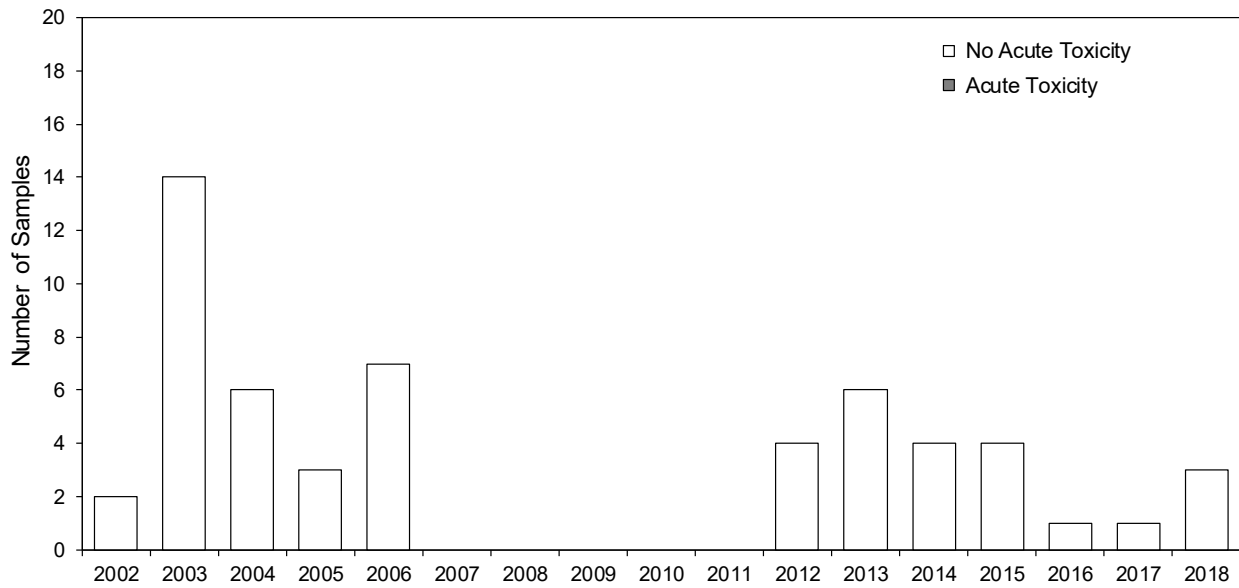


Figure 4-9. Numbers of water samples collected from San Mateo County urban creeks from 2002 to 2016 that didn't exhibit or did exhibit acute toxicity to *Ceriodaphnia dubia*.

4.3.2. Toxicity in Sediment

Table 4-4 summarizes the numbers of sediment samples collected in San Mateo County urban creeks and tested for toxicity to laboratory test organisms from 2002 to 2018. These data were generated by the programs described in Section 4.1.

Table 4-4. Number of sediment samples collected from San Mateo County urban creeks and analyzed for toxicity from 2002 to 2018.

Monitoring Program	Data Points Collected in San Mateo Urban Creeks per Year																
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SMCWPPP Monitoring Program																	
Pre-MRP Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BASMAA RMC Monitoring (MRP)	-	-	-	-	-	-	-	-	-	-	2	2	2	2	1	1	1
POC Loads Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Water Ambient Monitoring Program (SWAMP)																	
Region 2 (SF Bay Region) Monitoring	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statewide Stream Pollution Trends (SPoT) Program ^{1,2}	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1
PRISM Grant Program	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Clean Estuary Partnership (CEP)																	
Urban Pesticide Monitoring Project	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	0	1	1	1	0	0	1	1	1	1	3	3	3	3	2	2	2

¹ SPoT data are only available through 2016.

² In 2011 and 2013-2015, the SPoT program conducted *H. azteca* testing at standard temperature (°25 C) and at the alternative temperature of °15 C which may be more representative of creek conditions and often results in higher toxicity to test organisms.

Figure 4-10 illustrates the number of bedded sediment samples collected from San Mateo County urban creeks from 2002 to 2018 that were considered toxic to the test organism *Hyalella azteca* using the two-tiered approach. In 2011 and 2013-2015, the SPoT program analyzed sediment samples for *H. azteca* toxicity using two different temperature treatments: the standard 25°C and 15°C, which may be more representative of creek conditions and often results in higher toxicity to *Hyalella azteca*. Both results are included in Figure 10. The 2011 and 2014 acute toxicity findings shown in Figure 10 are from the samples tested with the lower temperature treatment. The same samples did not exhibit toxicity using the standard temperature method. Based on the results shown in Figure 10, it appears that sediment toxicity to *Hyalella azteca* has decreased since monitoring began in 2003.

Toxicity tests in sediment using *Chironomus dilutus* conducted by SMCWPPP in 2016 – 2018 and the SPoT program in 2015 and 2016 also did not show acute toxicity using the two-tiered approach.

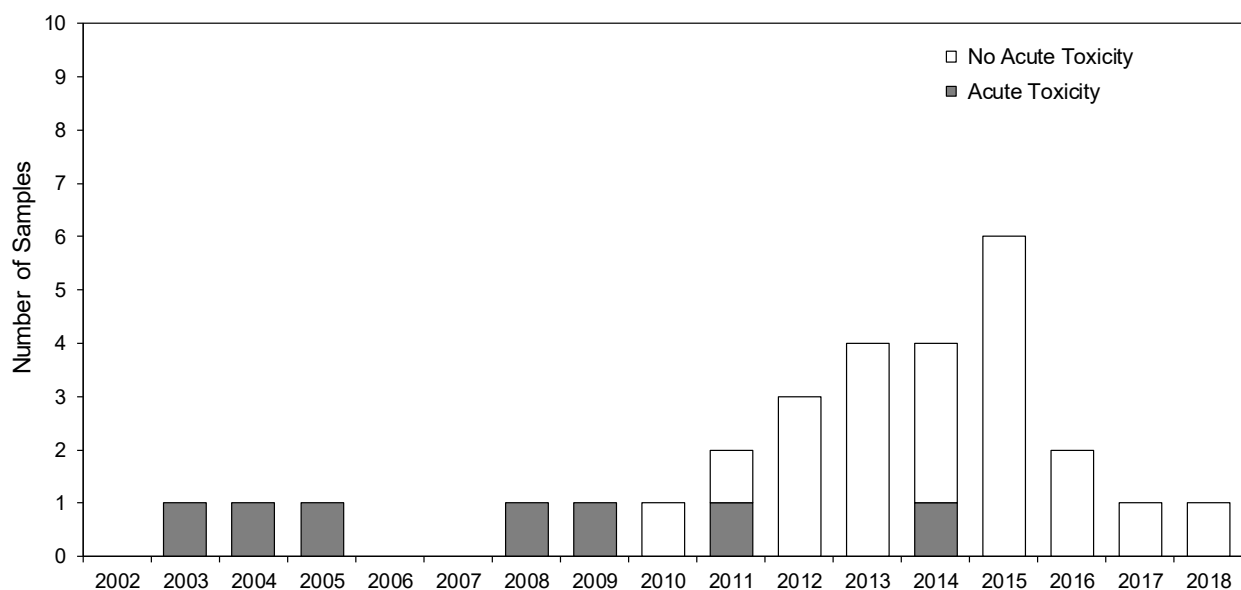


Figure 4-10 Sediment samples collected from San Mateo County urban creeks from 2002 to 2018 that didn't exhibit or did exhibit significant acute toxic to *Hyalella azteca*.

4.4. Statewide Review of Pesticide and Toxicity Monitoring Data

A recent statewide review compiles and summarizes chemistry data from monitoring performed in urban areas of California (including the San Mateo Creek and San Francisquito Creek in San Mateo County and other creeks in the greater San Francisco Bay area) for pyrethroid and fipronil pesticides and related toxicity testing results, covering the ten year period from 2003 to 2012 (Ruby 2013). Over 9,200 pyrethroid sample analysis results and 3,200 fipronil results were evaluated and summarized along with a large amount of toxicity testing data. The author concluded that evidence of the presence and effects of pyrethroids and fipronil, and associated toxic effects in urban watercourses, is widely distributed

geographically throughout urbanized areas of California. Furthermore, the author found that pyrethroid-related toxicity has been documented in nearly every major urban watershed in the state.

Other studies that quantify pesticide concentrations in water can provide a perspective with which to review the results of the pesticide monitoring. The California Department of Pesticide Regulation (DPR) routinely conducts pesticide monitoring at MS4 and receiving water sites in both Northern and Southern California with the objectives of evaluating pesticide concentrations in water, frequencies with which individual pesticide compounds are detected, and exceedances of US USEPA pesticide benchmarks. In WY 2017 (i.e., October 1, 2016 through September 30, 2017), DPR monitored locations in Alameda, Contra Costa, Placer, Sacramento, and Santa Clara Counties in Northern California as well as locations in Los Angeles, Orange, and San Diego Counties in Southern California. The pesticide analytes sampled by DPR were similar to those sampled by SMCWPPP in compliance with the MRP.

In the Northern California DPR study, bifenthrin had a detection frequency (DF) of 74%, making it the most frequently detected insecticide. Other pyrethroids sampled during the study were either not detected at all or had significantly lower DF values than bifenthrin. Imidacloprid was the second-most frequently detected insecticide with a DF of 59%. Fipronil, with a DF of 50%, closely followed imidacloprid as the third-most frequently detected insecticide. Fipronil desulfinyl and fipronil sulfone were also detected at rates of 56% and 21%, respectively. Pyrethroid concentrations were generally above their USEPA minimum benchmarks for toxicity to aquatic life with the exception of cyfluthrin, which is generally detected below the USEPA toxicity benchmark. Concentrations of imidacloprid and fipronil were always above their minimum benchmarks when detected by the DPR SWPP. The fipronil degradates were not above their minimum benchmarks except for one fipronil sulfone sample (Ensminger 2017).

In the Southern California DPR study, bifenthrin was the most frequently detected pyrethroid insecticide with a DF of 79%. The other sampled pyrethroids were again either not detected at all or detected significantly less frequently than bifenthrin. Fipronil also had a DF of 79%, and several of its degradates including fipronil sulfone and fipronil desulfinyl were also detected at comparably high concentrations (72 and 70%, respectively). Imidacloprid was the most frequently detected pesticide at a rate of 81%. (Budd 2018).

5.0 PERMITTEE SPECIFIC IMPROVEMENTS AND ENHANCEMENTS

As described in Section 3.0 of this report, San Mateo County MRP Permittees have been implementing pesticide toxicity control programs since 2003. The sections below summarize the improvements to IPM programs made by Permittees in about the last five years, and enhancements that are planned for the next permit term.

5.1. Town of Atherton

Improvements to IPM Practices in the Last Five Years

The Town made several improvements to its weed management practices, including the increased use of mulch in landscape and open space areas, manual weed removal whenever practical, and implementation of practices that contribute to turf vigor, such as proper mowing, fertilization, thatch removal, aeration, and switching from a day- based schedule to a need- based irrigation schedule using evapotranspiration rates. The healthy turf out-competed weeds and reduced the establishment of weed species, thereby reducing the use of herbicides.

The Town enhanced staff training on IPM. Staff now receive the Town's IPM program information and other related topics (i.e. protecting pollinators) annually in the Pesticide Worker Safety Training.

Enhancements to IPM Practices Planned for the Next Permit Term

The Town of Atherton plans to increase supervision of contractors to ensure compliance with its IPM policy. The Town plans to require its maintenance contractors to submit monthly and annual reports summarizing their IPM efforts to control pests in the Town's landscape, park, urban forest, and natural areas. The Town plans to require that contractors use pesticides only after monitoring indicates they are needed according to established IPM thresholds. Treatments will be made with the goal of removing only the target organism. Pest control materials will be selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.

The Town's staff plans to perform site inspections throughout the month to assess the condition of the area, and the maintenance contractor's efforts to control pests. To ensure implementation of IPM practices, staff plans to review the maintenance contractor's billing summaries, monthly written inspection reports, and recommended remediation.

5.2. City of Belmont

Improvements to IPM Practices in the Last Five Years

The City of Belmont updated its SOPs to require all Park Department employees to obtain a Qualified Applicator Certification (QAC) within the first year of employment. The City also increased IPM training for City staff. The City stopped using bait in its buildings and facilities, and requires all contractors to use mechanical traps rather than bait. The City no longer allows the use of herbicides with a designation of "Caution" and "Danger." In 2019, the City of Belmont decided to stop using glyphosate and is exploring non-toxic alternatives.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of Belmont plans to update its IPM policy in the first two years, and ensure that staff receives information on the IPM policy at the annual QAC training.

5.3. City of Brisbane

Improvements to IPM Practices in the Last Five Years

The City of Brisbane increased its outreach and supervision of contractors to ensure compliance with its IPM policy. The City sends letters to contractors at the beginning of each year to remind them about the City's IPM policy. The City's maintenance team leader monitors contractors on each project. Through conversations with its contractors, the City confirms that the contractors adhere to the policy.

Since FY 2014-15, the City has been implementing preventive actions at its corporation yard, such as sealing holes and gaps, and trapping. The City's standard procedure for weed management is to mow/pull weeds, mulch, then monitor weed growth.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of Brisbane plans to create pesticide free parks and buildings, and may update its IPM Policy and SOPs to reflect any needed changes. The City plans to continue to monitor contractors for compliance with the IPM Policy.

5.4. City of Burlingame

Improvements to IPM Practices in the Last Five Years

The City implemented several IPM techniques to manage weeds, such as using mulch (generated from tree work) to suppress weeds, spot spraying of weeds, implementing cultural practices on athletic fields, such as aerating, fertilizing, over-seeding and composting to increase health of grass and discourage weeds, and creating denser landscapes by adding more plant material to eliminate bare dirt. The City enacted a policy to stop spraying weeds in the City's alley ways, and requires the use of mechanical methods for removing excessive vegetative growth.

Due to the potential negative health effects associated with glyphosate, the City has chosen to not use glyphosate in public parks or City facilities, and opted for organic alternatives. The City provided additional trainings to increase staff awareness on how to manage pests without glyphosate.

The City restructured its current rodent control contract to reduce the number of bait stations being placed near creeks and streams. Each year the maintenance team selectively reduced the number of stations by 50 units.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of Burlingame plans to continue to modify pest management practices to support IPM. The City plans to monitor the effectiveness of mechanical weed removal and organic chemical applications, and update its IPM policy to require the use of more non-pesticide approaches. Additionally, the City staff

plans to evaluate pesticide applications better through a work and asset management software called Cartegraph.

By FY 2020-21 the City will have removed 100 bait stations from the field. The City plans to continue to reduce the number of units down to the minimal effective amount necessary to control the rodent population.

5.5. Town of Colma

Improvements to IPM Practices in the Last Five Years

The Town of Colma began requiring landscape contractors to submit records of IPM practices and pesticide use on the SMCWPPP Pesticide Tracking spreadsheet. To ensure that IPM techniques are being implemented, Town staff routinely reviews reports submitted by pest control contractors. The Town incorporated several non-chemical approaches to managing pests, such as, monitoring for pests, mowing weeds, mulching, preventative actions, and use of baits and traps. Pesticides of concern have not been used since FY 2014-15. The Town has voluntarily suspended the use of glyphosate until further notice. Colma provided information on IPM to staff at annual local tailgate meetings. The Town updated contract language and made changes to contractor hiring and management procedures to facilitate data collection from contractors.

The Town started using the SMCWPPP Pesticide Tracking spreadsheet to track pesticide usage, amount of the active ingredients, and location of application during this past permit period.

Enhancements to IPM Practices Planned for the Next Permit Term

In the next permit term the Town of Colma plans to update its IPM policy and procedures; The Town plans to provide enhanced staff training on updates to the Town's IPM Policy. Town staff are also planning to conduct IPM educational outreach to residents. The Town plans to continue to explore alternative methods and materials to treat weed abatement issues.

The Town plans to attach IPM policy to all landscape contracts (POs / Work Orders) to ensure that contractors are aware of it.

The Town plans to improve/ provide outreach to contractors/ vendors by letting them know about local Bay Friendly Training, IPM training/ workshops, and communicating improved practices to contractors.

5.6. Daly City

Improvements to IPM Practices in the Last Five Years

The City of Daly City created a pesticide-free building that houses the child care center at City Hall. The City uses several IPM techniques to manage pests, such as line trimming weeds and mulching, removing plants that require frequent pesticide applications, and replacing invasive plants with native plants. Daly City is piloting alternate new products to replace glyphosate, and purchased a line mower to provide more mechanical support to weed control. The City attaches its IPM policy to all landscape contracts to ensure that contractors are aware of it. Daly City also includes IPM information in its annual pesticide training for all Parks Department staff.

Enhancements to IPM Practices Planned for the Next Permit Term

In the next permit term, the City will invest in new maintenance management software to track work performed as well as pesticide usage. This will help the City better analyze its pest management practices, and identify opportunities for implementing IPM, including reducing pesticide use. Daly City will also ensure that the Public Works Supervisor and Maintenance Leads attend all IPM trainings held by SMCWPPP.

5.7. East Palo Alto

Improvements to IPM Practices in the Last Five Years

In the past five years, the City of East Palo Alto implemented a pesticide-free building program. The City updated its IPM Policy, modified pest management practices to support IPM, updated pesticide tracking system, created policies restricting the use of certain pesticides on municipal properties (i.e., buildings, parks, rights-of-way,) enhanced staff trainings on IPM, updated hiring processes for contractors that apply pesticides to ensure compliance with IPM Policy, increased supervision of contractors to ensure compliance with IPM Policy, and improved outreach to pest control professionals.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of East Palo Alto plans to create a pesticide-free park program and increasing outreach to residents. The City plans to conduct an outreach program for residents about pesticide alternatives and the proposed pesticide-free park program in the first year of the permit term, and work on developing pesticide-free parks in the next permit term.

5.8. Foster City

Improvements to IPM Practices in the Last Five Years

Foster City began using the SMCWPPP Pesticide Tracking spreadsheet to track pesticide usage, amount of the active ingredients, and location of application. The City worked with a Pesticide Control Advisor (PCA) to provide IPM information at tailgate meetings and the City's mandatory annual pesticide training. As an incentive, the City offers an annual Certification Pay to employees that hold a current Qualified Applicator Certification (QAC) or Qualified Applicator License (QAL).

Enhancements to IPM Practices Planned for the Next Permit Term

In the next permit term, Foster City plans to create policies that restrict the use of certain pesticides on municipal buildings, parks, and in public right of ways. The policies will likely be implemented within the next 2 to 3 years. The City plans to evaluate its current practices with pre-emergent herbicides with the goal of reducing its overall use of post-emergent products.

The City plans to offer an additional incentive for staff to obtain a QAC or QAL. A Maintenance Worker 1 will be automatically promoted to a Maintenance Worker 2 position when the employee obtains a QAC or QAL. Previously the employee had to wait until a Maintenance Worker 2 position became available. The City also plans to hire firms to provide in-house trainings and seminars to assist with continuing education requirements, including IPM trainings, needed to maintain the QAC.

5.9. Half Moon Bay

Improvements to IPM Practices in the Last Five Years

The City prefers mechanical approaches to weed control instead of the use of pesticides. In 2019, the City of Half Moon Bay stopped using any glyphosate products such as Roundup. The City is currently revisiting its usage, and plans on having a formal policy in place later this year.

The City uses traps instead of broadcast pesticides and takes preventative measures such as sealing holes and gaps in structures and improving sanitation to address pest issues.

The City of Half Moon Bay began using rented goats to assist with the City's weed and fire abatement programs. The goats have been used to great success and with the backing of local residents. Goats are ideal for weed abatement because they eat many weeds, helping the City avoid using herbicides. Goats are able to graze large city-owned parcels quickly and with relative ease. The goats are not allowed into any areas that are considered sensitive habitat. The amount grazed by goats each year is significant.

Tailgate meetings are used to provide IPM information and training on the IPM policy and standard operating procedures.

Enhancements to IPM Practices Planned for the Next Permit Term

In the next permit term the City of Half Moon Bay plans to update its IPM policy, and provide enhanced staff training on any policy and/or operational changes. The City is exploring alternative methods and materials to manage weeds, and will work with SMCWPPP to improve IPM policies and procedures around this issue. Continuous improvement is anticipated throughout the next permit term. Policy adjustment will require feedback from City Council.

In addition, the City plans to update its contact language and make changes to contractor hiring and management procedures to facilitate data collection from contractors. The City plans to attach the IPM policy to all landscape contracts (e.g., Purchase Orders and Work Orders) to ensure that contractors are aware of it.

The City also plans to improve outreach to contractors and vendors. For example, the City plans to let contractors know about local Bay Friendly training opportunities, IPM training events and workshops, and will communicate improved practices to contractors.

5.10. Town of Hillsborough

Improvements to IPM Practices in the Last Five Years

The Town of Hillsborough updated its IPM Policy in 2019. The Town implemented several non-chemical pesticide management strategies such as monitoring, mowing weeds, and mulching. Hillsborough removed plants that require frequent pesticide applications, and replaced invasive plants with native species. The Town used baits and traps instead of broadcast pesticides, and took preventative measures such as sealing holes and gaps in structures, and improving sanitation. The Town held tailgate meetings to train staff on the IPM policy and IPM SOPs.

Hillsborough made significant improvements to its contractor hiring and management procedures. The Town's IPM Policy is now included in all contract documents (e.g., RFP and specifications). Hillsborough also updated contract specifications to include a requirement that contractors not use pesticides of concern. Contractors are now required to implement preventative measures in areas prone to pests to deter them. For example, they remove tule plants from water bodies to prevent frogs from reproducing.

The Town increased supervision of contractors to ensure compliance with IPM policy with routine meetings, phone calls, and emails. The Town and the pest control contractor meet in person yearly to review the Town's IPM policy and discuss how to comply with this policy. Contractors are required to obtain Town staff's approval before applying pesticides, and submit documentation describing the IPM techniques that were implemented. If needed, Town staff conducts field visits to confirm the use of IPM methods. Monthly reports are provided to the Town with a summary of the inspections made, products used, and recommendations.

Enhancements to IPM Practices Planned for the Next Permit Term

In the next permit term the Town of Hillsborough plans to enhance staff training with more information on the Town's IPM Policy. Town staff are also planning to conduct IPM outreach to residents.

5.11. City of Menlo Park

Improvements to IPM Practices in the Last Five Years

The City of Menlo Park updated its IPM Policy in 2015. In April 2017, the City began implementing an herbicide-free program at City parks. Weeds are now hand-pulled, and areas are mulched to inhibit weed germination.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of Menlo Park plans to provide additional IPM training to parks and facilities maintenance staff.

5.12. City of Millbrae

Improvements to IPM Practices in the Last Five Years

The City of Millbrae focused on weed management, and increased the use of wood chips for weed control. The City converted the Millbrae City Hall landscape to xeriscape. The City began requiring contractors to obtain permission from City staff before applying pesticides.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of Millbrae plans to improve outreach to residents, including conducting a workshop for residents to educate them on IPM and alternatives to pesticides.

5.13. City of Pacifica

Improvements to IPM Practices in the Last Five Years

The City of Pacifica created pesticide-free areas, and restricted the use of glyphosate on municipal properties. The Public Works Department significantly reduced the use of glyphosate for weed control, and is relying on increased use of mechanical weeding with mowers and weed-whackers.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of Pacifica plans to create policies restricting the use of certain pesticides on municipal properties, and investigate the use of different mechanical weed control options. The City is developing a weed control plan to address areas where it is difficult to manually remove vegetation. The plan may include the rental or purchase of additional machinery, such as bigger brush mowers with tracks for off road work, and smaller mowers to replace weed whackers.

5.14. Town of Portola Valley

Improvements to IPM Practices in the Last Five Years

To eliminate the use of rodenticides on Town property, the Town funded and implemented a pilot program on two of its sports fields. The pilot program used mechanical trapping methods for gophers. Following the success of the pilot program, the Town implemented trapping methods at all Town owned properties and sports fields, and stopped the use of rodenticides. Portola Valley stopped the application of pre and post-emergent spraying of weeds on all trails, and also stopped spraying along roads.

Enhancements to IPM Practices Planned for the Next Permit Term

Portola Valley is a small rural town, and there are limited opportunities for additional actions. In the next permit term the Town of Portola Valley plans to enhance staff trainings, and increase supervision of contractors to ensure compliance with the Town's IPM Policy. The Town will continue to implement IPM practices.

5.15. City of Redwood City

Improvements to IPM Practices in the Last Five Years

The City of Redwood City began using the SMCWPPPP pesticide tracking spreadsheet. The City enhanced staff trainings, increased supervision of contractors that apply pesticides to ensure IPM policy compliance, and modified pest management practices. Two notable modified practices are the use of more mechanical controls for fire control, and testing additional organic pesticides for weed abatement.

Enhancements to IPM Practices Planned for the Next Permit Term

The City plans to continue to modify pest management practices with a focus on finding alternative methods and materials to treat weed abatement issues. For example, City staff plans to continue to investigate mechanical means of weed abatement to replace chemical treatments, and modify terrain (i.e., move large rocks) to accommodate brush mowers or other attachments for removal and access. In FY 2019-20, the City plans to gather data on current methods used, and consult with neighboring jurisdictions on its practices for similar areas. In FY 2020-21, the City plans to pilot the modified pest management practices at specific test sites, followed by a review of the modified practices for effectiveness in FY 2021-22. The City plans to roll out modified practices City wide in FY 2022-23.

5.16. City of San Bruno

Improvements to IPM Practices in the Last Five Years

In the past five years, the City of San Bruno has lowered its use of pesticides in parks and moved to more manual removal of weeds.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of San Bruno plans to discontinue the use of glyphosate on City properties, and plans to train employees on alternatives methods of weed control.

5.17. City of San Carlos

Improvements to IPM Practices in the Last Five Years

The City of San Carlos created two pesticide free parks, Vista Park and Cedar Park. The City created policies that suspended the use of use of glyphosate in all developed parks. The City provided tailgate staff trainings on IPM. The City increased supervision of contractors to ensure compliance with IPM Policy.

Enhancements to IPM Practices Planned for the Next Permit Term

In the next five years, the City of San Carlos plans to explore creating additional pesticide-free parks.

5.18. City of San Mateo

Improvements to IPM Practices in the Last Five Years

In 2017, the City of San Mateo updated its IPM SOPs and hiring processes for contractors that apply pesticides to ensure compliance with the IPM Policy. The City revised the “Structural Pest Control Services”, and “Landscape Pest Control Services” Scopes of Work used in soliciting bids from contractors to include up-to-date IPM requirements. These included updates to the list of prohibited products, which increased from the previous permit.

In April 2019, the City ceased to use glyphosate containing products, and plans to explore alternatives in the coming year.

The City revised Monthly IPM Reporting Forms for its contractors. The revision included a listing of products that are not allowed for application under the City’s IPM policy, and added that emergency applications may only occur with the Project Manager’s authorization. As of 2019, the Parks and Recreation Department sends monthly application reports to the Environmental Services Division for addition to the appropriate tracking folders for the current fiscal year. Parks and Recreation submit these reports regardless of whether or not there were any applications for that month. Tracking pesticide use has increased from once a year reporting, to once a month within the City.

In FY 2018-19, the Stormwater Coordinator and Environmental Compliance Inspector began shadowing individuals from the City’s pest control contractor to ensure compliance with the IPM policy. The City worked with its pest control contractor to gain access to the contractor’s internal web-based tracking

database. This makes it possible for the City to review its service reports at any time. These reports include information on pesticides used, the amounts, and areas and dates serviced.

The City hired a Stormwater Coordinator in January 2017, whose responsibilities include oversight of IPM implementation. The Stormwater Coordinator trains park maintenance staff on IPM, assists with the renewal and management of pest management contracts, and actively monitors contractors by conducting field visits and reviewing records.

Enhancements to IPM Practices Planned for the Next Permit Term

The City is in the process of hiring an Environmental Compliance Coordinator (ECC) whose responsibilities will include monitoring IPM progress and initiatives, identifying areas in need of improvement, developing solutions, and ensuring ongoing compliance.

The City plans to review current practices and update internal policies and procedures and maintenance agreement contract templates, if needed. The City plans to evaluate its record collection, review, and retention practices to ensure thorough and adequate oversight of all City staff and contractors tasked with pesticide application or pest management practices.

The City plans to evaluate current pest management practices, and incorporate least-toxic products and practices, wherever possible. The City plans to evaluate the effectiveness of these practices, and incorporate them into contracts and in-house policies, as needed.

The City plans to improve outreach to residents through use of social media and other messaging opportunities to the maximum extent practical. Public Works recently hired a Communications and Public Relations Analyst specializing in public outreach who can be utilized to provide outreach on IPM and other stormwater issues.

5.19. County of San Mateo

Improvements to IPM Practices in the Last Five Years

In the last five years, the County's Facilities, Maintenance and Operations Section reinforced the idea of less (or no) spraying of pesticides unless no other option is available. Its pest control vendor used more bait stations and traps and less spraying. The County's landscapers use very little, if any, pesticides. The County forwarded new information, as well as workshops and trainings on the subjects, to its contractors to keep them up to date on new policies and ideas. The County worked closely with the contractors and provided them tracking tools for their pesticide usage.

As part of the Parks Department, the Natural Resource Management Program (NRM) oversaw contractors using herbicides in natural areas within park properties. These contractors are required to track all areas of their work using an application via smartphone, tablet, or a web-based portal. The application requires delineation of an area treated and the amount of herbicide used per treatment date and polygon. All NRM contractors are now briefed on the County's current IPM policy and provided training on how to use the application described above. NRM staff regularly checks up on contractors performing herbicide work and uses the data collected in the app to improve reporting. For larger

projects, NRM staff provide public outreach concerning the use of herbicides and provide information and education about the approach and address potential concerns of residents.

Enhancements to IPM Practices Planned for the Next Permit Term

Throughout the next permit term, the County plans to work with its contractors to improve IPM practices and reduce the use of pesticides. The NRM team will provide training to the ranger staff on IPM and alternatives to herbicide use in our parks. In 2020, an updated IPM training module will be developed for current staff. In 2021, a new module will be developed for all new hires.

5.20. San Mateo County Flood Control District

Improvements to IPM Practices in the Last Five Years

Though the San Mateo Flood Control District (District) does not routinely apply herbicides at the County-maintained flood control facilities, the District continued to improve pest management practices to support IPM. District and County staff perform vegetation maintenance within the San Bruno Creek Flood Control Zone with the use of non-chemical strategies such as removal with hand tools and/or weed whacking. The District also contracted with a landscape/restoration consultant for on-going maintenance of several mitigation sites within the Colma Creek Flood Control Zone. Work performed by the contractor at the mitigation sites involved the use of non-chemical strategies such as hand weeding and mechanical removal, mulching, and replacing invasive plants with native plants. The District performed minor channel maintenance activities within the Colma Creek Flood Control Zone, including limited vegetation management as part of the Colma Creek Channel Maintenance Project. Vegetation management work has included the removal of pampas grass in a targeted area adjacent to Colma Creek, and removal of other weedy vegetation at pipe outlets and joints within the concrete-lined channel and banks in the upper reach of Colma Creek. The majority of channel vegetation maintenance involves the use of non-chemical strategies such as mechanical and hand removal. Small amounts of herbicide may be used where needed to treat invasive pampas grass root balls.

The District worked closely with contractors to ensure compliance and increased its supervision of contractors to ensure compliance with the District's IPM policy. For the Colma Creek Channel Maintenance Project and mitigation site maintenance, the District issued task specific authorizations for agreed upon work, provided detailed memos and e-mails summarizing permit conditions, BMPs, and IPM policy, and closely monitored the work with a County biologist.

Enhancements to IPM Practices Planned for the Next Permit Term

In the next permit term, the District plans to continue with improvement of pest management practices to support IPM, and communicating improved practices to contractors. The District will continue to closely supervise contractors.

5.21. South San Francisco

Improvements to IPM Practices in the Last Five Years

The City of South San Francisco conducted enhanced pesticide safety, calibration and appropriate chemical use trainings, hosted by a Pesticide Control Advisor (PCA). As a result, five City staff hold

Qualified Applicator Certification (QAC) or higher level licenses. Staff are also trained as Bay-Friendly Landscape Professionals.

The City has implemented use of pre-emergents on right-of-way (ROW) and median areas to reduce manual labor and reduce future seed banks. This has resulted in less post-emergent herbicide applications, such as glyphosate-containing products.

The City purchased a new remote-controlled slope flail mower that allows for weed abatement to be performed in areas that are generally unsafe for employees to access. Additionally, this tool has increased efficiency dramatically when working in open space and ROW areas.

South San Francisco also implemented cultural practices of increasing use of recycled tree mulch, from our internal tree crew, and applying these in areas to suppress weeds and increase soil health where possible.

The City also plants non-invasive species that out compete weed species and focuses on choosing plants that are not host to damaging insects/disease or potentially vector insects/diseases, e.g., *Phytophthora ramorum*, Polyphagous shot hole borer (PSB), and Glassy-winged Sharpshooter.

The City has also focused on removing Monterey Pines at first signs of attack from Red Turpentine Beetle (RTB) or other boring beetles that spread Pitch Canker. These insects that are a vector for Pitch Canker in Pines, are responsible for the deaths of many pines throughout the Peninsula and state in general. Removing trees at the early stages of attack helps reduce insect numbers so they cannot nest and reproduce, further spreading the disease.

Enhancements to IPM Practices Planned for the Next Permit Term

The City of South San Francisco plans to update its IPM policy in FY 2020-21. The City plans to adopt an Urban Forest Master Plan and revise its approved tree list to help promote canopy coverage and support urban wildlife and insects.

The City intends to increase use of “pollinator garden” type landscape plantings to provide pollinator corridors throughout the city to connect the Coastal Range with Sign Hill and San Bruno Mountain, and attract beneficial insects.

5.22. Woodside

Improvements to IPM Practices in the Last Five Years

The Town of Woodside modified pest management practices to support IPM. Last year, after the State of California listed glyphosate as a Prop 65 chemical, the Town banned the use of glyphosate at all Town facilities.

Enhancements to IPM Practices Planned for the Next Permit Term

The Town of Woodside will continue to focus on implementing IPM practices, and provide enhanced staff training on any policy and/or operational changes. The Town will incorporate updates to the IPM Policy via Town Council resolutions.

6.0 CONCLUSIONS

Through the development of this pesticide source control effectiveness evaluation report, San Mateo County Permittees have complied with the requirements in MRP Provision C.9.g by:

- Evaluating the effectiveness of pesticide source control measures implemented;
- Evaluating the attainment of TMDL/WQAS pesticide concentration and toxicity targets for water and sediment;
- Describing improvements to Permittee IPM programs in the last five years; and
- Describing improvements planned during the next Permit term.

This section summarizes the conclusions of the evaluation, including source control measures that SMCWPPP and San Mateo County municipal agencies are continuing to implement and planned enhancements to assist in achieving targets for pesticide concentrations and pesticide-related toxicity in San Mateo County urban creeks.

6.1. Summary of Implementation Assessment Outcomes (Levels 1 - 4)

SMCWPPP and San Mateo County municipal agencies have successfully implemented a number of source control measures consistent with Provision C.9 of the MRP and the TMDL/WQAS implementation plan (see Section 3.0). For example, the following Level 1 through 4 outcomes have been achieved as a result of control measure implementation:

- All San Mateo County Permittees have adopted IPM policies/ordinances and established pesticide application SOPs. All municipal staff that apply pesticides receive training on the IPM policies. IPM policies and pesticide programs have led to an increase in awareness about pesticide impacts and changes in behavior by municipal employees and contractors. San Mateo County Permittees are either not using pesticides of concern, or using them in minimal quantities, and generally only as a last resort.
- All San Mateo County Permittees that use contractors to apply pesticides have either 1) hired contractors that are IPM-certified and/or have taken the Bay-Friendly Landscaper Training or 2) have contract specifications in place that require contractors to follow their IPM policies. Of the 20 agencies that hire pest control contractors, 17 require that contractors obtain permission from municipal staff before making any pesticide applications.
- SMCWPPP implements the OWOW program in local retail stores and nurseries to provide less-toxic pest control information to residents at the point-of-purchase. From FY 2013-14 through FY 2017-18, SMCWPPP sponsored 44 store employee trainings and trained 390 employees. The willingness of store managers to participate in the OWOW program and send employees to trainings reflects the changing attitude of pesticide sellers toward IPM and the use of less-toxic pest control methods. Regional OWOW program leaders report an overall increase in sales of less toxic products as a result of the OWOW program's implementation.

- San Mateo County Permittees have ensured that adequate pesticide disposal services are available to all residents and small businesses in San Mateo County by participating in the in the San Mateo County Health Department's HHW Program and VSQG Business Collection Program. The HHW and VSQG Programs help reduce the amount of pesticides available as a potential source to urban runoff. For example, in both FY 2016-17 and FY 2017-18, the HHW Program managed more than 94,000 pounds of poisons (including pesticides) per year.
- SMCWPPP's other various efforts to educate residents about pesticides and IPM, including media advertising, website postings and distribution of outreach materials at events, raise awareness and lead to increased use of IPM and decreased use of toxic pesticides. Information on less-toxic pest control is posted on SMCWPPP's website (flowstobay.org), which includes a webpage dedicated to helping the public find IPM certified contractors (flowstobay.org/IPMPCO). To-date, seven IPM certified contractors have agreed to be listed on the new webpage. SMCWPPP has also conducted targeted outreach to structural PCOs on IPM.
- SMCWPPP is continuing to educate pest control professionals on IPM and water quality issues by sending them informational letters annually.
- As a result of SMCWPPP and Permittee efforts to reduce pesticide use at new development and redevelopment sites, project developers are continuing to use sustainable landscaping practices in development projects. These practices reduce pesticide use by encouraging pest-resistant landscaping and design features in the design, landscaping, and environmental reviews of proposed development projects. Project designs that use efficient irrigation systems to minimize runoff are also encouraged.
- All Permittees have made significant improvements to their IPM programs in the last five years (see Section 5 for more details). Figure 6-1 provides an overview of the types of improvements made and the number of agencies that made each improvement. The enhancements most commonly reported by Permittees were changing their pest management practices to incorporate IPM, updating their IPM Policy or SOPs, and enhancing staff trainings to incorporate information on IPM.

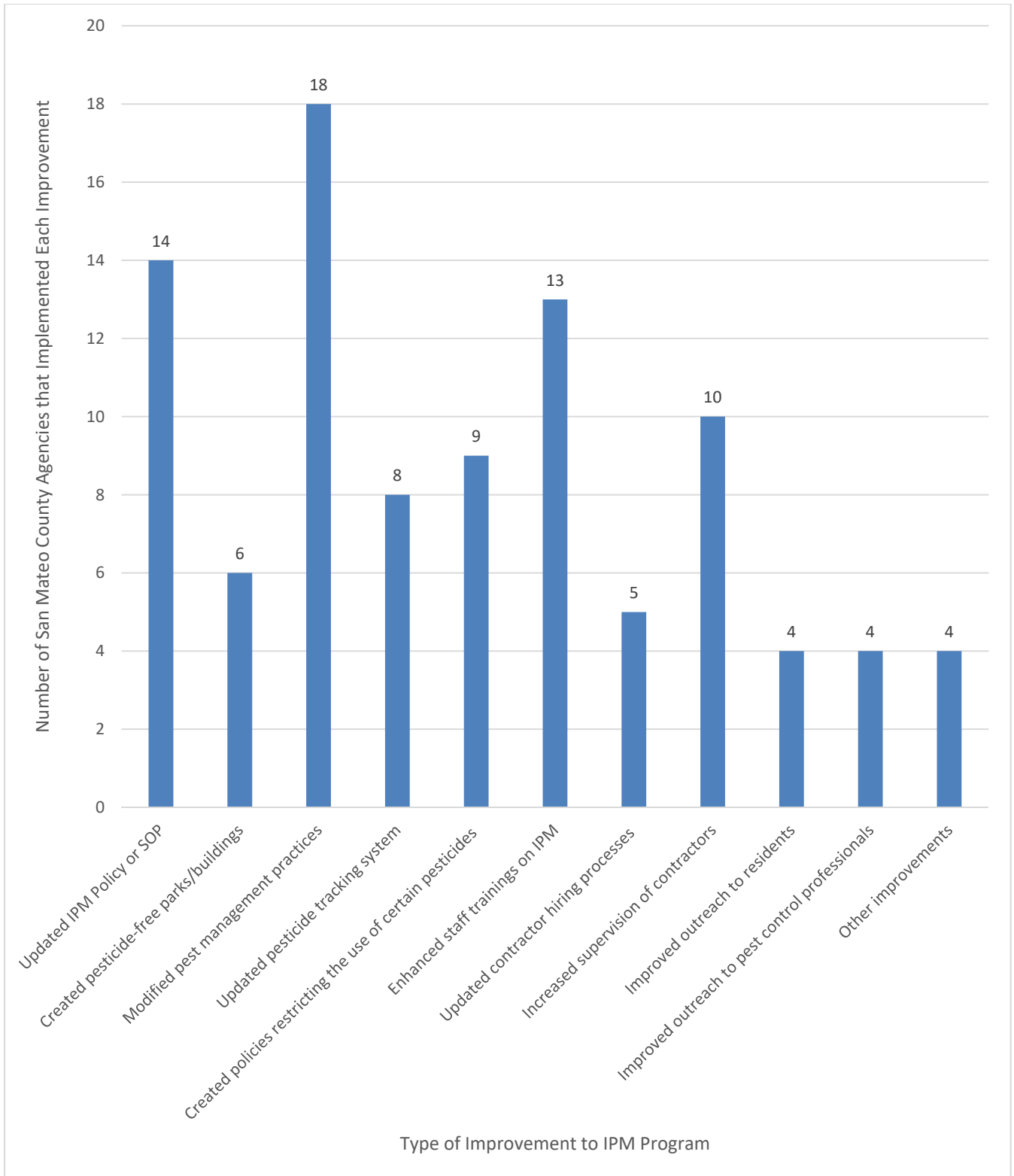


Figure 6-1. Summary of Improvements Made to San Mateo County Permittee IPM Programs from FY 2013-14 to FY 2018-19.

6.2. Summary of Water Quality Assessment Outcomes (Level 6)

Over the course of the last decade a number of monitoring programs have tested for pesticides and toxicity in water and sediment samples from San Mateo County urban creeks. SMCWPPP has monitored urban creeks since the early 2000s, consistent with NPDES stormwater permit requirements, and other programs have collected additional data, as described in Section 4.0. Based on evaluation of these data, the following Level 6 outcomes were observed:

- The available monitoring data suggest that diazinon is no longer a concern in San Mateo County urban creeks. From 2002 to 2012, diazinon concentrations have been well below the TMDL/WQAS target (i.e., 100 ng/L). In addition, toxicity to *Ceriodaphnia dubia* (i.e., Toxicity Units > 1.0) was not observed in water samples collected from San Mateo County urban creeks from 2002 to 2018. These results correspond to the timeframe when diazinon and chlorpyrifos were phased out of use in urban areas and further support the hypothesis that *Ceriodaphnia dubia* toxicity exhibited in the 1990s was attributable to these organophosphate pesticides.
- Pesticides that have gained market share during the past decade (e.g., pyrethroids, fipronil, imidacloprid) are a potential concern in San Mateo County urban creeks. However, based on the limited sediment chemistry data compiled, pyrethroid concentrations and related toxicity may be declining. TOC-normalized concentrations of pesticides in sediment samples appear to have decreased since 2012 for pyrethroids and since 2014 for fipronil. Furthermore, with the exception of two bifenthrin samples (one collected in 2004 and the other in 2016), concentrations of these pesticides did not exceed adverse effects thresholds. In 2002 to 2012, 60% (6 of 10) of the bedded sediment samples collected from San Mateo County urban creeks were acutely toxic to the test organism *Hyalella azteca* (an organism known to be sensitive to pyrethroids); whereas, only 7% (1 of 15) of the bedded sediment samples collected from 2013 to 2018 were acutely toxic to *Hyalella azteca*. Statewide, pyrethroids such as bifenthrin are still the most widely detected pesticides and are considered to be the leading cause of pesticide-related toxicity in urban areas (Ruby 2013). However, imidacloprid, a neonicotinoid pesticide with potential impacts to bee populations, is being detected more frequently throughout Northern California (Ensminger 2017) and was recently added to the SPoT program (2015) and to MRP monitoring (2016) in San Mateo County.

7.0 NEXT STEPS

In follow-up to this pesticide source control effectiveness evaluation, SMCWPPP and San Mateo County Permittees plan to continue implementing and enhancing pesticide source control measures, in an effort to not only reduce the impacts of current pesticides of concern, but also to reduce the risk of future pesticides types from impacting San Mateo County creeks and San Francisco Bay. Based on the evaluation of available water quality monitoring results, pesticides that have gained market share during the past decade (e.g., pyrethroids, fipronil, and neonicotinoids) may be of particular concern in San Mateo urban creeks.

7.1. Program Level

In follow-up to this evaluation, SMCWPPP plans to continue its multi-faceted pesticide toxicity reduction efforts described in this report. SMCWPPP's future activities will include continuing to:

- **Actively Participate in the Regulatory Process.** Since municipal agencies do not have the authority to ban or place significant restrictions on pesticide sales or use within their jurisdiction, it is essential that SMCWPPP (on behalf of San Mateo County Permittees) continues its efforts to influence the pesticide approval and registration process. SMCWPPP will continue to work with CASQA to communicate to the USEPA Office of Pesticide Programs (OPP) and the California Department of Pesticide Regulation (DPR) the need to fully consider the impact on water quality during the pesticide approval and registration process. CASQA plans to undertake activities to both address near-term pesticide concerns and seek long-term regulatory change. CASQA's current priority activities are as follows:
 - Continue collaboration with DPR to address near-term regulatory concerns, while seeking USEPA actions:
 - Ensure DPR action on fipronil water pollution is completed, including professional user education about new restrictions on its outdoor urban use
 - Ensure DPR enforces mitigation measures for pyrethroids and adopts additional measures as necessary
 - Ensure the state continues to conduct surveillance monitoring to evaluate pyrethroids (and fipronil) mitigation effectiveness and to evaluate occurrence of new threats like imidacloprid and other neonicotinoid insecticides
 - Continue to encourage USEPA to complete scientific groundwork and to identify and implement pyrethroids, fipronil, malathion, and imidacloprid mitigation measures, recognizing that it is likely that necessary mitigation cannot readily be implemented entirely by DPR
 - Focus on providing USEPA with detailed scientific information to support mitigation strategies appropriate in the urban context
 - Seek long-term changes in the pesticide regulatory structure:
 - Leverage success at the state level and continue to be a key stakeholder in the STORMS project that is developing statewide Water Quality Control Plan amendments for urban pesticides reduction. Through this process, work with other stakeholders to implement the planned restructuring of California's urban surface water pesticides monitoring to increase its effectiveness and improve coordination.
 - Seek procedure changes such that DPR continues to refine its registration procedures to address remaining gaps in water quality protection.

- **Assist San Mateo County Permittees with MRP Compliance.** Through its Parks Maintenance and IPM Workgroup, SMCWPPP will continue assisting San Mateo County Permittees to comply with the pesticides toxicity reduction requirements in the MRP.
- **Conduct Outreach to Residents.** SMCWPPP will continue conducting outreach targeting San Mateo County residents who apply pesticides or hire professionals that provide pest control services.
- **Conduct Outreach to Structural Pest Control Professionals.** SMCWPPP will continue conducting outreach to structural pest control professionals in San Mateo County. This outreach may include sending informational letters and/or making educational telephone calls directly to structural pest control professionals.
- **Implement Point-of-Purchase Outreach.** SMCWPPP will continue working with the BASMAA IPM Store Partnership Program (*Our Water Our World*) in local retail stores and nurseries.
- **Coordinate with the County Agricultural Commissioner.** SMCWPPP will continue coordinating with San Mateo County Agriculture/Weights and Measures staff to update them on water quality issues related to pesticides, get their input and assistance on pest management practices, and report to them any observed or citizen-reported violation of pesticide regulations.
- **Implement a Water Quality Monitoring Program.** SMCWPPP will continue implementing its water quality monitoring program and evaluating the results (and the results from other applicable local monitoring programs) for the attainment of pesticide concentration and toxicity targets for water and sediment and any changes in water quality related to pesticide toxicity in urban creeks.

7.2. Permittee Level

In follow-up to this evaluation, San Mateo County Permittees plan to continue their wide-ranging pesticide toxicity reduction activities and make selected enhancements to these efforts, as described in this report and below. Future activities by Permittees will include:

- **Continuing to Implement Multi-faceted Local IPM Programs.** San Mateo County municipal agencies will continue implementing and as appropriate improving their local IPM programs to reduce the use of pesticides of concern. This will include updating IPM policies/ordinances and SOPs as needed, tracking and minimizing the use of pesticides of concern, training municipal staff, and requiring contractors to implement IPM.
- **Making Specific Enhancements to Local IPM Programs.** Figure 7-1 summarizes specific enhancements that Permittees plan to make to their IPM programs in the upcoming Permit term. These enhancements were described in more detail in Section 5. The most commonly planned actions are to improve staff trainings, enhance pest management practices, and update IPM policies/ordinances and SOPs.
- **Continuing to Provide Disposal Locations for HHW, including Pesticides.** Permittees will continue to work with the San Mateo County HHW Program to provide free pesticide disposal to residents.

- **Continuing to Require New Development and Redevelopment Projects to Implement Sustainable Techniques that Reduce Pesticide Use.** San Mateo County Permittees will continue to require practices that reduce pesticide use by encouraging pest-resistant landscaping and design features in the design, landscaping, and environmental reviews of proposed development projects. Project designs that use efficient irrigation systems to minimize runoff are also encouraged.

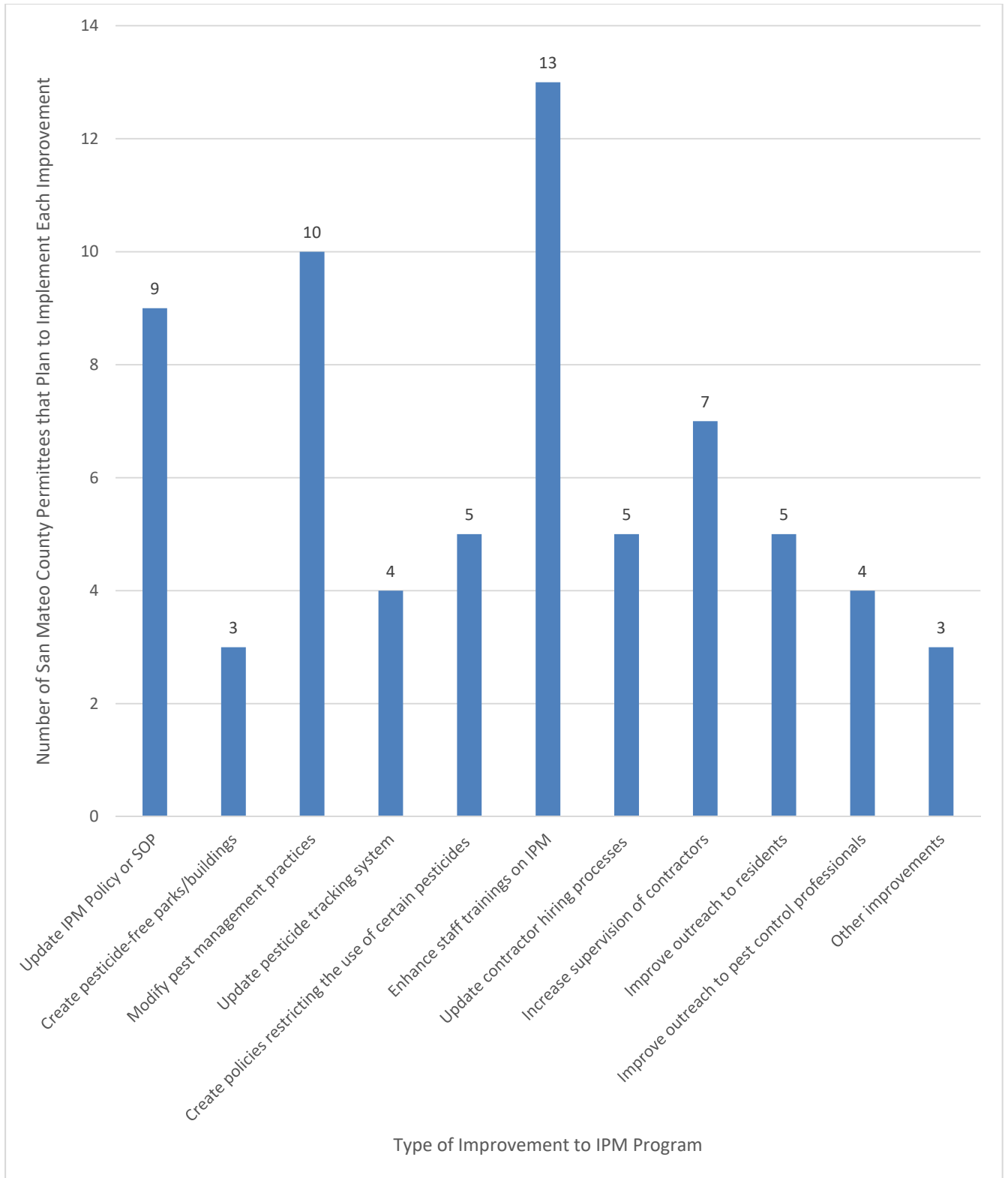


Figure 7-1. Specific Enhancements Planned to Permittee IPM Programs in the Next Permit Term.

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Appendix 10

- Trash Subcommittee Attendance List – FY 2018/19
- Litter Work Group Attendance List – FY 2018/19
- FY 2019/20 Litter Work Group Work Plan

Trash Subcommittee Meeting Attendance – FY 2018/19

Name	Agency	Phone	E-Mail	08/30/18	12/06/18	03/07/19
Tim Murray	City of Belmont	(650) 222-6460	tmurray@belmont.gov		X	
Dianne Lynn	City of Belmont	(650) 595-7425	dlynn@belmont.gov			
Brandon Tyler	City of Belmont	(650) 222-5240	btyler@belmont.gov			
Ryan Moran	City of Belmont	(650) 222-6405	rmoran@belmont.gov	X		
Rick Locke	City of Belmont	(650) 222-6401	rlocke@belmont.gov	X	X	
Marcus Escobedo	City of Belmont	(650) 222- 6459	mescobedo@belmont.gov	X		X
Matt Fabry	SMCWPPP Program Manager	(650) 599-1410	mfabry@co.sanmateo.ca.us			
Reid Bogert	C/CAG	(650) 599-1433	rbogert@smcgov.org		X	
Keegan Black	City of Brisbane	(415) 728-7986	kblack@ci.brisbane.ca.us		X	X
Randy Breault	City of Brisbane	(415) 508-2131	rbreault@ci.brisbane.ca.us			
Rob Mallick	City of Burlingame	(650) 558-7673	rmallick@burlingame.org			
Rick Horne	City of Burlingame	(650) 558-7672	rhorne@burlingame.org			X
Mike Heathcote	City of Burlingame	(650) 558-7679	mheathcote@burlingame.org			
Jennifer Lee	City of Burlingame	(650) 558-7381	jlee@burlingame.org	X	X	X
Louis Gotelli	Town of Colma	(650) 333-0295	louis.gotelli@colma.ca.gov			
Muneer Ahmed	Town of Colma	(650) 757-8894	Muneer.ahmed@colma.ca.gov			
Kelly Carroll	Town of Colma	(408) 921-4480	kellyc@csgengr.com	X	X	X
Jeff Fornesi	City of Daly City	(650) 991-5752	jfornesi@dalycity.org			
John Sanchez	City of Daly City	(650) 991-8265	jsanchez@dalycity.org	X	X	
Ryan Brunmeier	City of Daly City	(650) 991-8065	rbrunmeier@dalycity.org			
Sibely Calles	City of Daly City	(650) 991-8054	scalles@dalycity.org	X		
Michelle Daher	City of East Palo Alto	(650) 853-3197	mdaher@cityofepa.org			
Norm Dorais	City of Foster City	(650) 286-3279	ndorais@fostercity.org	X		
Vivian Ma	City of Foster City	(650) 286-3270	vma@fostercity.org		X	
Stephanie MacDonald	City of Foster City		smacdonald@fostercity.org			X
Mark Lander	City of Half Moon Bay		markl@csgengr.com	X		X
Kelly Carroll	City of Half Moon Bay	(408) 921-4480	kellyc@csgengr.com	X	X	X
Catherine Chan	City of Half Moon Bay		catherinec@csgeng.com		X	
Gary Francis	Town of Hillsborough	(650) 375-7506	gfrancis@hillsborough.net	X	X	X
Brian Henry	City of Menlo Park	(650) 330-6799	bphenry@menlopark.org			
Hugo Tores	City of Menlo Park		hatorres@menlopark.org			X
Clarence Li	City of Menlo Park		clli@menlopark.org			X
Mike Killigrew	City of Millbrae	(650) 259-2374	mkilligrew@ci.millbrae.ca.us			X
Raymund Donguines	City of Pacifica	(650) 738-3767	donguinesr@ci.pacifica.ca.us	X		

Name	Agency	Phone	E-Mail	08/30/18	12/06/18	03/07/19
Bernie Mau	City of Pacifica	(650) 438-5416	Maub@ci.pacifica.ca.us			X
Howard Young	Town of Portola Valley	(650) 851-1700 X214	hyoung@portolavalley.net			
Terrance Kyaw	City of Redwood City	(650) 780-7466	TKyaw@redwoodcity.org			
Vicki Sherman	City of Redwood City	(650) 780-7472	vsherman@redwoodcity.org	X	X	X
Jason Claire	City of Redwood City	(650) 208-6365	jclaire@redwoodcity.org			
Albert Mungria	City of Redwood City	(650) 780-7477				
Victor Castaneda	City of Redwood City		vcastaneda@redwoodcity.org			
Dennis Bosch	City of San Bruno		dbosch@sanbruno.ca.gov			
Robert Wood	City of San Bruno	(650) 616-7046	rwood@sanbruno.ca.gov			
Ted Chapman	City of San Bruno	(650) 616-7169	TChapman@sanbruno.ca.gov	X	X	X
Joe Ortiz	City of San Bruno	(650) 333-8336	Jortiz@sanbruno.ca.gov			
Kathryn Robertson	City of San Carlos	(650) 802-4212	KRobertson@cityofsancarlos.org		X	X
Sarah Scheidt	City of San Mateo	(650) 522-7385	sscheidt@cityofsanmateo.org			X
Grant Ligon	City of San Mateo	(650) 823-1285	gligon@cityofsanmateo.org		X	
Roxanne Murray	City of San Mateo	(650) 522-7346	rmurray@cityofsanmateo.org			
Rick Pina	City of San Mateo	(650) 522-7373	rpina@cityofsanmateo.org			
Sven Edlund	City of San Mateo	(650) 522-7342	sedlund@cityofsanmateo.org			
Mark Swenson	City of San Mateo	(650) 522-7349	mswenson@cityofsanmateo.org	X		
Andrew Wemmer	City of So. San Francisco	(650) 829-3883	andrew.wemmer@ssf.net	X		X
Thomas Siphongsay	City of So. San Francisco	(650) 829-3882	thomas.siphongsay@ssf.net	X	X	X
Daniel Garza	City of So. San Francisco	(650) 829-3880	daniel.garza@ssf.net			
Julie Casagrande	County of San Mateo - DPW	(650) 599-1457	jasagrande@co.sanmateo.ca.us	X		X
Breann Liebermann	County of San Mateo		bliebermann@smcgov.org	X	X	X
Kevin Lu	County of San Mateo		khlu@smcgov.org			
Diana Shu	County of San Mateo		dshu@co.sanmateo.ca.us			
Lillian Clark	County of San Mateo		lclark@co.sanmateo.ca.us			
Katherine Sheehan	Colma and Half Moon Bay	(650) 522-2506	katherines@csgengr.com			
Whitney Schmucker	SGA, Inc.	(510) 224-5086	wschmucker@sga-inc.net			
Ian Hull	ERM	(925) 708-0650	hulli@samtrans.com			X
Chris Sommers	EOA, Inc.	(510) 832-2852 X109	csommers@eoainc.com	X	X	X
John Fusco	EOA, Inc.	(510) 832-2852 X130	jrfusco@eoainc.com		X	X
			No. Attending	19	18	23

**San Mateo Countywide Water Pollution Prevention Program (SMCWPPP)
Litter Work Group - 2018/19 - Attendance Record**

Name (e-mail)	Phone	Agency	2/4/19	5/8/19
Matt Fabry mfabry@smcgov.org	650-599-1419	CCAG/SMCWPP	X	X
Reid Bogert rbogert@smcgov.org				X
Diane Lynn dlynn@belmont.gov	650-595-7425	City of Belmont		
Julie Freitas jfreitas@belmont.gov	650-595-7425	City of Belmont		
Keegan Black kblack@ci.brisbane.ca.gov	415-508-2131	City of Brisbane		
Jennifer Lee jlee@burlingame.org	650-558-7381	City of Burlingame	X	
Rick Horne rhorne@burlingame.org	650-558-7672			
Michael Heathcote mheathcote@burlingame.org				
Louis Gotelli lgotelli@colma.ca.gov		Town of Colma		
Kelly Carroll kellyc@csgengr.com	408-921-4480	Half Moon Bay		X
Stephen Stolte ssolte@dalycity.org	650-991-8126	City of Daly City		
Michelle Daher mdaher@cityofepa.org	650-853-3197	City of East Palo Alto		
Norm Dorais ndorais@fostercity.org		City of Foster City		
Gary Francis gfrancis@hillsborough.net		Town of Hillsborough		
Clarence Li clli@menlopark.org	650-330-6797	City of Menlo Park		X
Shelly Reider sreider@ci.millbrae.ca.us	650-259-2444	City of Millbrae		
Vicki Sherman vsherman@redwoodcity.ca.us		City of Redwood City	X	X
Ted Chapman tchapman@sanbruno.ca.gov		City of San Bruno	X	X
Kathryn Robertson krobertson@cityofsancarlos.org		City of San Carlos	X	X
Roxanne Murray rmurray@cityofsanmateo.org	650-522-7346	City of San Mateo	X	X
Sarah Scheidt sscheidt@cityofsanmateo.org				

**San Mateo Countywide Water Pollution Prevention Program (SMCWPPP)
Litter Work Group - 2018/19 - Attendance Record**

Name (e-mail)	Phone	Agency	2/4/19	5/8/19
Andrew Wemmer Andrew.Wemmer@ssf.net	650-829-3883	City of South SF	X	X
Daniel Garza Daniel.Garza@ssf.net				
Breann Liebermann bliebermann@smcgov.org		San Mateo County Office of Sustainability	X	
Eun-Soo Lim eulim@smcgov.org			X	
Kevin Lu klu@smcgov.org			X	
Lillian Clark lclark@smcgov.org	650-599-1447		X	
Prabhyot Khangura pkhangura@smcgov.org				X
Ying Sham ysham@smchousing.org		San Mateo County Department of Housing		
Julie Casagrande jcasagrande@smcgov.org	650-599-1457	San Mateo County Public Works		
Julia Au jau@rethinkwaste.org	650-802-3509	Rethink Waste	X	X
Shirley Ng			X	
Joanna Rosales			X	
Joe La Mariana jlamariana@rethinkwaste.org			X	
Gino Gasparini ggasparini@recology.com	650-598-8254	Recology-SM County	X	X
Mia Rossi mrossi@recology.com			X	X
Yvette Madera ymadera@recology.com	650-598-8242			
Monica Devincenzi MDevincenzi@republicservices.com	650-756-1130 x224	Republic Services		
Nicole Lee nlee@republicservices.com				X
Jessica Chen jchen@republicservices.com	415-604-9015	RS - Daly City		X
Susan Kennedy susan@ssfscavenger.com	925-437-2510	South SF Scavenger		
Teresa Montgomery teresa@ssfscavenger.com	650-589-4020		X	X
Chris Sommers csommers@eoainc.com	510-832-2852 x 109	EOA Inc.	X	X
Peter Schultze-Allen pschultze-allen@eoainc.com	510-832-2852 x 128		X	X



SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

SMCWPPP Litter Work Group

FY 2019–20 Work Plan

Final

June 2019

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INTRODUCTION AND BACKGROUND

Trash Impacts on Water Bodies and Regulatory Responses

Trash (i.e., litter, floatables, gross pollutants, or solid waste) is a serious problem for watersheds where it presents an aesthetic nuisance, and a serious threat to aquatic life in creeks and the oceans. Data suggest that plastic trash in particular persists for hundreds of years in the environment and can pose a threat to wildlife through ingestion, entrapment, as well as harboring chemicals potentially harmful to the aquatic environment. Types of trash commonly observed in watersheds and water bodies include food and beverage containers (e.g., plastic bags and bottles) and packaging, cigarette butts, food waste, construction and landscaping materials, furniture, electronics, tires, and hazardous materials (e.g., paint and batteries). The San Francisco Bay Regional Water Quality Control Board (Water Board) has listed multiple tributaries and shorelines as being impaired for trash.

In response to concerns about urban trash impacts on receiving water bodies in the San Francisco Bay area, in 2009 the Water Board included trash reduction requirements in the Municipal Regional Stormwater (MRP) National Pollutant Discharge Elimination System (NPDES) Permit for Phase I communities in the Bay area (Order R2-2009-0074.) These provisions require applicable Bay Area municipalities (Permittees) to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by, 70% by 2017, 80% by 2019, and to a point of “no adverse impacts” to water bodies by 2022.

Trash Sources and Pathways

Trash in San Francisco Bay Area creeks and shorelines originates from a variety of sources: pedestrian litter, waste containers, illegal dumping on land areas, and litter from vehicles. Pedestrian litter includes trash sources from high traffic areas near businesses and schools, transitional areas where food/drinks are not permitted (e.g. bus stops), and from public or private special events with high volumes of people. Inadequate waste container management includes sources such as overflowing or uncovered containers and dumpsters as well as the dispersion of household and business-related trash and recycling materials before, during, and after collection. On-land illegal dumping of trash is related to a variety of societal issues including construction activity, inadequate collection services and homeless encampments. Trash from vehicles occurs due to littering from automobiles and uncovered loads of material being transported to transfer stations, processing facilities and landfills.

Types of Trash Control Measures

SMCWPPP Permittees are attempting to address trash load reduction requirements outlined in the MRP by implementing a number of control measures designed to significantly reduce trash in local creeks and the Bay. Control measures implemented to-date include:

- Installation and maintenance of trash capture devices that intercept trash once in the storm drain system;
- Adoption and enforcement of product-related ordinances, such as single-use plastic bag bans;
- Enhanced street sweeping;
- Strategic placement and selection of public trash containers;
- Improvements to inadequately-sized or serviced private containers/bins;
- Public outreach and education campaigns;
- On-land cleanups and illegal dumping prevention;
- Enhanced storm drain inlet maintenance; and,
- Creek and shoreline cleanups and prevention programs.
- Improved review of new and redevelopment projects for litter-reduction design and operation
- Enhanced franchised waste hauler contract language and coordination
- Enforcement of existing and new trash and litter related municipal codes

SMCWPPP Trash Subcommittee and Litter Work Group

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) was established in 1990 to reduce the pollution carried by stormwater into local creeks, the San Francisco Bay, and the Pacific Ocean. The program is a partnership of the City/County Association of Governments (C/CAG), each incorporated city and town in the county, and the County of San Mateo, which share a common municipal stormwater NPDES permit. The SMCWPPP Technical Advisory Committee (TAC) functions as the decision-making body for routine program activities and provides oversight and guidance to five subcommittees.

The SMCWPPP Trash Subcommittee assists member agencies with the implementation of new or enhanced trash control measures and actions required by the MRP. The Trash Subcommittee generally meets four to six times a year. In FY 2013-14, the Subcommittee recommended that a work group be formed to enhance coordination between representatives from the local hauling community and municipal staff focused on stormwater and trash management.

In response, the SMCWPPP Litter Work Group began meeting on regular basis in March of 2014. The meetings are attended by representatives from: Recology San Mateo, South San Francisco Scavenger Company; Rethink Waste (the South Bayside Waste Management Authority); and stormwater and trash program municipal staff from jurisdictions in San Mateo County. The goals of the Litter Work Group are to collectively identify opportunities to reduce the contributions of litter generated from disposal, collection-associated sources and illegal dumping; educate the public and those involved with litter control efforts; and to coordinate and share information with the Zero Litter Initiative (ZLI) in Santa Clara County.

This Work Plan was developed through the SMCWPPP Litter Work Group. The Work Group provided input on the highest priority tasks included in this Work Plan and commented on the Draft version. Response to comments received from Litter Work Group members are included as Attachment A.

Work Group Tasks from 2014 through June of 2019

The Litter Work Group completed the following tasks in previous fiscal years:

- In FY 2013-14, the Work Group coordinated the 1st Litter Roundtable event in June 2014 that focused on various aspects of container management.
- In FY 2014-15, the Work Group organized the 2nd Litter Roundtable event in June 2015 that focused on commercial waste container management and produced:
 - Right Size – Right Service Campaign Outreach Materials
- In FY 2015-16, the Work Group completed:
 - A report on “Litter Practices Recommendations for Solid Waste Franchise Agreements”
 - Compilation of data for the Illegal Dumping and Container Overage maps
- In FY 2016-17, the Work Group completed:
 - Illegal Dumping and Container Overage maps for member agencies staff
 - The 1st draft of the “Litter Reduction Toolkit for Multi-Family Dwellings”
- In FY 2017-18, the Work Group completed:
 - Recommendations to Rethink Waste – Recology San Mateo Contract Extension
 - The final “Litter Reduction Toolkit for Multi-Family Dwellings”
 - Coordination with the Zero Litter Initiative in Santa Clara County
 - Organized the 3rd Litter Roundtable in May 2018 on illegal dumping and enforcement
- In FY 2018-19, the Work Group completed:
 - Created a fact sheet from the Litter Reduction Toolkit for Multi-Family Dwellings on reducing litter and waste through building design and operation
 - Trained municipal staff on improved project design review to reduce litter and waste

WORK PLAN OBJECTIVES

To assist municipalities with achieving future trash/litter reduction goals outlined the MRP, the SMCWPPP Trash Committee and Litter Work Group developed this work plan to achieve the following objectives:

- **Work with the California Department of Transportation (Caltrans) and other transportation agencies to coordinate trash control measure implementation, including the siting and installation of trash full capture systems** – Litter in San Mateo County can be generated on city/county jurisdictional areas or within the right-of-way (ROW) of transportation agencies that transverse through these areas. Regardless of where litter is generated, it can affect adjacent areas and therefore collaboration on trash control actions between San Mateo cities/county and transportation agencies can have mutually-beneficial litter reduction outcomes. Similar to San Mateo MRP Permittees, Caltrans is required by the Water Board to implement trash controls actions to address specific area targets outline in their NDPEs permit. Additionally, Caltrain, BART and other transportation agencies in San Mateo County are required to address the trash reduction requirements in the statewide Trash Amendments, which will be incorporated into the statewide Phase II NPDES permit that these agencies must comply with. This task will support the collaboration between San Mateo MRP Permittees, and Caltrans and other transportation agencies on educating the public about litter reduction, enhancing street sweeping, conducting litter removal (on-land cleanups), improving trash bin/container management programs, and siting, designing, installing and maintaining trash full capture systems.

***Objective:** Enhance coordination with Caltrans and other transportation agencies in San Mateo County enhance litter prevention and reduction actions, including the siting, design, installation and maintenance of trash full capture systems within the County in prioritized locations.*

- **Evaluate the Effectiveness of Source Control Actions and Characterize the Types of Trash in San Mateo County stormwater** – Source controls are effective actions to prevent the generation of litter. Source control actions have been implemented by many Permittees in San Mateo County for specific litter-prone items (i.e., single use plastic carryout bags and expanded polystyrene carryout food-ware) via local ordinances and policies. The effectiveness of these actions has not been fully evaluated in San Mateo County. Additionally, there are remaining information gaps on the dominant types of trash in stormwater in San Mateo. Filling these information gaps could assist San Mateo Permittees by developing information that will support the continuation of load reduction credits for source control actions in MRP 3.0 and identify the dominant litter-prone items found in stormwater that should be considered for further local regulatory actions as was done with previous efforts related to plastic shopping bags and expanded polystyrene food-ware.

***Objective:** Provide additional information on the effectiveness of existing source control actions and identify litter-prone items in stormwater that should be considered for future actions.*

- **Educate Targeted Sectors of the Community on these Issues** – The SMCWPPP Public Information and Participation (PIP) Subcommittee is conducting outreach of various types to the community in San Mateo County. In the past the Litter Work Group has coordinated with the PIP Subcommittee on efforts related to litter reduction, such as Adopt-a-Block and School outreach efforts. The Work Group can contribute knowledge and resources from municipal staff who coordinate waste reduction and recycling efforts within their jurisdictions and from waste hauler staff operating in the jurisdiction. Leveraging the efforts and resources of multiple programs and franchised companies can increase effectiveness.

***Objective:** Continue to coordinate with the SMCWPPP PIP Subcommittee on the investigation of potential enhanced outreach efforts at schools, multi-family homes, and business communities.*

- **Share Information with the Countywide Recycling Committee Members on these Issues** – The San Mateo Countywide Recycling Committee (CWRC) meets quarterly and is conducting outreach of various types to the community in San Mateo County. In the past the Litter Work

Group has coordinated with the CWRC on efforts related to litter reduction and reducing waste. Leveraging the efforts and resources of multiple programs and franchised companies can increase effectiveness.

Objective: *Continue to coordinate with the Countywide Recycling Committee.*

- **Coordinate with Litter Reduction Partners** – The Santa Clara Valley Zero Litter Initiative (ZLI) was formed in 2010 to bring together stakeholders interested in eliminating litter and its impacts throughout the Santa Clara Valley. The ZLI combats this multi-faceted problem by bringing stakeholders together to identify collaborative solutions. Since forming, ZLI has conducted roundtables about litter associated with garbage/recycling collection including a Right-Size Right-Service campaign for locations where dumpsters are contributing litter to the storm drain, transport and disposal pathways. Other topics of interest identified by ZLI stakeholders include litter reduction solutions via business engagement, law/code enforcement and highway/freeway controls. SMCWPPP agencies can increase the effectiveness of their litter reduction efforts by sharing resources with Caltrans and the ZLI.

Objective: *Continue to coordinate efforts and share information with the Zero Litter Initiative in Santa Clara County to further reduce litter.*

PROPOSED TASKS FOR FY 2019-20

For FY 2019-20, the Litter Work Group proposes to conduct the following tasks:

1. **Plan and Coordinate a 4th Roundtable Event Focusing on Enhancing the Coordination with Transportation Agencies on Trash Controls**– The Litter Work Group will develop and hold one roundtable event for San Mateo Permittees and transportation agencies. The roundtable event will be conducted to present and discuss opportunities and barriers for enhanced coordination on trash control measure implementation. The roundtable will include discussions on important trash sources, specific trash control measure types, potential mutually-beneficial projects, cost-sharing mechanisms, and on-going collaboration. The anticipated outcome of the roundtable is a list of potential collaborative projects in San Mateo Permittee areas that can be further scoped and discussed in subsequent dialogues with individual Permittees and/or SMCWPPP staff. All communications and outreach regarding the roundtable event will be handled through this task, including agenda preparation, speaker identification and coordination, and facility and food/beverage coordination.
2. **Phase I of the San Mateo Stormwater Trash Characterization Study** – In Phase I, the Litter Work Group will develop a sampling and analysis plan (SAP) for conducting the trash characterization study, which will be focused on evaluating the effectiveness of existing trash source control actions and filling information gaps on the dominant types of trash in stormwater in San Mateo to inform future source control measures in San Mateo County. The SAP will include a summary of existing information on trash types in stormwater, specific management questions that will be addressed via the SAP, monitoring site locations, sampling frequencies, a trash characterization plan, and data analysis techniques that will be employed. The anticipated outcome of this task is a well-defined SAP that can be implemented in FY 2020-21.
3. **Education, Communication and Outreach**
 - A. **Coordinate with the PIP Subcommittee** – The Program will continue to coordinate with the PIP Subcommittee on a campaign focusing on the commercial building sector in FY 2019-20. As requested and within the budget allotted, the Program will attend meetings/calls, provide feedback on draft materials, and respond to inquiries from PIP consultants.
 - B. **Coordinate with the San Mateo Countywide Recycling Committee** - The Program will continue to share information with the CWRC in FY 2019-20. As requested and within the budget allotted, the Program will attend quarterly meetings, provide feedback on draft outreach materials, and coordinate with the County Office of Sustainability.

- C. Coordinate with ZLI** – The Program will continue to share information and best practices with the Santa Clara Valley Zero Litter Initiative (ZLI) during FY 2019-20. As requested and within the budget allotted, the Program will attend ZLI meetings and webinars.
- 4. Litter Work Group Facilitation** - To support Tasks 1, 2 and 3, the Program will convene up to two meetings of the Litter Work Group. Meeting material preparation, including agendas, and follow up activities (e.g., summaries and action items) will be conducted as part of this task.

Estimated Costs and Schedule

The proposed work plan schedule and associated cost estimates for FY 2019-20 are included in Table 1. Depending on the complexities and challenges associated with implementation of the tasks described in the work plan, the proposed schedule may be revised. Costs associated with each task are estimates. More definition of each task will be necessary once the work plan or a portion thereof is approved by the SMCWPPP TAC.

Table 1. SMCWPPP Trash Committee and Litter Work Group Proposed FY 19-20 Tasks, Schedule and Estimated Costs.

Task #	Task	Description	Start Date	Complete Date	Estimated Program Cost
1.	Roundtable Event #4	Coordinate and facilitate a 4 th Litter Roundtable on the issue of trash capture device installation with Caltrans and other transportation agencies.	July 2019	June 2020	\$8,000
2.	Stormwater Trash Characterization Study	Phase 1 – Determine priorities for the characterization study, develop monitoring and characterization plan and select monitoring sites.	July 2019	June 2020	\$8,000
3.A	Coordinate with the PIP Subcommittee	Attend meetings/calls, provide feedback on draft materials, and respond to inquiries from PIP consultants.	July 2019	June 2020	\$1,000
3.B	Coordinate with the San Mateo Countywide Recycling Committee	Share information and best practices at the quarterly San Mateo Countywide Recycling Committee via CWRC meetings.	July 2019	June 2020	\$1,000
3.C	Coordinate with Santa Clara ZLI	Share information and best practices with the Santa Clara Valley Zero Litter Initiative (ZLI) via ZLI meetings and webinars.	July 2019	June 2020	\$1,000
4.	Litter Work Group Facilitation	Convene two Litter Work Group meetings/calls, provide agendas and summaries.	July 2019	June 2020	\$7,000
			Total Cost		\$26,000

Appendix 11

- Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2019

Updated Control Measures Plan for PCBs and Mercury in San Mateo County Stormwater Runoff



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Appendix B – Descriptions of Land Uses Referenced in this Report

LIST OF ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
CW4CB	Clean Watersheds for a Clean Bay
CWA	Clean Water Act
FY	Fiscal Year
GI	Green Infrastructure
MPC	Monitoring and Pollutants of Concern
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
PCBs	Polychlorinated Biphenyls
POC	Pollutant of Concern
POTW	Publically Owned Treatment Works
RAA	Reasonable Assurance Analysis
RMP	Regional Monitoring Program for Water Quality in San Francisco Bay
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
TMDL	Total Maximum Daily Load
WY	Water Year
WMA	Watershed Management Area

1.0 INTRODUCTION

1.1. Background

Fish tissue monitoring in San Francisco Bay (Bay) has revealed bioaccumulation of polychlorinated biphenyls (PCBs), mercury, and other pollutants. The levels found are thought to pose a health risk to people consuming fish caught in the Bay. As a result of these findings, an interim advisory has been issued on the consumption of fish from the Bay. The advisory led to the Bay being designated as an impaired water body on the Clean Water Act (CWA) "Section 303(d) list" due to elevated levels of PCBs, mercury, and other pollutants. In response, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) has developed Total Maximum Daily Load (TMDL) water quality restoration programs targeting PCBs and mercury in the Bay. The general goals of the TMDLs are to identify sources of PCBs and mercury to the Bay, implement actions to control the sources, and restore water quality.

The PCBs and mercury TMDLs stipulate that a 90% reduction in PCBs and 50% reduction in mercury found in discharges from urban stormwater runoff to the Bay are needed to achieve water quality standards and restore beneficial uses. Provisions C.11 and C.12 of the first Bay Area Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Municipal Regional Permit, or MRP 1.0; Order R2-2009-0074) required Permittees to implement pilot-scale control measures during the permit term to reduce PCBs and mercury discharges from Municipal Separate Storm Sewer Systems (MS4s) to the Bay. These pilot studies were intended to enhance the collective knowledge about the costs and benefits of different Best Management Practices (BMPs) to control PCBs and mercury.

The reissued (and current) permit (MRP 2.0, Order R2-2015-0049) requires municipal agencies to move from pilot-scale work to focused implementation and defined load reduction goals (e.g., 3 kg/year PCBs across the MRP 2.0 area by June 30, 2020). The strategies and BMPs that will be applied to meet the load reduction goals are anticipated at a minimum to include:

- Stormwater green infrastructure (GI);
- Trash control devices that remove sediments containing PCBs and/or mercury;
- Source property identification and referral for investigation and abatement; and
- Management of PCBs in building materials during demolition.

Permittees may also implement additional types of controls to address the PCBs and mercury reduction goals, such as enhancements to municipal operation and maintenance (O&M) activities that remove sediments containing PCBs and/or mercury.

In compliance with Provisions C.11 and C.12, the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), a program of the City/County Association of Governments (C/CAG) of San Mateo County, is continuing to work with San Mateo County municipal agencies to identify control measures for PCBs and mercury that reduce discharges from their MS4s. This plan documents the approaches taken and progress made to-date, including summaries of:

- The pertinent MRP 2.0 permit requirements;
- Progress to-date identifying sources of and controls for PCBs and mercury discharges in San Mateo County stormwater runoff;

- The types of control measures typically used to control PCBs and mercury discharges in stormwater runoff from local watersheds surrounding San Francisco Bay;
- Documentation of existing and planned PCBs and mercury control measures for each San Mateo County MRP 2.0 Permittee;
- Updated estimates of the reductions in PCBs and mercury loads from San Mateo County stormwater runoff during the MRP 2.0 term that have been quantified to-date, calculated using the interim accounting methodology described later (see Section 5.0); and
- Next steps.

This plan provides an update to the plan that was submitted with the FY 2017/18 Annual Report in September 2018 (SMCWPPP 2018b), including updated estimates of the PCBs and mercury load reductions achieved in San Mateo County this permit term (including a period immediately preceding the permit term, as explained later, see Section 4.0) that have been quantified to-date. Consistent with the Provision C.11/12 requirements, the information contained within this plan will continue to be updated periodically during MRP 2.0 as new information is developed about control measures and associated pollutant load reductions.

1.2. Summary of Permit Requirements

MRP 2.0 Provisions C.11.a.iii and C.12.a.iii required Permittees to submit with their FY 2015/16 Annual Reports a prioritized list of watersheds and management areas where control measures for PCBs and mercury are currently implemented or will be implemented during the term of permit along with an implementation schedule (accomplished by SMCWPPP 2016b).¹ Permittees were also required to provide the monitoring data and other information used to select the management areas. In addition to the list of management areas, Permittees were also required to report on the following:

- The number, type and locations and/or frequency (if applicable) of control measures;
- A cumulative listing of all potentially PCBs-contaminated sites Permittees have discovered and referred to the Regional Water Board to-date, with a brief summary description of each site and where to obtain further information;
- The description, scope and start date of control measures;
- For each structural control and non-structural control BMP, interim implementation progress milestones and a schedule for milestone achievement; and
- Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified by Permittees.

In subsequent Annual Reports, Permittees are required to provide updates to the initial information presented with the FY 2015/16 Annual Report.

The MRP also requires that Permittees demonstrate and report on achievement of PCBs load reductions and ancillary load reduction benefits for mercury during the term of the Permit. As part of this requirement to report load reductions, MRP Provisions C.11/12.b., Assess Mercury/PCBs Load Reductions from Stormwater, required Permittees to submit with their FY 2015/16 Annual Report for Executive Officer approval an assessment methodology (which was referred to as the interim accounting

¹The MRP also required submittal of an initial progress report by April 1, 2016 (accomplished by SMCWPPP 2016a).

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methodology (BASMAA 2017), that updates the load reduction accounting system outlined in the MRP 2.0 factsheet. Permittees were required to use the assessment methodology to quantify in a technically sound manner PCBs and mercury loads reduced through implementation of pollution prevention and treatment control measures, including source control, stormwater treatment, GI, and other measures. Beginning with their FY 2016/17 Annual Report, Permittees were required to report on the use of the methodology to demonstrate progress toward achieving the PCBs and mercury load reductions required this permit term (accomplished by SMCWPPP 2017b), with updates provided in subsequent Annual Reports (accomplished by SMCWPPP 2018b and this report).

2.0 PROGRESS TO-DATE IDENTIFYING PCBs AND MERCURY SOURCES AND CONTROLS

The below sections briefly summarize progress to-date identifying sources of and controls for PCBs and mercury discharges in San Mateo County stormwater runoff and related efforts such as developing the interim accounting methodology.

In addition to the efforts described in the below sections, during the past several years the Regional Monitoring Program for Water Quality in San Francisco Bay (RMP) has conducted stormwater runoff monitoring in San Mateo County and other parts of the Bay Area through its Small Tributary Load Strategy (STLS). The monitoring in San Mateo County has been coordinated with SMCWPPP, with SMCWPPP staff assisting with selection of sampling stations and coordination with staff from local agencies. Monitoring objectives have included characterizing PCBs and mercury concentrations in stormwater runoff from the bottom of selected urban catchments with potential pollutant source areas (referred to as Watershed Management Areas or WMAs, see below discussion for further details) and estimating pollutant loading rates from some catchments. SMCWPPP (2017a, 2018a, and 2019) include additional information on the STLS efforts in San Mateo County.

2.1. 2000 through 2015

From 2000 to 2015, SMCWPPP and others conducted periodic sediment sampling programs in San Mateo County to begin to characterize the distribution of PCBs in various land uses throughout the urban landscape and identify catchments and properties within catchments that are potential sources of PCBs to the MS4. During this period, over 270 sediment samples were collected in San Mateo County, mainly from streets and MS4s in the public right-of-way (e.g., storm drain lines accessed via manholes, storm drain inlets, drainage channels, and pump station sumps). The samples were analyzed for PCBs congeners, total mercury, and ancillary analytes (KLI and EOA 2002, SMSTOPPP 2002, 2003, and 2004, Yee and McKee 2010, SMCWPPP 2015, and CW4CB 2017a). The remainder of this section provides more details about these sediment monitoring efforts.

The initial step in the sediment sampling programs was a 2000 and 2001 collaborative project among SMCWPPP and other Bay Area countywide stormwater programs referred to as the Joint Stormwater Agency Project (JSAP). The JSAP measured concentrations of PCBs, mercury and other pollutants in embedded sediments collected from stormwater conveyance systems in San Mateo County and other parts of the Bay Area (KLI and EOA 2002). The primary goal was to characterize the distribution of pollutants among land uses in watersheds draining to the Bay.

In follow-up to the JSAP regional survey, SMCWPPP and other Bay Area countywide stormwater programs began performing “case studies” in some areas where relatively elevated PCBs were found during the JSAP. The primary goals were to develop methods to identify PCBs sources and begin to identify measures to address any controllable sources found. The techniques employed included collection and analysis of embedded stormwater conveyance sediment samples and research on historical and current land use. In the early 2000s, SMCWPPP completed PCBs case study work in four San Mateo County areas where elevated levels of PCBs were found during the JSAP survey. The case studies investigated the Bradford and Broadway pump station drainages in Redwood City, the South Maple pump station drainage in South San Francisco, an area in the vicinity of Colma Creek, and the Pulgas Creek pump station drainage in San Carlos (SMSTOPPP 2002, 2003, and 2004).

In 2007, a State of California Proposition 13 grant-funded study by the San Francisco Estuary Institute (SFEI) collected street dirt and MS4 sediment samples in the City of San Carlos in San Mateo County and other parts of the Bay Area (Yee and McKee 2010). In addition, beginning in 2010 SMCWPPP partnered with the Bay Area Stormwater Management Agencies Association (BASMAA) in the USEPA grant-funded Clean Watersheds for a Clean Bay (CW4CB) project to conduct additional investigation of PCBs sources to the MS4 in the Pulgas Creek pump station drainage in San Carlos (CW4CB 2017a).

In 2014, SMCWPPP worked with San Mateo County MRP Permittees to conduct a process to screen for “high interest parcels” for PCBs in the county. The screening covered all land areas in the county that drain to the Bay. The process was generally consistent with a framework developed through a collaboration of SMCWPPP and the other Bay Area countywide stormwater programs in consultation with Regional Water Board staff. Parcels were identified that were industrialized in 1980 or earlier (i.e., old industrial parcels) or have other land uses associated with PCBs (i.e., electrical, recycling, and military). SMCWPPP then worked with municipal staff to prioritize these parcels based on the evaluation of existing information on current land uses and practices (e.g., redevelopment status, extent and quality of pavement, level of current housekeeping, any history of stormwater violations, and presence of electrical or heavy equipment, storage tanks, or stormwater treatment) identified via land use analysis, local institutional/historical knowledge, and surveys of site conditions (windshield, Google Street View, and/or aerial photograph). The prioritization resulted in a list of about 1,600 high interest parcels for PCBs in San Mateo County (SMCWPPP 2015a).

In January and February 2015, SMCWPPP designed a monitoring plan based on the above screening for high interest parcels and then collected 101 sediment samples from the urban storm drainage system (e.g., manholes, storm drain inlets) and public right-of-way surfaces (e.g., street gutters). The general goal was to continue attempting to identify potential source areas for PCBs. Samples were distributed among the nine municipalities that collectively encompass 93% of the old industrial land use in San Mateo County that drains to San Francisco Bay (SMCWPPP 2015a).

2.2. FY 2015/16

In FY 2015/16, SMCWPPP implemented a process to identify Watershed Management Areas (WMAs) and prioritize them based on the potential for reducing PCBs loads by implementing controls within each WMA. WMAs were defined as all catchments with high interest parcels and/or existing or planned stormwater pollutant controls (e.g., GI implemented on parcels per Provision C.3 requirements, built on public lands such as parks, or retrofitted into the public right-of-way (ROW)).

WMAs generally coincide with stormwater runoff hydrologic catchments in San Mateo County that drain to 24-inch or larger diameter outfalls. These urban catchments were originally delineated at this geographical scale as part of SMCWPPP’s program to help local agencies develop trash controls in San Mateo County (SMCWPPP 2014).² The process identified 110 catchments with high densities of high

²The WMA numbering system starts with the numerical designations (ranging from 0 to 408) used by SMCWPPP (2014). Additional WMAs were delineated for areas that contain parcels of interest but were not delineated in 2014, with numerical designations ranging from 1000 to 1017. These 18 WMAs were not necessarily hydrologic catchments. They combine areas that drain to outfalls ≥ 24-inches, drain directly to natural waterways including the Bay, and/or private drainages. Finally, additional WMAs were delineated that lack parcels of interest but include pollutant controls (mainly GI in old urban parcels that were redeveloped). These WMAs are not hydrologic catchments and were delineated for each Permittee that drains to the Bay. They were designated “Other –” followed by three letters representing the jurisdiction (e.g., Other – SSF for South San Francisco).

interest parcels (and usually with existing pollutant controls), and an additional 26 catchments with pollutant controls only, for a total of about 130 WMAs (SMCWPPP 2016a and b).

In FY 2015/16, SMCWPPP also participated in a BASMAA regional project to develop an interim accounting methodology to account for PCBs and mercury load reductions during MRP 2.0 associated with all control measures. The methodology is fully described by BASMAA (2017), a report that was approved by the Regional Water Board's Executive Officer in April 2017. Per MRP 2.0 requirements, the interim accounting methodology will eventually be replaced by more robust accounting methods, including a modeling approach for estimating pollutant loads reduced via GI and stormwater treatment, via the ongoing development of a Reasonable Assurance Analysis (RAA) and associated efforts.

Also in FY 2015/16, SMCWPPP worked with San Mateo County MRP Permittees to develop a database of existing and planned GI and stormwater treatment projects on parcels or in the public ROW in San Mateo County, including Low Impact Development (LID) measures at redevelopment sites. The database includes existing and planned GI and treatment facilities constructed in 2005 or later (SMCWPPP 2016b).

Finally, during the 2015/16 rainy season SMCWPPP collected eight composite samples of stormwater runoff. The samples were collected from outfalls at the bottom of WMAs that contain high interest parcels (i.e., with land uses associated with PCBs such as old industrial, electrical and recycling, as described above). The RMP STLS collected an additional seven stormwater runoff composite samples in San Mateo County in coordination with SMCWPPP. Composite samples consisting of six to eight aliquots collected during the rising limb and peak of the storm hydrograph (as determined through field observations) were analyzed for PCBs congeners, total mercury, and other analytes (SMCWPPP 2017a).

2.3. FY 2016/17

SMCWPPP's major FY 2016/17 efforts related to PCBs and mercury load reduction included the following:

- Collected 17 composite samples of stormwater runoff from outfalls at the bottom of WMAs that contain high interest parcels with land uses associated with PCBs. The RMP STLS collected an additional four stormwater runoff composite samples in San Mateo County in coordination with SMCWPPP. Composite samples consisting of six to eight aliquots collected during the rising limb and peak of the storm hydrograph (as determined through field observations) were analyzed for PCBs congeners, total mercury, and other analytes (SMCWPPP 2018).
- Collected 67 sediment samples as part of the program to attempt to identify source properties within WMAs. These samples were collected in the public ROW, including locations adjacent to high interest parcels. Individual and composite sediment samples collected from manholes, storm drain inlets, driveways, and sidewalks were analyzed for PCBs congeners, total mercury, and other analytes (SMCWPPP 2018).
- Worked with Permittees to update the database of existing and planned GI and stormwater treatment projects in San Mateo County. The database includes existing GI and treatment facilities constructed in 2005 or later and all known planned facilities (SMCWPPP 2017b).
- Continued updating and prioritizing the list of WMAs in San Mateo County (SMCWPPP 2017b).
- Summarized the preliminary PCBs and mercury load reductions achieved this permit term that had been quantified to-date (SMCWPPP 2017b).

2.4. FY 2017/18

SMCWPPP's major FY 2017/18 efforts related to PCBs and mercury load reduction included the following:

- Collected 13 composite samples of stormwater runoff from outfalls at the bottom of WMAs that contain high interest parcels with land uses associated with PCBs. The RMP STLS collected an additional two stormwater runoff composite samples in San Mateo County in coordination with SMCWPPP. Composite samples consisting of six to eight aliquots collected during the rising limb and peak of the storm hydrograph (as determined through field observations) were analyzed for PCBs congeners, total mercury, and other analytes (SMCWPPP 2019).
- Collected 57 sediment samples as part of the program to attempt to identify source properties within WMAs. These samples were collected in the public ROW, including locations adjacent to high interest parcels. Individual and composite sediment samples collected from manholes, storm drain inlets, driveways, and sidewalks were analyzed for PCBs congeners, total mercury, and other analytes (SMCWPPP 2019).
- Continued working with San Mateo County MRP Permittees to update the database of existing and planned GI and stormwater treatment projects in the County. The database includes existing GI and treatment facilities constructed in 2005 or later and all known planned facilities (SMCWPPP 2018b).
- Summarized the preliminary PCBs and mercury load reductions achieved this permit term that had been quantified to-date (SMCWPPP 2018b).
- Began evaluating opportunities to take credit for PCBs and/or mercury loads avoided due to contaminated site cleanups (referred to as "self-abatements") in San Mateo County that were initiated during 2005 or later, typically a result of enforcement actions to remediate sites overseen by federal or state regulatory agencies. Cleanups completed during the MRP 2.0 permit term that prevent the discharge of PCBs to storm drains should result in credit towards MRP 2.0 load reduction requirements. This evaluation may also lead to opportunities to identify additional PCBs source properties that could be referred to the Regional Water Board for further investigation and abatement, either because cleanup at a site was never completed, or because the cleanup standards applied were not adequate relative to TMDL goals for reducing pollutant loads in stormwater runoff.
- Worked with San Mateo County Permittees to begin evaluating new or enhanced municipal O&M activities implemented in 2005 or later that may remove sediments containing PCBs and/or mercury, including any opportunities to monitor existing activities (e.g., via analysis of sediments removed for PCBs and mercury) and/or readily enhancing existing actions to reduce pollutant loads (i.e., "no missed opportunities"). The types of municipal O&M evaluated include maintenance of MS4 infrastructure (e.g., channel desilting and cleanout and/or retrofit of detention ponds, flood control basins, pump stations or storm drain inlets).

2.5. FY 2018/19

During FY 2018/19, SMCWPPP continued identifying areas of interest and opportunity for PCBs and mercury controls, including refining the list of WMAs and their prioritization. This is a multi-year process designed to identify the land areas in San Mateo County that contribute relatively high loads of PCBs and/or mercury to MS4s. Consistent with MRP requirements, the focus remained on PCBs, with ancillary/secondary benefits assumed to be realized for controlling mercury. SMCWPPP's major FY 2018/19 efforts related to PCBs and mercury load reduction included the following:

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- Continued working with San Mateo County MRP Permittees to update the database of existing and planned GI and stormwater treatment projects in San Mateo County. The database includes existing GI and treatment facilities constructed in 2005 or later and all known planned facilities (see Section 4.0).
- Submitted two source property referrals (both in San Carlos) to the Regional Water Board (see Section 4.15):
 - 270 Industrial Road / 495 Bragato Road, San Carlos
 - 977 and 1007/1011 Bransten Road, San Carlos
- Summarized the preliminary PCBs and mercury load reductions achieved this permit term that had been quantified to-date (see Section 5.0).
- Collected 25 sediment samples as part of the program to attempt to identify source properties within WMAs. These samples were collected in the public ROW, including locations adjacent to high interest parcels. Individual and composite sediment samples collected from manholes, storm drain inlets, driveways, and sidewalks were analyzed for PCBs congeners, total mercury, and other analytes. In addition, in FY 2018/19 the RMP STLS collected two stormwater runoff composite samples in San Mateo County in coordination with SMCWPPP. The full results of this WY 2019 POC monitoring program will be reported with SMCWPPP's Integrated Monitoring Report, which is due March 2020.
- Continued evaluating opportunities to take credit for PCBs and/or mercury loads avoided due to contaminated site cleanups (referred to as "self-abatements") in San Mateo County that were initiated during 2005 or later, typically a result of enforcement actions to remediate sites overseen by federal or state regulatory agencies. Cleanups completed during the MRP 2.0 permit term that prevent the discharge of PCBs to storm drains should result in credit towards MRP 2.0 load reduction requirements.
- Worked with San Mateo County Permittees to continue evaluating new or enhanced municipal O&M activities implemented in 2005 or later that may remove sediments containing PCBs and/or mercury, including any opportunities to monitor existing activities (e.g., via analysis of sediments removed for PCBs and mercury) and/or readily enhancing existing actions to reduce pollutant loads (i.e., "no missed opportunities"). The types of municipal O&M evaluated include maintenance of MS4 infrastructure (e.g., channel desilting and cleanout and/or retrofit of detention ponds, flood control basins, pump stations or storm drain inlets).

The PCBs load reduction credited when a source property is referred to the Regional Water Board is directly proportional to the area of the referred property (acres is the unit used in the load reduction calculation). In September 2018, SMCWPPP conducted an analysis of total industrial area and average industrial parcel size among the four most populous counties in the MRP area, based on county assessor parcel data. Table 2.1 and Figure 2.1 show the results (it is important to note that the y-axis of Figure 2.1 is on a log scale). The total industrial acreage and average industrial parcel size are much lower in San Mateo County relative to the other counties, illustrating the challenge for San Mateo County Permittees to achieve PCBs load reductions via source property referrals compared to the other counties. In particular, even though the total population of Contra Costa County is roughly only 50% greater than San Mateo County, the total industrial acreage and average industrial parcel size in Contra Costa County exceeds San Mateo County by roughly a factor of four and six, respectively.

Table 2.1 Total Industrial Acreage and Average Industrial Parcel Size in Most Populous MRP Counties

	San Mateo County	Alameda County	Contra Costa County	Santa Clara County
Total Industrial Area (acres)	3,043	14,034	12,833	16,039
Average Industrial Parcel Size (acres)	1.25	2.03	7.55	3.00

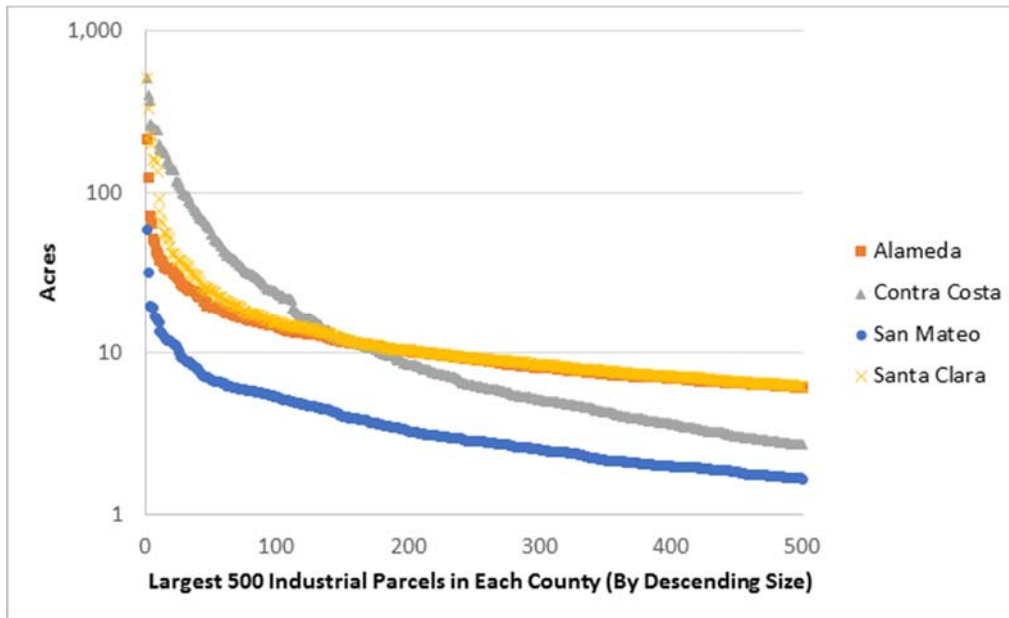


Figure 2.1. Area of 500 Largest Industrial Parcels in Most Populous MRP Counties

3.0 SUMMARY OF CONTROL MEASURES

Permittees have implemented a variety of control measures since the development of PCBs and mercury urban stormwater loading estimates incorporated into the TMDLs. Control measures were implemented to reduce PCBs and/or mercury in stormwater and/or other impacts of stormwater runoff. The control measures that have a direct benefit towards reducing the impacts of PCBs and mercury on the Bay are documented in this plan.

The types of control measures implemented to control PCBs and mercury in stormwater runoff generally fall into the following three categories:

- **True Source Controls (Load Avoidance)** – Controls that focus on the original source or use of a potential pollutant. True source controls include regulations and laws adopted to minimize or eliminate the use of a pollutant for specific activities and pollution prevention activities, such as inspections, that identify high risk practices that could release PCBs or mercury into the environment. The one true source control for mercury is the reduction of mercury in devices and equipment as a result of legislation or voluntary reduction by manufacturers. No additional true source controls are currently available for PCBs due to the production of these organic compounds being banned in the 1970s and the tight regulation of PCBs still in use.
- **Source Controls (Load Reduction)** – Source controls are load reduction control measures that reduce the risk of the pollutant entering the environment after it has already been used in devices/materials/equipment, or that intercept the pollutant before it is discharged to a receiving water body. The control measure types that fall into this category include: source property abatement, enhanced street sweeping, MS4 and flood control facility maintenance, mercury device recycling, and the control of PCBs-containing material during building demolition/renovation.
- **Treatment Controls (Load Reduction)** – Treatment controls are load reduction control measures that remove pollutants via physical, biological, or chemical processes. The control measure types that fall into this category include stormwater treatment measures, GI, and diversions of stormwater to Publicly Owned Treatment Works (POTWs).

Control measures needed to address PCBs and mercury load reduction criteria included in MRP 2.0 are currently under development by Permittees based on continued evaluations of sources of these contaminants and load reduction benefits associated with existing control measures. To the extent possible with the available information, control measures implemented to-date and those planned for implementation within each WMA during the term of MRP 2.0 are summarized in Section 4.0, consistent with MRP requirements.

Descriptions of each control measure type that Permittees may implement or cause to be implemented by other responsible parties to control PCBs and/or mercury are provided below.

3.1. Source Property Identification and Abatement

Source Property Investigation and Referral Process

PCBs and mercury source properties discharge these pollutants to the MS4s. One typical mechanism is for on-site contaminated surface soils to be mobilized by stormwater runoff, wind and/or vehicles and enter on-site or off-site storm drains. Identification and subsequent abatement of these properties

and/or focused control measure implementation in the public ROW around source properties can provide an opportunity for PCBs and mercury stormwater load reductions. Reductions occur through the abatement of properties via available mechanisms, including referrals to the Regional Water Board or through enforcement actions brought against property owners by Permittees.

San Mateo County MRP Permittees continue to implement a program to attempt to identify source properties in priority WMAs. These investigations typically include the following tasks:

- 1) Property records and aerial photography review;
- 2) Public ROW surveys and/or property inspections;
- 3) Private property and public ROW soil/sediment sampling; and
- 4) Reporting and planning/identifying control measures (including planning referrals).

As source properties are identified, information regarding pollutant concentrations observed, evidence of transport to the MS4, property ownership, previous stormwater violations, and any other pertinent information is documented. Additionally, the location and geographical extent of the property is delineated in GIS to facilitate the calculation of PCBs and mercury load reductions.

In October 2018, SMCWPPP submitted two source property referrals (both in San Carlos) to the Regional Water Board (Section 4.15). In addition, SMCWPPP and San Mateo County Permittees will continue attempting to identify source properties for referral to the Regional Water Board, based on the evaluation of the results of the WY 2019 POC monitoring program and other appropriate data, as it becomes available.

Review of Contaminated Site Cleanups (Potential Self-Abatements)

In addition to the source property investigations and referral process described above, SMCWPPP has also been evaluating opportunities to take credit for PCBs and mercury loads avoided due to contaminated site cleanups in San Mateo County that were initiated during 2005 or later, since these cleanups are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. The cleanups are referred to as “self-abatements” and are typically a result of enforcement actions with cleanup oversight by federal, state and local regulatory agencies, including United States Environmental Protection Agency (USEPA), California Department of Toxic Substance Control (DTSC), the Regional Water Board, and/or local municipal agencies. In addition, cleanups completed during the MRP 2.0 permit term should result in credit towards MRP 2.0 load reduction requirements. Investigation of contaminated site cleanups may also lead to opportunity to identify additional PCBs source properties that could be referred to the Regional Water Board for further investigation and abatement, either because cleanup at a site was never completed, or because the cleanup standards applied were not adequate relative to TMDL goals for reducing pollutant loads in stormwater runoff.

Regional Water Board staff has compiled a list of contaminated sites that were or are targeted for cleanup of soil and/or groundwater impacts under USEPA, DTSC, Regional Water Board, or local municipal agency oversight. The list was compiled primarily from a review of online databases, including DTSC’s Envirostor and the State Water Resource Control Board’s GeoTracker, and targeted sites that may have been associated with PCBs. The purpose in compiling this list was so that Regional Water Board staff could follow-up with the oversight agencies to ensure stormwater runoff concerns were or will be adequately addressed as part of the cleanups. The list has been updated periodically as new information

becomes available. SMCWPPP is reviewing the latest versions of the Regional Water Board list to help identify PCBs and mercury cleanup sites in San Mateo County. SMCWPPP is also in the process of reviewing online databases (Envirostor and GeoTracker) to review site histories and cleanup records, and compile the information needed to determine the cleanup status of the site, justify calculating any pollutant load reductions for the site cleanup, and document the data inputs needed to calculate loads avoided. The following information is being collected, as available:

- Area of the site;
- Current cleanup status;
- Date of cleanup;
- Evidence of PCBs on the site prior to cleanup (i.e., pre-cleanup PCBs concentrations in soils or groundwater);
- Cleanup/abatement methods;
- Evidence of adequate PCBs cleanup at the site (e.g., post-cleanup PCBs concentrations in soils or groundwater);
- Available evidence to justify designation as a potential PCBs source property for referral to Regional Water Board; and
- Documentation of any follow-up needed at the site.

3.2. Green Infrastructure and Treatment Control Measures

Green Infrastructure

Green infrastructure (GI) and other treatment controls may be installed in roadway and storm drain infrastructure in the public ROW to treat stormwater runoff (e.g., construction of green streets). GI may be retrofitted into existing infrastructure or included as part of new infrastructure capital improvement projects (e.g., transportation improvements such as street projects). In addition, applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via GI/LID techniques or equivalent. Installation of GI facilities on private property or public lands in San Mateo County continues to improve stormwater quality and help reduce PCBs and mercury loads. GI facilities include infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. Examples of GI include bioretention, LID, green/complete streets, and other systems that generally use the natural filtration or infiltration of stormwater.

MRP 2.0 requires that a 370 grams/year PCBs load reduction is achieved in San Mateo County by the end of this permit term. Of this, at least 15 grams/year must be achieved via GI. For the purposes of tracking and crediting pollutant load reductions achieved through GI and stormwater treatment, During FY 2015/16, SMCWPPP staff worked with San Mateo County MRP Permittee staff to begin developing a database of existing and planned public and private GI and stormwater treatment projects in San Mateo County, including GI/LID measures at redevelopment sites and GI installed in the public ROW during infrastructure projects (SMCWPPP 2016b). The database includes existing and planned GI and treatment facilities constructed in 2005 or later since these facilities are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. In addition, 2005 was the year that San Mateo County's municipal stormwater permit was amended to include more stringent Provision C. 3

requirements; thus most new or redevelopment projects constructed in 2005 or later include stormwater treatment.

The types of information in the database of existing and planned public and private GI and stormwater treatment projects in San Mateo County include the following:

- Project name
- Description of GI and stormwater treatment system(s)
- Location - street address or location description and coordinates
- Whether the facility is located on private property or in public ROW
- Area treated by facility (acres)
 - For GI/LID at redevelopment or new developments sites, this is generally assumed to be the project area
 - For Green Street or other retrofits in public ROW, estimated drainage area to facility
- Hydraulic sizing criteria
- Date of construction
 - Existing facilities: date of construction completion (e.g., initial inspection sign-off)
 - Planned facilities: estimated construction completion date

During FYs 2016/17, 2017/18 and 2018/19, SMCWPPP staff continued working with municipal staff to update the GI database with available new or revised information. For each San Mateo County Permittee with urban areas that drain to San Francisco Bay, a summary of the information gathered to-date on existing and planned GI and stormwater treatment facilities is presented in Section 4.0 of this report. Preliminary load reductions calculated for all GI and stormwater treatment implemented in San Mateo County during the MRP 2.0 permit term are reported in Section 5.0.

The information in this section and Section 4.0 also helps to fulfill the requirement in MRP Provision C.3.j.iv to report on development and implementation of methods to track and report implementation of GI. Section 3.0 of SMCWPPP's 2018/19 Annual Report provides more information about SMCWPPP's efforts to track GI on behalf of San Mateo County MRP Permittees.

Trash Full Capture Systems

Trash full capture systems are devices or series of devices that trap all particles retained by a 5mm mesh screen and have a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the tributary drainage catchment area. Examples of full capture systems include storm drain inlet screening devices that treat relatively small areas to hydrodynamic separators and netting devices treating hundreds or thousands of acres.

To-date, two hydrodynamic separators (which are a type of large trash full capture system) have been retrofitted into the MS4 in urban areas of San Mateo County that drain to the Bay (one system is in Foster City and the other is in the City of San Mateo). A summary of the information gathered to-date on these trash full capture systems is presented in Sections 4.8 and 4.16 of this report. Preliminary load reductions estimated for these systems are included in Section 5.0.

3.3. Municipal O&M Activities that Potentially Remove Sediments with PCBs and/or Mercury

SMCWPPP is working with San Mateo County MRP Permittees to continue evaluating new or enhanced municipal O&M activities that may remove sediments containing PCBs and/or mercury. SMCWPPP is tracking actions implemented in 2005 or later since these actions are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. The types of municipal O&M evaluated are described below. As part of this evaluation SMCWPPP is assessing whether new or enhanced municipal O&M activities were implemented or planned for implementation during the MRP 2.0 permit term.

Street Sweeping and Flushing

Most San Mateo County Permittees conduct street sweeping, which along with trash and debris also removes sediments and particle-bound pollutants such as PCBs and mercury to some extent. If enhancements are made by San Mateo County MRP Permittees to street sweeping programs that would increase PCBs and mercury removal from stormwater runoff, the associated pollutant load reductions will be documented.

In addition to traditional street sweeping, street flushing may also provide pollutant reduction benefits in stormwater runoff. Street flushing includes pressure washing and/or the use of water to flush streets of sediment, trash and sediment-associated pollutants, then collecting and properly disposing of the water, sediments and pollutants. A street flushing pilot project was conducted in San Carlos during MRP 1.0 (CW4CB 2017b). However, additional street flushing projects have not occurred in San Mateo County under MRP 2.0 to-date. If street flushing projects are implemented by San Mateo County MRP Permittees in the future, pollutant load reductions associated with this control measure will be documented.

MS4 Line Flushing

Occasionally, opportunities present themselves to remove PCBs or mercury associated sediment deposited in MS4 lines. These opportunities typically do not occur often because the traditional MS4 is designed to convey stormwater (and associated sediments) effectively through the system. MS4 line flushing pilot projects have been conducted in the Bay Area, but not in San Mateo County to-date. If MS4 line flushing projects are implemented by San Mateo County MRP Permittees, load reductions associated with this control measure will be documented.

Storm Drain Inlet Maintenance

Municipalities periodically conduct storm drain inlet maintenance (e.g., clean-outs of catch basins). Most San Mateo County MRP Permittees inspect and maintain their inlets annually. Through these efforts, sediment and organic material (and associated pollutants) are removed from the MS4. If enhancements are made by San Mateo County MRP Permittees to inlet maintenance programs that would increase PCBs and mercury removal from stormwater runoff, the associated pollutant load reductions will be documented.

Channel and Pump Station Maintenance

San Mateo County MRP Permittees periodically remove sediment from storm drain channels and pump stations as part of their ongoing maintenance programs. As sediment and organic material are removed, sediment-associated pollutants such as PCBs and mercury are also removed. If enhancements are made

by San Mateo County MRP Permittees to channel and pump station maintenance programs that would increase PCBs and mercury removal from stormwater runoff, the associated pollutant load reductions will be documented.

3.4. Managing PCBs in Building Materials

PCBs were used in many applications and materials in buildings, especially those constructed from about 1950 through 1980. MRP 1.0 required the implementation of a pilot project to assist in developing management practices that address legacy caulks containing PCBs. Permittees complied with this requirement by participating in a regional project led by the San Francisco Estuary Partnership (SFEP) that: 1) evaluated PCBs levels in caulk in buildings; and 2) developed preliminary BMPs, a Model Implementation Process, and associated model policies and ordinances to reduce or prevent the release of PCB-laden caulks to the environment during demolition of Bay Area buildings.

Building upon the requirements in MRP 1.0, MRP 2.0 Provision C.12.f requires Permittees to develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs concentrations of 50 parts per million or greater in applicable structures³ at the time such structures undergo demolition, so that PCBs do not enter municipal storm drain systems. A Permittee is exempt from this requirement if it provided evidence acceptable to the Executive Officer in its FY 2016/17 Annual Report that the only buildings that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame buildings.

Permittees were required to develop a protocol by June 30, 2019 that includes each of the following components, at a minimum:

- The necessary authority to ensure that PCBs do not enter municipal storm drains from PCBs-containing materials in applicable structures at the time such structures undergo demolition;
- A method for identifying applicable structures prior to their demolition; and,
- Method(s) for ensuring PCBs are not discharged to the municipal storm drain from demolition of applicable structures.

By July 1, 2019 and thereafter, Permittees are required to:

- Implement or cause to be implemented the PCBs management protocol for ensuring PCBs are not discharged to municipal storm drains from demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff; and,
- Develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

On behalf of MRP Permittees, BASMAA conducted a multi-year regional project to assist MRP Permittees to address Provision C.12.f. The BASMAA project, which began in FY 2016/17 and was completed in March 2019, assisted Permittees in developing local programs to manage PCBs-containing materials during building demolition. It developed guidance materials, tools and training materials and conducted outreach. SMCWPPP actively participated in the project, including providing BASMAA's project manager.

³ Applicable structures are buildings built or remodeled from January 1, 1950 through December 31, 1980, with the following exemptions: single-family residential buildings, wood-framed buildings, and partial building demolitions.

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At the outset of the project, a BASMAA Steering Committee was convened to provide project oversight and guidance during the project. The Steering Committee included BASMAA Directors, countywide stormwater program staff, and Permittee staff from various relevant municipal departments. The Steering Committee met periodically throughout the project. In addition, a project TAG, a small balanced advisory group formed from industry, regulatory, and Permittee representatives to provide review and input on selected project work products, was convened. The TAG was comprised of representatives from industry and state/federal regulatory agencies, and Permittees. Other efforts to engage key stakeholders included an industry stakeholder roundtable meeting (August 2017) and two larger stakeholder group meetings (December 2017 and May 2018) that included industry, regulatory and municipal representatives. During FY 2018/19, Permittees tailored the BASMAA products for local use, adopted the program (e.g., via local policy or ordinance), and trained local staff to implement the new program starting July 1, 2019.

Key BASMAA project deliverables provided to each Permittee to use as appropriate given local procedures and needs included:

- A protocol for pre-demolition building survey for priority PCBs-containing building materials;
- Model language for municipal adoption (e.g., ordinance) of the new program to manage PCBs materials during building demolition and model supporting staff report and resolution;
- CEQA strategy and model notice of exemption;
- Supplemental demolition permit model application materials, including forms, process flow charts, and applicant instructions; and
- An analysis to assist municipalities that pursue cost recovery.

Other project deliverables included:

- A coordination/communication strategy for the project;
- A technical memorandum summarizing any new information & decisions needed by BASMAA at outset, including an annotated table of regulatory drivers and relevant requirements;
- A technical memorandum with the state of the practice for identifying PCBs-containing building materials (developed to inform development of the pre-demolition building survey protocol listed below);
- Industry stakeholder outreach materials and a fact sheet for municipal staff;
- A spreadsheet tool used to develop the prioritized list of potential PCBs-containing building materials that the demolition program will focus on;
- A conceptual approach for an assessment methodology and data collection program to quantify PCBs loads reduced through managing PCBs-containing materials during building demolition.

During FY 2018/19, the BASMAA project concluded by conducting the following outreach and training tasks:

- Prepared training materials for municipal staff on adoption and implementation of the new program;

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- Developed outreach materials and a standard presentation to inform industry stakeholders including developers, planning firms, urban planning non-governmental organizations, demolition firms, property owners, property managers, and realtors about the new program to manage PCBs in building materials during demolition;
- Using the above training materials, conducted training workshops (in-person and a webinar) for key municipal and countywide stormwater program staff;
- Conducted a webinar for industry stakeholders; and
- Developed a list of Bay Area opportunities, including contact information and dates, for municipal and/or stormwater program staff to conduct additional outreach to industry stakeholders using the above industry outreach materials.

In addition, during FY 2018/19 MRP Permittees worked together through the BASMAA Monitoring and Pollutants of Concern Committee (MPC) to begin developing a framework to comply with data collection/evaluation and reporting requirements under Provision C.12.f. As mentioned previously, these requirements include developing an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the new program. The preliminary regional process developed to-date includes the following steps:

1. The municipality informs demolition permit applicants that their projects are subject to the MRP Provision C.12.f requirements, necessitating, at a minimum, an initial screening for priority PCBs-containing materials.
2. For every demolition project, applicants complete and submit a version of BASMAA's model "PCBs Screening Assessment Form" (Screening Form) or equivalent to the municipality.
3. The municipality reviews the Screening Form to make sure it is filled out correctly and is complete and works with the applicant to correct any deficiencies.
4. The municipality then issues the demolition permit or equivalent, according to its procedures.⁴
5. For Applicable Structures only, the municipality submits completed Screening Forms and any supporting documents (consultant's report from PCBs building survey, QA/QC checklist, and lab reports) to its countywide program; forms for exempt sites need not be submitted. Forms should be submitted to the countywide programs electronically if feasible, and at a minimum annually, but quarterly is preferred.
6. The countywide programs compile the completed Screening Forms and any supporting documents. The countywide program then works with the other MRP countywide programs through BASMAA to manage and evaluate the data, and to assist Permittees with associated MRP reporting requirements.

⁴ Municipalities should require that applicants fill out and certify a Screening Form for every demolition. For non-Applicable Structures, applicants simply check the boxes, certify, and submit to municipality. Then the municipality can authorize the demolition (e.g., issue a demolition permit). In general, municipalities should have a completed and certified Screening Form before authorizing a demolition, unless they are a small community that is exempt or has some other arrangement with Regional Water Board staff. But there is no need to track non-Applicable Structures otherwise.

Permittees began implementing the program on July 1, 2019. The MRP stipulates a collective PCBs load reduction credit of 246.67 grams/year for San Mateo County Permittees, if all the Permittees implement a program consistent with the permit requirements.

3.5. Managing PCBs in Storm Drain or Roadway Infrastructure

Studies in areas outside of the Bay Area have shown that PCBs may be present in storm drain and/or roadway infrastructure due to their use in caulks and sealants in the mid to late 20th century. Provision C.12.e of MRP 2.0 requires Permittees to evaluate the presence of PCBs in caulks/sealants used in storm drain or roadway infrastructure in public ROWs by collecting samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement. BASMAA completed a regional project to address this permit requirement on behalf of all MRP Permittees. The results of the study are documented in a project report that was submitted with SMCWPPP's FY 2017/18 Annual Report.

3.6. Diversions of Urban Runoff to Wastewater Treatment Facilities

The diversion of urban runoff (i.e., dry weather flows and/or stormwater runoff) to existing wastewater treatment facilities could potentially reduce PCBs and mercury loads to the Bay. A study was conducted in the City of San Carlos during MRP 1.0 to evaluate diversion of urban runoff to a publicly-owned treatment works (POTW). Stormwater runoff collected at the Pulgas Creek Pump Station (PCPS) during WY 2013 and WY 2014 rainfall events was diverted to a regional domestic wastewater treatment plant that is located in Redwood City and operated by Silicon Valley Clean Water (SVCW). The PCPS drains catchments with primarily old industrial land uses with the most elevated concentrations of PCBs in MS4 sediment and stormwater runoff samples collected to-date in San Mateo County. The study included monitoring PCBs and mercury concentrations in the diverted stormwater runoff. In addition, an engineering firm was retained to provide conceptual designs and associated planning-level costs for two full-scale design options (gravity or pumped flow) for diversions from the PCPS to the SVCW treatment plant. The pumped flow design included repurposing an existing sanitary sewer booster pump station located adjacent to the PCSC.

Both designs accounted for capacity limitations in the local sanitary sewer collection system during wet weather conditions. The City of San Carlos' sanitary sewer system is susceptible to overflows during storm events due to infiltration and inflow (I/I) of groundwater and stormwater into the collection system. The City entered a Consent Decree with San Francisco Baykeeper in 2010 which requires implementation of measures to reduce sanitary sewer overflows (SSOs), which led to development of a January 2013 Sewer Collection System Master Plan. For this study, a hydraulic model developed during the master planning process was used to analyze the capacity of the collection system for conveying flows from the PCPS to the SVCW treatment plant during rainfall events. Not surprisingly, the model indicated that the collection system had limited capacity to accept additional flows during wet weather conditions without causing system overflows or surcharge.

Based upon the study monitoring and conceptual designs, the estimated pollutant loads that could be diverted from reaching the Bay by a full-scale pumped or gravity flow diversion from the PCPS to the SVCW treatment plant were relatively low (2 to 5 grams/year of PCBs and < 1 gram/year of mercury). Planning-level estimated costs ranged from \$11,000 to \$23,000 per gram of PCBs diverted to the treatment plant. Given the relatively low effectiveness in terms of pollutant load reduction and the relatively high costs, a full-scale diversion at the PCPS did not appear cost-effective compared to other PCBs controls and was not pursued further (SMCWPPP 2015b).

3.7. Addressing Illegal Dumping

This source control measure category entails addressing illegal dumping of waste (e.g., construction and demolition debris, stockpiles, spilled materials) containing PCBs or mercury to prevent it from entering MS4s. If enhancements are made by San Mateo County MRP Permittees to programs that address illegal dumping and would prevent PCBs or mercury removal from entering stormwater runoff, the associated pollutant load reductions will be documented.

3.8. Mercury Reduction via Hazardous Waste Collection Programs

Many types of devices and equipment (e.g., thermometers, switches, and fluorescent lamps) can contain mercury. When these devices are not adequately managed at their end-of-life, mercury can be released into the environment and become available to stormwater runoff. Control measures currently implemented by Permittees that address the potential for mercury releases include: 1) the support of policies and laws that reduce the mass of mercury in specific devices/equipment; and 2) the implementation of recycling programs that reduce the risk of mercury from being released at the end-of-life of these devices and equipment.

San Mateo County municipalities participate in San Mateo County Health Department's Household Hazardous Waste (HHW) Program and Very Small Quantity Generator Business Collection (VSQG) Program. The HHW Program offers residents the opportunity to drop-off mercury-containing devices and equipment and other hazardous wastes at designated drop-off points or drop-off events free of charge. The VSQG Program provides an inexpensive hazardous waste disposal option to eligible businesses, non-profits, and other government agencies that generate less than 100 kilograms of waste per month. It operates by appointment only and charges a fee to cover the cost of transportation and disposal. Many San Mateo County municipal agencies promote the availability of the HHW Program and VSQG Program on their agency websites. The estimated mass of mercury collected in FY 2018/19 via these programs is presented in Section 5.0.

4.0 EXISTING AND PLANNED CONTROL MEASURES

SMCWPPP is tracking all existing and planned control measures that should result in pollutant load reduction credits towards meeting the San Mateo County portion of the PCBs and mercury TMDL wasteload allocations and MRP 2.0 load reduction requirements. All existing controls that commenced or were enhanced in 2005 or later are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. This year was selected because load reductions due to controls fully implemented before 2005 were already accounted for in the PCBs TMDL baseline urban runoff load estimate. As part of the evaluation SMCWPPP is assessing whether each existing or planned control would represent a new action or an enhancement during the MRP 2.0 permit term, including a period immediately preceding the permit term.⁵ In addition to credit towards TMDL goals, such controls should result in credit towards the MRP 2.0 requirement that a 3,000 grams/year PCBs load reduction is achieved across the MRP 2.0 area by the end of the permit term. Of this, an interim 500 grams/year reduction was required by June 2018, which was achieved on a regional basis (see SMCWPPP's FY 2017/18 Annual Report for more details). In addition, MRP 2.0 requires that at least 15 grams/year PCBs load reduction in San Mateo County is achieved via GI by the end of the permit term. The permit also requires a 6 grams/year mercury load reduction in San Mateo County via GI by the end of the permit term. The GI load reductions have already been achieved (see Sections 5.2 and 5.3).

The WMAs identified in San Mateo County and the associated control measures currently implemented (i.e., existing) or the control measures under development (i.e., planned) within these WMAs to-date are described for each San Mateo County Permittee in Sections 4.1 through 4.19. Each WMA and the GI/LID facilities within it are mapped in Appendix A, Figures A-1 through A-19. The Cities of Half Moon Bay and Pacifica drain to the Pacific Ocean and therefore were not included below, since this plan is focused on the PCBs and mercury TMDLs for San Francisco Bay. The inventory is organized alphabetically by Permittee and includes information on control measures in each WMA compiled by SMCWPPP to-date. It is important to note that the below summaries may not include all existing or planned control measures. The inventory will continue to be updated and refined as additional information becomes available. The land uses referenced in this report, including in Sections 4.1 through 4.19 below, are described in Appendix B.

⁵Based on language in the MRP and discussions with Regional Water Board staff, it is assumed that applicable controls implemented from July 1, 2013 through the end of the permit term should result in credit towards these load reduction requirements.

4.1. Town of Atherton

Watershed Management Areas

Table 4.1 lists the five WMA’s identified to-date in the Town of Atherton, and its total land area and associated land uses.

Table 4.1. Atherton WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
238	San Francisco Bay	8	0%	0%	100%	0%	0%	0%
252	Atherton Creek	10	0%	2%	98%	0%	0%	0%
261	Redwood Creek	882	0%	1%	99%	0%	0%	0%
71	Ravenswood Slough	10	0%	17%	83%	0%	0%	0%
ATH	Multiple	2,314	0%	9%	87%	0%	4%	0%

Existing and Planned Control Measures Summary

Table 4.2 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Atherton.

Table 4.2. Existing (E) and planned (P) PCBs and mercury control measures in Atherton WMAs

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
238	E			E		E	E			E
252				E		E	E			E
261				E		E	E			E
71	E			E		E	E			E
ATH		E/P		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the Town of Atherton to-date in WMAs 71 and 238. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Atherton treat **14 acres** of land comprised of old urban land use. Of this total, **1.16 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.3). An additional **12.50 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Atherton is also pursuing a new multi-benefit GI facility to help reduce existing flooding issues in the lower reaches of Atherton Creek and reduce pollutant loads. A preliminary project design was developed in early 2018. The project was presented at the Town’s Park and Recreation Committee and Town Council multiple times. The project received significant public opposition with respect to siting the project in the Town’s only park (Holbrook-Palmer Park). As a result, the Council directed Town staff to evaluate other potential project locations at which a facility could be sited and still take advantage of the \$13.6 million funding commitment for the project from Caltrans. The project is now being proposed at Cartan Field located at Menlo College in Atherton. The project would include a diversion structure to re-direct all dry-weather urban runoff and the first flush of wet-weather runoff from the Atherton Channel through a pre-treatment device to remove trash, debris, and sediment before conveying the water into a buried multi-chambered storage/infiltration facility with a targeted storage capacity of eight to 10 acre-feet.

Table 4.3 Land area in the Atherton WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New & Redevelopment or Retrofit	ATH	1.16	0	1.16	0	0	0
	Total	1.16	0	1.16	0	0	0

- 1 – Preliminary - may not include all acres currently treated by GI and treatment controls.
- 2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.
- 3 – GI and treatment controls may include proprietary vault-based systems.
- 4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

The Town of Atherton conducted a one-time desilting of the Atherton Channel at Watkins Avenue and Station Lane in 2004/2005. Approximately 25 cubic yards of sediment was removed during this activity.

However, the sediment was not tested for PCBs and mercury. If the Town were to repeat this enhanced municipal O&M activity in the future it may be possible to test the sediment removed for PCBs and mercury and estimate the pollutant loads avoided.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures are present in Atherton or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.2. City of Belmont

Watershed Management Areas

Table 4.4 lists the six WMAs identified to-date in the City of Belmont, and their total land areas and associated land uses.

Table 4.4. Belmont WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
101	Laurel Creek	10	1%	3%	96%	0%	0%	0%
1011	Steinberger Slough	60	21%	49%	9%	11%	10%	0%
32	Steinberger Slough	27	0%	33%	66%	0%	1%	0%
60	Laurel Creek	270	5%	29%	60%	5%	1%	0%
77	Belmont Creek	59	16%	23%	52%	9%	0%	0%
BEL	Multiple	2,505	0%	12%	62%	2%	24%	0%

Existing and Planned Control Measures Summary

Table 4.5 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Belmont.

Table 4.5. Existing (E) and planned (P) PCBs and mercury control measures in Belmont WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
101	E			E		E	E			E
1011	E	E/P		E		E	E			E
32	E			E		E	E			E
60	E	E/P		E		E	E			E
77		E/P		E		E	E			E
BEL		E/P		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Belmont to-date in WMAs 101, 1011, 32, and 60. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Belmont treat **30 acres** of land, of which **1 acre** is comprised of old industrial land use and another **10.87 acres** is comprised of old urban land use. Of this total, **17.80 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.6). An additional **14.82 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Belmont is also planning to construct green streets on public lands or ROWs that will treat **1.42 acres** of land. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Table 4.6 Land area in the Belmont WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New & Redevelopment or Retrofit	60	2.74	0	2.74	0	0	0
	77	1.00	1.00	0	0	0	0
	1011	3.39	0	0	0	0	3.39
	BEL	10.67	0	10.67	0	0	0
	Total	17.80	1.00	13.41	0	0	3.39

- 1 – Preliminary - may not include all acres currently treated by GI and treatment controls.
- 2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.
- 3 – GI and treatment controls may include proprietary vault-based systems.
- 4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Belmont or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.3. City of Brisbane

Watershed Management Areas

Table 4.7 lists the four WMAs identified to-date in the City of Brisbane, and their total land areas and associated land uses.

Table 4.7. Brisbane WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1004	San Francisco Bay	721	72%	5%	2%	0%	21%	0%
17	Guadalupe Valley Creek	788	25%	11%	30%	0%	34%	0%
350	San Francisco Bay	8	14%	0%	2%	0%	84%	0%
BRI	Multiple	215	1%	10%	7%	25%	57%	0%

Existing and Planned Control Measures Summary

Table 4.8 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Brisbane.

Table 4.8. Existing (E) and planned (P) PCBs and mercury control measures in Brisbane WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1004	E	E/P		E		E	E			E
17	E	E/P		E		E	E			E
350	E			E		E	E			E
BRI				E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Brisbane to-date in WMAs 17, 350, and 1004. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Brisbane treat **38.43 acres** of land which is comprised of old industrial land use. All of this GI was built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.9). An additional **65 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Brisbane was also awarded funding from C/CAG in December 2017 for a Safe Routes to School / Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees imposed by C/CAG on registered vehicles in San Mateo County.

Table 4.9 Land area in the Brisbane WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	17	21.02	21.02	0	0	0	0
	1004	17.41	17.41	0	0	0	0
	Total	38.43	38.43	0	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

Brisbane may cleanout sediment in mixing basins that are downstream of an area where elevated PCBs in storm drain sediments have been observed. If the City were to conduct this enhanced municipal O&M activity it may be possible to test the sediment removed for PCBs and mercury and estimate the pollutant loads avoided.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures are present in Brisbane or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.4. City of Burlingame

Watershed Management Areas

Table 4.10 lists the 11 WMAs identified to-date in the City of Burlingame, and their total land areas and associated land uses.

Table 4.10. Burlingame WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1005	San Francisco Bay	18	30%	65%	3%	0%	2%	0%
1006	San Francisco Bay	290	26%	41%	17%	11%	5%	0%
138	San Francisco Bay	15	69%	11%	0%	0%	20%	0%
139	Sanchez Creek	63	8%	2%	90%	0%	0%	0%
141	Easton Creek	62	31%	15%	54%	0%	0%	0%
142	Easton Creek	20	71%	29%	0%	0%	0%	0%
149	San Francisco Bay	81	10%	11%	79%	0%	0%	0%
16	San Francisco Bay	24	31%	0%	0%	0%	69%	0%
164	El Portal Creek	241	49%	22%	28%	0%	0%	0%
85	El Portal Creek	121	48%	51%	0%	0%	0%	0%
BUR	Multiple	1,845	1%	19%	75%	1%	4%	0%

Existing and Planned Control Measures Summary

Table 4.11 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Burlingame.

Table 4.11. Existing (E) and planned (P) PCBs and mercury control measures in Burlingame WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1005	E			E		E	E			E
1006	E	E/P		E		E	E			E
138				E		E	E			E
139		E/P		E		E	E			E
141	E	E		E		E	E			E
142	E	E		E		E	E			E
149	E	P		E		E	E			E
16	E	P		E		E	E			E
164	E	E/P		E		E	E			E
85	E	P		E		E	E			E
BUR	E	E/P		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Burlingame to-date in the nine WMAs indicated by Table 4.11. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at green streets and new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Burlingame treat **45 acres** of land which is comprised of **7.57 acres** of old industrial and **37 acres** of old urban land uses. Of this, **12.04 acres** was built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.12). An additional **46 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Burlingame has six existing green street projects on public lands or ROWs that treat **2.37 acres** of old urban land use. Two of these project were completed during FY 2018/19, the Public Parking Lot H on El Camino Real and Ralston Avenue featuring rain gardens, and the California Drive Roundabout project with bioretention facilities. The Carolan Avenue Complete Streets Project featuring rain gardens, and reconstruction of the U.S. 101 / Broadway interchange featuring bioretention areas, were both completed in FY 2017/18. The Downtown Burlingame Streetscape Project featuring curb extensions and rain gardens was completed in 2014. The Donnelly Avenue Sustainable Streets and Parking Lot Demonstration project also featuring curb extensions and rain gardens was

completed in 2011. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Table 4.12 Land area in Burlingame WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	164	4.64	3.87	0.77	0	0	0
	1006	2.79	0	2.79	0	0	0
	BUR	2.24	0	2.24	0	0	0
	Total	9.67	3.87	5.80	0	0	0
Green Street or Regional Retrofit	139	0.04	0	0.04	0	0	0
	164	0.81	0	0.81	0	0	0
	BUR	1.52	0	1.52	0	0	0
	Total	2.37	0	2.37	0	0	0
Total - All GI		12.04	3.87	7.36	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Burlingame or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.5. Town of Colma

Watershed Management Areas

Table 4.13 lists the 3 WMAs identified to-date in the Town of Colma, and their total land areas and associated land uses.

Table 4.13. Colma WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
181	Colma Creek	21	1%	37%	1%	0%	60%	0%
329	Colma Creek	65	6%	91%	1%	0%	2%	0%
COL	Multiple	1,139	1%	12%	3%	0%	84%	0%

Existing and Planned Control Measures Summary

Table 4.14 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Colma.

Table 4.14. Existing (E) and planned (P) PCBs and mercury control measures in Colma WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
181				E		E	E			E
329		E		E		E	E			E
COL	E	E/P		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the Town of Colma to-date in WMA COL (Table 4.14). Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at green streets and new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Colma treat **33 acres** of land which includes **25 acres** of old urban land uses. Of this, **19 acres** was built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.15). An additional **6.73 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The Town was also awarded funding from C/CAG in December 2017 for a Safe Routes to School/Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees in San Mateo County. Colma has one existing green street project on public lands or ROWs that was constructed in 2015 and treats **0.93 acres** of old urban land use. Colma is currently planning to construct a second green street project on Mission Road.

Table 4.15 Land area in Colma WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	COL	18.14	0	11.28	0	0	6.86
Green Street or Regional Retrofit	COL	0.93	0	0	0	0	0.93
Total - All GI		19.07	0	11.28	0	0	7.79

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Colma or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.6. City of Daly City

Watershed Management Areas

Table 4.16 lists the six WMAs identified to-date in the City of Daly City, and their total land areas and associated land uses.

Table 4.16. Daly City WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1004	San Francisco Bay	50	5%	68%	24%	0%	3%	0%
181	Colma Creek	28	1%	91%	0%	0%	8%	0%
307	Colma Creek	161	3%	22%	69%	0%	6%	0%
329	Colma Creek	742	0%	46%	45%	0%	9%	0%
350	San Francisco Bay	269	5%	30%	41%	0%	24%	0%
DCY	Multiple	1,131	1%	20%	64%	0%	16%	0%

Existing and Planned Control Measures Summary

Table 4.17 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Daly City.

Table 4.17 Existing (E) and planned (P) PCBs and mercury control measures in Daly City WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1004	E	P		E		E	E			E
181		P		E		E	E			E
307				E		E	E			E
329		E/P		E		E	E			E
350	E	P		E		E	E			E
DCY		E/P		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Daly City to-date in WMAs 1004 and 350 (Table 4.17). Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Daly City treat **nearly 108 acres** of land, which is comprised of **1 acre** of old industrial and **107 acres** of old urban land use. All of this GI was built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.18). An additional **96 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Daly City was also awarded funding from C/CAG in December 2017 for a Safe Routes to School/Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees in San Mateo County.

Table 4.18 Land area in the Daly City WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	329	103.24	0	103.24	0	0	0
	DCY	4.52	1.02	3.50	0	0	0
	Total	107.76	1.02	106.74	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Daly City or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.7. City of East Palo Alto

Watershed Management Areas

Table 4.19 lists the eight WMAs identified to-date in the City of East Palo Alto, and their total land areas and associated land uses.

Table 4.19. East Palo Alto WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1015	San Francisco Bay	63	97%	3%	0%	0%	0%	0%
66	Ravenswood Slough	5	0%	1%	99%	0%	0%	0%
67	San Francisco Bay	95	17%	8%	64%	0%	11%	0%
68	San Francisquito Creek	317	1%	24%	70%	0%	4%	0%
70	San Francisco Bay	443	4%	25%	67%	0%	3%	0%
71	Ravenswood Slough	183	1%	20%	79%	0%	0%	0%
72	San Francisco Bay	26	79%	12%	0%	0%	9%	0%
EPA	Multiple	265	2%	18%	63%	0%	17%	0%

Existing and Planned Control Measures Summary

Table 4.20 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of East Palo Alto.

Source Property Investigation

Source property investigative work has been conducted in the City of East Palo Alto to-date in the seven WMAs indicated by Table 4.20. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Table 4.20. Existing (E) and planned (P) PCBs and mercury control measures in East Palo Alto WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1015	E	E/P		E		E	E			E
66	E			E		E	E			E
67	E	E/P		E		E	E			E
68		E		E		E	E			E
70	E	E/P		E		E	E			E
71	E			E		E	E			E
72	E	P		E		E	E			E
EPA	E	E		E		E	E			E

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in East Palo Alto treat **35 acres** of land which includes **13.5 acres** of old industrial and **16.5 acres** of old urban land uses. Of this, **17.77 acres** was built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.21). An additional **1.62 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City was also awarded funding from C/CAG in December 2017 for a Safe Routes to School/Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees in San Mateo County. The City currently has six green street projects on public lands and/or in public ROW that are either under construction or in the planning stages that will treat at least **2 acres** of land. Additional information will be documented when it becomes available.

Table 4.21 Land area in East Palo Alto WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	67	1.20	1.20	0	0	0	0
	68	1.77	0	1.77	0	0	0
	70	9.48	4.98	1.55	0	0	2.95
	1015	2.70	2.70	0.00	0	0	0
	EPA	2.62	0	0.62	0	0	2.00
	Total	17.77	8.88	3.94	0	0	4.95

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

The City of East Palo Alto has reported preliminary information about potential opportunities to conduct sediment removal activities from locations that may have elevated PCBs concentrations. A large volume of soil (~150,000 cubic yards) resulting from past remediation activities (e.g., on the Stanford Campus) and believed to contain PCBs was stockpiled on a private property at 391 Demeter Street in East Palo Alto. The owner had stockpiled soils there for decades and the site was under Regional Water Board order until 2008. The City was not responsible for removing this material but believes soils may have migrated into nearby wetlands. In general, the City is addressing this old industrial area as part of its Ravenswood Specific Plan Area. The site may be undergoing redevelopment and the soil stockpiles may have been removed with testing of the soils for PCBs and other pollutants. SMCWPPP is currently in the process of obtaining more information from East Palo Alto staff.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M, including channel desilting projects and cleanout of a stormwater pump station located at the east end of O’Connor Street and adjacent stormwater basin) are present in East Palo Alto or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.8. City of Foster City

Watershed Management Areas

Table 4.22 lists the two WMAs identified to-date in the City of Foster City, and their total land areas and associated land uses.

Table 4.22. Foster City WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1010	San Francisco Bay	271	19%	19%	1%	49%	11%	0%
FCY	Multiple	2,061	0%	7%	54%	31%	9%	0%

Existing and Planned Control Measures Summary

Table 4.23 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Foster City.

Table 4.23. Existing (E) and planned (P) PCBs and mercury control measures in Foster City WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1010		E/P	E	E		E	E			E
FCY		E/P		E		E	E			E

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the City of Foster City to-date.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Foster City treat **63 acres** of land, which is comprised of **3.4 acres** of old industrial and **16.36 acres** of old urban land use. Of this total, **54 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.24). An additional **28 acres**

will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City is also planning to construct a green street project in the median at Chess Drive that will include bioretention facilities to treat at least **0.5 acres** of land. Additional information will be documented when it becomes available.

Table 4.24 Land area in Foster City WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	1010	41.52	3.41	0	38.11	0	0
	FCY	12.26	0	7.12	3.30	0	1.84
	Total	53.78	3.41	7.12	41.41	0	1.84

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

Foster City has installed one hydrodynamic separator (a large full trash capture treatment system) in the public ROW in WMA 1010. This device treats nearly **25 acres** of land, including **6.8 acres** of old industrial and **18 acres** of old urban land uses.

Foster City conducted dredging in its lagoon in 2005 and removed about 100,000 cubic yards of sediment. Prior to this dredging project, in 1996 ten surface sediment samples were collected from locations that were spatially distributed throughout the lagoon. The samples were analyzed for PCBs (as Aroclors) and total mercury. PCBs were not detected in any of the 10 samples (detection limit of 20 µg/kg for each Aroclor). Mercury was detected in only 3 of the ten samples, at a relatively moderate level (0.2 mg/kg in each sample). It should be noted that Foster City was built in the 1960s and land uses, which are primarily residential and commercial/retail, have generally not changed since that time. In general, these land uses are associated with relatively low levels of PCBs and mercury in stormwater runoff. Based on the above data and the City’s land use, it appears unlikely that enhancing efforts to periodically dredge the Foster City lagoon would be a cost-effective measure to reduce loads of PCBs and mercury to the Bay.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures are present in Foster City or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.9. Town of Hillsborough

Watershed Management Areas

Table 4.25 lists the one WMA identified to-date in the Town of Hillsborough, and its total land area and associated land uses.

Table 4.25. Hillsborough WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
HIL	Multiple	3,974	0%	3%	81%	0%	15%	0%

Existing and Planned Control Measures Summary

Table 4.26 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Hillsborough.

Table 4.26. Existing (E) and planned (P) PCBs and mercury control measures in Hillsborough WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
HIL		E/P		E						E

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Hillsborough to-date.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Hillsborough treat **0.12 acres** of land, all of which is comprised of old urban land use. All of this GI was built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.27). An additional **5.63 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. The Town is also planning to construct an infiltration trench at Crossroads Park. It should be noted that the acres treated by GI

reported in this section are preliminary and may be revised in the future as additional information becomes available.

Table 4.27 Land area in Hillsborough WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	HIL	0.12	0	0.12	0	0	0
	TOTAL	0.12	0	0.12	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Hillsborough or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.10. City of Menlo Park

Watershed Management Areas

Table 4.28 lists the 12 WMAs identified to-date in the City of Menlo Park, and their total land areas and associated land uses.

Table 4.28. Menlo Park WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1012	Ravenswood Slough	50	84%	16%	0%	0%	0%	0%
1014	Atherton Creek	102	44%	53%	2%	0%	1%	0%
238	San Francisco Bay	337	39%	32%	28%	0%	1%	0%
239	Atherton Creek	19	84%	16%	0%	0%	0%	0%
247	San Francisquito Creek	118	0%	35%	64%	0%	1%	0%
252	Atherton Creek	98	8%	23%	68%	0%	1%	0%
332	Atherton Creek	9	94%	6%	0%	0%	0%	0%
378	San Francisquito Creek	138	3%	2%	94%	0%	0%	0%
66	Ravenswood Slough	59	54%	9%	0%	36%	1%	0%
70	San Francisco Bay	47	0%	15%	84%	0%	1%	0%
71	Ravenswood Slough	1,041	6%	26%	61%	5%	3%	0%
MPK	Multiple	2,290	1%	23%	56%	1%	18%	0%

Existing and Planned Control Measures Summary

Table 4.29 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Menlo Park.

Source Property Investigation

Source property investigative work has been conducted in the City of Menlo Park to-date in the nine WMAs shown in Table 4.29. Updated results will be provided in the SMCWPPP's Integrated Monitoring Report due in March 2020.

Table 4.29. Existing (E) and planned (P) PCBs and mercury control measures in Menlo Park WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1012	E	E/P		E		E	E			E
1014	E	E		E		E	E			E
238	E	E/P		E		E	E			E
239	E	E		E		E	E			E
247		E/P		E		E	E			E
252		E/P		E		E	E			E
332	E			E		E	E			E
378				E		E	E			E
66	E	E/P		E		E	E			E
70	E	E		E		E	E			E
71	E	P		E		E	E			E
MPK	E	E/P		E		E	E			E

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Menlo Park treat **245.44 acres** of land, of which **105.56 acres** is comprised of old industrial and **71.54 acres** is comprised of old urban land use. Of this total, **133.33 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.30). An additional **84 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City was also awarded funding from C/CAG in December 2017 for a Safe Routes to School/Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees in San Mateo County. The City currently has two green street projects that are under construction or planned for construction that will treat **4 acres** of land.

Table 4.30 Land area in Menlo Park WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	66	15.06	3.76	0	11.30	0	0
	71	10.96	6.52	4.44	0	0	0
	238	20.30	16.71	3.59	0	0	0
	239	9.69	9.69	0	0	0	0
	247	12.99	0	12.99	0	0	0
	252	3.80	1.55	2.25	0	0	0
	1012	47.35	47.35	0	0	0	0
	1014	9.12	5.19	3.93	0	0	0
	MPK	4.06	0	4.06	0	0	0
	Total	133.33	90.77	31.26	11.30	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

Menlo Park removed sediment from a section of the Atherton Channel at Haven Avenue and Bayfront Expressway (Highway 84) in 2007, 2008, 2009, 2011, 2013 and 2015. Each of these years the City removed about 500 cubic yards of sediment, except that only vegetation was removed in 2015. Since 2015, this cleaning has been performed every year and the City anticipates continuing with this schedule. Although the sediment has not been tested for PCBs to-date, the ongoing cleanout schedule provides a potential opportunity for future testing and calculation of load avoidance.

The Facebook West Campus is a 22 acre property located at 312-314 Constitution Avenue in Menlo Park. This site was identified in Envirostor as a voluntary PCBs cleanup site overseen by DTSC. The property is a former Raychem Corporation Facility, which later became Raychem/Tyco. The property was purchased by Facebook in 2011. Initial remedial actions at the site completed in 2007 included the excavation and off-site disposal of 6,561 cubic yards of contaminated soil and installation of a multi-media cap. Further remediation was conducted between 2012 and July 2013, and included excavation and off-site disposal of 1,800 cubic yards of PCBs contaminated soil with > 50 mg/Kg PCBs, and excavation and off-site disposal of 10,600 cubic yards of soil with < 50 mg/Kg PCBs. PCBs concentrations in the soil were as high as 2,600 mg/Kg prior to cleanup. The remediated soil cleanup concentration of <0.74 mg/Kg was achieved except for 100 cubic yards of soil with PCBs > 50 mg/Kg and 500 cubic yards of soil with PCBs < 50 mg/Kg that were left buried in place at 27 - 37 feet below the ground surface. SMCWPPP is evaluating whether a PCBs load reduction credit could be estimated for this site as a self-abatement.

Updated Control Measure Plan for PCBs & Mercury in San Mateo County Stormwater Runoff (September 2019)

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures are present in Menlo Park or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.11. City of Millbrae

Watershed Management Areas

Table 4.31 lists the four WMAs identified to-date in the City of Millbrae, and their total land areas and associated land uses.

Table 4.31. Millbrae WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1005	San Francisco Bay	241	14%	27%	33%	0%	25%	0%
395	Highline Creek	481	3%	15%	77%	0%	5%	0%
401	Highline Creek	52	13%	69%	16%	0%	2%	0%
MIL	Multiple	1,309	2%	14%	71%	0%	13%	0%

Existing and Planned Control Measures Summary

Table 4.32 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Millbrae.

Table 4.32. Existing (E) and planned (P) PCBs and mercury control measures in Millbrae WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1005	E	P		E		E	E			E
395		E/P		E		E	E			E
401				E		E	E			E
MIL		E		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Millbrae to-date in WMA 1005 (Table 4.32). Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Millbrae treat **15 acres** of land, all of which is comprised of old urban land use. None of this GI was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18). An additional **20.53 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City was also awarded funding from C/CAG in December 2017 for a Safe Routes to School/Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees in San Mateo County. Millbrae is currently constructing a green street project on Taylor Boulevard and Almenar Street that will treat **0.5 acres** of land with bioretention facilities.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Millbrae or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.12. Town of Portola Valley

Watershed Management Areas

Table 4.33 lists the one WMA identified to-date in the Town of Portola Valley, and its total land area and associated land uses.

Table 4.33. Portola Valley WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
PVY	Multiple	5,794	0%	2%	36%	3%	58%	0%

Existing and Planned Control Measures Summary

Table 4.34 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Portola Valley.

Table 4.34. Existing (E) and planned (P) PCBs and mercury control measures in Portola Valley WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
PVY		E		E		E	E			E

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Portola Valley to-date.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Portola Valley treat **1.67 acres** of land, all of which is comprised of old urban land use. All of this total was built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.35). An additional **11.6 acres** will be treated by new or redevelopment

projects that are currently under construction or planned for construction. It should be noted that the information on GI reported in this section is preliminary and may be revised in the future as additional information becomes available.

Table 4.35 Land area in Portola Valley WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	PVY	1.67	0	1.67	0	0	0
	Total	1.67	0	1.67	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Portola Valley or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.13. City of Redwood City

Watershed Management Areas

Table 4.36 lists the 26 WMAs identified to-date in the City of Redwood City, and their total land areas and associated land uses.

Table 4.36. Redwood City WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1000	San Francisco Bay	143	75%	4%	0%	12%	9%	0%
1011	Steinberger Slough	153	6%	4%	0%	62%	28%	0%
1013	Atherton Creek	38	15%	33%	37%	0%	14%	0%
1014	Atherton Creek	69	1%	16%	83%	0%	0%	0%
1016	Pulgas Creek	6	0%	15%	0%	0%	85%	0%
239	Atherton Creek	17	62%	36%	2%	0%	0%	0%
253	Atherton Creek	193	2%	12%	85%	0%	1%	0%
254	Atherton Creek	37	26%	67%	0%	1%	6%	0%
261	Redwood Creek	432	2%	26%	70%	0%	2%	0%
266	Redwood Creek	91	9%	63%	25%	4%	0%	0%
267	Redwood Creek	74	37%	35%	4%	23%	2%	0%
269	San Francisco Bay	45	9%	0%	0%	74%	16%	0%
323	Redwood Creek	185	1%	41%	57%	0%	0%	0%
324	Redwood Creek	44	8%	42%	50%	0%	0%	0%
325	Redwood Creek	21	15%	29%	56%	0%	0%	0%
327	Redwood Creek	126	19%	52%	29%	0%	1%	0%
333	Redwood Creek	15	29%	18%	0%	53%	0%	0%
334	Redwood Creek	19	48%	3%	0%	39%	10%	0%
335	Redwood Creek	24	73%	23%	0%	0%	4%	0%
336	Redwood Creek	66	24%	66%	10%	0%	1%	0%
337	Redwood Creek	137	17%	31%	52%	0%	0%	0%
379	Atherton Creek	400	27%	43%	30%	0%	0%	0%
388	Redwood Creek	42	2%	48%	50%	0%	0%	0%
405	San Francisco Bay	22	100%	0%	0%	0%	0%	0%
407	San Francisco Bay	18	61%	11%	0%	19%	9%	0%
RCY	Multiple	4,595	1%	8%	55%	21%	15%	0%

Existing and Planned Control Measures Summary

Table 4.37 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Redwood City.

Table 4.37. Existing (E) and planned (P) PCBs and mercury control measures in Redwood City WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1000	E	E/P		E		E	E			E
1009	E	E		E		E	E			E
1011	E	E		E		E	E			E
1013				E		E	E			E
1014	E	E		E		E	E			E
1016	E			E		E	E			E
239	E	E		E		E	E			E
253	E	E/P		E		E	E			E
254	E	E		E		E	E			E
261		E/P		E		E	E			E
266	E	E/P		E		E	E			E
267	E			E		E	E			E
269				E		E	E			E
323	E			E		E	E			E
324	E	E/P		E		E	E			E
325		P		E		E	E			E
327	E	E/P		E		E	E			E
333	E			E		E	E			E
334				E		E	E			E
335				E		E	E			E
336		E/P		E		E	E			E
337	E	E		E		E	E			E
379	E	E/P		E		E	E			E
388	E	E/P		E		E	E			E
405				E		E	E			E
407	E			E		E	E			E
80				E		E	E			E
RCY	E	E/P		E		E	E			E
SMC	E	E/P		E		E	E			E
WDE	E	E		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Redwood City to-date in the 21 WMAs indicated by Table 4.37. Updated results will be provided in the SMCWPPP's Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at green streets and new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Redwood City treat **221 acres** of land, of which **24 acres** is comprised of old industrial and **121 acres** is comprised of old urban land use. Of this total, **115 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.38). An additional **52 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Redwood City has four existing GI projects on public lands and ROWs. One project was constructed in 2008 and treats **3.55 acres**, and two projects were constructed in 2014 and treat **2.4 acres** of old industrial and new urban land use. For the fourth project, the City was awarded funding from C/CAG in December 2017 for a Safe Routes to School/Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees in San Mateo County. The project was completed in 2019 and treats **1.17 acres** of old urban land use in WMA RCY as part of the Kennedy Middle School Safe Routes to School Project. These projects include bioretention facilities and vegetated swales.

The City is also planning to construct additional green streets on public lands or ROWs that will treat **6.09 acres** of land. One of these projects is the Middlefield Road Streetscape, which was awarded funding via a Proposition 1 stormwater implementation grant administered by the State Water Resources Control Board and is expected to be completed by about June 2020. Another project is a green street project on 5th and Page that will include bioretention facilities, which is currently in the planning stages.

SMCWPPP has also developed a concept for regional stormwater retention facilities beneath playing fields at the City's Red Morton Park that would potentially manage runoff from up to **1,650 acres**. The concept was presented to the City's Utilities Subcommittee and City Council as part of its GI Plan adoption, and C/CAG is working with the County Office of Sustainability to advance preliminary design of the project via funds awarded from the EPA San Francisco Bay Water Quality Improvement Fund to the County. Additional coordination among interested parties is continuing in early FY 2019/20.

Other PCBs and Mercury Controls

SMCWPPP has also begun to evaluate the load reduction opportunity available through potential future sediment removal actions at a small stormwater detention pond in Redwood City. Areas draining to the pond include a portion of San Carlos with old industrial land uses that are associated with elevated PCBs in street and storm drain sediments, including the Delta Star / Tiegel site, a PCBs source property (see Section 4.15). There are currently no sediment removal actions conducted at the pond.

The stormwater detention pond is located within the Redwood Shores Ecological Reserve (Figure 4.1), which is owned and managed by the California Department of Fish and Wildlife. However, the Redwood City Public Works Department operates a pump station at the pond, including providing daily

management of water levels in the pond and pump station maintenance as needed. As water levels in the pond rise, the pumps are turned on and water from the pond is pumped through a discharge pipe at the south-eastern edge of the pond into the adjacent Steinberger slough at discharge point A (Figure 4.1). A second discharge pipe conveys gravity-fed flow from the north-eastern edge of the pond into the Steinberger Slough at discharge point B (Figure 4.1). Both discharge pipe outfalls typically remains below the water surface in the slough, except at low tide.

Table 4.38 Land area in Redwood City WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)					
			Old Industrial	Old Urban	New Urban	Other	Open Space	
Parcel-based New & Redevelopment or Retrofit	239	0.70	0	0.70	0	0	0	
	253	0.50	0	0.50	0	0	0	
	254	3.91	3.91	0	0	0	0	
	261	7.04	0.99	5.78	0	0	0.27	
	266	7.17	4.65	2.52	0	0	0	
	324	2.96	0	2.96	0	0	0	
	327	5.47	0	5.47	0	0	0	
	336	7.02	0	7.02	0	0	0	
	337	0.61	0	0.61	0	0	0	
	379	28.55	8.84	19.71	0	0	0	
	388	1.19	1.19	0	0	0	0	
	1000	1.66	1.66	0	0	0	0	
	1009	0.14	0	0.14	0	0	0	
	1014	1.09	0	1.09	0	0	0	
	RCY	43.43	0.85	23.51	18.10	0	0.97	
Total		111.45	22.09	70.02	18.10	0	1.24	
Green Street or Regional Retrofit	1000	1.66	1.66	0	0	0	0	
	RCY	1.94	0	1.17	0.77	0	0	
	Total		3.60	1.66	1.17	0.77	0	0
Total - All GI			115.05	23.75	71.19	18.87	0	1.24

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

SMCWPPP previously conducted a site visit to the pond with representatives from Redwood City Public Works and the California Fish and Wildlife Department. Based on the observations made during the visit, SMCWPPP identified several potential tasks that could be implemented as initial steps that would help inform the costs and benefits of implementing enhanced sediment removal activities at the site.

The tasks under consideration include:

- Characterizing PCBs and mercury concentrations in accumulated pond sediments;
- Characterizing concentrations of PCBs and mercury in sediments that have accumulated in the adjacent slough near the pond's outfalls and upstream and downstream, to better understand whether polluted sediment are transported from the pond to the slough;
- Monitoring stormwater flows into and out of the pond for PCBs and mercury to estimate loads into the pond, and subsequently into the slough from the pond.
- Estimate annual stormwater loads of PCBs and/or mercury that flow to the pond from the adjacent old industrial source areas;
- Estimating pollutant loads avoided via one-time or periodic sediment removal actions (e.g., sediment dredging) and the costs of those actions;
- Estimate the mass of PCBs and mercury in annual stormwater flows that are deposited within the pond and could be removed through ongoing sediment-removal actions;

If such monitoring and evaluation indicates that sediment removal actions at the pond would be a cost-effective control for PCBs and mercury, SMCWPPP and/or the City would work with the appropriate agencies (e.g., California Department of Fish and Wildlife) to further identify logistical considerations (e.g., methods, permits, schedules).

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures are present in Redwood City or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.



Figure 4.1. Drainage catchment and storm drain lines for the Redwood Shores Ecological Reserve Stormwater Detention Basin in Redwood City (shown in blue). Point A is the pump station discharge pipe location. Point B is the gravity fed discharge pipe location. Both discharge pipes empty to the Steinberger Slough.

4.14. City of San Bruno

Watershed Management Areas

Table 4.39 lists the eight WMAs identified to-date in the City of San Bruno, and their total land areas and associated land uses.

Table 4.39. San Bruno WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1005	San Francisco Bay	301	6%	22%	65%	0%	7%	0%
290	San Bruno Creek	1,773	2%	29%	54%	0%	15%	0%
291	Colma Creek	23	0%	100%	0%	0%	0%	0%
292	Colma Creek	155	23%	56%	21%	0%	0%	0%
296	Colma Creek	573	0%	9%	55%	0%	36%	0%
307	Colma Creek	25	0%	24%	76%	0%	0%	0%
362	San Bruno Creek	3	48%	52%	0%	0%	0%	0%
SBO	Multiple	659	0%	20%	57%	0%	23%	0%

Existing and Planned Control Measures Summary

Table 4.40 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Bruno.

Source Property Investigation

Source property investigative work has been conducted in the City of San Bruno to-date in the five WMAs indicated by Table 4.40. Updated results will be provided in the SMCWPPP's Integrated Monitoring Report due in March 2020.

Table 4.40. Existing (E) and planned (P) PCBs and mercury control measures in San Bruno WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1005	E	P		E		E	E			E
290		E/P		E		E	E			E
291	E			E		E	E			E
292	E			E		E	E			E
296	E			E		E	E			E
307		E		E		E	E			E
362	E			E		E	E			E
SBO				E		E	E			E

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in San Bruno treat **22 acres** of land, of which **7 acres** is comprised of old industrial and **15 acres** is comprised of old urban land use. Of this total, **11.5 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.41). An additional **11.4 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

SMCWPPP also developed a project concept for a regional retention facility on Caltrans property between the I-280 and I-380 interchange. The project concept was responsive to an identified need for upstream retention in San Bruno’s Storm Drain Master Plan to alleviate downstream flooding. The project concept was submitted to Caltrans for consideration for funding given that approximately 40 acres of Caltrans rights-of-way are in the project drainage area. The concept is currently on a list for Caltrans consideration for future funding, but it is currently anticipated to be a low priority project for Caltrans due to low overall benefit relative to Caltrans interests (primarily trash load reduction and then TMDL load reductions). Because there is also upstream drainage area within unincorporated San Mateo County, C/CAG and the County are also hoping to advance design work for this project, leveraging the EPA grant funds mentioned in the above Redwood City project.

Table 4.41 Land area in San Bruno WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	290	11.54	7.00	4.54	0	0	0
	Total	11.54	7.00	4.54	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in San Bruno or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.15. City of San Carlos

Watershed Management Areas

Table 4.42 lists the 11 WMAs identified to-date in the City of San Carlos, and their total land areas and associated land uses.

Table 4.42. San Carlos WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1011	Steinberger Slough	261	52%	24%	24%	0%	0%	0%
1016	Pulgas Creek	135	74%	26%	0%	0%	0%	0%
207	Steinberger Slough	82	11%	33%	54%	0%	2%	0%
210	Pulgas Creek	141	57%	43%	0%	0%	0%	0%
31	Pulgas Creek	99	69%	15%	16%	0%	0%	0%
32	Steinberger Slough	39	21%	37%	42%	0%	0%	0%
57	Pulgas Creek	63	7%	58%	34%	0%	2%	0%
59	Steinberger Slough	28	88%	12%	0%	0%	0%	0%
75	Steinberger Slough	65	86%	14%	0%	0%	0%	0%
80	Cordilleras Creek	20	8%	82%	10%	0%	0%	0%
SCS	Multiple	2,510	0%	5%	80%	0%	15%	0%

Existing and Planned Control Measures Summary

Table 4.43 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Carlos.

Source Property Investigation

Source property investigative work has been conducted in the City of San Carlos to-date in the eight WMAs indicated by Table 4.43. WMA 31 and WMA 210, referred to respectively as the Pulgas Creek pump station north and south drainages, have been a particular focus areas for source property investigation work over the past 15 years. These primarily old industrial catchments have the most elevated concentrations of PCBs in MS4 sediment and stormwater runoff samples collected to-date from WMAs in San Mateo County. Collectively they were designated as a “pilot watershed” for the grant funded Clean Watershed for a Clean Bay (CW4CB) project (CW4CB 2017a). Two potential source properties that have been identified in these WMAs to-date are: (1) 977 and 1007/1011 Bransten Road in WMA 31 and (2) 1411 Industrial Road in WMA 210. SMCWPPP and the City of San Carlos have referred the 977 and 1007/1011 Bransten Road Bransten Road property to the Regional Water Board, as described below. SMCWPPP and the City of San Carlos are working with the property owner on next steps at the 1411 Industrial Road property. The property owner is working with Regional Water Board staff and has retained a consultant to investigate potential sources of PCBs associated with the property.

Table 4.43. Existing (E) and planned (P) PCBs and mercury control measures in San Carlos WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1011	E	E		E		E	E			E
1016	E	E/P		E		E	E			E
207		P		E		E	E			E
210	E			E		E	E			E
31	E	E/P		E		E	E			E
32	E	P		E		E	E			E
57		E/P		E		E	E			E
59	E	E		E		E	E			E
75	E	P		E		E	E			E
80				E		E	E			E
SCS	E	E/P		E		E	E			E

Based on the spatial distribution of PCBs in MS4 and street dirt sediments collected in WMA 31 and WMA 210, it appears that other source(s) remain unidentified in WMA 210. PCBs from unknown sources were previously found in inlets and manholes in the vicinity of Center, Washington and Varian Streets and Bayport Avenue in WMA 210. The PCBs in these samples could have originated from any of about 20 small industries on these streets. During WY 2017, seven additional samples were collected in this area. The results suggested that three small properties could be PCBs sources. Two samples collected from the driveways of 1030 Washington Street, a construction business, had elevated PCBs (1.29 and 3.73 mg/kg). A sample from the driveway of 1029 Washington Street was also elevated with a concentration of 5.64 mg/kg. In addition, samples from the driveway of 1030 Varian Street, an unpaved lot used for storage, had an elevated PCBs concentration of 1.84 mg/kg. It should be noted that all of the buildings in this area appear to be of the type and age that may have PCBs in building materials. SMCWPPP is currently working with the City of San Carlos to determine next steps for these properties.

Another source property identified through SMCWPPP's investigations is located at 270 Industrial Road / 495 Bragato Road in WMA 1011 in San Carlos. 270 Industrial Road is occupied by the Delta Star facility where transformers are manufactured, including transformers with PCBs historically (from 1961 to 1974). Adjacent to 270 Industrial Road is 495 Bragato Road (Tiegel Manufacturing), a roughly three acre site that is largely unpaved. PCBs appear to have migrated to this property from the Delta Star property.

Updated Control Measure Plan for PCBs & Mercury in San Mateo County Stormwater Runoff (September 2019)

In October 2018, SMCWPPP and the City of San Carlos worked together to submit two source property referrals (both in San Carlos) to the Regional Water Board:

- 270 Industrial Road / 495 Bragato Road, San Carlos (Delta Star / Tiegel)
- 977 and 1007/1011 Bransten Road, San Carlos

The total combined acreage of these properties is about 10 acres, resulting in an estimated about 20 g/year load reduction (see Section 5.1 for the calculation methods) when these properties are formally referred and the associated enhanced municipal O&M is implemented, per MRP requirements.

Green Infrastructure

Based on the information compiled to-date, GI at green streets and new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in San Carlos treat **46 acres** of land, of which **35.6 acres** is comprised of old industrial and **10.7 acres** is comprised of old urban land use. Of this total, **44 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.44). An additional **20 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

San Carlos also has an existing green street project that was constructed in 2014 in the public ROW along Bransten Road, which is located in an old industrial area (CW4CB 2017c). These bioretention facilities were constructed within curb extensions and treat **0.54 acres** of old industrial land use.

The City is also planning a green street along San Carlos Ave between Wellington Ave and Prospect St. The San Carlos Avenue Pedestrian Project will incorporate flow through planters and trees at various locations along the corridor. As part of this project, the City is also working with Arundel Elementary School to construct bioretention facilities in the school's parking lot.

Other PCBs and Mercury Controls

As part of the CW4CB project, in 2013 San Carlos conducted a street flushing pilot project to test the effectiveness of this type of control measure in reducing PCBs and mercury in stormwater runoff (CW4CB 2017b). Additional street flushing is not currently planned in San Carlos or other locations in San Mateo County.

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in San Carlos or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

Table 4.44 Land area in San Carlos WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	57	0.37	0	0.37	0	0	0
	59	18.22	18.22	0	0	0	0
	1011	13.39	13.39	0	0	0	0
	1016	2.62	2.62	0	0	0	0
	SCS	8.84	0	8.84	0	0	0
	Total	43.44	34.23	9.21	0	0	0
Green Street or Regional Retrofit	31	0.54	0	0.54	0	0	0
Total - All GI		43.98	34.23	9.75	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

4.16. City of San Mateo

Watershed Management Areas

Table 4.45 lists the 20 WMAs identified to-date in the City of San Mateo, and their total land areas and associated land uses.

Table 4.45. City of San Mateo WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1007	San Mateo Creek	87	11%	31%	56%	0%	2%	0%
1008	16th Avenue Channel	111	5%	15%	79%	0%	1%	0%
1009	Multiple	175	33%	34%	33%	0%	0%	0%
101	Laurel Creek	211	5%	22%	73%	0%	0%	0%
1010	San Francisco Bay	2	0%	0%	0%	99%	1%	0%
1017	San Francisco Bay	18	82%	17%	0%	0%	1%	0%
111	San Mateo Creek	95	8%	57%	33%	0%	2%	0%
114	16th Avenue Channel	85	18%	24%	58%	0%	0%	0%
120	16th Avenue Channel	10	6%	14%	80%	0%	0%	0%
149	San Francisco Bay	399	5%	12%	82%	0%	1%	0%
156	16th Avenue Channel	40	17%	57%	25%	0%	1%	0%
25	Poplar Creek	219	6%	17%	77%	0%	0%	0%
399	San Mateo Creek	32	6%	9%	85%	0%	0%	0%
403	16th Avenue Channel	48	4%	13%	83%	0%	0%	0%
408	16th Avenue Channel	43	19%	51%	28%	0%	2%	0%
60	Laurel Creek	28	0%	13%	1%	85%	1%	0%
89	Borel Creek	98	15%	49%	35%	0%	1%	0%
90	Borel Creek	21	6%	10%	84%	0%	0%	0%
92	Borel Creek	136	3%	36%	61%	0%	0%	0%
SMO	Multiple	5,789	1%	21%	64%	4%	9%	0%

Existing and Planned Control Measures Summary

Table 4.46 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Mateo.

Table 4.46. Existing (E) and planned (P) PCBs and mercury control measures in City of San Mateo WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1007	E	E/P		E		E	E			E
1008		E		E		E	E			E
1009	E	E/P		E		E	E			E
101	E			E		E	E			E
1010				E		E	E			E
1017				E		E	E			E
111	E	E/P		E		E	E			E
114	E	P		E		E	E			E
120		E		E		E	E			E
149	E	E/P		E		E	E			E
156	E	E/P		E		E	E			E
25	E		E	E		E	E			E
399				E		E	E			E
403	E			E		E	E			E
408	E	P		E		E	E			E
60	E			E		E	E			E
89	E	E/P		E		E	E			E
90		E		E		E	E			E
92		E/P		E		E	E			E
SMO	E	E/P		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of San Mateo to-date in the 13 WMAs shown in Table 4.46. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at green streets and new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in the City of San Mateo treat **60 acres** of land which is comprised of **13 acres** of old industrial and **42 acres** of old urban land uses. Of this, **44.72 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.47). An additional **153 acres** will be treated by new or redevelopment projects and green streets that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City of San Mateo has four existing green street projects and one planned green street project that are described in more detail below.

1. Laurel Elementary School Safe Routes to School. The San Mateo-Foster City School District, the City of San Mateo, and SMCWPPP created a project that built upon the Safe Routes to School program. A semicircular rain garden and seating area captures a portion of rooftop runoff while interior and perimeter stormwater planters in the parking lot manages building and parking lot runoff. Two street intersections now feature stormwater curb extensions that shorten crossing distance while at the same time capturing, slowing, and cleaning runoff before it enters Laurel Creek. The project was completed in 2015.
2. Delaware Street Bike Lane and Streetscape Improvement Project. The project consists of improvements to the bike lane and streetscape on South Delaware Street between Sunnybrae Boulevard and Charles Lane. Bioretention facilities are incorporated into street, traffic signage and striping, lighting, landscape, and irrigation improvements. In addition, the project includes a bioretention bulb-out at East 16th Avenue and South Claremont Street. The project was completed in 2014.
3. Poplar Corridor Safety Improvement Project. The project included safety improvements along the Poplar Avenue Corridor as well as neighborhood enhancements along Humboldt Street between Peninsula Avenue and Poplar Avenue. The project includes bioretention bulb-outs at the intersection of Humboldt Street and College Avenue and a mid-block bioretention curb extension along Humboldt Avenue in front of the San Mateo Superior Court, Central Branch location. The project was completed in 2016.
4. North Central Pedestrian Improvements Project. The North Central Pedestrian Improvements Project is part of the City's Pedestrian Master Plan. The intersection improvements include curb bulb-outs with bioretention. The project was completed in 2017.
5. East 4th Avenue and Fremont Street GI Project. The City plans to build a Green Street project at East 4th Avenue and South Fremont Street (with curb extension and bioretention) as part of the San Francisco Estuary Partnership / BASMAA Urban Greening Bay Area grant from EPA through its San Francisco Bay Water Quality Improvement Fund. This project will install bioretention bulb-outs on the northwest and southwest corners of the intersection of East 4th Avenue and South Fremont Street, and on the northeast and southeast corners of South Delaware Street at East 5th Avenue and East 9th Avenue. The project will include replacing concrete sidewalk, curb and gutter, and ramps, installing planters with bioretention soil and underdrain pipes, and adjusting the adjacent storm drain catch basins. The total project budget is \$400,000 and is scheduled for completion in 2019.

Table 4.47 Land area in City of San Mateo WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	90	1.12	1.12	0	0	0	0
	111	0.28	0	0	0	0	0.28
	149	3.08	3.08	0	0	0	0
	156	3.31	0	3.31	0	0	0
	1007	0.29	0.29	0	0	0	0
	1008	3.20	3.20	0	0	0	0
	1009	3.35	3.35	0	0	0	0
	SMO	22.92	0	18.88	1.17	0	2.87
	Total	37.55	11.04	22.19	1.17	0	3.15
Green Street or Regional Retrofit	156	2.11	0	2.11	0	0	0
	SMO	5.06	0	5.06	0	0	0
	Total	7.17	0	7.17	0	0	0
Total - All GI		44.72	11.04	29.36	1.17	0	3.15

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

The City of San Mateo has installed one hydrodynamic separator (a large full trash capture treatment system) in the public ROW in WMA 25. This device treats nearly 284 acres of land, including 15 acres of old industrial and 269 acres of old urban land uses.

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in the City of San Mateo or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.17. Unincorporated San Mateo County

Watershed Management Areas

Table 4.48 lists the 17 WMAs identified to-date in unincorporated County of San Mateo, and their total land areas and associated land uses.

Table 4.48. Unincorporated County of San Mateo WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1005	San Francisco Bay	224	9%	33%	0%	0%	57%	0%
1011	Steinberger Slough	33	60%	38%	2%	0%	0%	0%
17	Guadalupe Valley Creek	850	1%	0%	0%	0%	99%	0%
181	Colma Creek	26	47%	44%	9%	0%	0%	0%
247	San Francisquito Creek	121	17%	70%	12%	0%	1%	0%
253	Atherton Creek	87	15%	4%	79%	0%	1%	0%
261	Redwood Creek	319	0%	13%	87%	0%	0%	0%
290	San Bruno Creek	224	0%	10%	0%	0%	90%	0%
293	Colma Creek	18	0%	0%	0%	0%	100%	0%
296	Colma Creek	131	0%	11%	37%	0%	52%	0%
307	Colma Creek	126	0%	0%	0%	0%	100%	0%
332	Atherton Creek	8	7%	6%	87%	0%	0%	0%
350	San Francisco Bay	40	0%	0%	0%	0%	100%	0%
379	Atherton Creek	403	28%	20%	50%	0%	1%	0%
71	Ravenswood Slough	158	0%	6%	94%	0%	0%	0%
77	Belmont Creek	27	81%	7%	11%	0%	0%	0%
SMC	Multiple	174,760	1%	1%	3%	0%	94%	0%

Existing and Planned Control Measures Summary

Table 4.49 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in unincorporated County of San Mateo.

Source Property Investigation

Source property investigative work has been conducted in unincorporated County of San Mateo to-date in the 14 WMAs indicated by Table 4.49. Updated results will be provided in the SMCWPPP's Integrated Monitoring Report due in March 2020.

Table 4.49. Existing (E) and planned (P) PCBs and mercury control measures in unincorporated San Mateo County WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1005				E		E	E			E
1011	E	P		E		E	E			E
17	E			E		E	E			E
149 ^{1,2}	n/a ⁵	E/P	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
181		E		E		E	E			E
247				E		E	E			E
253	E			E		E	E			E
261		P		E		E	E			E
266 ^{1,3}	n/a	P	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
290		P		E		E	E			E
293	E			E		E	E			E
296	E			E		E	E			E
307		P		E		E	E			E
327 ^{1,3}	n/a	P								
332	E			E		E	E			E
336 ^{1,3}	n/a	P	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
350	E			E		E	E			E
379	E	E/P		E		E	E			E
71	E	E		E		E	E			E
77		E		E		E	E			E
SMC	E	E/P		E		E	E			E
SMO ^{1,2}	n/a	E/P	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SSF ^{1,4}	n/a	P	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

1 – Although the WMA is not under unincorporated County’s jurisdiction, the County owns one or more parcels in the WMA that have existing or planned GI projects. Other control measures in these WMAs are identified in the existing and planned control measure tables for each municipality that has jurisdiction over the WMA land area, as identified below.

2 – WMAs 149 and SMO are located in the City of San Mateo. See Section 4.1.6 for all control measures in these WMAs.

3 – WMAs 266, 327, and 336 are located in Redwood City. See Section 4.1.3 for all control measures in these WMAs.

4 – WMA SSF is located in South San Francisco. See Section 4.1.8 for all control measures in this WMA.

5 – n/a = not applicable, because the control measure is or would be implemented by another municipality.

Green Infrastructure

Based on the information compiled to-date, GI at green streets and new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in unincorporated County of San Mateo treat **188 acres** of land which includes **6.7 acres** of old industrial and **163 acres** of old urban land uses. Of this, **146 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.50). An additional **35 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The County is also constructing or planning to construct two additional green street projects on public lands that will treat **2.07 acres** of land. The first project is the reconstruction of 7th Avenue from Middlefield Road to Edison Way in the North Fair Oaks area in Menlo Park. The second project is the Middlefield Road Improvement Project which is currently planned to feature 14 curb bulb outs with bioretention facilities and flow-through planters.

The County was also awarded funding from C/CAG in December 2017 for a Safe Routes to School/Green Streets Infrastructure Pilot Project funded by local Safe Routes to School and stormwater funding, all from vehicle registration fees in San Mateo County.

Table 4.50 Land area in Unincorporated County of San Mateo WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	71	9.46	0	9.46	0	0	0
	77	2.19	2.19	0	0	0	0
	149	2.00	0	2.00	0	0	0
	181	0.99	0	0.99	0	0	0
	379	8.22	1.84	6.38	0	0	0
	SMC	118.87	0	115.87	0	0	3.00
	SMO	0.81	0	0.81	0	0	0
	Total	142.54	4.03	135.51	0	0	3.00
Green Street or Regional Retrofit	SMC	3.30	0	3.30	0	0	0
Total - All GI		145.84	4.03	138.81	0.00	0.00	3.00

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

Updated Control Measure Plan for PCBs & Mercury in San Mateo County Stormwater Runoff (September 2019)

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures are present in unincorporated County of San Mateo or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.18. City of South San Francisco

Watershed Management Areas

Table 4.51 lists the 30 WMAs identified to-date in the City of South San Francisco, and their total land areas and associated land uses.

Table 4.51. City of South San Francisco WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
1001	Colma Creek	410	42%	35%	17%	0%	6%	0%
1002	San Francisco Bay	293	62%	31%	0%	2%	5%	0%
1005	San Francisco Bay	7	0%	100%	0%	0%	0%	0%
1011	Steinberger Slough	40	41%	39%	0%	0%	21%	0%
291	Colma Creek	171	81%	18%	0%	0%	2%	0%
292	Colma Creek	65	95%	4%	0%	0%	2%	0%
293	Colma Creek	636	27%	22%	39%	0%	12%	0%
294	Colma Creek	67	92%	8%	0%	0%	0%	0%
295	Colma Creek	25	73%	22%	0%	0%	4%	0%
296	Colma Creek	568	4%	24%	70%	0%	2%	0%
297	Colma Creek	30	13%	18%	69%	0%	0%	0%
298	Colma Creek	122	9%	9%	72%	0%	10%	0%
306	Colma Creek	37	37%	23%	41%	0%	0%	0%
307	Colma Creek	943	1%	19%	74%	1%	5%	0%
311	Colma Creek	111	3%	11%	85%	0%	1%	0%
313	San Francisco Bay	77	42%	21%	34%	0%	4%	0%
314	San Francisco Bay	66	78%	16%	0%	0%	6%	0%
315	San Francisco Bay	108	84%	16%	0%	0%	0%	0%
316	San Francisco Bay	117	82%	18%	0%	0%	0%	0%
317	San Francisco Bay	32	89%	11%	0%	0%	0%	0%
318	San Francisco Bay	70	84%	16%	0%	0%	1%	0%
319	San Francisco Bay	99	75%	25%	0%	0%	0%	0%
352	Colma Creek	40	17%	2%	81%	0%	0%	0%
354	Colma Creek	10	85%	14%	0%	0%	0%	0%
356	Colma Creek	10	79%	20%	0%	0%	1%	0%
357	Colma Creek	17	65%	32%	0%	0%	3%	0%
358	Colma Creek	32	73%	27%	0%	0%	0%	0%
359	Colma Creek	23	92%	8%	0%	0%	0%	0%
362	San Bruno Creek	14	61%	39%	0%	0%	0%	0%
SSF	Multiple	1,539	13%	18%	56%	1%	12%	0%

Existing and Planned Control Measures Summary

Table 4.52 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of South San Francisco.

Table 4.52. Existing (E) and planned (P) PCBs and mercury control measures in South San Francisco WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1001	E	E/P		E		E	E			E
1002	E	E/P		E		E	E			E
1005	E			E		E	E			E
1011	E			E		E	E			E
291	E	E/P		E		E	E			E
292	E	E		E		E	E			E
293	E	E/P		E		E	E			E
294	E			E		E	E			E
295	E			E		E	E			E
296	E	E/P		E		E	E			E
297				E		E	E			E
298		P		E		E	E			E
306	E	E/P		E		E	E			E
307		E/P		E		E	E			E
311				E		E	E			E
313	E	E/P		E		E	E			E
314	E	P		E		E	E			E
315	E	E/P		E		E	E			E
316	E	E/P		E		E	E			E
317	E			E		E	E			E
318	E	E/P		E		E	E			E
319	E	E/P		E		E	E			E
352				E		E	E			E
354	E			E		E	E			E
356	E			E		E	E			E
357	E			E		E	E			E
358	E	E		E		E	E			E
359	E	E		E		E	E			E
362	E	E		E		E	E			E
SSF	E	E/P		E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of South San Francisco to-date in the 25 WMAs indicated by Table 4.52. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at green street and new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in the City of South San Francisco treat **324 acres** of land which includes **251 acres** of old industrial and **73 acres** of old urban land uses. Of this, nearly **110 acres** were built from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) (Table 4.53). An additional **194 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City of South San Francisco also continues to pursue a regional retention facility at Orange Memorial Park with \$9.5 million in funding from Caltrans in an initial Cooperative Implementation Agreement and an additional \$6 million also from Caltrans to support their trash requirement goals. The project is in the 90% design phase for a stormwater capture facility that will remove sediment and associated pollutants from Colma Creek before flowing into San Francisco Bay, and potentially provide for parkland irrigation at Orange Memorial Park. This regional stormwater capture project would potentially capture flows from approximately **2,486 acres** of a multi-jurisdictional area of primarily old urban land uses. The City anticipates starting construction in 2019, with an estimated completion date of September 2021.

Table 4.53 Land area in City of South San Francisco WMAs treated by GI built from July 1, 2013 to June 30, 2019.^{1,2,3,4}

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Other	Open Space
Parcel-based New & Redevelopment or Retrofit	291	5.32	5.32	0	0	0	0
	292	26.49	26.49	0	0	0	0
	293	13.14	11.89	1.25	0	0	0
	307	10.02	0.00	10.02	0	0	0
	313	7.63	7.63	0	0	0	0
	316	14.03	14.03	0	0	0	0
	318	4.80	4.80	0	0	0	0
	319	5.00	5.00	0	0	0	0
	359	3.36	3.36	0	0	0	0
	1001	15.11	13.85	1.26	0	0	0
	1002	0.85	0.85	0	0	0	0
	SSF	4.09	2.35	1.74	0	0	0
	Total		109.84	95.57	14.27	0	0	0

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in the City of South San Francisco or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.19. Town of Woodside

Watershed Management Areas

Table 4.54 lists the two WMAs identified to-date in the Town of Woodside, and its total land area and associated land uses.

Table 4.54. Woodside WMAs and associated land uses.

WMA ID	Outfall Water Body	Total Area (Acres)	% Old Industrial	% Old Urban Commercial	% Old Urban Residential	% New Urban	% Open Space	% Other
261	Redwood Creek	46	0%	0%	98%	0%	2%	0%
WDE	Multiple	7,275	0%	5%	48%	2%	45%	0%

Existing and Planned Control Measures Summary

Table 4.55 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Woodside.

Table 4.55. Existing (E) and planned (P) PCBs and mercury control measures in Woodside WMAs.

WMA ID	Control Measure Categories									
	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
261				E		E	E			E
WDE	E			E		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the Town of Woodside to-date in WMA WDE. Updated results will be provided in the SMCWPPP’s Integrated Monitoring Report due in March 2020.

Green Infrastructure

Based on the information compiled to-date, GI at new and redevelopment project sites have not been built since 2005 (the PCBs TMDL loading baseline year) in Woodside, and there are no projects under

construction or planned. It should be noted that the information on GI reported in this section is preliminary and may be revised in the future as additional information becomes available.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Woodside or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

5.0 PCBs AND MERCURY LOADS REDUCED

Preliminary PCBs and mercury loads reduced through stormwater control measures implemented in San Mateo County during the current MRP term are reported in this section. The loads reduced were quantified for those control measures and projects reported in Section 4.0 that were implemented and/or completed from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19).

In general, the load reductions reported in this section are preliminary and do not include all existing and planned control measures. For example, the load reductions reported in this section do not account for any contamination site cleanups (referred to as “self-abatements”) or municipal O&M enhancements (e.g., channel desilting, enhanced street sweeping, inlet cleaning, inlet-based trash capture systems) implemented by Permittees during the permit term. Any load reductions during the permit term associated with these controls will be reported in future reports. SMCWPPP will continue to track all relevant control measures and update the associated load reduction calculations as additional information becomes available and as new or enhanced actions are implemented.

5.1. Summary of Loads Reduced Accounting Methodology

The accounting methodologies used to calculate the load reductions reported in this section were developed by BASMAA and approved by the Executive Officer of the Regional Water Board for the purpose of load reduction reporting during MRP 2.0. These methods and data inputs are described fully in the BASMAA *Interim Accounting Methodology Report* (BASMAA 2017). The equations and default data inputs that are used to calculate load reductions are summarized below. The data on acres addressed by each type of control measure that were reported in Section 4.0 were used in the equations below to calculate the PCBs and mercury load reductions.

Source Property Identification and Abatement

The projected POC loads reduced through source property identification and abatement were calculated using the equation below:

$$\text{Load of POC Reduced} = SP_A \cdot (SP_Y - OU_Y)$$

Where:

SP_A	=	Source property area (acres)
SP_Y	=	Source property POC yield
OU_Y	=	Old Urban land use POC yield

Default inputs:

PCBs Source property yield	=	4,065 mg/acre/year
PCBs Old urban land use yield	=	30.3 mg/acre/year
Mercury Source property yield	=	1,300 mg/acre/year
Mercury Old urban land use yield	=	215 mg/acre/year

Fifty percent of the load reduced is projected here for each anticipated source property referral that was identified in Section 4.0. (Per the MRP, the remaining 50% will be credited upon completion of the abatement process, or at ten years, whichever occurs first.)

Green Infrastructure and Treatment Controls

Parcel-Based GI/LID (e.g., New Development and Redevelopment)

The POC loads reduced through parcel-based new development, redevelopment, and retrofit projects were calculated using the equation below:

$$\text{Load of POC Reduced} = P_A \cdot (P_Y - NU_Y)$$

Where:

P_A	=	Project area (acre)
P_Y	=	Existing PCBs or mercury yield (mg/acre/year)
NU_Y	=	New Urban PCBs or mercury yield (mg/acre/year)

Default inputs:

PCBs New Urban land use yield	=	3.5 mg/acre/year
Mercury New Urban land use yield	=	33 mg/acre/year

Green Streets and Regional Retrofit Projects

The POC loads reduced due to green streets and regional retrofit projects were calculated using the equation and inputs provided below:

$$\text{Annual Mass of PCB Reduced} = P_A \cdot P_Y \cdot E_f$$

Where:

P_A	=	Tributary area treated (acres)
P_Y	=	Area-weighted PCBs or mercury yield (mg/acre-year)
E_f	=	Efficiency factor for green infrastructure/retrofit treatment control measure (assumed to be 70%)

5.2. PCBs Loads Reduced

Preliminary Estimated PCBs Loads Reduced from July 1, 2013 through June 30, 2019

The preliminary estimated PCBs loads reduced by San Mateo County Permittees from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) are shown in Table 5.1. Permittees achieved more than 60 g/year of PCBs load reductions cumulatively over this time period. Table 5.2 shows the PCBs loads reduced, itemized by control measure category. New and re-development projects have been and continue to be ongoing across all San Mateo County municipalities. Over the permit term to-date, more than 855 acres have been developed or redeveloped, including more than 321 acres of old industrial and 438 acres of old urban land uses. Green streets and regional retrofit projects have been constructed that treat an additional 15 acres of urban land uses. It is important to emphasize that the PCBs loads reduced that are reported here are preliminary, and may not include all control measures that have been implemented by San Mateo County Permittees to-date. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports. Table 5.2 also illustrates that the 15 g/year PCBs load reduction through GI by the end of the permit term required by the MRP has already been achieved.

In addition, as described in Section 4.15, during October 2018 SMCWPPP submitted two source property referrals (both in San Carlos) to the Regional Water Board. The total combined acreage of these

properties is about 10 acres, resulting in an about 20 g/year PCBs load reduction (see Section 5.1 for the calculation methods).

Table 5.1. Preliminary estimates of PCBs loads reduced by San Mateo County Permittees from July 1, 2013 through June 30, 2019 (FY 2013/14 through FY 2018/19).

Permittee	PCBs Loads Reduced (g/year)						Cumulative Load Reduced
	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	
Atherton	0.03	0	0	0	0	0	0.03
Belmont	0	0	0	0.01	0.10	0.34	0.45
Brisbane	0.75	0	0	0	2.44	0	3.19
Burlingame	0	0.15	0.01	0.27	0.05	0.04	0.53
Colma	0.00	0.00	0	0.00	0.24	0.06	0.31
Daly City	0.01	0.18	0	0.43	2.25	0.08	2.96
East Palo Alto	0.12	0.24	0.03	0.46	0	0	0.85
Foster City	0.07	0	0.12	0.00	0.00	0.57	0.77
Hillsborough	0	0	0.00	0	0.00	0	0.00
Menlo Park	2.08	0.21	1.68	0.65	3.71	0.06	8.38
Millbrae	0	0	0	0	0	0	0
Portola Valley	0	0	0	0	0.04	0	0.04
Redwood City	0.20	1.12	0.71	0.30	0.77	0.64	3.75
San Bruno	0.12	0	0.58	0	0	0	0.70
San Carlos	1.74	0	0.75	0	0.62	20.38	23.48
San Mateo City	0.44	0.52	0.32	0.23	1.94	0.11	3.56
San Mateo County	3.19	0.36	0.36	0.05	0.10	0	4.05
South San Francisco	3.45	1.47	0	0.29	1.05	2.07	8.33
Woodside	0	0	0	0	0	0	0
Total	12.20	4.25	4.56	2.69	13.32	24.36	61.38

Table 5.2. Preliminary estimates of PCBs loads reduced in San Mateo County by control measure category from July 1, 2013 through June 30, 2019 (FY 2013/14 through FY 2018/19).

Control Measure Category		PCBs Loads Reduced (g/year)						Cumulative Load Reduced
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	
Source Property Identification and Referral	270 Industrial Road / 495 Bragato Road, San Carlos						15.53	15.53
	977 and 1007/1011 Bransten Road, San Carlos						4.84	4.84
GI and Other Stormwater Treatment Controls	Parcel-based GI/LID (i.e., new development and redevelopment projects)	12.19	4.15	4.49	2.67	11.38	3.64	38.51
	Green Streets and Regional Retrofits	0.01	0.10	0.07	0.02	0.05	0.06	0.31
	Hydrodynamic Separators (a large full trash capture system) ³					1.89	0.29	2.18
Enhanced O&M Measures⁴								
Manage PCBs in Building Materials⁴								
Manage PCBs in Infrastructure⁴								
Diversion to POTW⁴								
Source Controls / Other⁴								
Total – All San Mateo County Permittees and Controls		12.20	4.25	4.56	2.69	13.32	24.36	61.38

1. Load Reduced = (Source Property Area (acre)) x (4.065 – 0.0303 (g/acre/year)).

2. For parcel-based projects, Load Reduced = (Project Area (acre)) x (Existing Yield – 0.0035 (g/acre/year)). For green street or regional retrofit projects, Load Reduced = (Project Drainage Area (ac)) x (area-weighted PCBs yield (g/acre/year)) x 0.70. See Section 4.0 for acres associated with this control measure.

3. Load Reduced = (Project Drainage Area (acre)) x (area-weighted PCBs yield (g/acre/year)) x 0.20.

4. Loads reduced for these control measures will be provided in future reports, as applicable.

5.3. Mercury Loads Reduced

Preliminary Estimated Mercury Loads Reduced from July 1, 2013 through June 30, 2019

The preliminary estimated mercury loads reduced by San Mateo County Permittees from July 1, 2013 through June 30, 2019 (i.e., FY 2013/14 through FY 2018/19) are shown in Table 5.3. San Mateo County Permittees have achieved more than 507 g/year of mercury load reductions over this time period. Table 5.4 shows the mercury loads reduced by control measure category. New development and redevelopment projects currently account for 95% of the mercury load reduction reported to-date. Large full trash capture systems account for an additional 4% of the mercury load reduction reported to-date. Green streets and regional retrofit projects account for the remaining 1%. Table 5.4 also illustrates that the 6 g/year mercury load reduction through GI by the end of the permit term required by the MRP has already been achieved.

Table 5.3. Preliminary estimates of mercury loads reduced by San Mateo County Permittees from July 1, 2013 through June 30, 2019 (FY 2013/14 through FY 2018/19).

Permittee	Mercury Loads Reduced (g/year)						Cumulative Load Reduced
	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	
Atherton	0.21	0	0	0	0	0	0.21
Belmont	0	0	0	0.07	0.66	2.97	3.71
Brisbane	11.42	0	0	0.00	37.28	0	48.69
Burlingame	0	1.39	0.09	4.04	0.50	0.30	6.32
Colma	0	0.02	0	0	1.62	0.44	2.07
Daly City	0.08	1.24	0	2.90	15.20	1.29	20.72
East Palo Alto	1.63	3.53	0.17	6.63	0	0	11.97
Foster City	0.48	0	0.82	0	0	7.59	8.88
Hillsborough	0	0	0.02	0	0.00	0	0.022
Menlo Park	30.8	2.48	22.24	8.98	55.76	0.41	120.7
Millbrae	0	0	0	0	0	0	0
Portola Valley	0	0	0	0	0.30	0	0.30
Redwood City	2.52	14.84	8.55	3.92	6.72	4.36	40.91
San Bruno	0.83	0	8.87	0	0	0	9.69
San Carlos	24.6	0	11.36	0	9.15	0	45.11
San Mateo City	6.7	7.38	2.39	1.54	15.80	0.75	34.56
San Mateo County	21.6	4.99	2.41	0.36	0.93	0	30.27
South San Francisco	50.4	22.34	0	3.98	15.87	31.05	123.27
Woodside	0	0	0	0	0	0	0
Total	151.3	58.21	56.93	32.43	159.79	49.16	507.83

Table 5.4. Preliminary estimates of mercury loads reduced in San Mateo County by control measure category from July 1, 2013 through June 30, 2019 (FY 2013/14 through FY 2018/19).

Control Measure Category		Mercury Loads Reduced (g/year)						Cumulative Load Reduced
		FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	
Source Property Identification and Referral								
GI and Other Stormwater Treatment Controls	Parcel-based GI/LID (i.e., new development and redevelopment projects)	151.23	57.48	56.42	32.31	143.96	45.49	486.90
	Green Streets and Regional Retrofits	0.08	0.73	0.51	0.11	0.38	0.40	2.21
	Hydrodynamic Separators (a large full trash capture system) ³					15.45	3.27	18.72
Enhanced O&M Measures ⁴								
Manage PCBs in Building Materials ⁴								
Manage PCBs in Infrastructure ⁴								
Diversion to POTW ⁴								
Source Controls/Other ⁴								
Total – All San Mateo County Permittees and Controls		151.31	58.21	56.93	32.43	159.79	49.16	507.83

1. Load Reduced = (Source Property Area (acre)) x (1.033 – 0.215 (g/acre/year)).
2. For parcel-based projects, Load Reduced = (Project Area (acre)) x (Existing Yield – 0.033 (g/acre/year)). For green street or regional retrofit projects, Load Reduced = (Project Drainage Area (ac)) x (area-weighted mercury yield (g/acre/year)) x 0.70. See Section 4.0 for acres associated with this control measure.
3. Load Reduced = (Project Drainage Area (acre)) x (area-weighted mercury yield (g/acre/year)) x 0.20.
4. Loads reduced for these control measures will be provided in future reports, as appropriate.

Mercury Mass Collected via Countywide Hazardous Waste Collection Program

San Mateo County municipalities participate in San Mateo County Health Department's Household Hazardous Waste (HHW) Program and Very Small Quantity Generator Business Collection (VSQG) Program (see Section 3.8). The estimated mass of mercury collected in FY 2014/15 through FY 2017/18 via these programs is shown in Table 5.5. It should be noted that these mass estimates are not directly comparable to pollutant load reductions in stormwater runoff discharges.

Table 5.5. Estimated mercury mass collected via the San Mateo County Health Department's Household Hazardous Waste (HHW) and Very Small Quantity Generator Business Collection (VSQG) programs.

Mercury Containing Device/Equipment	FY 2014-15		FY 2015-16		FY 2016-17		FY 2017-18		FY 2018-19	
	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)
Fluorescent Lamps (linear ft) ^{1,2}	25,532	0.05	89,662	0.19	93,896	0.19	125,582	0.26	107,269	0.22
CFLs (each) ³	1,881	0.01	17,211	0.08	17,354	0.08	18,689	0.08	18,513	0.08
Thermostats (each) ⁴	26	0.10	12	0.05	10	0.04	11	0.04	15	0.06
Thermometers (each) ⁵	313	0.19	13	0.01	19	0.01	0	0.00	25	0.02
Switches (each)	18	0.05	0	0.00	0	0.00	0	0.00	26	0.07
Total Mass of Mercury Collected (Kg)		0.40		0.32		0.32		0.39		0.45

^[1]The County HHW Program reported the number of circle tubes and U-bent lights. A conservative assumption was made that all U-bent tubes were 22 inches and all circle tubes were 8 inches based on the most available, smallest sizes found on Internet searches.

^[2]The average mercury content for a four-foot linear fluorescent lamp is 8.3 milligrams (mg). This is equal to 2.075 mg per linear foot. Source: NEMA 2005. Fluorescent and Other Mercury-Containing Lamps and the Environment: Mercury Use, Environmental Benefits, Disposal Requirements. National Electrical Manufacturers Association. March 2005. 14p.

^[3]The National Electrical Manufacturers Association (NEMA) announced that under the new voluntary commitment, effective October 1, 2010, participating manufacturers will cap the total mercury content in CFLs that are under 25 watts at 4 mg per unit, and CFLs that use 25 to 40 watts of electricity will be capped at 5 mg per unit. Each CFL recycled is assumed to have an average mass of 4.5 mg mercury. New CFLs are also assumed to have 4.5 mg mercury on average. Source: NEMA 2010. NEMA Lamp Companies Agree to Reduction in CFL Mercury Content Cap. Available at <http://www.nema.org/media/pr/20101004a.cfm>. Accessed April 11, 2012.

^[4]The amount of mercury in a thermostat is determined by the number of ampoules. There are generally one or two ampoules per thermostat (average is 1.4) and each ampoule contains an average of 2.8 grams (g) of mercury. Therefore, each thermostat recycled is assumed to contain approximately 4.0 g of mercury. Source: TRC 2008. Thermostat Recycling Corporation's Annual Report for the U.S. Prepared by the Thermostat Recycling Corporation. [http://www.thermostat-recycle.org/files/u3/2008 TRC Annual Report.pdf](http://www.thermostat-recycle.org/files/u3/2008%20TRC%20Annual%20Report.pdf).

^[5]USEPA reports that glass mercury fever thermometers contain about 0.61 g of mercury. Source: USEPA 2012. Thermometers. Available at <http://www.epa.gov/mercury/thermometer-main.html>. Accessed April 11, 2012.

6.0 DISCUSSION AND NEXT STEPS

Building on the efforts described in this report, SMCWPPP and San Mateo County MRP Permittees plan to continue to work together to conduct a variety of activities to continue addressing MRP requirements for PCBs and mercury and making progress towards achieving the TMDL allocations, including the following tasks:

- SMCWPPP will continue to refine and prioritize the current list of WMAs in San Mateo County, identify new priority WMAs as needed, and attempt to identify source areas within WMAs. As part of these efforts, SMCWPPP is currently evaluating the results of its WY 2019 POC monitoring program (sediment sampling for PCBs and mercury) that targeted selected catchments and parcels of interest. SMCWPPP is also evaluating the results of PCBs and mercury sampling conducted in San Mateo County during the RMP STLS's WY 2019 stormwater runoff monitoring program.
- During WY 2020, SMCWPPP plans to conduct additional POC monitoring (8 sediment samples for PCBs and mercury), targeting selected catchments and parcels of interest. SMCWPPP will also continue to assist the RMP STLS select PCBs and mercury sampling stations in San Mateo County for its WY 2020 stormwater runoff monitoring program.
- SMCWPPP and San Mateo County Permittees will continue attempting to identify PCBs source properties in the County and refer them to the Regional Water Board, based on the evaluation of the results of the WY 2019 POC monitoring program and other appropriate data, as they become available.
- SMCWPPP will continue to evaluate the cost-effectiveness of conducting additional POC monitoring efforts in future years (e.g., sediment and stormwater runoff sampling for PCBs and mercury) that could further inform implementation of controls in priority WMAs.
- SMCWPPP will complete the RAA to support GI planning and demonstration of PCBs and mercury load reductions to meet goals set by the MRP. The modeling system supporting the RAA will be used to test various combinations of GI projects within each city and unincorporated county jurisdiction, and will provide output that will support decision-making and GI planning. SMCWPPP will also submit the GI RAA for peer review and address any comments received.
- SMCWPPP will continue its efforts to work with San Mateo County municipalities, schools, and the San Mateo County Office of Sustainability, to pursue funding for and facilitate implementation of cost-effective GI, including regional multi-jurisdiction and multi-benefit stormwater capture and treatment projects. This will include continued follow-up on project concepts and related prioritization efforts presented in SMCWPPP's Countywide Stormwater Resource Plan. SMCWPPP will also continue developing an implementation-level approach to achieving water quality goals and other community benefits associated with GI, via the ongoing development of the San Mateo Countywide Sustainable Streets Master Plan (funded by a Caltrans Adaptation Planning Grant issued to C/CAG). In addition, SMCWPPP will continue advancing GI project designs through \$2.94 million in state grant funds issued to C/CAG through the California Natural Resources Agency. All of these efforts to support GI implementation in San Mateo County and seek new project funding and opportunities will be integrated to the extent feasible with plans to create a new Flood and Sea Level Rise Resiliency Agency (FSLRRD) (resilientsanmateo.org) in the County by January 2020. SMCWPPP's FY 2018/19 Annual Report provides additional details.

Updated Control Measure Plan for PCBs & Mercury in San Mateo County Stormwater Runoff (September 2019)

- With continued assistance and guidance from SMCWPPP, San Mateo County Permittees will begin to implement their GI Plans that were submitted to the Regional Water Board in September 2019.
- SMCWPPP will develop a control measures plan, including a schedule and corresponding RAA, which demonstrates quantitatively that sufficient control measures will be implemented to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations by 2028 and 2030, respectively. Per the requirements in MRP Provisions C.11/12.d., this control measures plan is due in September 2020. As part of this effort, SMCWPPP and San Mateo County Permittees will continue planning scenarios for control measure implementation in priority WMAs in San Mateo County. High priority will continue to be given to the Pulgas Creek pump station north and south drainages (WMA 31 and WMA 210), which are the two WMAs in San Mateo County with the greatest number of samples with elevated concentrations of PCBs in sediment and stormwater runoff samples to-date.
- SMCWPPP will continue to evaluate opportunities to take credit for PCBs and mercury loads avoided due to “self-abatement” of existing PCBs contamination sites in San Mateo County.
- SMCWPPP will continue to work with San Mateo County Permittees to look for opportunities to take credit for PCBs and mercury loads avoided due to planned removals of sediments with elevated levels of pollutants. SMCWPPP will also continue to evaluate opportunities to optimize existing municipal O&M activities, enhance planned sediment removals, and/or identify new removal actions, as cost-effective.
- SMCWPPP will continue to work with San Mateo County Permittees to update the existing San Mateo County GI and stormwater treatment tracking database described previously, and update the associated PCBs and mercury load reduction calculations. This effort will be coordinated with ongoing development of C/CAG’s San Mateo Countywide Sustainable Streets Master Plan (funded by an Adaptation Planning Grant from Caltrans), which includes a task to develop a San Mateo County GI tracking tool per the requirements in MRP Provision C.3.j.iv.
- SMCWPPP will continue to work with other Bay Area stormwater management programs through the BASMAA MPC to develop a system for managing data during the new programs to manage PCBs materials during building demolition in compliance with Provision C.12.f., and refine, document and report on the data collection and assessment methodology currently under development. SMCWPPP will also assist San Mateo County Permittees with other closely related Provision C.12.f. reporting requirements (e.g., Permittees must submit with their FY 2019/20 Annual Reports a running list of applicable structures that applied for a demolition permit and those that had materials with PCBs at 50 ppm or greater).
- SMCWPPP will continue to participate in the RMP PCBs Work Group to help oversee RMP studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas. A continued focus will be the conceptual model under development for Steinberger Slough in San Mateo County and associated monitoring fieldwork by the RMP.
- SMCWPPP will continue to work with San Mateo County Environmental Health Services (EHS) on education and outreach efforts to San Mateo County residents likely to consume locally-caught fish from the Bay. EHS’s Fish Smart program conducts a variety of related activities, such as maintenance of strategically placed signs, training of healthcare workers to disseminate information, and targeted social media posts. SMCWPPP will also work with EHS to conduct an evaluation of this risk reduction program.

7.0 REFERENCES

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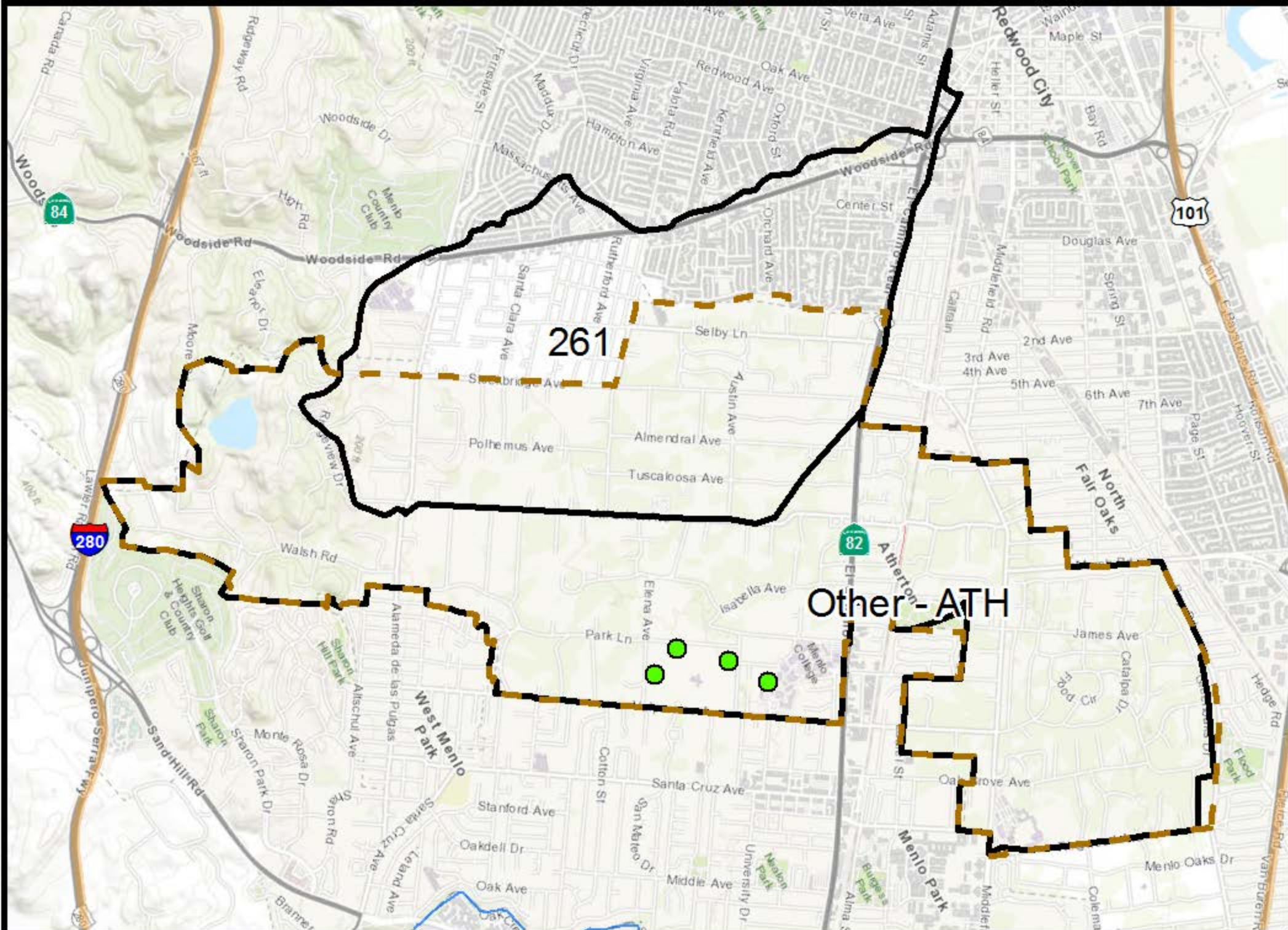
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Appendix A

Maps for each San Mateo County Permittee showing WMAs
and GI/LID facilities

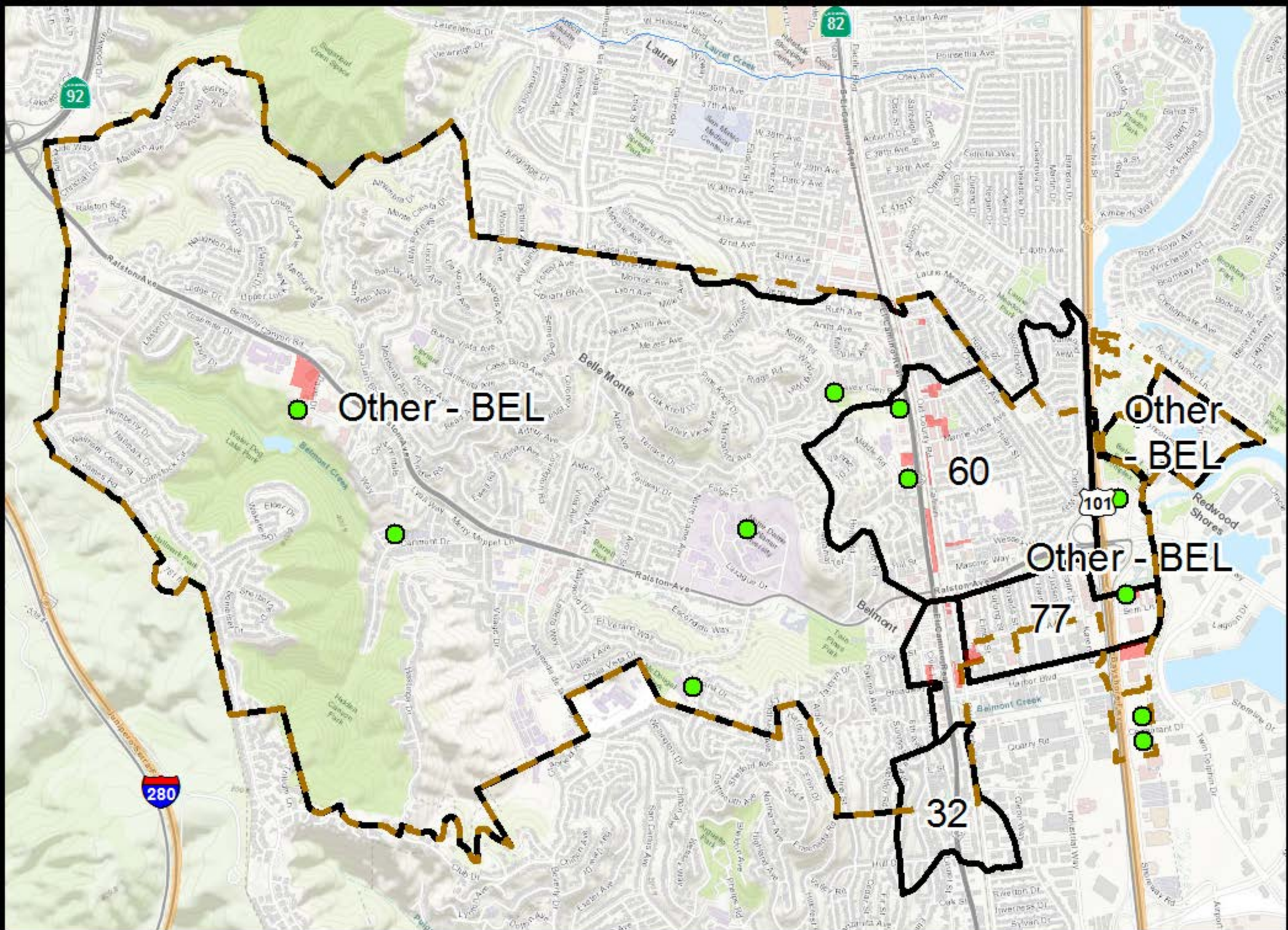


**Figure A-1. WMAs and GI/LID in Atherton
Atherton Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

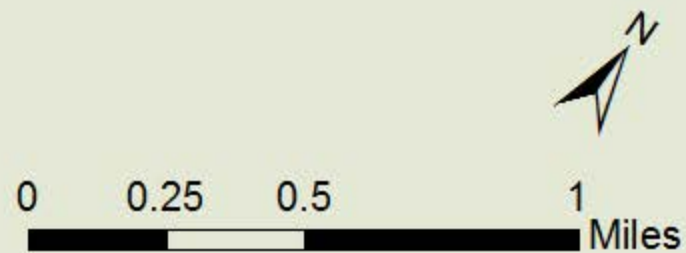
0 0.4 0.8 1.6
Miles





**Figure A-2. WMAs and GI/LID in Belmont
Belmont Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



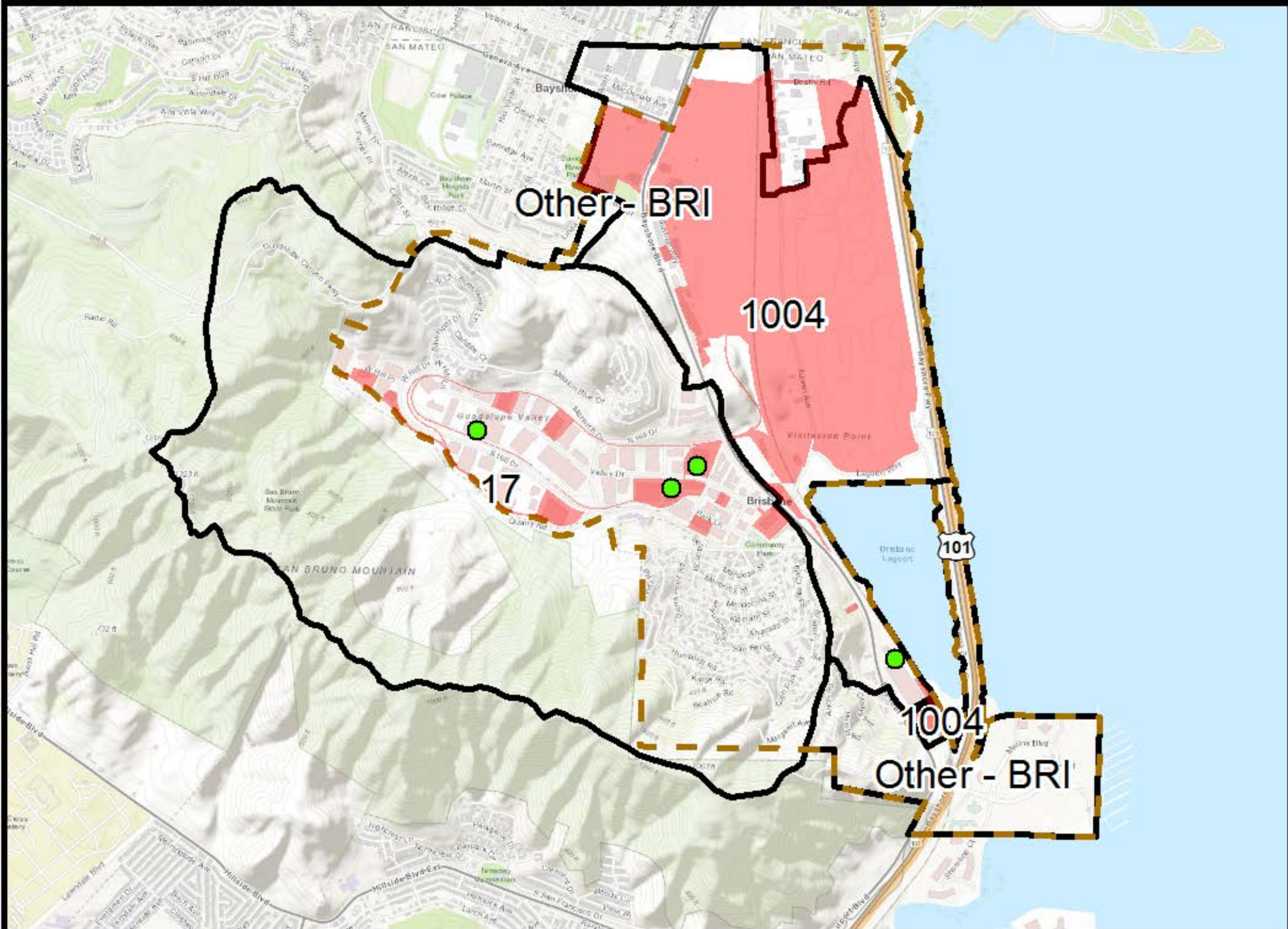
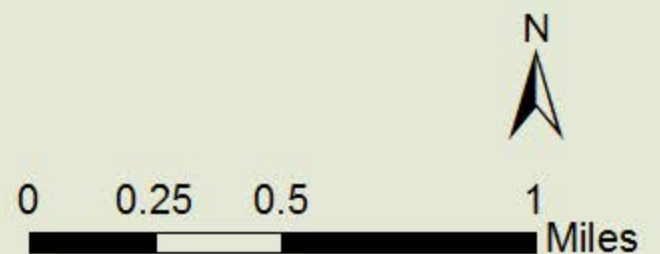


Figure A-3. WMAs and GI/LID in Brisbane
Brisbane Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



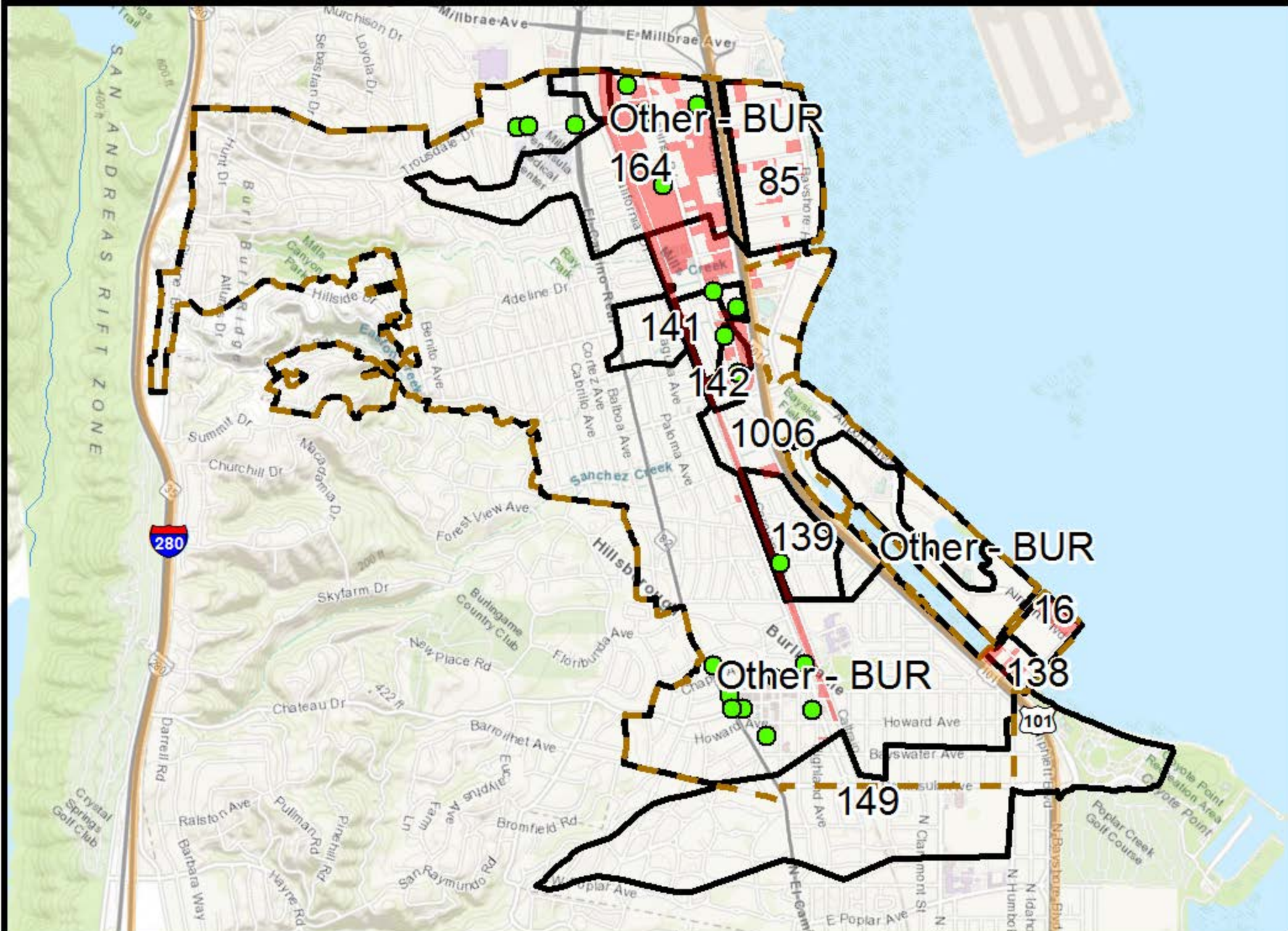
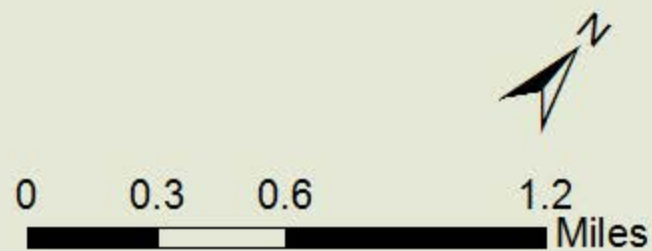


Figure A-4. WMAs and GI/LID in Burlingame
Burlingame Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



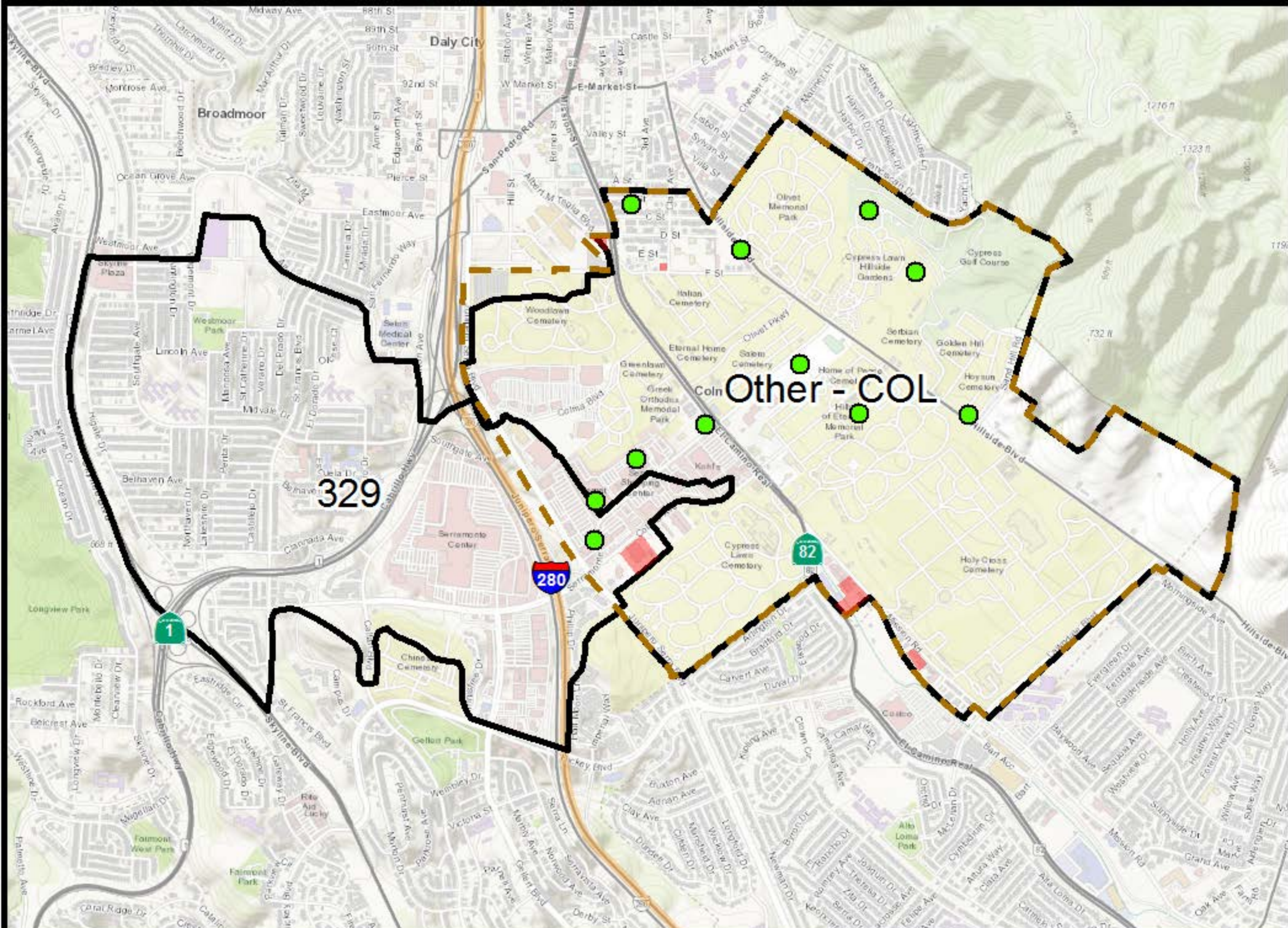
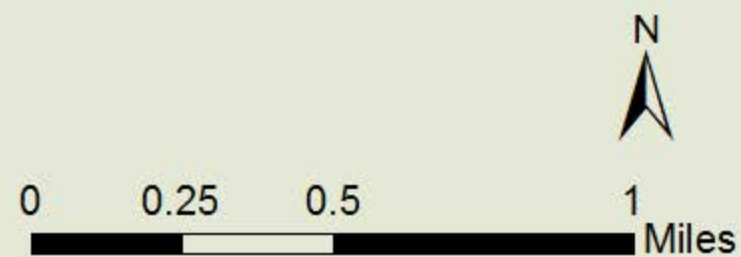
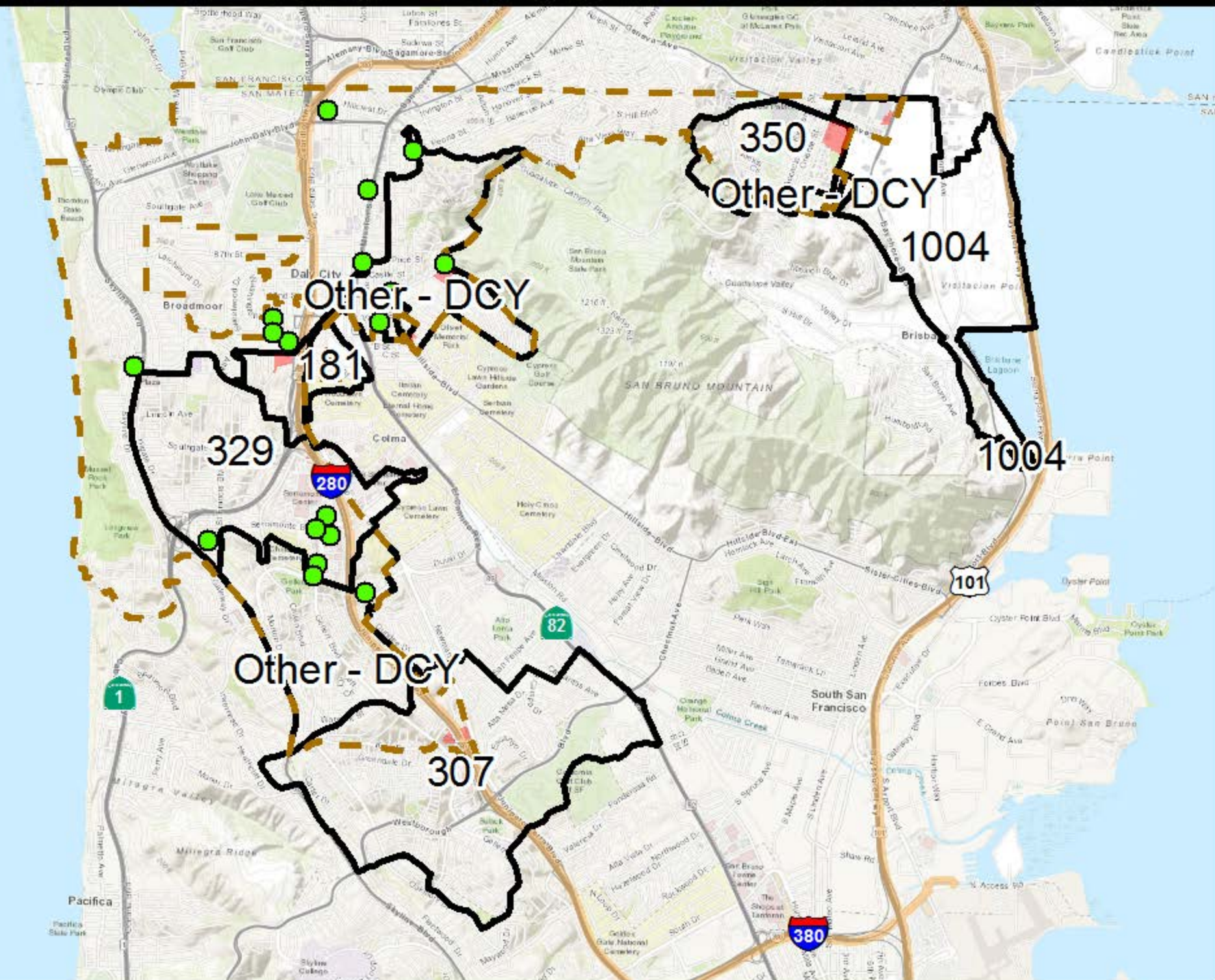


Figure A-5. WMAs and GI/LID in Colma
Colma Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary





**Figure A-6. WMAs and GI/LID in Daly City
Daly City Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



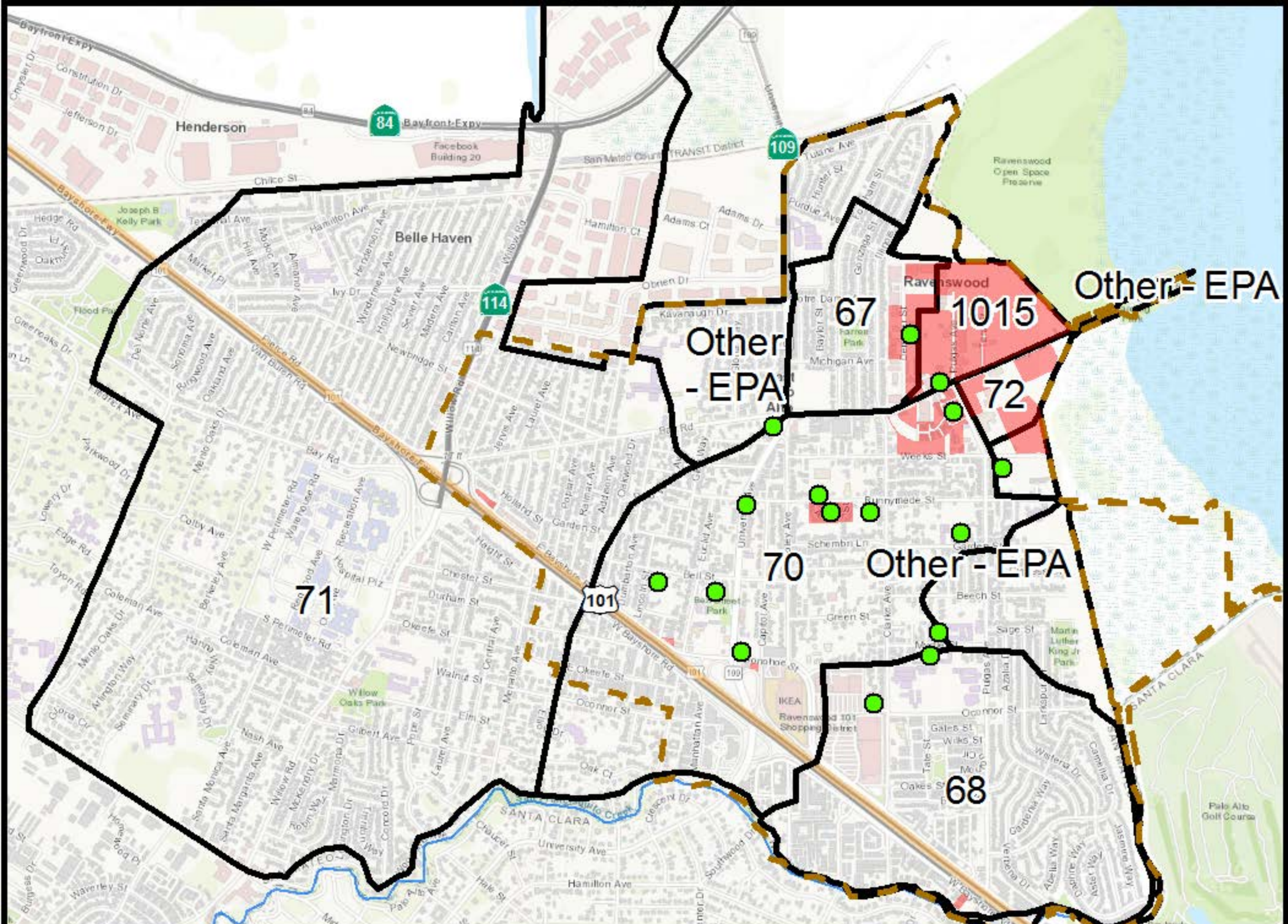
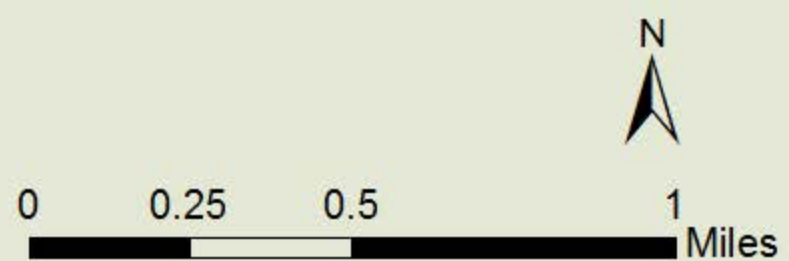


Figure A-7. WMAs and GI/LID in East Palo Alto
East Palo Alto Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



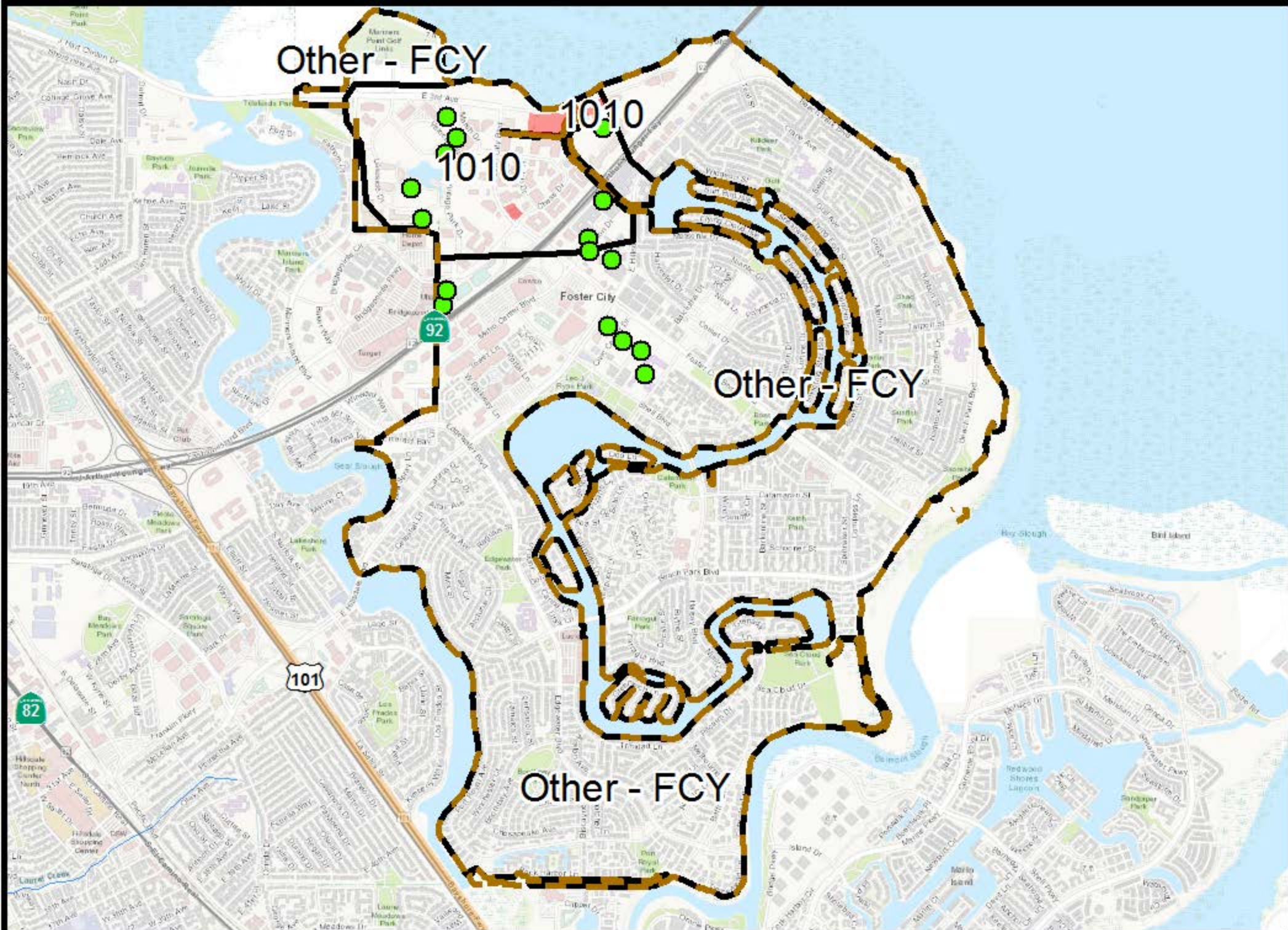
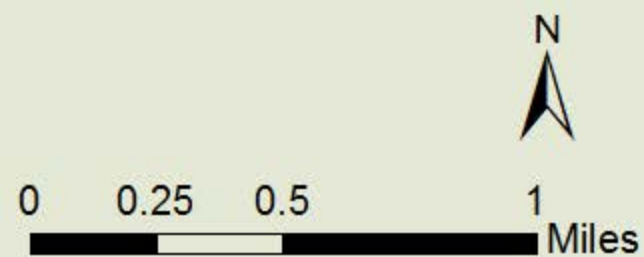
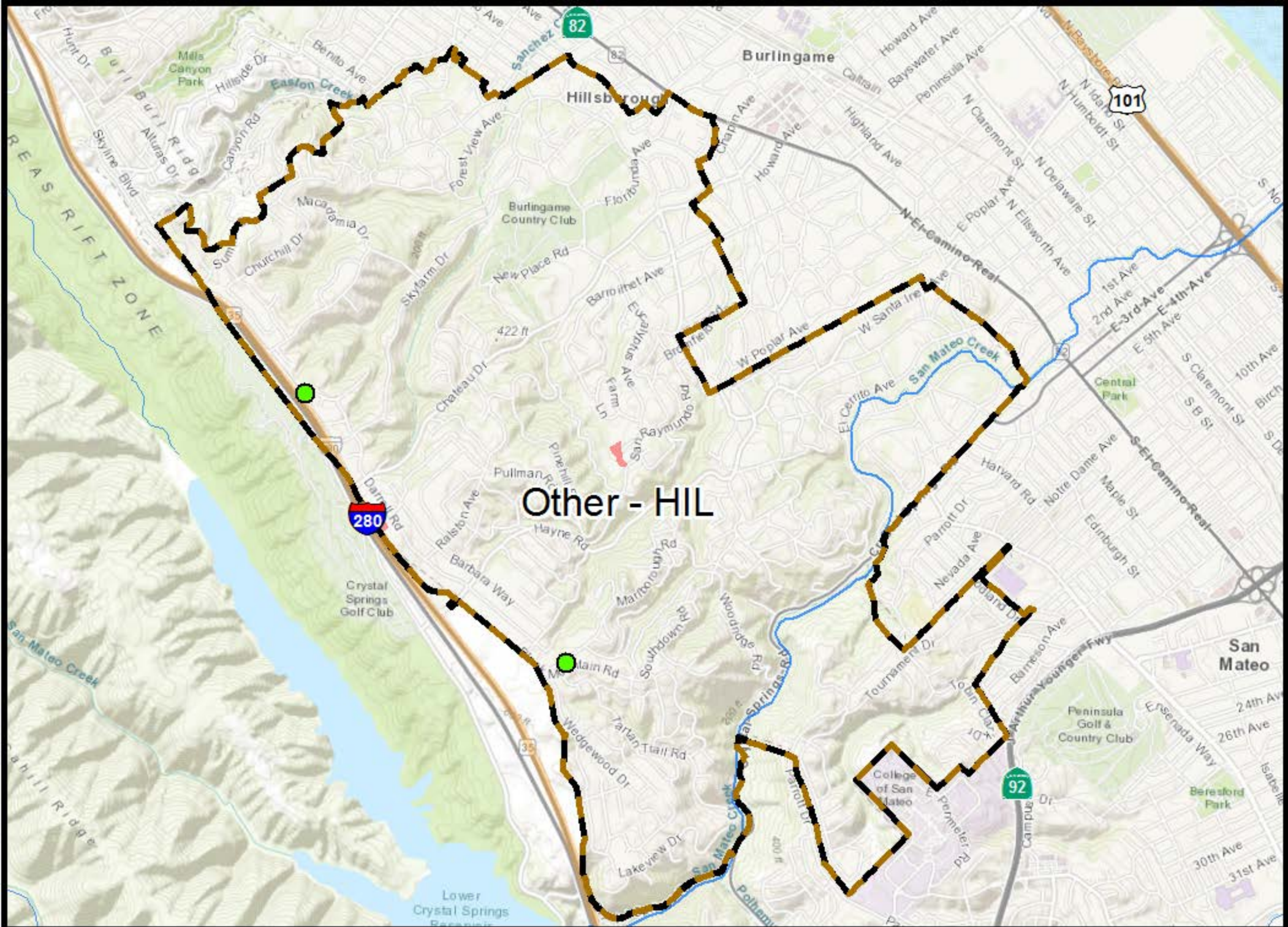


Figure A-8. WMAs and GI/LID in Foster City
Foster City Watershed Management Area Map

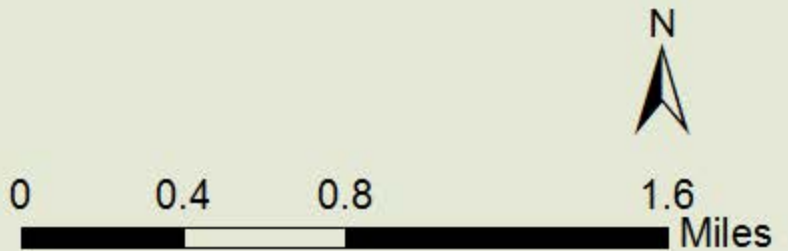
- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

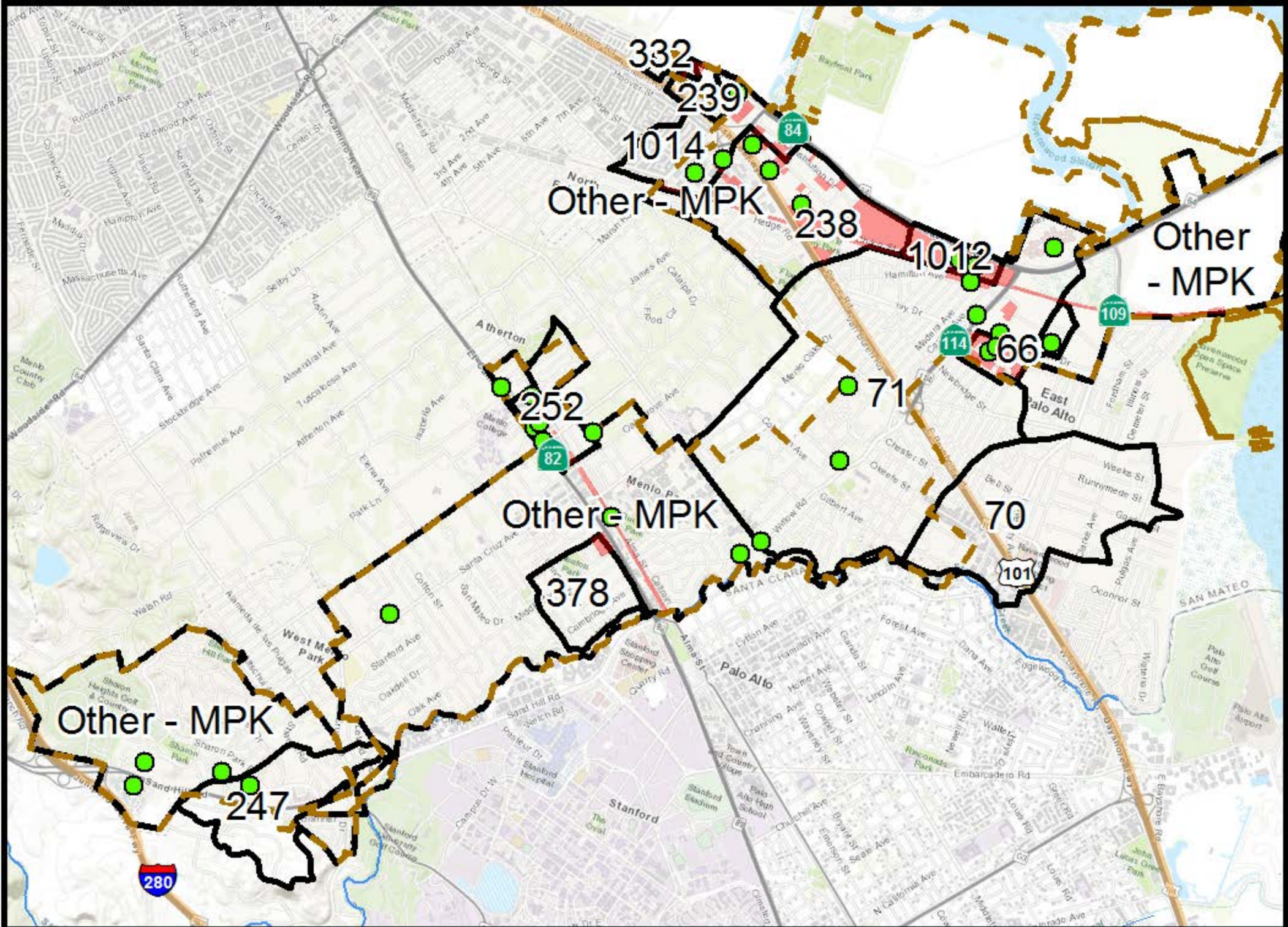




**Figure A-9. WMAs and GI/LID in Hillsborough
Hillsborough Watershed Management Area Map**

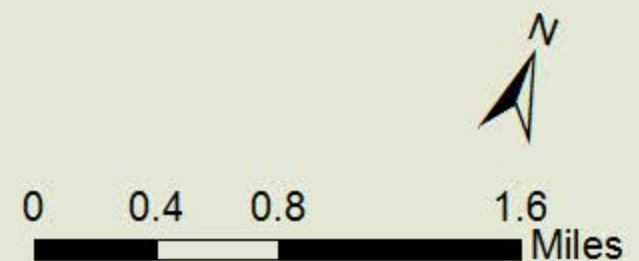
- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary





**Figure A-10. WMAs and GI/LID in Menlo Park
Menlo Park Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



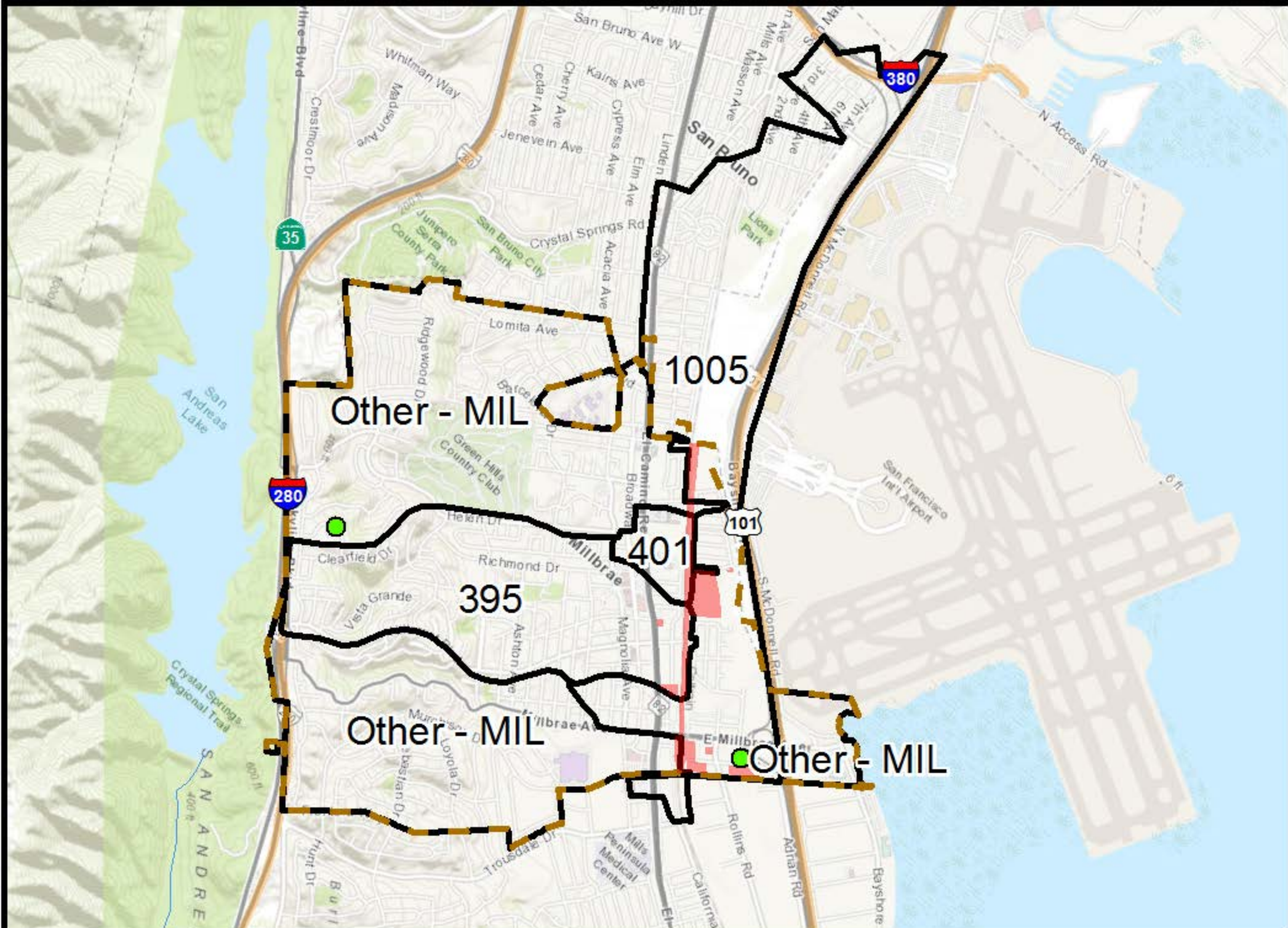
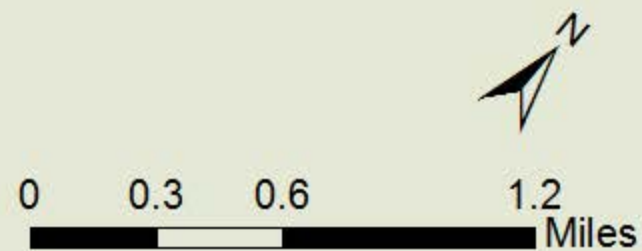


Figure A-11. WMAs and GI/LID in Millbrae
Millbrae Watershed Management Area Map

-  GI/LID Location
-  High Interest Areas
-  Watershed Management Area (WMA)
-  Permittee Boundary



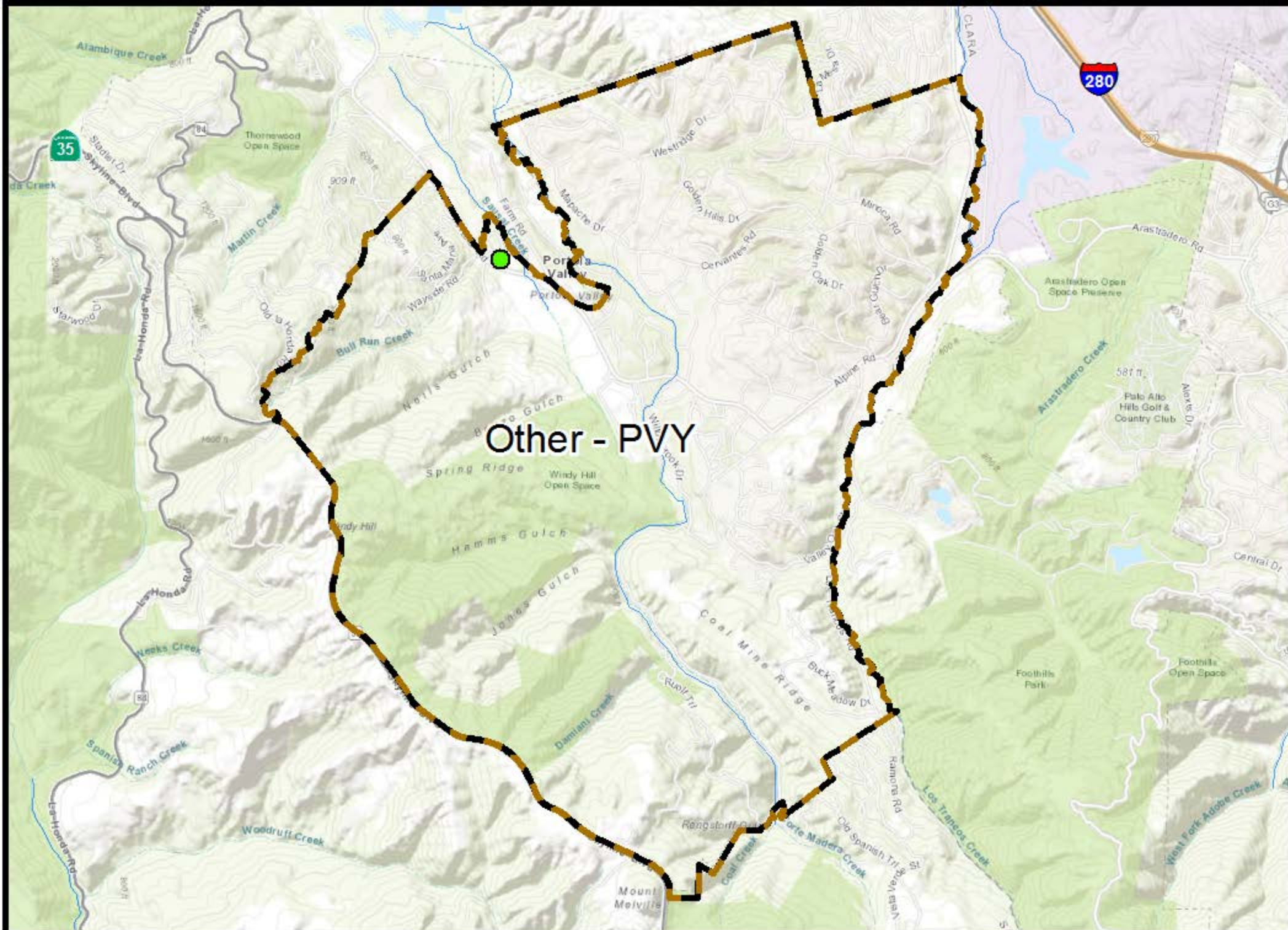
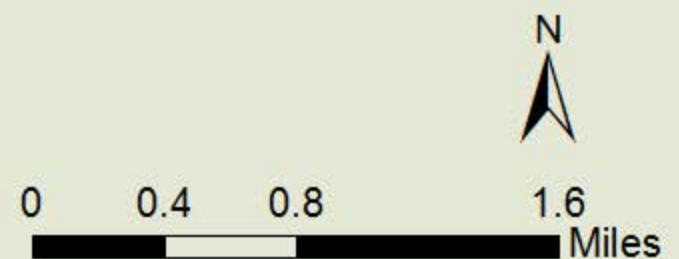
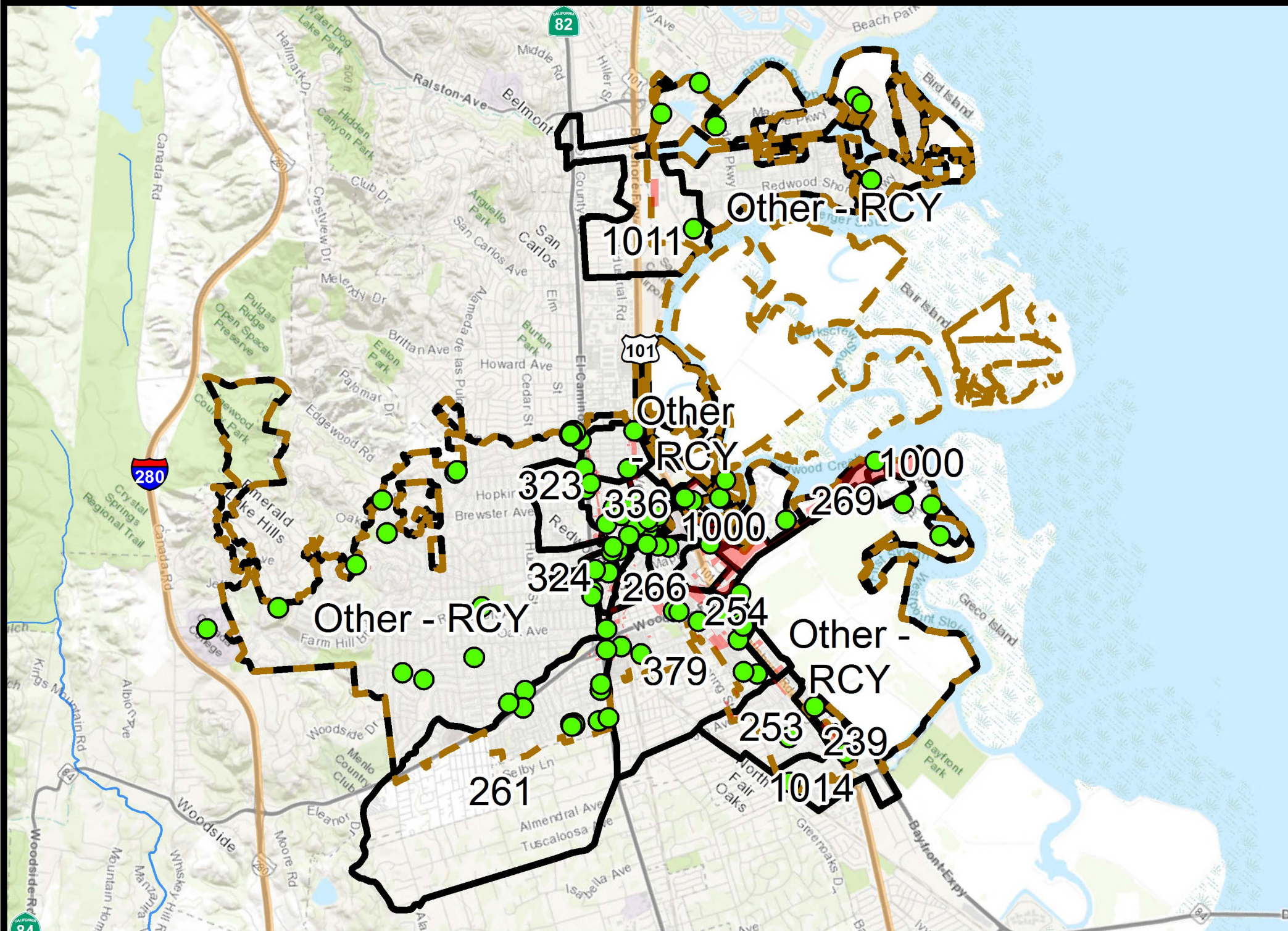


Figure A-12. WMAs and GI/LID in Portola Valley
Portola Valley Watershed Management Area Map

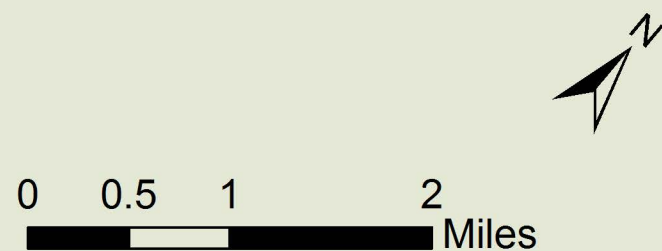
- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary





**Figure A-13. WMAs and GI/LID in Redwood City
Redwood City Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



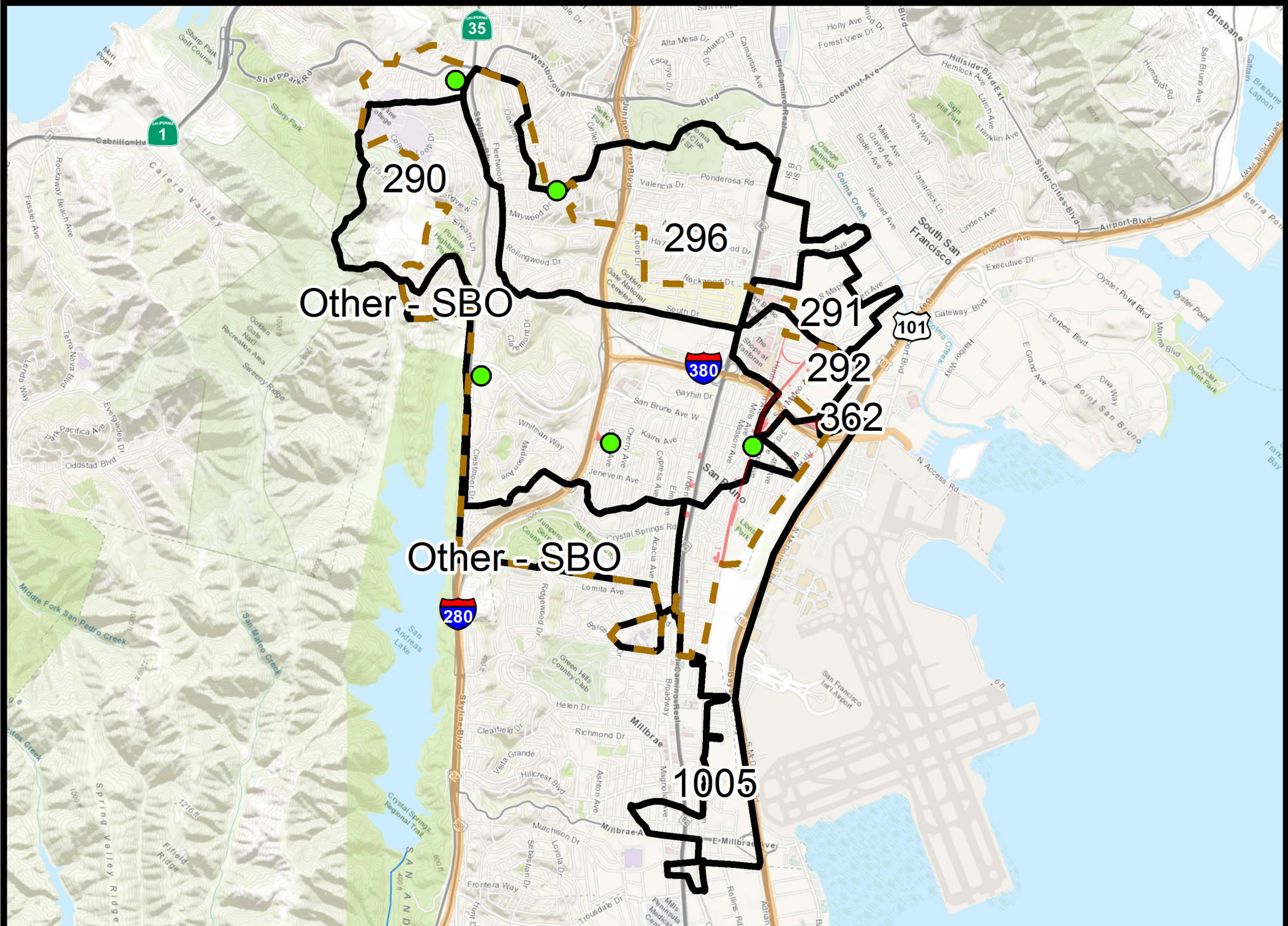
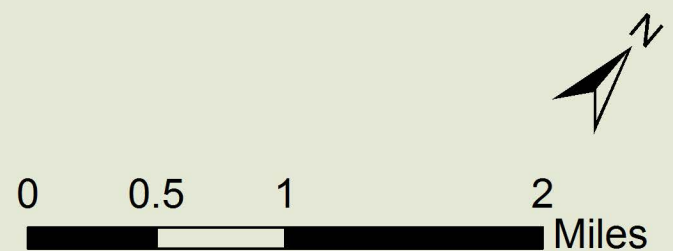


Figure A-14. WMAs and GI/LID in San Bruno
San Bruno Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



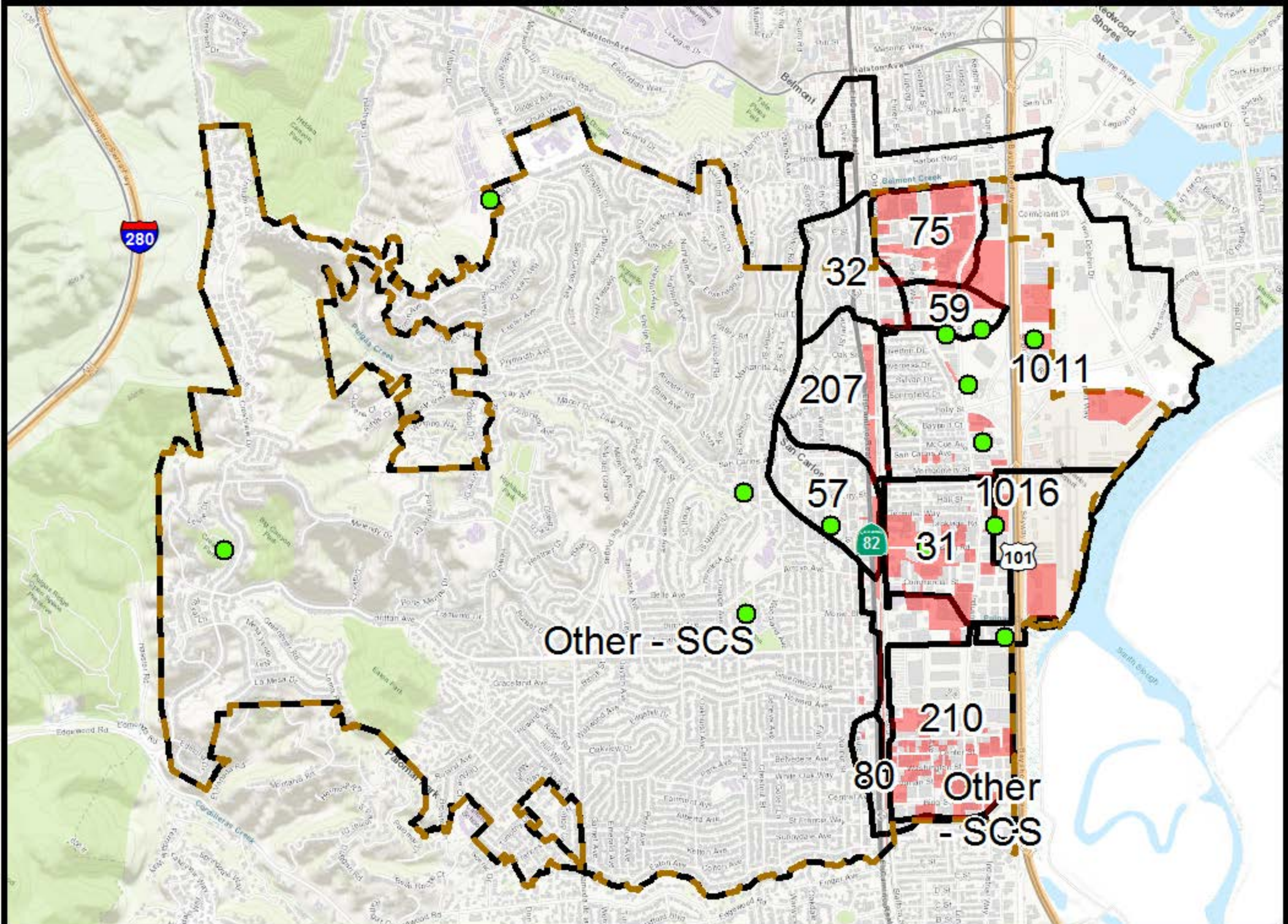
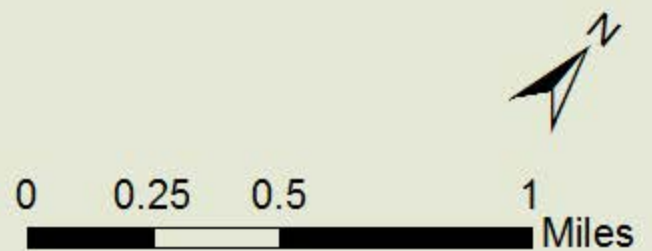


Figure A-15. WMAs and GI/LID in San Carlos
San Carlos Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



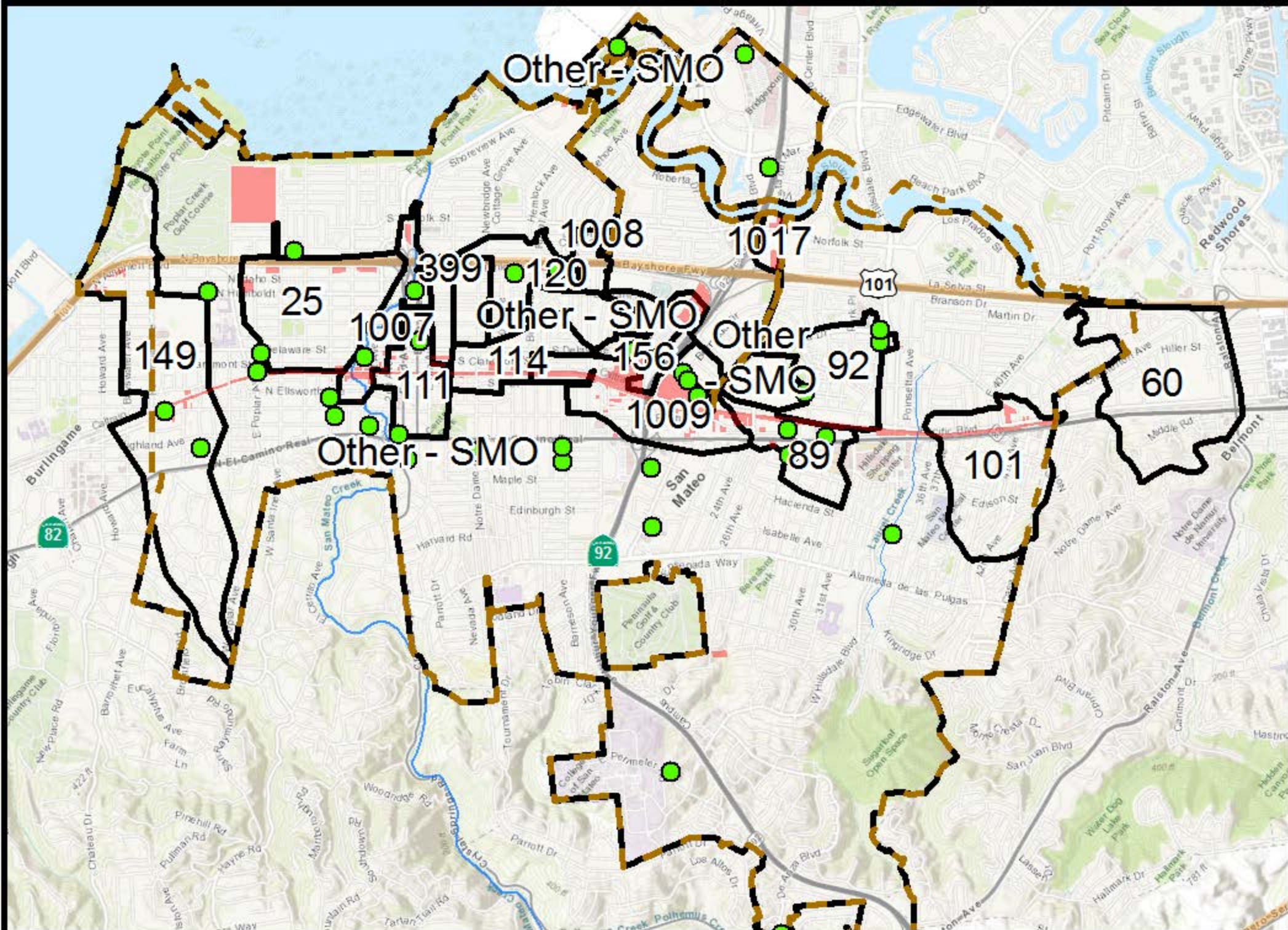
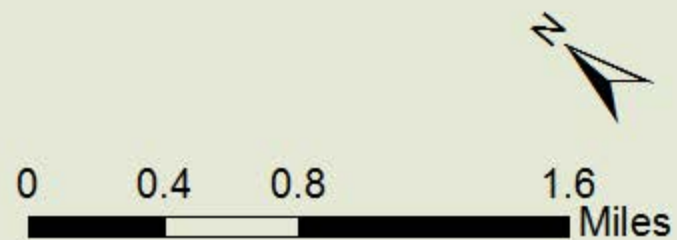
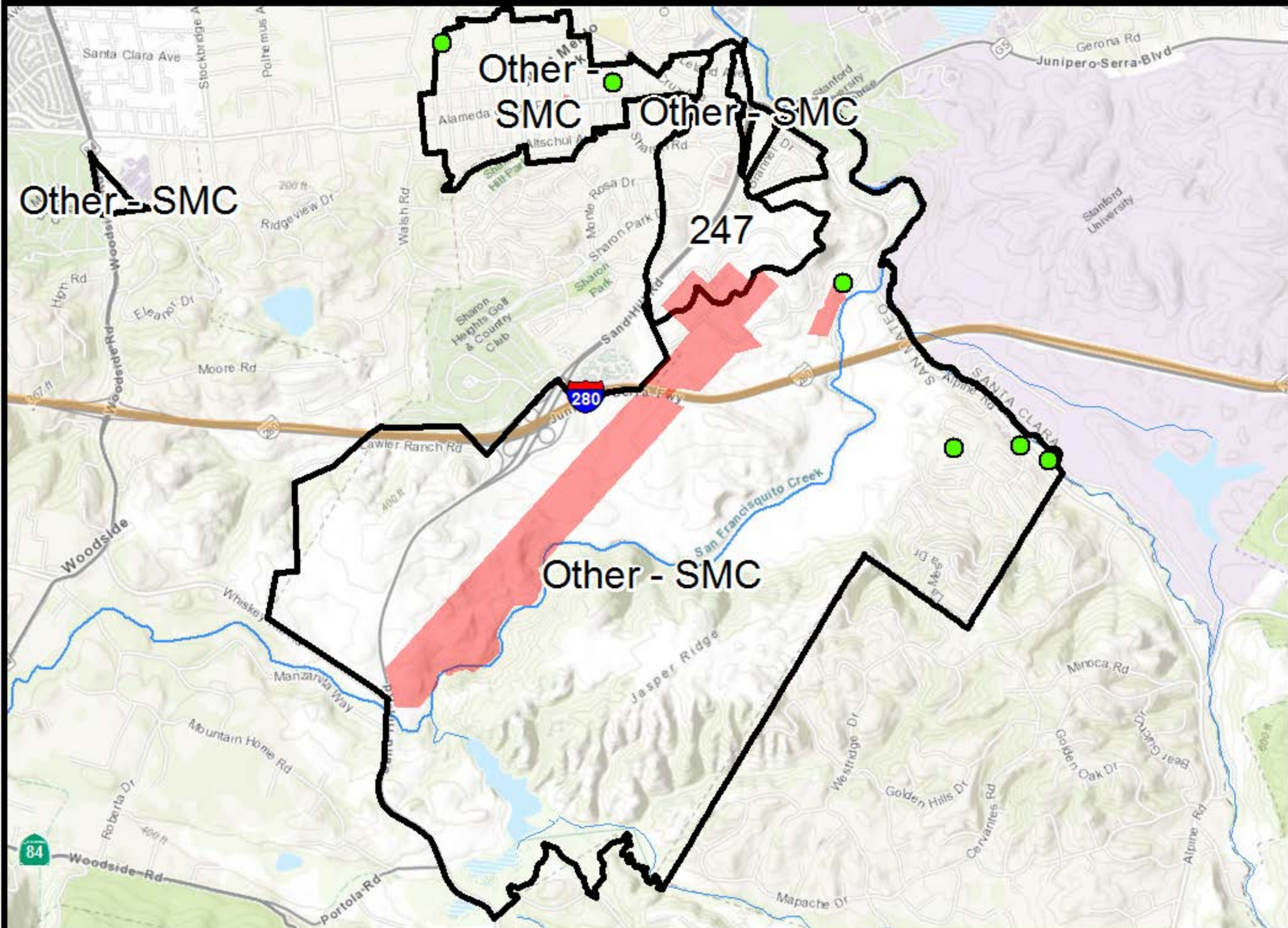


Figure A-16. WMAs and GI/LID in San Mateo
San Mateo Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary





**Figure A-17a. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

0 0.4 0.8 1.6 Miles



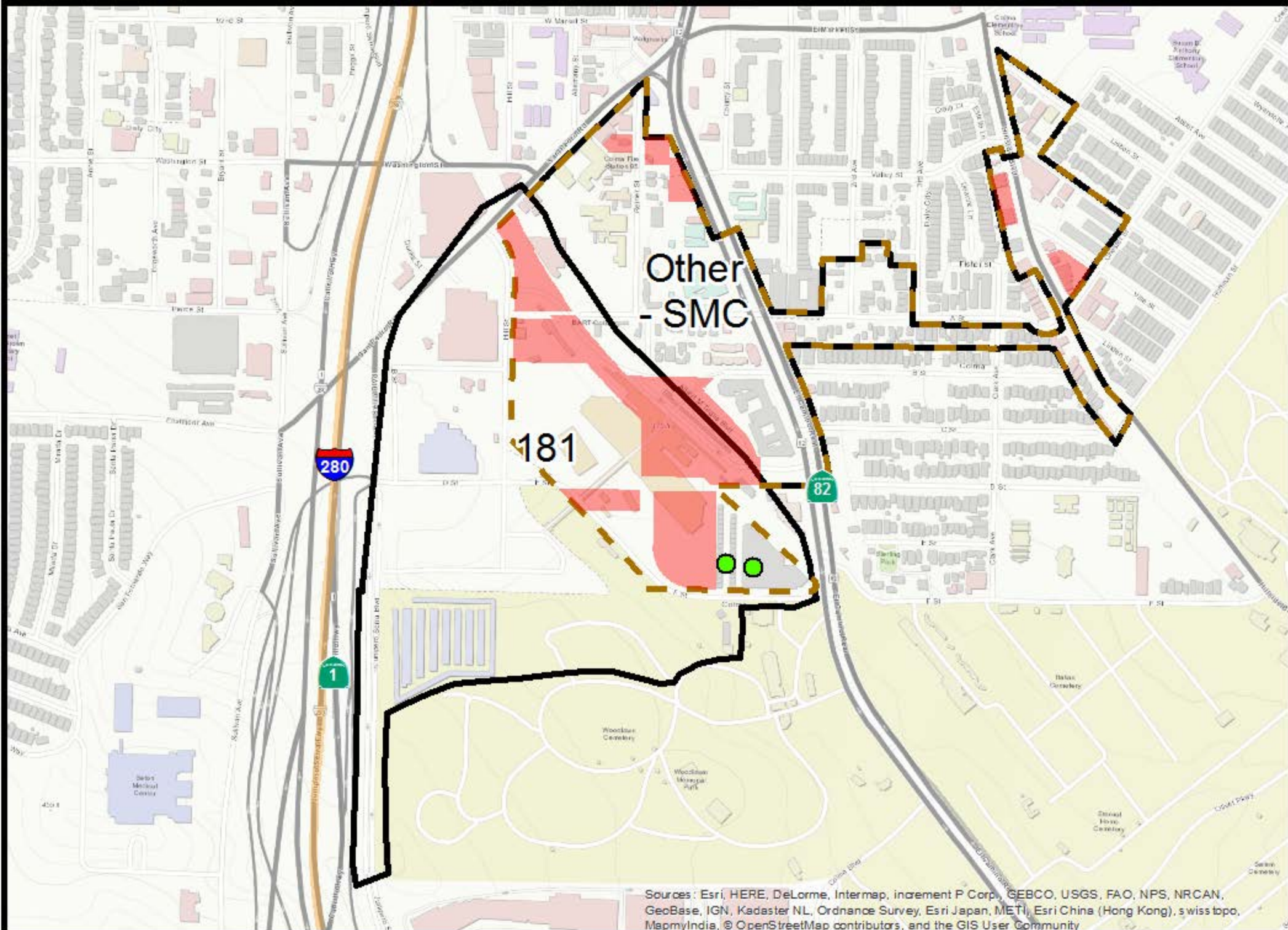
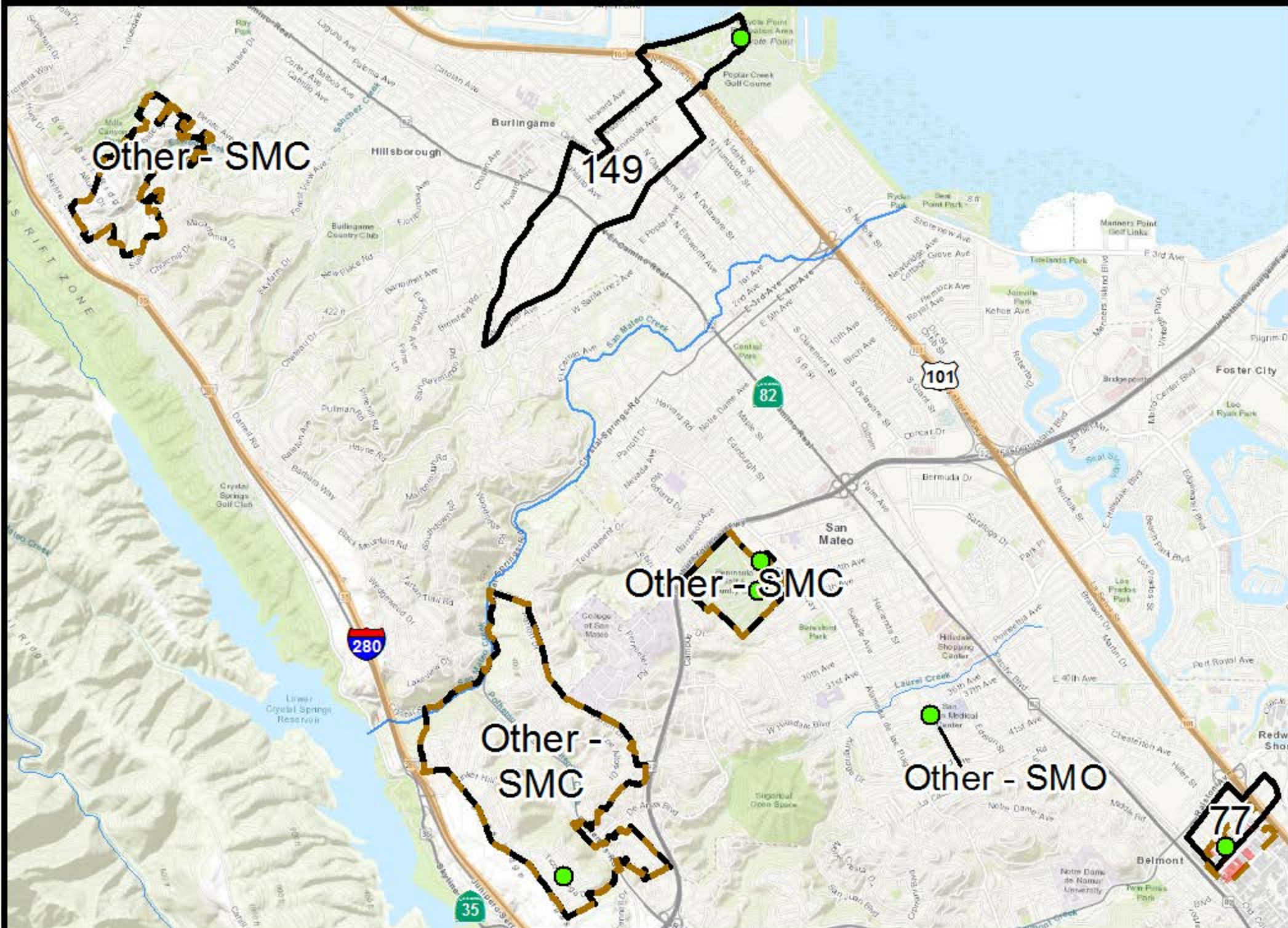


Figure A-17b. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

0 0.1 0.2 0.4 Miles

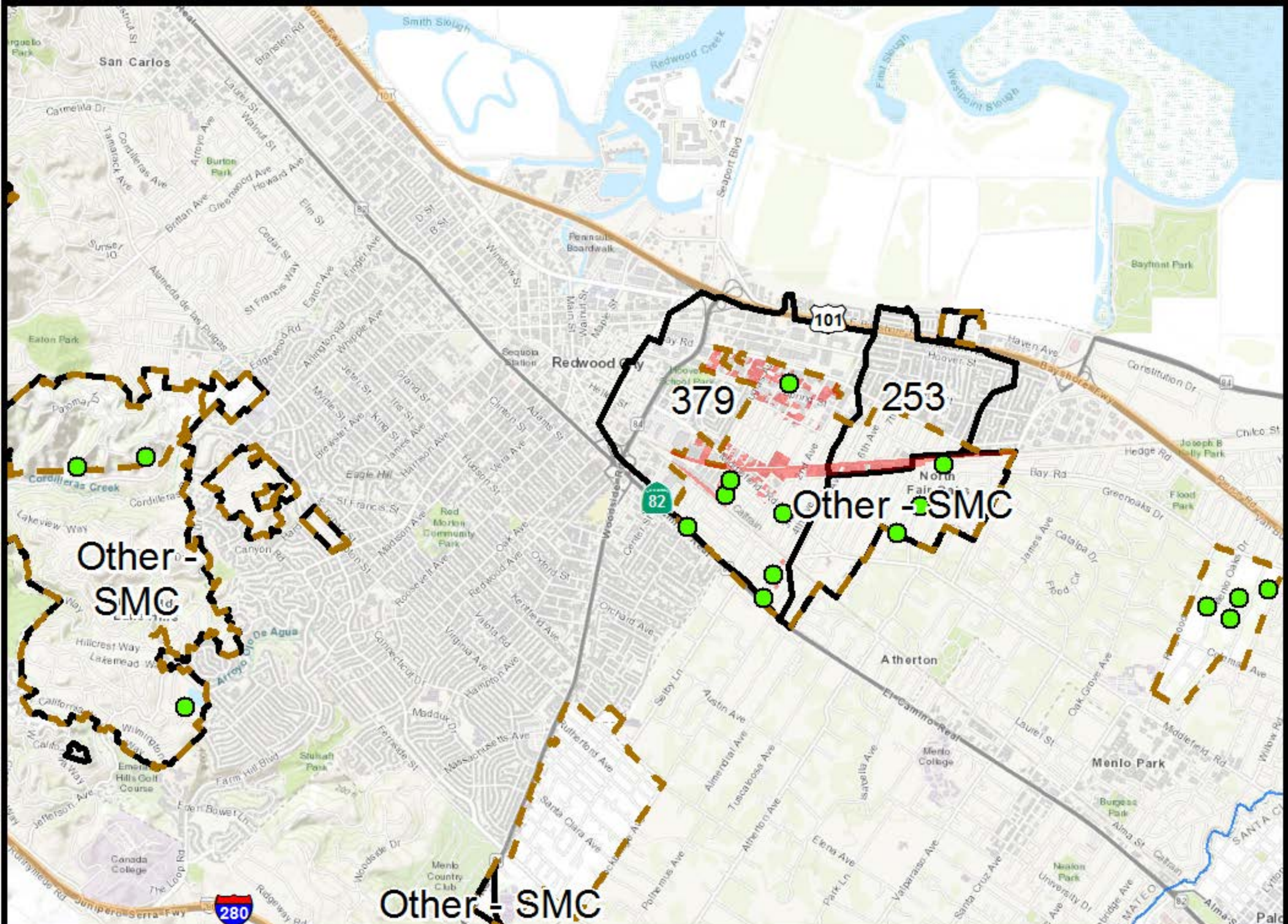




**Figure A-17c. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map**

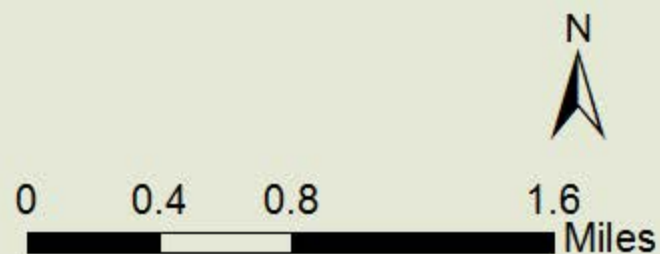
- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary





**Figure A-17d. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



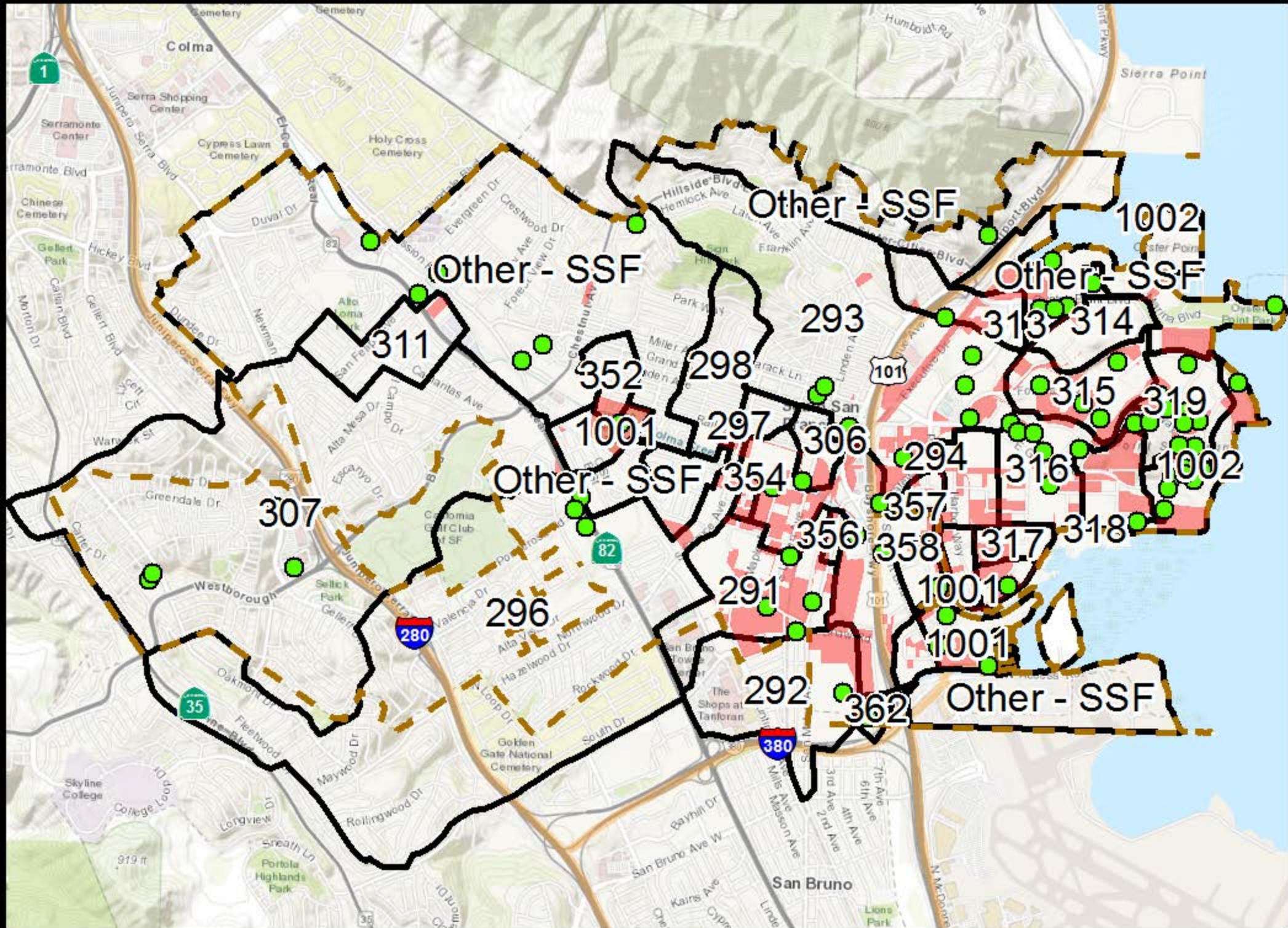
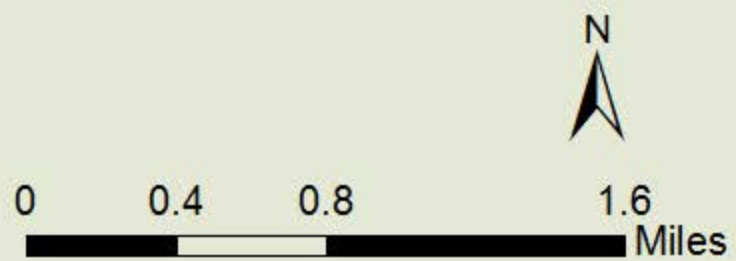
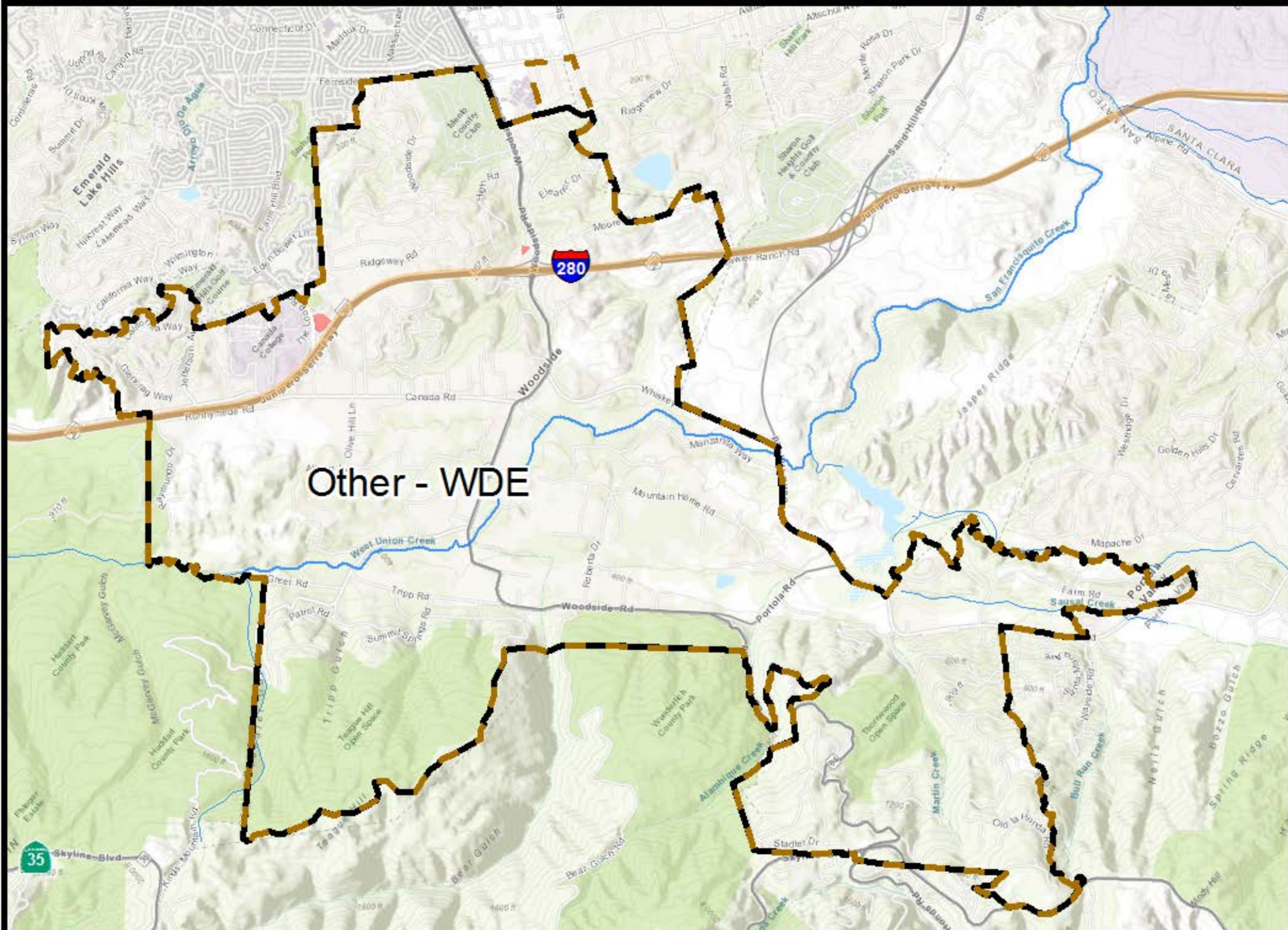


Figure A-18. WMAs and GI/LID in South San Francisco
South San Francisco Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary





**Figure A-19. WMAs and GI/LID in Woodside
Woodside Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



Appendix B

Descriptions of Land Uses Referenced in this Report

Descriptions of Land Uses Referenced in this Report

Old industrial: Area developed as an industrial land use before 1980 and not redeveloped before 2002, including railroads.

Old urban: Area developed before 1980 as any land use other than industrial or airport.

New urban: Area developed or redeveloped after 1980.

Open space: Area that is not developed or mostly pervious including large urban parks, channels, golf courses, and cemeteries.

Other: Airports.

Appendix 13

- Annual Reporting for FY 2018-2019, Regional Supplement for Training and Outreach
- Pesticides Subcommittee Annual Report and Effectiveness Assessment - 2018-2019, California Stormwater Quality Association, Final Report, August 2018
- Annual Reporting for FY 2018-2019, New Development and Redevelopment

Annual Reporting for FY 2018-2019

Regional Supplement for Training and Outreach

San Francisco Bay Area Municipal Regional Stormwater Permit



September 2019



B A S M A A

Alameda Countywide
Clean Water Program

Contra Costa
Clean Water Program

Fairfield-Suisun
Urban Runoff
Management Program

Marin County
Stormwater Pollution
Prevention Program

Napa Countywide
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Flood &
Wastewater District

To Whom It May Concern:

We certify under penalty of law that this document was prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

James Scanlin, Alameda Countywide Clean Water Program

Courtney Riddle, Contra Costa Clean Water Program

Kevin Cullen, Fairfield-Suisun Urban Runoff Management Program

Matt Fabry, San Mateo Countywide Water Pollution Prevention Program

Adam Olivieri, Santa Clara Valley Urban Runoff Pollution Prevention Program

Jennifer Harrington, Vallejo Flood & Wastewater District

Bay Area

Stormwater Management

Agencies Association

P.O. Box 2385

Menlo Park, CA 94026

650.365.8678

info@basmaa.org

**MRP Regional Supplement for Training and Outreach
Annual Reporting for FY 2018-2019**

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C.5.e. Control of Mobile Sources	2
Public Information and Outreach	4
C.7.c.ii.(1) Stormwater Point of Contact	4
Pesticides Toxicity Control	4
C.9.e.ii.(1) Point of Purchase Outreach	4

LIST OF ATTACHMENTS:

C.9.e.ii.(1) Point of Purchase Outreach

Home Depot Letters of Support (2)
Our Water, Our World Consultant's Final Report

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2018-2019

INTRODUCTION

This Regional Supplement has been prepared to report on regionally implemented activities complying with portions of the Municipal Regional Stormwater Permit (MRP), issued to 76 municipalities and special districts (Permittees) by the San Francisco Bay Regional Water Quality Control Board (Water Board). The Regional Supplement covers training and outreach activities related to the following MRP provisions:

- Provision C.5.e., Control of Mobile Sources,
- Provision C.7.c.ii.(1), Stormwater Point of Contact, and
- Provision C.9.e.ii.(1), Point of Purchase Outreach.

These regionally implemented activities are conducted under the auspices of the Bay Area Stormwater Management Agencies Association (BASMAA), a 501(c)(3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area. Most of the 2018-2019 annual reporting requirements of the specific MRP Provisions covered in this Supplement are completely met by BASMAA Regional Project activities, except where otherwise noted herein or by Permittees in their reports. Scopes, budgets, and contracting or in-kind project implementation mechanisms for BASMAA Regional Projects follow BASMAA's operational Policies and Procedures as approved by the BASMAA Board of Directors. MRP Permittees, through their program representatives on the Board of Directors and its committees, collaboratively authorize and participate in BASMAA Regional Projects or Regional Tasks. Depending on the Regional Project or Task, either all BASMAA members or Phase I programs that are subject to the MRP share regional costs.

Training

C.5.e. Control of Mobile Sources

This provision requires:

Each Permittee shall implement a program to reduce the discharge of pollutants from mobile businesses.

(1) The program shall include the following:

- (a) Implementation of minimum standards and BMPs for each of the various types of mobile businesses, such as automobile washing, power washing, steam cleaning, and carpet cleaning.*
- (b) Implementation of an enforcement strategy that specifically addresses the unique characteristics of mobile businesses.*
- (c) Regularly updating mobile business inventories.*
- (d) Implementation of an outreach and education strategy to mobile businesses operating within the Permittee's jurisdiction.*
- (e) Inspection of mobile businesses, as needed.*

(2) Permittees may cooperate county-wide and/or region-wide with the implementation of their programs for mobile businesses, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education.

BASMAA's long-standing [Surface Cleaner Training and Recognition Program](#) addresses

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the BMP and training aspects of the provision by focusing on the most common type of outdoor cleaning – cleaning of flat surfaces like sidewalks, plazas, parking areas, and buildings. Individual Permittees address the inspection and enforcement aspects of the provision.

Cleaners that take the web-based training and a self-quiz are designated by BASMAA as Recognized Surface Cleaners. BASMAA also created and provides marketing materials for use by Recognized Surface Cleaners. Cleaners can use the website to get trained and recognized for the first time or renew their training and recognition, as required annually. Recognized cleaners can also download marketing materials from the website. Potential customers, including Permittees can use the site to verify the recognition status of any cleaner, as can municipal inspectors.

In July 2014, the State Water Board adopted a temporary Emergency Regulation for Statewide Urban Water Conservation that directly affected some of the surface cleaning activities and best management practices of the Surface Cleaner Training and Recognition Program. Among other actions, the emergency regulations “prohibited, except where necessary to address an immediate health and safety need:...

- 2) The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;
- 3) The application of potable water to driveways and sidewalks;”

The regulation was to remain in effect for 270 days, unless extended by the State Water Board due to ongoing drought conditions.

Of particular concern was item 3), which prohibited many of the activities conducted by surface cleaners if an immediate health and safety need could not be demonstrated and would require significant changes in the Surface Cleaner Training and Recognition Program. However, both the term and content of the emergency regulations were temporary, and the State Water Board might need to change either with minimal notice. Given the uncertain long-term future of the emergency regulations, BASMAA adopted a two-part strategy:

- 1) track the status of the emergency regulations with a plan to make the necessary changes to the Surface Cleaner Training and Recognition Program if the regulations became permanent, and
- 2) alert the cleaners that are in the Surface Cleaner Training and Recognition Program to the emergency regulations.

To effect part 2), in August 2014, BASMAA sent a notice to all the Recognized Cleaners alerting them to the emergency regulations. Part 1) progressed along the following chronology of events:

- May 2015, the State Water Board amended and readopted the emergency regulation extending its effectiveness to February 2016.
- February 2016, the State Water Board extended the emergency regulation through October 2016 (into FY 16-17).
- May 2016, the State Water Board replaced the emergency regulation adopted in

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2018-2019

- February 2016 and extended the regulation through February 2017.
- February 2017, the State Water Board extended the emergency regulation for 270 days until November 25, 2017.
- April 2017, the Governor issued Executive Order [B-40-17](#), which builds on actions taken in Executive Order [B-37-16](#), including the State Water Board maintaining prohibitions on wasteful practices such as hosing off sidewalks. And as directed by the Governor in Executive Order B-37-16, the State Water Board is to separately take action to make wasteful water practices permanent.
- February 2018, the State Water Board attempted to make wasteful water practices permanent but after receiving significant opposition from water agencies before the adoption meeting, postponed adoption to allow more time to address comments.

In discussions with BASMAA, State Water Board staff have indicated that the regulations would regulate water use and not the discharge, and the regulations would regulate the use of potable water. BASMAA continues to track any developments and will work with the State Water Board as they develop and adopt a permanent regulation to try to ensure that necessary outdoor surface cleaning activities can be conducted in accordance with both stormwater regulations and urban water conservation regulations.

Public Information and Outreach

C.7.c.ii.(1) Stormwater Point of Contact

This provision requires:

Each Permittee shall maintain and publicize one point of contact for information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives. This point of contact can be maintained individually or collectively and Permittees may combine this function with the spill and dumping complaint central contact point required in C.5.

BASMAA assists with this provision by using the regional website: BayWise.org to list or link to member programs' lists of points of contact and contact information for the stormwater agencies in the Bay Area (<https://baywise.org/about/>).

Pesticides Toxicity Control

C.9.e.ii.(1) Point of Purchase Outreach

This provision requires Permittees to:

- *Conduct outreach to consumers at the point of purchase;*
- *Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and*
- *Participate in and provide resources for the "Our Water, Our World" program or a functionally equivalent pesticide use reduction outreach program.*

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2018-2019

The Annual Reporting provision requires:

Outreach conducted at the county or regional level shall be described in Annual Reports prepared at that respective level; reiteration in individual Permittee reports is discouraged. Reports shall include a brief description of outreach conducted..., including level of effort, messages and target audience. (The effectiveness of outreach efforts shall be evaluated only once in the Permit term, as required in Provision C.9.f. [Ed. C.9.g]).

Below is a report of activities and accomplishments of the *Our Water, Our World* program for FY 2018-2019. For a detailed report of activities, see the attached Consultant's Final Report.

- Coordinated program implementation with major chains Orchard Supply Hardware corporate (OSH), Home Depot, and Ace Hardware National.
 - Orchard Supply Hardware corporate (San Jose) Unfortunately, OSH's parent company, Lowe's decided to close all of its OSH stores in California and across the country in the fall of 2018. OSH was the first large chain to support the *Our Water, Our World* Program, adding 100 stores to the program in its first year after the pilot program and being a very engaged partner for the next 20 years of the program.
 - Home Depot Corporate (Atlanta) directed support of the program with their stores (see letters attached).
- Maintained an inventory of the following: fact sheets, shelf tags, literature rack display signage, *10 Most Wanted* brochures, *Pest or Pal Activity Guide for Kids*, custom-designed product guide dispensers, and three versions of product guides (OSH, Home Depot, and generic), from which participating agencies could purchase materials.
- Updated less-toxic Product Lists: 3 versions – Master by-pest, Master by-manufacturer, and Home Depot product-by-pest.
- Updated / revised Home Depot and General pest calendars to reflect additional pests and products.
- Updated / revised Home Depot and General How Products work handout, research new products, and active ingredients.
- Made revisions to all training packet handouts – revised and updated information, added new dates and contact.
- Revised and updated Herbicide Alternatives handout for Advocates.
- Coordinated employee trainings and tabling events at *Our Water, Our World* stores.

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2018-2019

- Maintained [Our Water, Our World website](#).
- Provided [Ask-the-Expert](#) service—in which the Bio-Integral Resource Center (BIRC) provides 24-hour turnaround on answers to pest management questions. BIRC researched and provided answers to about 44 questions in FY 18-19.
- Provided and staffed exhibitor booths and made presentations to attendees:
 - Excel Gardens Dealer Show, Las Vegas (August 2018)
 - L&L Dealer Show, Reno (October 2018)
 - NorCal trade show, San Mateo (February 2019)
- Participated in UCIPM Continuing Education for IPM Advocates.

Below are some outputs and outcomes for FY 18-19:

- 80 *Our Water, Our World* Store Trainings¹
- 638 employees trained at *Our Water, Our World* stores²
- 104 Tabling events at *Our Water, Our World* stores³
- 4,608 customers contacted by Advocates at tabling events at stores⁴
- 44 questions researched and answered by technical expert
- Home Depot reported that Scott's Miracle Gro increased the sales across each category of their less toxic pesticide product line Nature's Care on average by 12.5% - 30%.
- The sales of Sluggo by Monterey are up approximately 35%.
- The sales of the Copper Soap fungicide by Monterey are up approximately 30%.
- Home Depot continues to increase their less toxic product offerings by 8-12% over the last year.

^{1,2,3,4} Funded by permittees at local level.

Attachments

Point of Purchase Outreach

Home Depot Letters of Support



2455 Paces Ferry Road NW • Atlanta, GA 30339
770-433-8211

Store Support Center

August 8, 2018

Geoff Brosseau
Executive Director
Bay Area Storm Water Management Agencies Association
P.O. Box 2385
Menlo Park, CA 94026

Geoff,

Thank you for the support again this year of the Our Water Our World program in our Home Depot Bay Area stores. The wet weather throughout spring contributed to an increase in rodent populations and weed outbreaks for our customers in Northern California. Annie Joseph and her team of IPM Advocates have been an important resource this selling season, working closely with our associates to raise the awareness of proper rodent trapping, repelling, and exclusion methods and included these methods in their trainings, outreach events, and Home Depot store mentoring visits. They did a great job of making sure our floor displays of traps and less toxic baits were labeled with the less toxic product shelf talkers.

The weed outbreaks this season appeared to increase demand for organic herbicides as the program Advocates saw an increase in customer interest in alternative, non-toxic weed controls including tools, mulches, and eco-friendly herbicides. With our expanded offerings of the new eco-friendly herbicides the Advocates were able to guide many customers looking for less toxic options. The team's engagement, commitment, and IPM expertise continues to make them an essential partner for our Lawn and Garden business in the Bay Area Home Depot stores.

On behalf of The Home Depot, thank you for your partnership and support.

A handwritten signature in black ink that reads "Ron Jarvis".

Ron
Vice President Sustainability & SER



**Interoffice
MEMORANDUM**

DATE: January 11, 2019
TO: California Store Managers, D28 ASMs and Department Heads
FROM: Ron Jarvis
CC: Steve Knott, Scott Jacobson
SUBJECT: Our Water Our World training

OUR WATER, OUR WORLD is a coalition of organizations whose purpose is to encourage consumers to use less toxic pest controls in and around their homes. They specialize in retail friendly education. Their goal is not to alienate consumers by telling them what they can't use, but instead their information focuses on less toxic pest management and ties into products currently on our shelves.

An Our Water, Our World (OWOW) representative will be in your store to help train employees and label less-toxic products with shelf-talkers. The representative may also schedule a tabling event to educate consumers. This ties in well with "How-to" weekend events. The representative will display a sampling of excellent less toxic and Eco Options products off our shelves. They will provide free informational literature and a wealth of knowledge and experience. Please enjoy this additional help in your store.

A representative will contact you before the training or demonstration date to arrange details. Please contact Suzanne Bontempo at (415) 317-0475 if you have any questions.

Thank you

from the desk of.....

Ron Jarvis
Merchandising Vice President – Sustainability
THE HOME DEPOT USA, INC.
2455 Paces Ferry Road
Atlanta, GA 30339
(770) 384-4835
Fax (770) 384-4411

Attachments

Point of Purchase Outreach

Our Water, Our World Consultant's Final Report

Our Water Our World 2018-19 Final Report for BASMAA

created by Suzanne Bontempo August 2019

Program Annual Overview:

- Rats and mice pest problems continue to grow, as we hear the consumers and retail associates requesting our education for management, exclusion and elimination for these pest. We, as IPM Advocates, have seen a continuing increase of interest among the consumers about alternatives to the traditional rodenticides. Suzanne actively researches the latest with rodent management to stay up to date. Besides the continuing education provided by UCIPM, she joined the EPA Rodent control webinar to gain more education. She also invited IPM Advocate Lorenzo Levinger to join the San Francisco IPM TACT Meeting hosted by Chris Geiger of the SF Department of the Environment to learn the latest on rodent abatement, then to report a summary of the meeting to Suzanne. With the latest in less toxic rodent exclusion and elimination, Suzanne shared with the team of IPM Advocates new suggestions to share with the retailers and the consumer. Many hours were spent during store mentoring visits, helping the customers with techniques for excluding pests. We attach laminated educational OWOW exclusion sheets on to the literature racks and in the rodent control aisle where possible. Proper instruction on trap setting techniques and baiting was offered to associates and the customers.
- With the rising customer awareness of possible health risks with Round Up, coupled with the drive of retailers moving away from glyphosate, has led to the urgency of more demand for eco-herbicides. Thankfully within the retail market the eco-herbicides products are more effective then in the past and have been met with positive reviews from consumers. In response to this, I worked with Debi Tidd to revise the Eco-Herbicide handout, which lists all of the eco-herbicides that are available on the retail market and how the active ingredients of each work. This handout was given to the employees on store mentoring visits, at trainings, and even emailed to managers so that they could include this information with inner-store training communications. As a result we have seen a large spike in eco-herbicides being stocked at the retailers and sales of eco-herbicides higher than ever before.
- We, the IPM Advocates, continue to support the local vector control agencies and mosquito abatement. The Fight the Bite handouts for each county that Annie & Debi created continue to be a vital tool and have been stocked in the OWOW literature racks, distributed at each training for employees, public outreach tabling events and to as many parties as possible.
- We, the IPM Advocates, continue our focus on the Asian Citrus Psyllid (ACP) education by reminding the employees and customers to inspect, detect and report to the California Department of Food and Agriculture (CDFA) to help track the spread of the ACP. Educational materials were distributed at every associate

training, and outreach-tabling event for the public. The educational flyers and bookmarks provided by the California Citrus Pest And Disease Prevention Committee (CCPDPC) were distributed to each retailer, displayed in the OWOW literature racks, the retail citrus areas, and at the register check out station when possible.

The year in review:

July:

7/1: Suzanne met with Annie Joseph to begin the transition of Annie's retirement from the OWOW program

7/5: emailed Geoff about the 2018-19 year

7/5: meeting with IPM Advocates-Steve G

7/6: meeting with Annie & Debi to discuss communications with OSH and their buyer Andrea Kennedy.

7/11: meeting with Ed Casey the Friedman's Buyer about OWOW promotions, and advertising the OWOW program. Then a meeting with Annie to discuss the variety of campaigns that supports the OWOW message that we, the IPM Advocates can partner with. We also discussed the upcoming trade shows, and scheduling a meeting with Krissa from Home Depot.

7/20: Provided an introduction with Andrea from OSH to see when we can schedule a meeting to discuss the upcoming retail year and trade show attendance.

August:

8/21: Attended the OWOW continuing education at the UCIPM facility with Karey Winbiel Rojas one other educators to discuss the latest in rodent abatement, weed management and the new publications from UCIPM

8/22: meeting with Annie & all Advocates about the closing of the OSH's

8/24: Follow up meeting with Advocates about each of the OSH's

8/26-8/30: Attend the Central Trade Show in Las Vegas, NV

Suzanne and IPM Advocate Lorenzo Levinger worked to set up the OWOW booth, attend vendor meetings with manufacturers and sales representatives. At this show we learn about new eco-friendly products entering the California market for the 2019 season. We met with over 2,000 attendees throughout the days of the show.

BASMAA was also given a retailer booth at no charge and a full page OWOW advertisement in the retailer trade show magazine at no charge.

Over the coming months I researched the new products from the show to add to the Master Products List for OWOW. I worked with Dr Quarels to confirm the efficacy of the new products and to ensure they are indeed less toxic, posing no threat to water quality.

September:

9/4: meeting with Annie, and monthly meeting with Advocates to discuss the seasonal pests for the month/season ahead

9/5: Meeting with Advocates-each of them 1:1 to offer support for the upcoming year

9/18: meeting with Advocates-Lisa, Steve Z, Darleen

9/20: meeting with Annie to discuss OWOW details

Emails Dr Qualres about efficacy of Teminix Mosquito Bait & Kill

9/25: meeting with Geoff highlighting the takeaways and concerns from the Central trade show.

9/27: meeting with Advocates-Debi to discuss OWOW pest focus for the year, expanding OWOW

into more retailers such as Lowes, revising the product list, website expansion and badges
9/28: monthly meeting with Advocates to discuss the seasonal pests for the month/season ahead.
Then meeting with Advocates-Steve Z, Darleen to provide additional mentoring

October:

10/1-10/4: Attend the L&L trade show in Reno, NV

Suzanne and IPM Advocate Debi Tidd worked to set up the OWOW booth, attend vendor meetings with manufacturers and sales representatives. At this show we learn about new eco-friendly products entering the California market for the 2019 season. We met with over 1,800 attendees throughout the days of the show.

BASMAA was also given a retailer booth at no charge and a full page OWOW advertisement in the retailer trade show magazine at no charge.

Over the coming months I researched the new products from the show to add to the Master Products List for OWOW. I worked with Dr Quarels to confirm the efficacy of the new products and to ensure they are indeed less toxic, posing no threat to water quality.

10/5: meeting with Advocates-Darleen to offer her more mentorship with the retailers

10/9: meeting with Advocates-mentoring both Darleen, Steve Z, offering them suggestions for the year, their budgets, materials and scheduling services for their stores

10/28: prep for meeting with Krissa/Home Depot

10/29: Meeting with Krissa/Home Depot to discuss the OWOW partnership

10/30 follow up meeting with Krissa/Home Depot

10/30: meeting with Annie and Debi to discuss new products, the products list and changes with active ingredients. Work with Debi to revise OWOW handouts.

November:

11/1: monthly meeting with Advocates to discuss the seasonal pests for the month/season ahead

11/5: meeting with Debi to revise OWOW training PowerPoint, pest of the month calendar, and how products work handout, communication with Krissa/HD, gave her the OWOW HD pest of the month calendar

11/7: Emailed Dr Quarle's question about rodenticides, communication with Karey-UCIPM about rodents, communicating with Advocates about upcoming IPM Advocates meeting

11/15: mentoring with Lisa, meeting with Patrice

11/19, 11/26, &12/3: preparing for meeting with Advocate

11/27: meeting with Ed Casey/Friedman's to discuss promoting OWOW

December:

12/3: monthly meeting with Advocates to discuss the seasonal pests for the month/season ahead.
Then meeting with Advocates-Steve Z, Darleen to provide additional mentoring

12/11: Annual meeting with IPM Advocates to discuss the new products from trade show, support ideas, product lists, and other OWOW logistics. & or the IPM Advocates attended.

12/12: communication with Krissa/HD about the new 'naturals' label they are using

12/17: mail product lists to Maris, communication with Geoff

12/19: meeting with Ed Casey/Friedman's. Communication with Krissa & introduction meeting with Tiffany/HD

12/26: communication with Geoff, emailed un updated list of OWOW retailers for the store locator

12/27: Annual report to Tiffany/HD

January:

1/2: monthly meeting with Advocates to discuss the seasonal pests for the month/season ahead.

Then meeting with Advocates-Steve Z, Darleen to provide additional mentoring

1/3: mentoring meeting with Darleen and Lisa

1/11: emailed Dr Quarles about Amdro active changes to Propuxur as the new active, mentoring meeting with Darleen, Lisa, Steve Z, Daniel and Lorenzo

1/15: mentoring meeting with Steve Z

1/17: mentoring meeting with Steve Z and Steven G

1/20: call with Debi about product list and OWOW handouts

1/28: call with Geoff, sent edits to Tiffany Seto progress report

1/31: call with Tom Feldman, Bonide regional manager about changes in active for Burn Out, email support to Advocates about HD resets

February:

2/2: monthly meeting with Advocates to discuss the seasonal pests for the month/season ahead

2/3: emailed Dr Quarles about Amdro Hydramethylnon as a perimeter bait, is it safe

2/3, 2/5, 2/6, 2/7, 2/9, 2/11, 2/12, 2/13, 2/15, 2/19, 2/20, 2/21, 2/25: all communication with Debi and working on the editing & revising the HD & Generic Pest of the Month Calendar, How Actives Work handout, and shelf talker labels for all OWOW stores

2/4: sent Geoff HD Ron Jarvis letter

2/4: meeting with Debi about HD & Generic Pest of the Month Calendar, How Actives Work handout, and shelf talker labels for all stores

2/6: emailed Geoff list of new Contra Costa stores for the OWOW website store locator

2/7: email with Tiffany, Home Depot

2/8: emailed Dr Quarles about Cory's gel snail bait

2/9: email out to the Advocates about EPA rodent webinar

2/14: Attend the NorCal Landscape and Nursery trade show in San Mateo, CA

Suzanne set up the retail booth, worked the day with IPM Advocate Lisa Ratusz. Suzanne met with manufacturers, sales representatives, commercial landscapers, city park workers, garden designers, master gardeners and other industry professionals, each looking for guidance around less toxic pest solutions. This is a well attended show where we made contacts with over 2,200 guests.

2/19: call with Annie about OWOW and pesticide exposure questions

2/20: mentoring meeting with Darleen

2/22: emailed Tiffany HD pest of the month calendar and HD how actives work list with Geoff

2/4: meeting with Debi about HD & Generic Pest of the Month Calendar, How Actives Work handout, and shelf talker labels for all stores

March:

3/1: email from Geoff, OWOW materials for Sonoma, and monthly meeting with Advocates to discuss the seasonal pests for the month/season ahead

3/3: mentoring meeting with Lisa,

3/4 two mentoring meetings with Steve Z

3/5: meeting with Lisa and Debi, mentoring Lorenzo UCIPM newsletter info, Karey with UCIPM asking about resource flyer

3/6: monthly support email to IPM Advocates, City of Lincoln inquiring about OWOW program. Mentoring Steve-questions about products list, mentoring Steven G and Darleen, emailed Dr Quarles about SNS products

3/7: emailed Geoff about the need for more IPM Advocates, meeting with Friedman's and OWOW support for them

3/8: mentored Darleen

3/10: mentoring Lorenzo

3/12: mentoring Steve Z, meeting with Kathy Grant, meeting with Annie, work on the HD product list & HD monthly calendar & HD how products work list

3/13: meeting Darleen, IPM Advocate recruit possibility, Lorenzo & CASQA, meeting with Debi

about AgroThrive, and HD product list revision
3/15: mentoring Steve Z throughout the day
3/19: mentoring Daniel
3/20: mentoring Steve Z, introduction to Aileen at UCIPM, assisting Debi with rats info handout, meeting with Paulina from West Sacramento Stormwater
3/22: meeting and mentoring Lisa with eco-herbicides, mentoring Lorenzo, Daniel and Patrice, email with Steve Z about SWD, pocket guide revisions
3/24: email with Margo about NorCal trade show, emailed Geoff about City of Lincoln OWOW inquiries, support for Lisa, Darleen and Steve
3/27: meeting with Debi, emailed Geoff about the Ask the Expert feature on OWOW website
3/29: email to Louie from Scotts
April:
4/1: meeting with Jennifer Kaiser and Kevin Cullen, Geoff and Debi pocket guide revisions
4/2: email to Dr Quarles about SWD and pesticide resistance, meeting with Dagmara, email with Jennifer Kaiser with website documents, email with Steve z
4/3: monthly IPM Advocates support email, email with Steve Z and Nita, meeting with Friedman's about product information
4/5: email from Elaine about UCIPM kiosk, email with Debi, email with Lisa
4/6: email with Janet about varmint fact sheet outline
4/8: emails with Geoff, Janet and Debi, meeting with Brandy from Fresno stormwater, mentoring Daniel and Lisa
4/11: meeting with Annie about Fairfield Suisun contract
4/12: mentoring Steve Z throughout the day
4/1-4/16: OWOW training material info sheets edited for Debi to revise
4/15: SJVSWQP meeting, mentoring Lorenzo with UCIPM newsletter
4/16: email with Janet and Debi, email with Friedman's, email with Dagmara
4/17: Debi sends me PowerPoint for us to discuss
4/23: Meeting with Debi & Michelle- new Ace's in CCC
4/25: email to Geoff about IPM Advocate training, email with City of Lincoln,
4/26: meeting with Debi
4/27: follow up meeting with Lorenzo IPM TAC meeting
4/28: meeting with Nita
4/29: meeting with City of Vacaville
Worked with Debi throughout the month of April to edit the OWOW training materials
May:
5/1 attended the Bee Audacious conference in Ross, CA on behalf of OWOW
5/7: Emailed Debi about Central Trade Show & product lists, Emailed Dr Quarles about 1) Clove Oil toxicity to soil microbes and 2) parathyroid toxicity. I mentored both Lisa & Patrice. Also assisted with email inquiry about Lisa's invoicing.
5/10: Email to Geoff & Margaret
5/13 & 14: Mentored Darleen with her contracts
5/17: Meeting with Steve Z and trade show registration
5/18: IPM Advocate recruiting meeting
5/25: Emailed Debi about product lists and registered for the L&L trade show
5/30: Meeting with Annie about sales information for OWOW
June:
6/3: Emailed IPM Advocates, Emailed Monterey rep, Scott's Miracle Gro rep, and Home Depot corporate
Meeting with Monterey rep. Email with Debi about product list additions. Mentored Maris
6/5: Phone meeting with Clayton Smith of Monterey
6/10: Print IPM Advocates training materials
Emailed Dr Quarles about Garden-phos

6/12: Meeting with Annie, emailed Home Depot corporate, emailed rep with Scott's Miracle-Gro
6/14: Meeting with Louis from Scott's
6/19: Meeting with Karey from UCIPM about Advocate continuing ed and possibility of training new Advocates
6/21: meeting with Tiffany from Home Depot Corporate and emailed Geoff & Margaret. Emailed Debi Master Product lists
6/27: Meeting with Annie and a meeting with Karey from UCIPM
6/29: Meeting with Tiffany from Home Depot about sales information

Educational retail trainings and public outreach:

- **Total number of OWOW retailer trainings in the 2018-19 fiscal year = 80**
 - Out of this total, 20 were at the Home Depot Stores
- **Total number of associates trained at these OWOW trainings = 638**
 - Out of this total, 204 were Home Depot associates
- **Total number of OWOW public outreach events in the 2018-19 fy = 104**
 - Out of this total, 42 were at the Home Depot Stores
- **Total number of people reached at these OWOW events = 4,608**
 - Out of this total, 1,450 were reached at the Home Depot stores

This reflects a 40% decrease in trainings conducted over the previous year and an 8% decrease in the number of public outreach events.

Though this looks like a dramatic decrease, I am not convinced I have all of the data correct. I know of other contract data sets not included in this year's report, contract data that I know Annie was able to include and I am not. I also recognize that we lost the Orchard Supply Hardware stores which also impact this data. Moving forward, I have been asked to work additional contract that were served by Annie in the past, however were not serviced in this fiscal year.

Retailer support and sales over view:

- Home Depot provided a letter of 'Thanks' and 'Support' for the OWOW program partnership in September, which Geoff sent to the agencies
- Home Depot provided a letter to BASMAA for the IPM Advocates outlining the program partnership and participation
- Scott's Miracle Grow Nature's Care pesticide products increased across each category on average from 12.5%-30% due to the IPM Advocates efforts
- The sales of Sluggo by Monterey are up approximately 35% due to the IPM Advocate's efforts
- The sales of the Copper Soap fungicide by Monterey are up approximately 30% due to the IPM Advocate's efforts
- The Home Depot store continues to increase their eco-friendly products by 8-12% over the year

In this 2019 year, Scott's Miracle Grow introduced a new organic fertilizer under the name of 'Performance Organics'. The sales of this organic water soluble fertilizer were better than forecasted, coming in at approximately over \$2MM in the northern California

Home Depot stores. I look forward to sales numbers for this new product in comparison to this year's numbers.

Final comments:

As I mentioned in my annual program overview above, a highlight of the program to further note was responding to the concern of customers for an alternative for Roundup. We noticed behavior changes in customers because of this concern. We now see entire shelf facing and prominent end cap displays of eco-herbicides in response to customer demand. A rewarding aspect of interacting with the public is to see them put down a pesticide product and purchase an alternative solution. This is a measure of direct behavior change.

The main challenge with OWOW program is with the retailer's. Over the years as the economic brackets shift and the cost of living increases here in the San Francisco Bay Area, the retailers have a tough time hiring a stable labor force. The cost of living is so high that many cannot avoid working in the retail environments of a garden center or hardware store. Because of this, many of the retailers are not staffed well enough and have high levels of employee turnovers, thus requesting more OWOW trainings, more education, more support, and more IPM resources. As a result, we need more IPM Advocates to assist with OWOW and meet the demands of the retailers.

In addition, if it was upgraded, the OWOW website has the potential to be a vital tool for the IPM Advocates, the retailers, and the public.



B A S M A A

September 30, 2019

Michael Montgomery, Executive Officer
California Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: FY 2018-19 Annual Report: MRP Provision C.9.f - Track and Participate
in Relevant Regulatory Processes

Dear Mr. Montgomery:

This letter and attachments are submitted on behalf of all 76 municipalities subject to the requirements of the Municipal Regional Stormwater NPDES Permit (MRP).

The essential requirements of provision C.9.f (text attached) are to track U.S. Environmental Protection Agency (USEPA) and California Department of Pesticide Regulation (DPR) actions related to urban-uses of pesticides and actively participate in the shaping of regulatory efforts currently underway. This provision allows for cooperation among Permittees through the California Stormwater Quality Association (CASQA), BASMAA, and/or the Urban Pesticide Pollution Prevention Project (UP3 Project) – an approach the Permittees have engaged in for a number of years. Recognizing this approach is the most likely to result in meaningful changes in the regulatory environment, Permittees elected to continue on this course in FY 2018-19 to achieve compliance with this provision. Oversight of this provision is the purview of the BASMAA Board of Directors.

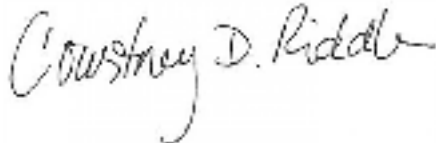
The actual work of tracking and participating in the ongoing regulatory efforts related to pesticides was accomplished through CASQA. CASQA conducted its activities on behalf of members and coordinated funding contributions and activities through its Pesticides Subcommittee, a group of stormwater quality agencies affected by pesticides or pesticides-related toxicity listings, TMDLs, or permit requirements, as well as others knowledgeable about pesticide-related stormwater issues. FY 2018-19 was another productive year for the Subcommittee. The CASQA Pesticides Subcommittee's annual report for FY 2018-19 (attached) provides a comprehensive and detailed accounting of efforts to track and participate in relevant regulatory processes as well as accomplishments related to pesticides and stormwater quality.

We certify under penalty of law that this document was prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

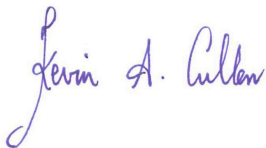
FY 2018-19 Annual Report: MRP Provision C.9.f - Track and Participate in Relevant Regulatory Processes



Jim Scanlin, Alameda Countywide Clean Water Program



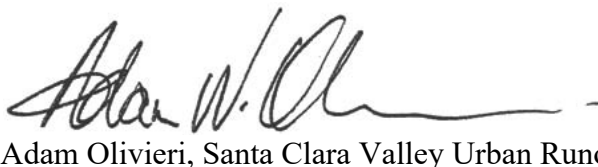
Courtney Riddle, Contra Costa Clean Water Program



Kevin Cullen, Fairfield-Suisun Urban Runoff Management Program



Matthew Fabry, San Mateo Countywide Water Pollution Prevention Program



Adam Olivieri, Santa Clara Valley Urban Runoff Pollution Prevention Program



Jennifer Harrington, Vallejo Flood & Wastewater District

Attachments

MRP Provision C.9.f

Pesticides Subcommittee Annual Report and Effectiveness Assessment 2018-2019; California Stormwater Quality Association; August 2019

MRP Provision C.9.f states:

C.9.f. Track and Participate in Relevant Regulatory Processes

i. Task Description – The Permittees shall conduct the following activities, which may be done at a county, regional, or statewide level:

- (1) The Permittees shall track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage U.S. EPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;
- (2) The Permittees shall track DPR pesticide evaluation activities as they relate to surface water quality and, when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;
- (3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and county agricultural commissioners in ensuring that pesticide applications comply with WQS; and
- (4) As appropriate, the Permittees shall submit comment letters on U.S. EPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.

ii. Reporting – In their Annual Reports, the Permittees shall summarize participation efforts, information submitted, and how regulatory actions were affected. Permittees who contribute to a county, regional, or statewide effort shall submit one report at the county or regional level. Duplicate reporting is discouraged.

Pesticides Subcommittee Annual Report and Effectiveness Assessment 2018-2019

California Stormwater Quality Association



Final Report
August 2019

Preface

The California Stormwater Quality Association (CASQA) is comprised of stormwater quality management organizations and individuals, including cities, counties, special districts, industries, and consulting firms throughout California. CASQA's membership provides stormwater quality management services to more than 22 million people in California. This report was funded by CASQA to provide CASQA's members with focused information on its efforts to prevent pesticide pollution in urban waterways. It is a component of CASQA's Source Control Initiative, which seeks to address stormwater and urban runoff pollutants at their sources.

This report was prepared by Stephanie Hughes under the direction of the CASQA Pesticides Subcommittee Co-Chair Dave Tamayo; with substantial assistance from Dr. Kelly Moran of TDC Environmental who provided data, documents, guidance, and review; and Tammy Qualls of Qualls Environmental Consulting who assessed the effectiveness of regulatory engagement and prepared the regulatory engagement schedule (Table 6).

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Abbreviations Used in this Report

BACWA – Bay Area Clean Water Agencies

BiOp – Biological Opinion

CASQA – California Stormwater Quality Association

CEQA – California Environmental Quality Act

CCRWQCB – Central Coast Regional Water Quality Control Board

CVRWQCB – Central Valley Regional Water Quality Control Board

CWA – Clean Water Act

DPR – California Department of Pesticide Regulation

EPA – United States Environmental Protection Agency

ESA – Endangered Species Act

FY – Fiscal Year (July 1 through June 30)

IPM – Integrated Pest Management

MAA – Management Agency Agreement between DPR and the Water Boards

MS4 – Municipal Separate Storm Sewer System

NACWA – National Association of Clean Water Agencies

NPDES – National Pollutant Discharge Elimination System

NMFS – National Marine Fisheries Service

OPP – U.S. EPA Office of Pesticide Programs

OW – U.S. EPA Office of Water

PAH – Polycyclic aromatic hydrocarbon

PEAIP – Program Effectiveness Assessment and Improvement Plan

PMAC – Pest Management Advisory Committee

PPI – Pests, Pesticides, and Integrated Pest Management DPR initiative

PMP – Pesticides-specific Management Practice

PSC – CASQA Pesticides Subcommittee

SPCB – Structural Pest Control Board

SFBRWQCB – San Francisco Bay Regional Water Quality Control Board

STORMS – Strategy to Optimize Resource Management of Storm Water (a program of the State Water Board)

SWAMP – California Water Boards Surface Water Ambient Monitoring Program

SWRCB – State Water Resources Control Board or State Water Board

TMDL – Total Maximum Daily Load (regulatory plan for solving a water pollution problem)

UCIPM – University of California Statewide IPM

UP3 – Urban Pesticides Pollution Prevention Partnership

UPCMP – Urban Pesticides Coordinated Monitoring Program

USGS – U. S. Geological Survey

Water Boards – California State Water Resources Control Board together with the California Regional Water Quality Control Boards

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Executive Summary

This report by the Pesticides Subcommittee (PSC) of the California Stormwater Quality Association (CASQA) describes CASQA's activities related to the goal of preventing pesticide pollution in urban waterways from July 2018 through June 2019.

To address the problems caused by pesticides in California's urban waterways, CASQA collaborates with the California State Water Resources Control Board and the California Regional Water Quality Control Boards (Water Boards) in a coordinated statewide effort, referred to as the Urban Pesticides Pollution Prevention (UP3) Partnership. By working with the Water Boards and other water quality organizations, we address the impacts of pesticides efficiently and proactively through the statutory authority of the California Department of Pesticide Regulation (DPR) and EPA's Office of Pesticide Programs (OPP). More than 16 years of collaboration with UP3 Partners, as well as EPA and DPR staff, has resulted in significant changes in pesticide regulation. CASQA's activities and outcomes are described in Section 2. This year's highlights include continued progress on the State Water Board's Urban Pesticides Amendments project as well the pesticide regulator actions described below.

Near term/Current problems – Are actions being taken by State and Federal pesticides regulators and stakeholders that are expected to end recently observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?

- 💧 In direct response to continued communication from CASQA and UP3 regarding pyrethroid and fipronil water pollution in urban areas, DPR has implemented mitigation measures and is currently monitoring their effectiveness. If successful, DPR's mitigation actions could avoid establishment of fipronil TMDLs for those water bodies.
- 💧 In response to a partner request based on information provided by CASQA, DPR routed a deltamethrin (a pyrethroid) registration application to its Surface Water Protection Program for review; the results did not support registration, leading to the applicant removing all urban uses from the product label.
- 💧 CASQA shared its urban runoff expertise with pesticide regulators by preparing comment letters to EPA for two pesticide reviews, providing the Water Boards and other partners with information that triggered additional letters on two more pesticide reviews, and participating in numerous meetings and conference calls focused on priority pesticides and long-term regulatory structure improvements. *(See Tables 3, 4 and 5 and the Appendix.)*
- 💧 CASQA/UP3 reviewed scientific literature in order to update and prioritize the Pesticide Watch List, which it shared with pesticides regulators and with government agency and university scientists to stimulate generation of surface water monitoring and aquatic toxicity data for the highest priority pesticides. *(See Table 2.)*

Long term/Prevent future problems – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

- 💧 The State Water Board continues to work toward adoption of the Urban Pesticide Amendments. These amendments would institutionalize the State's strategy of utilizing pesticide regulations as the primary mechanism for addressing pesticide water quality problems associated with urban runoff, serving as a TMDL alternative. Implementation will be supported by a new statewide urban runoff pesticides monitoring program intended to coordinate with existing Water Board and DPR urban pesticides and toxicity monitoring programs.
- 💧 DPR continues to demonstrate its commitment to addressing pesticide impacts on receiving waters through timely mitigation and implementation of improved evaluation procedures.

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- 💧 In concert with the development of the Urban Pesticide Amendments, the State Water Board and DPR completed an update of their Management Agency Agreement, to clarify their respective roles and achieve better coordination on addressing water quality impacts, particularly in urban areas.
- 💧 Although many improvements by OPP have been made since the early 2000s, improvement in scientific evaluations supporting OPP's regulatory efforts and better understanding of urban runoff management systems are still necessary to adequately protect urban surface waters from pesticide impairments. Recently the regulatory climate has changed, limiting support of progress by OPP in addressing these concerns.

In FY 2019-2020, CASQA plans to continue to address near-term pesticide concerns and seek long-term regulatory change. Future near-term and long-term tasks are identified in Section 3, Tables 5 and 6. Key topics include:

- 💧 Completion and adoption of the Urban Pesticide Amendments by the State Water Board
- 💧 Establishment of the new urban pesticides coordinated monitoring program in partnership with the Water Boards, DPR, and EPA Region 9
- 💧 Registration review-related activities at EPA for pyrethroids, fipronil, and imidacloprid (the only such opportunity for the next 15 years)
- 💧 DPR evaluation and potential additional action regarding pyrethroid and fipronil mitigation measures
- 💧 EPA risk mitigation for malathion and carbaryl in urban runoff in tandem with Endangered Species Act evaluations
- 💧 EPA Framework for Pesticides Risk Assessments Incorporating Endangered Species Act Biological Evaluations (and eventually all pesticides risk evaluations for conventional pesticides)
- 💧 DPR registration applications and proposed decisions for new products
- 💧 DPR proposed carbaryl regulations that would restrict carbaryl use and end sale of carbaryl consumer products

Section 1. Introduction

1.1 IMPORTANCE OF CASQA’S EFFORTS TO IMPROVE PESTICIDE REGULATION

For decades now, the uses of certain pesticides in urban areas – even when applied in compliance with pesticide regulations – have adversely impacted urban water bodies. Currently used pesticides are the primary cause of toxicity in California surface waters, including urban water bodies.¹ Under the Clean Water Act (CWA), when pesticides impact water bodies, local agencies may be held responsible for costly monitoring and mitigation efforts. To date, some California municipalities² have incurred substantial costs to comply with pesticides-related Total Maximum Daily Loads (TMDLs) and additional permit requirements. In some cases (e.g., diazinon, chlorpyrifos), municipal compliance costs have continued more than a decade after termination of virtually all urban use. In the future, more municipalities throughout the state could be subject to similar requirements, as additional TMDLs and Basin Plan amendments are adopted (Table 1). Meanwhile local agencies have no authority to restrict or regulate when or how pesticides are used³ in order to proactively prevent pesticide pollution and avoid these costs.

Under federal and state statutes, EPA and DPR have the authority to regulate pesticides, including substantial authority and responsibility to protect water bodies from adverse effects (including impacts from pesticides in urban runoff). Unfortunately, until the relatively recent past these agencies did not recognize the need, nor did they possess the institutional capacity to exercise their authority to protect urban water quality. As a result, past registration actions have allowed a number of pesticides (such as pyrethroids and fipronil) to be used legally in ways that have resulted in widespread pollution in urban water bodies. This situation is depicted in Figure 1.

To change this situation CASQA is actively engaged with state and federal regulators in an effort to develop an effective pesticide regulatory system, based primarily on existing statutes, that includes timely identification and mitigation of urban water quality impacts, and proactively prevents additional problems through the registration and registration review processes (Figure 2).

Table 1. California TMDLs, Statewide Water Quality Control Plans, and Basin Plan Amendments Addressing Currently Registered Pesticides and/or Toxicity in Urban Watersheds⁴

Water Board Region	Water Body	Pesticide	Status
Statewide	All MS4s/All Urban Waterways: Statewide Water Quality Control Plan amendments for urban pesticides reduction [“Urban Pesticides Amendments”] (Inland Surface Waters, Enclosed Bays & Estuaries, and Ocean)	All Pesticides/All pesticide-related toxicity	In preparation
	Sediment Quality Objectives (Enclosed Bays & Estuaries)	Sediment Toxicity ⁵	Approved

¹ See reports from the California Surface Water Ambient Monitoring Program Sediment Pollution Trends Program including Anderson, B.S., Hunt, J.W., Markewicz, D., Larsen, K., 2011. Toxicity in California Waters, Surface Water Ambient Monitoring Program. California Water Resources Control Board. Sacramento, CA.

² For example, Sacramento-area municipalities spent more than \$75,000 in the 2008-2013 permit term on pyrethroid pesticide monitoring alone; Riverside-area municipalities spent \$617,000 from 2007 to 2013 on pyrethroid pesticide chemical and toxicity monitoring.

³ Local agencies in California have authority over their own use of pesticides but are pre-empted by state law from regulating pesticide use by consumers and businesses.

⁴ Excludes pesticides that are not currently registered in California, such as organochlorine pesticides.

⁵ These TMDLs/Plan provisions can trigger toxicity testing stressor source identification studies, and additional follow up, even when toxicity is linked to current pesticides.

	Toxicity Provisions (Inland Surface Waters and Enclosed Bays & Estuaries)	Toxicity ⁵	In preparation
Water Board Region	Water Body	Pesticide	Status
San Francisco Bay (2)	All Bay Area Urban Creeks	All Pesticide-Related Toxicity	Approved
Central Coast (3)	Santa Maria River Watershed	Pyrethroids, Toxicity	Approved
	Lower Salinas River Watershed	Pyrethroids, Toxicity	Approved
	San Lorenzo River Watershed (Santa Cruz)	Chlorpyrifos ⁶	Approved
Los Angeles (4)	Marina del Rey Harbor	Copper (Marine antifouling paint) ⁷	Approved
	Oxnard Drain 3 (Ventura County)	Bifenthrin, Toxicity	EPA-Adopted Technical TMDL
	Calleguas Creek, its Tributaries and Mugu Lagoon	Water & Sediment Toxicity ⁵	Approved
	McGrath Lake (Ventura County)	(Diazinon & Chlorpyrifos) ⁶	Approved; reconsideration 2019
	Colorado Lagoon (Long Beach)	Sediment Toxicity ⁵	Approved
	Dominguez Channel and Greater Los Angeles and Long Beach Harbors Waters	Sediment Toxicity ⁵	Approved
	Ballona Creek Estuary	Sediment Toxicity ⁵	Approved
Central Valley (5)	Sacramento River and San Joaquin River Basins	Pyrethroids	Approved
	Sacramento-San Joaquin River Delta Waterways	Diazinon & Chlorpyrifos ⁶	Approved
	Sacramento & Feather Rivers	Diazinon & Chlorpyrifos ⁶	Approved
	Sacramento County Urban Creeks	Diazinon & Chlorpyrifos ⁶	Approved
	Lower San Joaquin River	Diazinon & Chlorpyrifos ⁶	Approved
Lahontan (6)	Pesticide Discharge Prohibition	All Pesticides	Approved
Santa Ana (8)	Newport Bay	Copper (Marine antifouling paint) ⁷	In preparation
	San Diego Creek, and Upper and Lower Newport Bay	Toxicity (Diazinon & Chlorpyrifos) ⁶	EPA-Adopted Technical TMDL
San Diego (9)	Shelter Island Yacht Basin (San Diego Bay)	Copper (Marine antifouling paint) ⁷	Approved
	Chollas Creek	Diazinon ⁶	Approved

⁶ Use prohibited in urban areas (diazinon) or no meaningful use due to use limitations (chlorpyrifos).

⁷ Primarily addresses pesticides that are directly discharged and should not ordinarily appear in stormwater (marine antifouling paint).

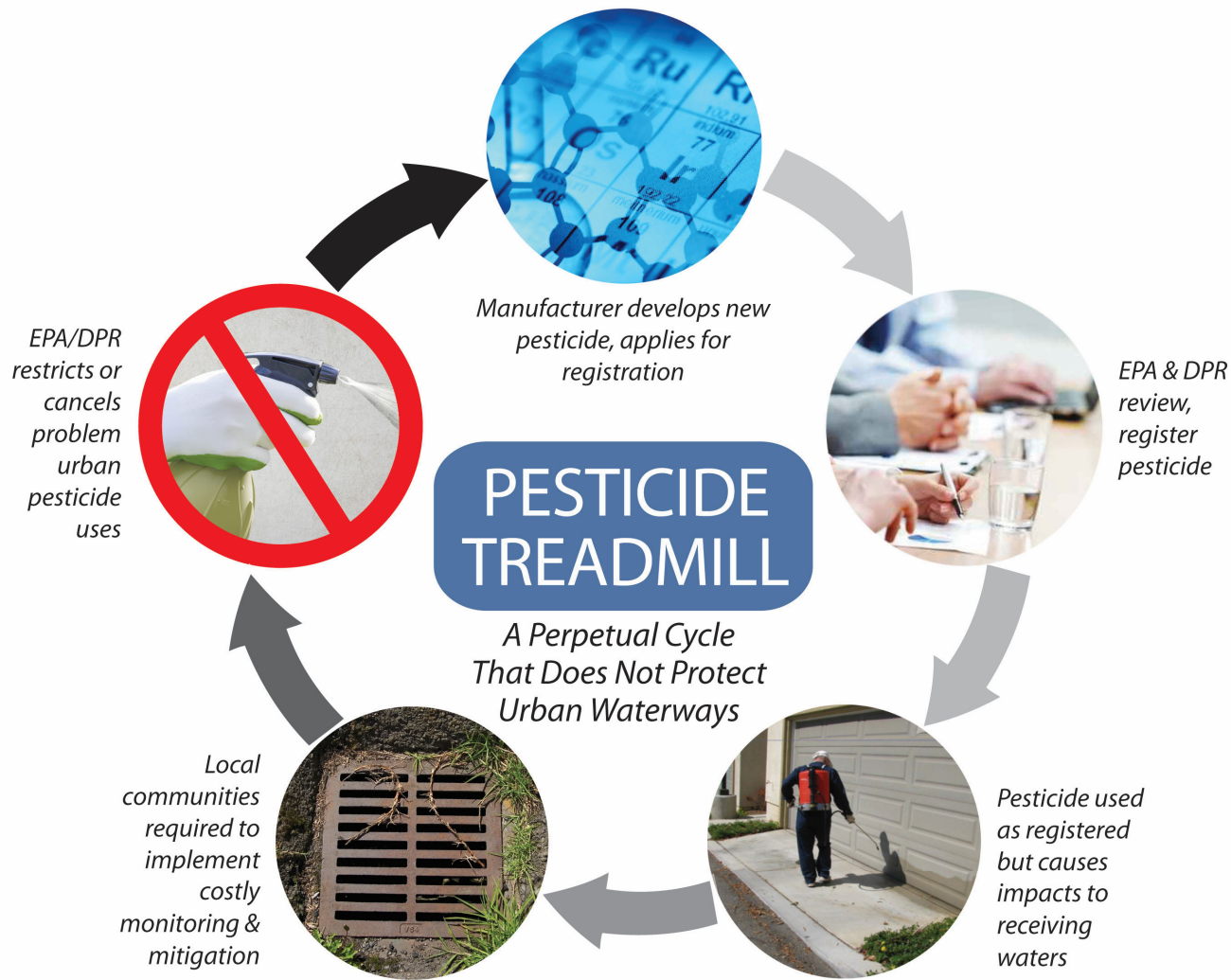


Figure 1. Current Pesticide Regulatory System.⁸

⁸ Photos in Figures 1 and 2 of spraying pesticide along a garage was taken by Les Greenberg, UC Riverside



Figure 2. Proactive Use of the Pesticide Regulatory Structure to Restrict Pesticide Uses that have the Potential to Cause Urban Water Quality Problems.

1.2 CASQA'S GOALS AND APPLICATION TO PROGRAM EFFECTIVENESS ASSESSMENT

The stated goal of CASQA's Vision, Action 1.4, is to "Develop a regulatory system implemented by EPA Office of Pesticide Programs (OPP), and California Department of Pesticides Regulation (DPR) to identify whether urban uses of a pesticide pose a threat to water quality, and then restrict or disallow those uses proactively so that water quality impacts are avoided". To accomplish this goal, primarily through the work of its Pesticides Subcommittee, in engaging in pesticide-related regulatory activities is to protect water quality by eliminating problems stemming from urban pesticide use. In support of Action 1.4, the Vision identifies Proposed Effort Steps 1-4 below.



Step 1. Work with EPA and DPR to develop a registration/reregistration process that clearly evaluates risks and potential water quality impacts of pesticides. The process for registration and registration review must include effective evaluations for the potential of all pesticide active ingredients and formulated products to impact urban waterways. The process must include consideration of all urban use patterns, and data required of manufacturers must support proactive evaluations. Cumulative risk assessments must be conducted, especially for pesticides with similar modes of action.



Step 2. Work with the Water Boards, DPR, EPA's Office of Water (OW) and OPP to develop a consistent definition of what comprises a water quality problem. CASQA will work with EPA's OW and OPP to develop consistent methodologies and approaches to allow evaluation of the potential impacts of pesticides on aquatic life.



Step 3. Develop recommendations for coordinating statewide pesticide monitoring efforts [that consider] monitoring requirements from DPR and the Water Boards and [that are] designed identify emerging pesticide problems in urban waterways before they become widespread and severe, and minimize duplication between the programs.



Step 4. For pesticides that are identified as a problem, identify mechanisms to use pesticide regulations and statutes, rather than total maximum daily loads (TMDLs) and permit requirements, to mitigate the problems. When needed, urban-specific, use-specific mitigation measures will be used to address water quality problems.

The effectiveness of CASQA's efforts toward these goals can be expressed in relation to management questions established as part of Municipal Separate Storm Sewer Systems' (MS4s') program effectiveness assessments that are required in some MS4 permits. With respect to addressing urban pesticide impacts on water quality, the following two management questions, derived from the proposed efforts for CASQA Vision Action 1.4, are suggested for inclusion in MS4s' program effectiveness assessment:

Question 1: (Near term/Current problems) – Are actions being taken by State and Federal pesticides regulators and stakeholders that are expected to end recently observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff? **Related to Action 1.4, Step 4.**

Question 2: (Long term/Prevent future problems) – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies? **Related to Action 1.4, Steps 1, 2, and 3.**

This report is organized to answer these management questions and is intended to serve as an annual compliance submittal for both Phase I and Phase II MS4s. It describes the year's status and progress, provides detail on stakeholder actions (by CASQA and others), and provides a roadmap/timeline showing the context of prior actions as well as anticipated end goal of these activities. This report may also be used as an element of future effectiveness assessment annual reporting.

Section 2. Results of CASQA 2018-2019 Efforts

To prevent urban water quality impacts from registered pesticide uses, CASQA's Vision Action 1.4 address both near-term regulatory concerns (Step 4) and seeks long term changes in the pesticide regulatory structure (Steps 1, 2, and 3).

At any given time, there are dozens of pesticides with current or pending actions from the EPA or DPR. Addressing near term regulatory concerns is important because some pesticides may pose immediate threat to water quality that can lead to compliance liability for MS4s, and because some of the regulatory decisions made by EPA and DPR will last many years. For example, pesticide registration decisions are intended to be revisited on a fifteen-year cycle. To inform its engagement on near-term regulatory concerns, CASQA uses the pesticide "Watch List" created by the PSC and the UP3 Partnership. The Watch List aids CASQA and the UP3 Partnership in their prioritization of near-term efforts (Section 2.1).

Meanwhile, CASQA and the UP3 Partnership are also working on a parallel effort to effect long-term systemic changes in the regulatory process itself. By identifying inadequacies and inefficiencies in the pesticide regulatory process, and persistently working with EPA and DPR to improve the overall system of regulating pesticides, CASQA and the UP3 are gradually achieving results (Section 2.2).

2.1 NEAR-TERM REGULATORY CONCERNS

CASQA seeks to ensure that the Water Boards and EPA's OW work with DPR and the EPA's OPP to manage problem pesticides that are creating near-term water quality impairments. These efforts address CASQA Vision Action 1.4, Step 4 as well as Phase II MS4 Program Effectiveness Assessment and Improvement Plan (PEAIP) Management Question 1 regarding observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff.

Assessment Question 1: (Near term/Current problems) – Are actions being taken by State and Federal pesticides regulators and stakeholders that are expected to end recently observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?

Answer: As detailed below, at the State level, significant progress has been made by DPR in addressing near-term and current problems with pesticides in surface waters receiving urban runoff. DPR continues to implement improved registration processes and responses to observed water quality problems. DPR also continues to implement and evaluate mitigation measures for observed problems with pyrethroids and fipronil.

At the Federal level, less progress has been made at addressing near term problems. Some early actions were taken to address pyrethroid and fipronil problems at the urging of CASQA and DPR. However, EPA does not show a clear understanding of key urban uses in its analyses, and it is still unclear if its upcoming risk management decisions for pyrethroids, fipronil, and imidacloprid and other neonicotinoids will provide any additional protection of urban water bodies.

2.1.1 Updated Pesticide Watch List

A key tool for identifying near-term regulatory concerns is our pesticide "Watch List." CASQA, working through the UP3 Partnership, reviews scientific literature, government reports, and monitoring studies as they are published. This information is used to prioritize pesticides based on the most up-to-date understanding of urban uses, pesticide characteristics, monitoring, and surface water quality toxicity (for pesticides and their degradates). The PSC uses these insights to update the Watch List each year (Table 2), which serves as a management tool to help us focus our efforts on the most important pesticides from the perspective of MS4 agencies.⁹

⁹ The first Watch List was published by the UP3 in 2005.

Table 2. Current Pesticide Watch List (July 2019)

Priority	Basis for Priority Assignment	Pesticides		
1	Monitoring data exceeding benchmarks; linked to toxicity in surface waters; urban 303(d) listings	Pyrethroids (20 chemicals) ¹⁰	Fipronil	Imidacloprid (neonic) Malathion
2	Monitoring data approaching benchmarks; modeling predicts benchmark exceedances; very high toxicity and broadcast application on impervious surfaces; urban 303(d) listing for pesticide, degradate, or contaminant that also has non-pesticide sources	Carbendazim (Thiophanate methyl) ¹¹ Chlorantraniliprole Copper pesticides	Creosote (PAHs) Indoxacarb Neonics (other than Imidacloprid) ¹²	Pendimethalin Pesticides with dioxins impurity ¹³ Polyhexamethylenebiguanide Zinc pesticides
3	Pesticide contains a Clean Water Act Priority Pollutant; 303(d) listing for pesticide, degradate, or contaminant in watershed that is not exclusively urban	Arsenic pesticides Chromium pesticides	Diuron Naphthenates	Simazine Silver pesticides Trifluralin
4	High or unknown toxicity (parent or degradate) and urban use pattern associated with water pollution; synergist for higher tier pesticide; on DPR priority list	Abamectin ADBAC pesticides ¹⁴ Azoxystrobin Bacillus sphaericus Bacillus thuringiensis (Bti) Bromacil N-Bromosulfamates Busan-77 Carbaryl Chlorinated isocyanurates Chlorine Chlorine dioxide Chlorfenapyr Chlorsulfuron DCOIT	Dichlobenil Dichlorvos (DDVP) Dithiopyr Halohydantoin Hydramethylnon Hypochlorites Imazapyr Isoxaben Mancozeb Methoprene Methyl anthranilate Mineral oil (aliphatic) MGK-264 Novaluron Oryzalin Oxadiazon Oxyfluorfen PCNB	Peroxyacetic acid Phenoxy herbicides ¹⁵ Piperonyl butoxide Prodiamine Propiconazole Pyrethrins Sodium bromide Sodium chlorite Sodium percarbonate Sodium tetraborate Spinosad/ Spinetoram Sulfometuron-methyl Tebuconazole Terbuthylazine Triclopyr Triclosan Trimethoxysilyl quats

¹⁰ Allethrin, Bifenthrin, Cyfluthrin, Cyhalothrin, Cypermethrin, Cyphenothrin, Deltamethrin, Esfenvalerate, Etofenprox, Flumethrin, Imiprothrin, Metofluthrin, Momfluothrin, Permethrin, Prallethrin, Resmethrin, Sumethrin [d-Phenothrin], Tau-Fluvalinate, Tetramethrin, Tralomethrin.

¹¹ Carbendazim is a registered pesticide, and also a degradate of thiophanate-methyl

¹² Acetamiprid, Clothianidin, Dinotefuran, Thiamethoxam (degrades into Clothianidin)

¹³ 2,4,-D, Chlorothalonil, Dacthal, Pentachlorophenol

¹⁴ Alkyl Dimethyl Benzyl Ammonium Chlorides (ADBAC) includes a family of 21 different quaternary ammonium pesticides.

¹⁵ MCPA and salts, 2,4-D, 2,4-DP, MCPP, dicamba

Priority	Basis for Priority Assignment	Pesticides		
		DDAC		
5	Frequent questions from UP3 Partners	Chlorpyrifos (near zero urban use)	Diazinon (no urban use) Glyphosate	Metoldehyde
New	Priority determined on the basis of proposed urban use, aquatic toxicity, and other information in registration application.	Not known but may include the following:	Cyantraniliprole Cyclaniliprole Flupyradifurone	Nitenpyram (Neonic) Nithiazine (Neonic) Sulfoxaflor (Neonic)
None	Based on review of available data, no approved urban use or no tracking trigger as yet identified.	Most of the >1,000 existing pesticides		
Unknown	Lack of information. No systematic screening has been completed by UP3 for the complete suite of urban pesticides.	Unknown		

Comparing the current Watch List to the version published in the 2017/18 PSC Annual Report, we see that the insecticides fipronil, imidacloprid, malathion, and pyrethroids remain as the Priority 1. With respect to other priorities, the list was updated in order to:

- (1) add all registered pool, hot tub, and fountain pesticides meeting the criteria specified in the “basis for priority assignment” column;¹⁶
- (2) add pesticides identified through DPR’s urban monitoring prioritization model as priorities for its urban monitoring studies;
- (3) revise priority levels based on the latest monitoring data from the U.S. Geological Survey (USGS), DPR, and others (all changes were in levels 3-5); and
- (4) clarify listings for neonicotinoids to reflect current registration status.

2.1.2 Description of Near-Term Regulatory Processes

Immediate pesticide concerns may arise from regulatory processes undertaken at DPR or EPA’s OPP. For example, when EPA receives an application to register a new pesticide, there may be two opportunities for public comment that are noticed in the Federal Register, as depicted in green in Figure 3. EPA’s process usually takes less than a year while DPR typically evaluates new pesticides or major new uses of active ingredients within 120 days. Now that DPR implements relatively robust surface water quality review procedures for new pesticide registrations, there is reduced need for CASQA to provide input to EPA on new pesticides.

Figure 3. EPA’s Registration Process for New Pesticides



¹⁶ Pesticide-containing water from pools, hot tubs, and fountains can be inappropriately discharged into gutters and storm drains (which can violate water quality standard and has caused fish kills). On that basis, these pesticides were identified from California registration data and added to the Watch List to assist agencies seeking improved label instructions to prevent inappropriate discharges of these pesticides.

Another regulatory process, “Registration Review,” depicted in Figure 4, is meant to evaluate currently registered pesticides about every 15 years, to account for new data available since initial registration. In general, it takes EPA five to eight years to complete the entire process. EPA regularly updates its schedule for approximately 50 pesticides that will begin the review process in a given year.¹⁷

Figure 4. EPA’s Registration Review – Process to Review Registered Pesticides at a Minimum of Every 15 Years.



While EPA must consider water quality in all of its pesticide registration decisions, at DPR this step is not yet fully established as standard (most outdoor urban pesticide registration applications are routinely routed by DPR for surface water review, but a few – notably antimicrobial products used in storm drains – do not automatically receive this review). CASQA monitors registration applications, to identify those relevant to urban runoff, based on the pesticide watch list in Table 2 and use pattern/toxicity analysis for pesticides that have not previously been reviewed.

2.1.3 Key Near-Term Regulatory Activities in 2018-19

In 2018-19, CASQA identified a product registration application containing deltamethrin (a top priority pyrethroid pesticide). A CASQA Partner (Sacramento County) successfully requested this product be routed by DPR for surface water review. The subsequent evaluation did not support registration. DPR subsequently issued a Notice of Proposed Decision to Deny the product. The applicant subsequently resubmitted the product removing all urban uses from the product label. DPR staff recommend that CASQA continue monitoring all registration applications while DPR considers changing its standard procedures in response to CASQA’s 2015 request that all storm drain pesticides be automatically routed for surface water review.

DPR also has an ongoing, but informal review process (called continuous evaluation) that can address pesticides water pollution. If it needs to obtain data from manufacturers, DPR can initiate a formal action, called “Reevaluation.” DPR evaluations of pyrethroids and fipronil in urban runoff occurred in response to CASQA and Water Board requests. These evaluations, mitigation measure development, and mitigation effectiveness evaluation have involved ongoing communication with CASQA and the UP3 Partnership.

2.1.3.1 Progress on Near-Term Regulatory Concerns

Table 3 presents a summary of recent UP3 activities to address near-term regulatory concerns and their 2018-2019 results; for additional insight regarding ongoing pesticide registrations, see the Appendix. This year CASQA concentrated efforts to affect near-term regulatory concerns on Priority 1 pesticides. CASQA has had considerable success in working with DPR and the Water Board. The positive outcomes in Table 3 reflect the success of CASQA’s teamwork in the UP3 Partnership. Some of this work occurs during formal public comment periods. To accomplish this, CASQA monitors the Federal Register and DPR’s website for notices of regulatory actions related to new pesticide registrations and registration reviews. Since the Watch List is not based on a comprehensive review of all pesticides, CASQA watches for additional pesticides that appear to have any of the following characteristics: proposed urban, outdoor uses with direct pathways for discharge to storm drains, high aquatic toxicity, or containing a priority pollutant. Participating in these regulatory processes can take many years to complete.

¹⁷ See <https://www.epa.gov/pesticide-reevaluation/registration-review-schedules> for schedule information.

Table 3. Latest Results of Efforts Communicating Near-Term Regulatory Concerns¹⁸

Regulatory Action or Concern	CASQA Efforts			Partner Support	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
DPR					
Bifenthrin product registration application				Sacramento County	Requested review of label, which appears to be inconsistent with DPR-Bifenthrin manufacturer memorandum of agreement establishing specific label language to implement bifenthrin-specific mitigation measures for urban runoff. Registration decision is pending.
Copper building paint registration proposed decision				Sacramento County	Requested that DPR revise surface water evaluation to address multiple topics not addressed in original evaluation, which used a marine antifouling paint evaluation methodology that does not appear appropriate for outdoor building paint. Registration decision is pending.
Deltamethrin window screen registration application				Sacramento County	Success! Requested that DPR perform an evaluation of this product. The subsequent DPR evaluation (including modeling) did not support registration. DPR subsequently issued a Notice of Proposed Decision to deny registration. The applicant subsequently resubmitted the product removing all urban uses from the product label.
Indoxacarb product label modification question				UP3	Success! CASQA identified that an important part of the label (stipulating outdoor clean-up practices) was omitted from the proposed revised label. DPR pulled the product from the registration process.
EPA					
Pyrethroids Registration Review Risk Assessments			✓		Following significant efforts by CASQA and Partners in 2017-18, during this FY, CASQA’s Pesticides Subcommittee Chair met with EPA pyrethroid chemical managers (all new staff) and the OPP Director to share California data and maps of 303(d) predictions. Discussed CASQA’s interest in bifenthrin - either cancelling uses in California or a substantial reduction of use through labeling or other mitigation. Registration Review decision pending.
Malathion Biological Opinion	✓				Requested retail restrictions to minimize use by non-professional users in urban settings. (See summary following this table). Decision pending.

¹⁸ Color coding in this table is meant to reflect the “Watch List” prioritization color coding in Table 2.

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Regulatory Action or Concern	CASQA Efforts			Partner Support	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
Indoxacarb Registration Review Final Registration Review Decision	✓			SFBRWQCB BACWA Tri-TAC	<p>Success! CASQA and its partners sought to prohibit application of granular products to any impervious surface or in locations where product may contact surface water, storm drain, or gutter. EPA fully incorporated this comment.</p> <p>Partial success. CASQA and its partners sought requirements that no outdoor application be made when rainfall is forecast within 48 hours. Future labels will contain voluntary wording specifying a 24-hour window. CASQA requested efficacy data to reduce the area receiving treatments (building “perimeter band”) to the minimum required for effective pest control. While it is not clear whether efficacy data were applied, the perimeter band was changed from a maximum of 10 feet to 7 feet. Lastly, CASQA requested a requirement of immediate sweep back from accidental application to impervious surfaces; future labels will include this as a guidance rather than a requirement.</p>
Zinc registration review preliminary risk assessments				SFBRWQCB BACWA NACWA Sacramento County	Pending.
Copper Registration Review - Final Interim Decision	✓			SFBRWQCB NSMA	<p>Success! Language requested by CASQA and its UP3 Partners to address pool, spa, and fountain emptying will be required to be placed on all such product labels.</p> <p>Partial success. CASQA requested that all storm drain applications of copper be prohibited. EPA will be prohibiting applications of copper compounds directly into MS4 and other storm drain systems with NPDES permits; the revised language allows for private entities (even those with storm drains that flow into public storm drain systems) to continue to apply copper root control chemicals.</p>
Nanosilver Final Work Plan	✓			BACWA NACWA SFBRWQCB Tri-TAC	In response to EPA’s Draft Work Plan, in 2012 CASQA and Partners shared scientific studies and requested that EPA consider bioavailability, aquatic toxicity, biomagnification, particularly as related to nanoparticle size as well as specific product uses. CASQA further expressed concern that the nanosilver registration review docket was not as robust most environmental risk assessment work plans. While the October 2018 Final Work Plan responded positively to almost all of these comments, the level of incorporation of these scientific areas into

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Regulatory Action or Concern	CASQA Efforts			Partner Support	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
					EPA's review will not be known until release of the Draft Risk Assessment.
Dichlobenil Proposed Interim Registration Review Decision	✓			SFBRWQCB BACWA NACWA	Success! In response to request by CASQA and its UP3 Partners, the EPA noted that it would be adding the following label language to all labels: "Do not use in storm, field, or other drains unless effluent is treated in a sanitary sewer system."
Chlorine gas/swimming pools Registration Review risk assessment				SFBRWQCB BACWA NACWA	Partial success. The risk assessment correctly identified potential impacts associated with emptying treated pools into storm drains and acknowledged that a requirement to contact local governments for direction prior to discharge would mitigate this risk (this reflects success of prior CASQA educational efforts related to other pool chemicals). Based on information from CASQA, UP3 Partners formally requested that language to address pool, spa, and fountain emptying be required to be placed on all such product labels. The EPA decision on this request is pending.
2,4-DP Draft Risk Assessment				CVRWQCB SFBRWQCB	In their 2014 comments on the EPA Work Plan, based on information from CASQA, UP3 Partners supported EPA's request for aquatic toxicity data from the registrants. However, registrants did not provide aquatic toxicity data for many species, including estuarine/marine invertebrates; EPA did not enforce this data requirement. Two requests were denied: (1) a request for data on the fate and aquatic toxicity for the degradate 2,4-DCP. Despite noting evidence of toxicity, and acknowledging the lack of information, EPA concluded that there are no risk concerns. (2) a request that EPA fully consider the potential ecological risks in urban settings as well as the cumulative risk of additive toxicities, both between 2,4-DB and 2,4-DP.
Hydramethylnon Proposed Interim Decision	✓			SFBRWQCB	Partial success. Prior to EPA's risk assessment, CASQA and the Water Board asked EPA to address transport via urban runoff to surface waters, particularly from impervious surfaces. In response, EPA evaluated these risks in its risk assessment and found them to be significant. In its proposed decision, EPA proposed to add new label language about environmental hazards, a rain advisory, and avoidance of broadcast applications on impervious surfaces.

Regulatory Action or Concern	CASQA Efforts			Partner Support	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
					However, CASQA and the Water Board had also requested that the risk assessment address the toxicity of hydramethylnon to sediment and benthic macroinvertebrates, degradates, and cumulative effects of degradates. Although EPA initially stated in its responses to CASQA comments that it would model sediment and consider degradates, neither was actually done in the risk assessment.
Spinosad and Spinetoram Final Interim Decision	✓			SFBRWQCB BACWA NACWA	Partial success. CASQA and its UP3 Partners requested that EPA address urban uses in addition to agricultural runoff. In response, EPA used its “turf” scenario to model urban use, which is not a good match for how the product is used. EPA did not model the other non-agricultural uses, including use inside storm drains and pet flea control. CASQA also sought additional study to quantify the environmental effects of these pesticides on benthic invertebrates. Benthic invertebrates were included in the analysis. CASQA also sought scientific assessment of risks of direct applications to storm drains for mosquito control as well as cumulative impacts of pesticide mixtures, but neither request was incorporated.

2.1.3.2 Federal Malathion Evaluation Does Not Reflect Use of Concentrates by Unlicensed Applicators

Malathion is of interest to CASQA because it has been found in California in many urban watersheds at concentrations above EPA’s malathion water quality criterion, resulting in multiple listings in the most recent EPA- approved California Clean Water Act 303(d) list of impaired water bodies. The National Marine Fisheries Service (NMFS) issued a Biological Opinion (BiOp) for malathion as part of a pilot project to integrate endangered species consultation into EPA’s pesticide registration review. While the BiOp identifies significant water quality impacts from urban malathion use, based on incorrect information about malathion use and a scientific analysis that does not account for impervious surfaces and storm drain systems, it incorrectly attributes these water quality impacts to malathion applications for mosquito abatement (which are very rare in California urban areas).

CASQA analyzed DPR statewide sales data and pesticide use reporting (PUR) data to provide EPA and NMFS with information on sources of malathion in urban watersheds. The data strongly suggest that urban non-professional (“non-reported”) malathion use far outweighs urban use by licensed professionals (“reported use”). In addition, CASQA reviewed the labels of all malathion products registered in California and confirmed that eleven products are labeled in a way that allows for application (exclusive of area wide mosquito control), by professionals or residents to sites outside the home including use for both landscaping and structural pest control. Nine of these eleven products allow application to impermeable surfaces such as foundations or painted and non-painted surfaces. Surveys of use patterns by professionals and homeowners indicate that in California, the most common applications of insecticides on the outside of homes are for control of ants, and most of these applications are made to impervious surfaces around the perimeters of homes. Notably, all products available for homeowners are concentrates, ranging from 50% to 81.8% active ingredient, with labels describing specific levels of dilution (requiring measurement) prior to application. However, survey results indicate that only 43% to 62% of residential users claim to actually measure the amount of pesticide that they use.

CASQA concluded that the major source of malathion in urban runoff may be unreported uses of malathion concentrate products by unlicensed applicators in residential settings. Mitigation measures proposed in the BiOp would not address these uses. CASQA proposed that EPA and NMFS adopt a new mitigation measure to protect urban waterways (and address the 303(d) listings), specifically requesting that the agencies only allow licensed, trained professional applicators to use malathion and prevent malathion products being sold to or used by unlicensed persons for urban use.

2.2 LONG-TERM CHANGE IN THE PESTICIDES REGULATORY STRUCTURE

Since the mid-1990s, CASQA (and its predecessor organization the Storm Water Quality Task Force), have worked toward a future in which the pesticide regulatory structure at the state and federal level proactively restricts pesticide uses that have the potential to cause urban water quality problems. These efforts directly relate to Phase II MS4 PEAIIP Management Question 2.

Assessment Question 2. (Long term/Prevent future problems) – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

Answer: Improvements in processes at EPA and especially at DPR have moved us closer to that future. Many of these improvements are linked to the persistent work of CASQA and the UP3 Partnership to educate regulators on how previous process deficiencies did not adequately address urban pesticide problems.

As detailed below, at the State level, significant progress has been made by DPR and the Water Boards in establishing a comprehensive statewide approach to utilizing pesticide regulatory authorities to prevent pesticide toxicity in urban water bodies. Overall, DPR has a system in place that is reasonably effective at addressing pesticide toxicity in urban water bodies, although improvement is needed to better coordinate this with the requirements of the Clean Water Act and NPDES MS4 permits. DPR and the Water Board, along with CASQA and other stakeholders, are working diligently to strengthen this system and to institutionalize it. This is primarily embodied in the State's effort to establish the Urban Pesticide Amendments and the recently completed update the Management Agency Agreement (MAA) between DPR and the State Water Board.

At the Federal level, OPP has implemented some improvements in how it evaluates and responds to water quality problems associated with pesticides, but it does not do this reliably and does not have a system in place to ensure that this will happen consistently and adequately. Although more effective regulation of pesticides by EPA is still an important goal for CASQA,¹⁹ due to the current regulatory climate at federal agencies, CASQA does not expect OPP to be very responsive to requests for additional improvements. Specific examples include the current administration's orders for a blanket reduction in regulations, chronic under-staffing at OPP, and lack of accessibility to OPP staff to share scientific information and stormwater expertise.

As a result, CASQA has decided for the time being to limit its efforts to affect long-term systemic change by EPA and other federal agencies. Instead, CASQA has focused more on solidifying advances made at the state level, which will leverage the considerable authority held by the State of California for regulating the use of pesticides.

2.2.1 Focus on Management Agency Agreement (MAA) Between DPR and State Water Board

In 1997, just as pesticides were first discovered to be an important pollutant in urban waterways, DPR and the State Water Board adopted their first formal agreement to collaborate to address pesticides water pollution. That agreement focused on agricultural areas; the processes it envisioned did not work well in the urban context. CASQA (and its predecessor organization the Storm Water Quality Task Force) worked with DPR and the Water Boards for the next 20 years toward establishing pesticides water quality protection systems that would work in the urban context. During this time, DPR substantially updated its science-

¹⁹ Long-term regulatory goals at the state and federal level are described in detail in Section 1.2.

based pesticide registration procedures to include a “surface water protection program” review process, it initiated an urban watershed monitoring program, and it developed approaches to implementing mitigation measures addressing urban water pollution, as evidenced by its actions on pyrethroids and fipronil. The Water Boards engaged with DPR, providing scientific and regulatory information, receiving and using information from DPR to inform design of its regulatory programs (particularly TMDLs), and cooperating in monitoring programs. In mid-2019, DPR and the State Water Board received approval to sign a major update to their formal MAA that memorializes their existing systems and growing cooperation and lays out the steps they are taking toward a “unified and cooperative program to protect water quality related to the use of pesticides.” The two agencies agree “to work cooperatively to address the discharge of pesticides that may cause or contribute to surface water or groundwater pollution, including surface water toxicity.”

DPR will evaluate surface water quality risks and consider these risks when making registration decisions; promote environmentally sound pest management; and respond to water quality concerns that pose significant adverse effects to aquatic organisms. Water Boards will confer with DPR when developing regulatory programs related to pesticides; ensure waters are monitored (in coordination with DPR’s monitoring and including permittee and State Water Board’s own monitoring participation); and require and support use of best management practices relating to pesticides (structural management practices are not intended to be required in urban areas).

The Implementation Plan that accompanies the MAA describes opportunities for coordination and mutual enrichment (including cross-training), expectations for both staff and executive level communication (including an annual management-level meeting between the agencies), and current agency organization and interactions. Excerpts from the Implementation Plan:

“In the urban environment, pesticides are transported by the municipal wastewater collection system and the municipal separate storm sewer system (MS4). PMPs [pesticides-specific management practices] focus primarily on prevention through responsible use according to the pesticide label and DPR regulations and as a part of a holistic IPM [Integrated Pest Management] strategy. DPR conducts education and outreach efforts to ensure professional applicators are up to date on regulatory actions and label changes. Wastewater treatment plants and multi-benefit storm water treatment practices such as low impact development, runoff infiltration, constructed wetlands, and restoration of riparian buffers around waterways can provide some reductions. However, they are not designed for, nor implemented to address, complex mixtures of pesticides and the effectiveness of these practices to remove various pesticides from these systems is not well understood.

DPR will work with the Water Boards to inform pesticide users on urban PMPs. The Water Boards, through their storm water permits, will continue to require PMPs from storm water permittees. Permittees must also include, as appropriate, education and outreach to inform residential and commercial pesticide users on responsible pesticide use and encourage municipal storm water permittees to provide local expertise into DPR’s pesticide regulatory process.

The Water Boards and DPR will collaborate to assess the impacts of pesticides in the urban environment through collective and comprehensive monitoring efforts, which optimize the use of monitoring resources of Water Boards, dischargers, and DPR.”

2.2.2 Focus on California’s Urban Pesticide Amendments

At the urging of CASQA, in 2014 the State Water Board made a strategically important decision to institutionalize its commitment to work closely with DPR and EPA to utilize pesticide regulatory authority as the primary mechanism for preventing and responding to impairments of receiving waters linked to current use pesticides in urban runoff. To accomplish this, it established an urban pesticides reduction project (now entitled the “Urban Pesticides Amendments”) as a top priority project for 2016 under the comprehensive stormwater strategy it adopted in December 2015, known as



“Strategy to Optimize Resource Management of Storm Water” or STORMS.²⁰ In 2018-19, the State Water Board continued working towards developing the Urban Pesticides Amendments which will be changes to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries, and the Water Quality Control Plan for Ocean Waters of California. It is important to note that a critical factor in the State Water Board’s decision to move in this direction was DPR’s demonstrated commitment and significant progress in addressing urban water quality issues caused by pesticides.²¹ It is anticipated that the public comment period will begin in late 2019, in tandem with a State Water Board Workshop. This would be followed by adoption, anticipated in 2020. In preparation for this next phase, CASQA has been providing outreach to MS4s throughout California to discuss the new amendments in greater detail.

CASQA representatives have been participating actively in the development of the Urban Pesticide Amendments since their inception, as members of the projects Core Team and various work groups, to ensure that they are consistent with CASQA’s vision for pesticide control.²² The key elements that we anticipate being in the amendments are listed below.

- 💧 Element 1: Establishment of a framework for the Water Boards to work with DPR and U.S. EPA to utilize pesticide regulatory authority as the primary means for addressing pesticides in urban runoff.
- 💧 Element 2: Adopt a program of implementation addressing urban pesticides water pollution that serves as a TMDL alternative and integrates a feasible compliance pathway for MS4s.
- 💧 Element 3: MS4 Monitoring program designed to coordinate with existing DPR and State Water Board pesticides and toxicity monitoring to support effective implementation of Elements 1 and 2.
- 💧 Element 4: Requirements for MS4s to support Elements 1 and 3 by contributing expertise on how pollutants present in urban environments enter and behave in urban runoff and water bodies.
- 💧 Element 5: Other actions that can reasonably be implemented by MS4s, such as integrated pest management (IPM) outreach, in support of pesticides reductions.

CASQA supports the State Water Board’s stated goal of implementing the Urban Pesticides Amendments “as an alternative to TMDL development to address pesticide and pesticide-related toxicity impairments in individual water bodies.” Achievement of this goal would provide substantial savings of state and MS4 agency resources as compared to establishment of multiple TMDLs throughout the state.

Elements 1-4 are consistent with CASQA Vision Action 1.4. Water Board staff have indicated their intent that the Urban Pesticides Amendments, as shown in Element 5 should also establish a consistent set of “*minimum pesticides source control measures for MS4 dischargers.*”

CASQA representatives have worked with the Water Boards to ensure that such requirements are reasonable and consistent with similar measures already in place in some regions. At this time, the list of potential minimum measures includes use of IPM, education of and outreach to residents and professional pesticide applicators, providing urban runoff scientific and management expertise to support pesticide regulatory processes, non-stormwater discharge prohibitions, and pesticide and toxicity monitoring.

²⁰ STORMS’ overall mission is to “lead the evolution of storm water management in California by advancing the perspective that storm water is a valuable resource, supporting policies for collaborative watershed-level storm water management and pollution prevention, removing obstacles to funding, developing resources, and integrating regulatory and non-regulatory interests.” (http://www.waterboards.ca.gov/water_issues/programs/stormwater/storms/)

²¹ As reported in previous CASQA Pesticide Subcommittee Annual Reports, DPR’s accomplishments include improved modeling, active ingredient screening for urban water quality issues, monitoring, and regulatory mitigation of pyrethroids and fipronil.

²² These goals have been adapted from the CASQA document, “End Goals for Pesticide Regulatory Activities,” 2014. Goal 3, above, is directly tied to Goals 2, 4, and 5 of that document.

CASQA supports the stated goal to “create a comprehensive, coordinated statewide monitoring framework for pesticides and toxicity in urban runoff and receiving water that improves resource efficiency, usefulness of data, and coordination of data collection to support management decisions.”²³ A well-designed and managed monitoring framework that is properly representative of urban areas can simultaneously provide more useful information and improve the utilization of resources by eliminating unnecessary MS4 monitoring requirements that do not contribute to effective management of pesticides and pesticide-caused toxicity.

Monitoring. Through the spring of 2019, CASQA participated in a process to set up a statewide monitoring framework. Key joint accomplishments on the establishment of the monitoring program:

- **Charter and Structure:** Agreement was reached with respect to a charter, an initial steering committee structure and membership for an Urban Pesticides Coordinated Monitoring Program (UPCMP). Figure 5 presents the proposed UPCMP framework including decision-making channels. While CASQA has begun exploring options for establishing a formal, more inclusive method for MS4s to select permanent steering committee representatives, the initial steering committee structure is:
 - 2 seats for the State Water Board (1 for the Division of Water Quality, 1 for the State Water Board Office of Information Management and Analysis);
 - 2 seats for the Regional Water Boards;
 - 2 seats for the DPR;
 - 3 seats for the MS4 permittees (the PSC Chair, and representatives from Alameda County and Orange County); and
 - 1 seat for the US EPA Region 9 (non-voting Member).
- **Start-Up Grant:** At the end of May 2019, the State Water Board issued a grant to the Aquatic Science Center to fund the start-up of the monitoring program, including convening of the program’s founding steering and technical committees, development of a start-up funding plan and first year workplan.

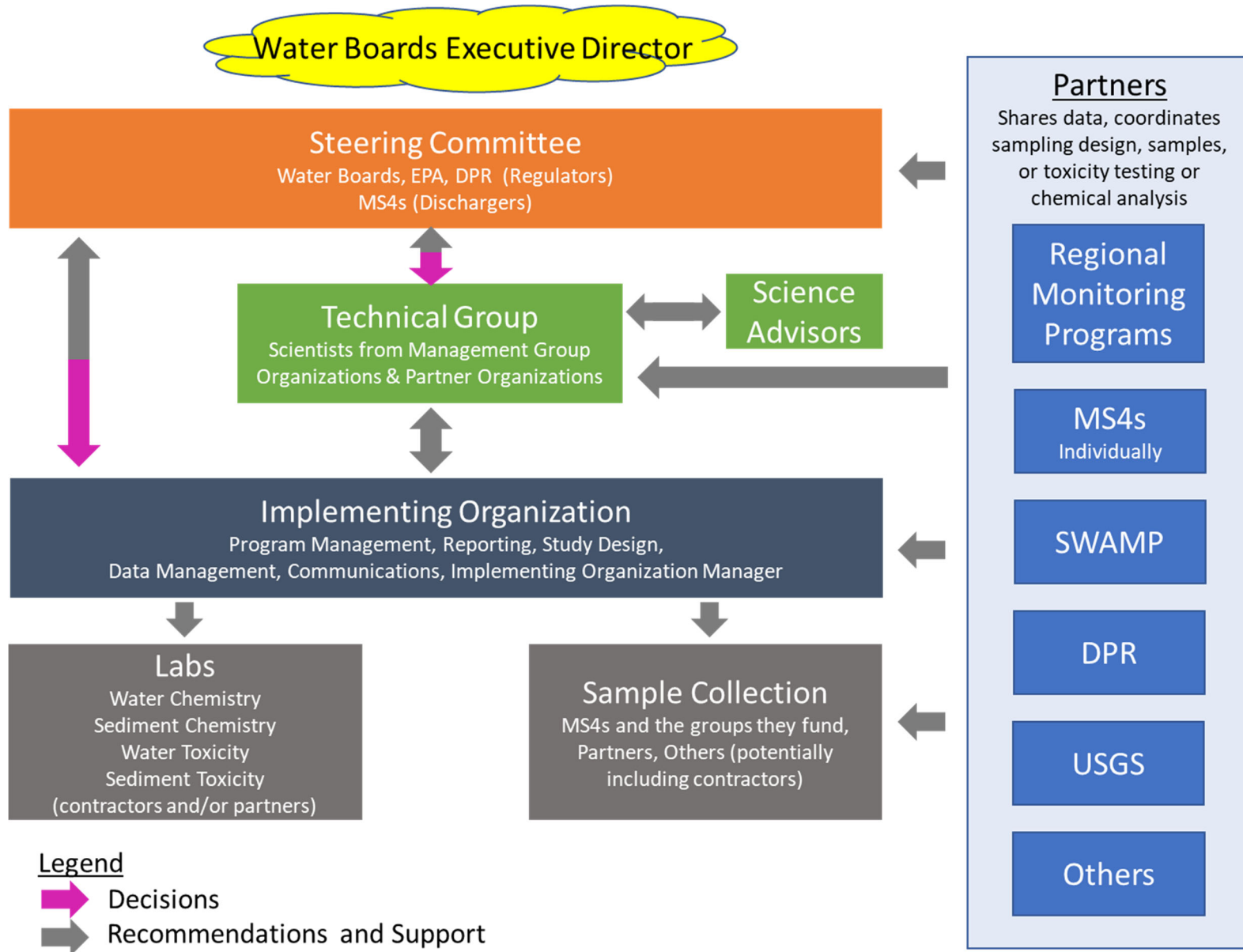
Technical Support. CASQA continues to provide technical support to the Water Boards on numerous crucial and highly detailed items related to the Urban Pesticide Amendments, Staff Report, CEQA Document, monitoring program, model permit language, and the relationship of these to the Management Agency Agreement.

MS4 Input. CASQA Pesticides Subcommittee began briefings for the MS4 community to explain, gather input, and obtain support for the Urban Pesticide Amendments in advance of their public release for comment. Briefings were provided to representatives of the following MS4 groups:

- | | | |
|--------------------------------|--------------------------------|---------------------------------|
| • Alameda Countywide | • Orange County MS4 Permittees | • San Mateo Countywide |
| • City of Salinas | • Phase II Subcommittee | • Ventura County MS4 Permittees |
| • Los Cerritos Watershed Group | • Santa Clara Countywide | |
| • Orange County Countywide | | |

²³ Informational Document, CEQA Public Scoping Meeting, State Water Resources Control Board, January 25, 2017

Figure 5. Proposed UPCMP Framework



2.2.2 CASQA Participation in Other State Efforts

As presented in Table 4, CASQA has been actively involved with various State agencies and advisory groups that affect pesticide use and pest management in urban areas.

Table 4. Participation in Other State Efforts to Support CASQA’s Goals

Agency or Conference	Latest Outcomes
DPR’s Pest Management Advisory Committee (PMAC)	Participation on the PMAC has resulted in expanded focus by DPR on urban pest management and water quality issues and generated funding for urban integrated pest management programs. DPR conducted a multi-stakeholder initiative entitled Pests, Pesticides, and Integrated Pest Management (PPI) to identify strategic actions to identify overcome barriers and establish widespread adoption of IPM; it included urban pests as a key focus and was completed in Fall 2018. A PSC member served on the PPI steering committee as well as the Structural Pest working group.
California Structural Pest Control Board (SPCB)	<p>A PSC member is an appointed member of the SPCB. The SPCB recognizes the potential for excessive pesticide application to impact water quality. The SPCB is in the process of adopting regulations to increase continuing education hours required in the IPM category. The SPCB’s Research Advisory Panel solicited proposals urban IPM research. Five proposals were selected and collectively awarded \$1.02 million to be funded by the SPCB Research Fund. The innovative research topics target four key urban pests:</p> <ul style="list-style-type: none"> • “Diet and Colony Structure of Two Emerging Invasive Pest Ants” • “Investigation of Rodenticide Pathways in an Urban System Through the Use of Isotopically Labelled Bait” • “Evaluation of bait station system efficacy for reduced-risk subterranean termite management in California” • “Development and Evaluation of Baiting Strategies for Control of Pest Yellowjackets in California” • “Improving Urban Pest Ants Management by Low-Impact IPM Strategies”
University of California Statewide IPM (UCIPM)	While a PSC member no longer serves on UCIPM’s Strategic Planning Committee, UCIPM continues to provide resources, develop materials, and implement programs that support urban IPM, such as the ongoing blogs “Pests in the Urban Landscape,” ²⁴ and “Retail Nursery & Garden Center IPM News.” ²⁵

²⁴ <http://ucanr.edu/blogs/UCIPMurbanpests/>

²⁵ <http://ipm.ucanr.edu/retail/retail-newsletter.html>

Section 3. CASQA's Approach Looking Ahead

At any given time, EPA and DPR may be in the process of evaluating and registering various pesticides for urban use. To improve ongoing pesticide regulatory processes, CASQA and the UP3 Partnership continuously track and engage in EPA and DPR activities, sharing their urban runoff and water-quality specific expertise with pesticides regulators. Typically, these efforts entail peer review of pesticides scientific assessments and risk management proposals, and sharing monitoring data, water quality regulatory background, and urban runoff agency compliance cost information. Sometimes, this involves recommending changes in an individual product's allowable uses or use instructions or requesting that regulators examine urban runoff discharges or fill critical data gaps by obtaining more data from manufacturers. CASQA and the UP3 Partnership are also working on a parallel effort to effect long-term change in the regulatory process, often using specific regulatory actions as educational opportunities on long-term issues.

In the coming year, CASQA plans to undertake activities to both address near-term pesticide concerns and seek long-term regulatory change. Although changes at the federal level are important for fully achieving CASQA's goal of protecting water quality through the effective use of pesticide regulations, until there is a more favorable situation at that level, we will continue to focus our efforts on solidifying progress at the state level. In FY 2019-2020, we will continue engagement on specific actions for priority pesticides at the federal level, while continuing our critical "end game" activities at the state level. This is in response to:

- 💧 the immediate need to participate in pyrethroid, fipronil, malathion, and imidacloprid regulatory actions (the only such opportunity for these chemicals the next 15 years);
- 💧 the opening of a strategic window of opportunity created by OPP's requirements to revise risk assessment procedures under the ESA;
- 💧 new data revealing the extent of urban pesticides water pollution and dozens of current and anticipated 303(d) listings / TMDLs for pyrethroids, fipronil, malathion, and imidacloprid; and
- 💧 a chance to leverage our recent success at the state level toward creating a realistic long-term pesticide management framework for MS4s.

CASQA's current priority activities are as follows:

(1) Continue collaboration with DPR to address near-term regulatory concerns, while seeking OPP and OW actions to reduce inconsistencies:

- 💧 Ensure DPR action on fipronil water pollution is completed, including professional user education about new restrictions on its outdoor urban use
- 💧 Ensure DPR enforces mitigation measures for pyrethroids and adopts additional measures as necessary
- 💧 Ensure the state continues to conduct surveillance monitoring to evaluate pyrethroids (and fipronil) mitigation effectiveness and to evaluate occurrence of new threats like imidacloprid and other neonicotinoid insecticides
- 💧 Continue to encourage EPA to complete scientific groundwork and to identify and implement pyrethroids, fipronil, malathion, and imidacloprid mitigation measures, recognizing that it is likely that necessary mitigation cannot readily be implemented entirely by DPR
 - Focus on providing EPA with detailed scientific information to support mitigation strategies appropriate in the urban context
 - Seek to build on and reinforce 2018-19 engagement with the EPA about the risk associated with urban uses of malathion (and the associated 303(d) listings) and the need to include traditional water quality risk assessments in tandem with complying with the ESA

(2) Seek long-term changes in the pesticide regulatory structure:

- Leverage our success at the state level and continue to be a key stakeholder in the STORMS project that is developing statewide Water Quality Control Plan amendments for urban pesticides reduction. Through this process, work with other stakeholders to implement the planned restructuring of California's urban surface water pesticides monitoring to increase its effectiveness and improve coordination.
- Seek procedure changes such that DPR continues to refine its registration procedures to address remaining gaps in water quality protection.

CASQA will continue to coordinate with the Water Boards through the UP3 Partnership to take advantage of efficiencies, increase effectiveness, and ensure that the water quality community has a consistent message. The types of activities that CASQA and the UP3 Partnership engage on an ongoing basis in are summarized in Table 5. Table 5 represents the recommended level of effort; CASQA will conduct these activities as priorities indicate and resources allow. Table 6 summarizes upcoming regulatory action items that are likely to proceed and may require CASQA attention in FY 2019-20.

Table 5. Recommended Ongoing CASQA Pesticide Subcommittee Activities

Activity		Purpose	Level of Effort
Regulatory Tracking	Track Federal Register notices	Identify regulatory actions that may require review.	Daily review; analyze EPA's scientific work and provide notification to CASQA members and partners as needed.
	Track DPR notices of registration applications and decisions	Identify pesticides meriting surface water review that are not within DPR's automatic routing procedures, identify gaps or potential urban runoff-related problems with current DPR evaluation or registration plans other regulations, procedures & policies.	Weekly review; obtain water quality assessments from DPR through public record requests; analyze from scientific and urban runoff management perspective and provide notification to CASQA members and partners as needed.
	Track activities at the Water Boards	Identify opportunities for improvements in TMDLs, Basin Plan Amendments, and permits.	Often weekly phone calls with Water Board staff; weekly review of noticed proceedings; review scientific information.
	Review regulatory actions, guidance documents, and work plans	Identify potential urban runoff-related problems with current EPA evaluation or registration plans, other regulations, procedures, and policies.	According to need as identified by tracking activities (average of 6 per month).
Regulatory Communications	Briefing phone calls, informal in-person meetings, teleconference meetings, and emails with EPA and DPR	Information sharing about immediate issues or ongoing efforts; educate EPA and DPR about issues confronting water quality community. Provide early communication on upcoming proceedings that help reduce the need for time-intensive letters.	As needed, but often several times per week. In-person meetings with DPR and EPA Region 9 approximately quarterly and OPP about 1-2 times per year in association with advisory committee meetings and scientific conferences.
	Convene formal meetings, write letters and track responses to letters	Ensure current pesticide evaluation or registration process accurately addresses urban runoff and urban pesticide use and management contexts and take advantage of opportunities to formally provide information suggest more robust approaches to that could be used in future regulatory process. Request and maintain communication on mitigation actions addressing highest priority pesticides.	Typically provide information and recommendations with regard to a dozen or so pesticides annually that could pose threats to water quality if EPA or DPR does not initiate certain procedures. Letters vary in length, but often are many pages and require many hours to write. As dockets are updated, review responses to comments and identify next opportunities. 4-6 meetings per year with DPR on mitigation actions.
Advisory	Serve on EPA, DPR, and Water Board policy and scientific advisory committees	Provide information and identify data needs and collaboration opportunities toward development of constructive approaches for managing pesticides.	2-6 meetings per committee per year. The PSC is currently represented on DPR's external advisory committee and has sporadic representation on water board panels related to pesticides.

Activity	Purpose	Level of Effort	
Educational	Presentations to and informal discussions with EPA, DPR, Water Board, CASQA members, pesticide manufacturers, water quality researchers, and other collaborators.	Educate EPA, DPR, Water Board, and CASQA members about the urban runoff-related shortcomings of existing pesticide regulatory process, educational efforts to support process improvements, and report on achievements. Encourage research and monitoring programs to address urban runoff data needs and priorities. Stimulate academic, government, or private development of analytical and toxicity identification methods to address anticipated urban runoff monitoring needs. Inform development of new pesticides by manufacturers and selection of pesticides by professional users.	As many as a dozen opportunities to present at water quality, pesticides and chemical conferences nationally. Additional 8-10 opportunities per year for state and regional events. Informal interactions weekly. Actual participation is a few formal events because preparation of presentations and coordination with water quality community can take as much as 40 hours per opportunity.
	Developing and delivering public testimony	Educate Water Board members about the problems with existing pesticide regulatory process, encourage change, and report on achievements.	2-3 times per year. Preparation and coordination can take as much as 40 hours per opportunity.
Monitoring and Science	Track major urban runoff monitoring and pesticide scientific studies; review scientific literature, monitoring data, and government reports; and maintain reference database	Stay abreast of the latest scientific findings in order to identify pesticide priorities for monitoring and mitigation, to improve methods for identifying sources of pesticides in urban runoff, and to support input and discussions with regulators toward improving pesticide regulation, which is science-based.	Review about 10 important publications per month and a dozen meetings per year.
	Peer review EPA, DPR, and Partner work plans and reports	Provide insights and ensure that work plans and reports are utilizing latest science regarding urban pesticide use, fate and transport, and water quality impacts and study designs focus on the most important information gaps about urban runoff pesticides water pollution.	Peer review approximately 6 documents per year, which can take up to 8 hours each.
	Update Pesticide Watch List based on new scientific and regulatory information	The Pesticide Watch List (Table 2) serves as a management tool to prioritize and track pesticides used outdoors in urban areas.	2-3 updates per year
	Develop urban conceptual models and track urban runoff numeric model development	Identify major sources of pesticides in urban runoff to focus identification of mitigation and prevention opportunities. Encourage better EPA and DPR predictive modeling to improve pesticide registration decisions.	Review 1-2 modeling publications per month. Develop one conceptual model annually (20-40 hours).
Data analysis of DPR/SWAMP/USGS/MS4 monitoring, pesticide use data, and information from scientific literature	Summarize data to educate CASQA members and water quality community, Water Boards, DPR, and EPA.	Detailed analysis is infrequent because finding, compiling, and analyzing data requires very high level of effort and funding. CASQA undertook a detailed monitoring summary in 2013. Report is available at www.casqa.org .	

Activity	Purpose	Level of Effort
Reporting	Prepare Monthly Action Plans	Coordinate CASQA's regulatory actions with Partners
	Prepare PSC Annual Report to describe the year's status and progress, provide detail on stakeholder actions, and the context of prior actions as well as anticipated end goal of these activities.	Provide CASQA's members with focused information on its efforts to prevent pesticide pollution in urban waterways. The document serves annual compliance submittal for both Phase I and Phase II MS4s. It may also be used as an element of PEAIps and future effectiveness assessment annual reporting.
		3 hours/month
		Preparation and coordination takes about 50 to 60 hours.

Table 6. Anticipated Opportunities for CASQA and the UP3 Partnership Pesticides Regulatory Engagement in 2019-2020

EPA Pesticide Registration Review (15-year cycle)
<p>Environmental Risk Assessments</p> <ul style="list-style-type: none"> • Priority 1 pesticides: Fipronil • Priority 2-4 pesticides: Chlorothalonil, Chromated Arsenicals, Copper 8-quinolinolate, Irgarol, Creosote, Oxadiazon, Oxyfluorfen, MCPP (phenoxy herbicide), Dichromic acid, Halohydantoin, o-Phenyl phenol, Pentachlorophenol (Pentachlorophenol, Dioxins), Sodium bromide, Thiophanate methyl, Triclopyr; others (schedule unknown)
<p>Endangered Species Act Biological Evaluation (Risk Assessment)</p> <ul style="list-style-type: none"> • Methomyl • Carbaryl
<p>Proposed Decisions</p> <ul style="list-style-type: none"> • Priority 1 pesticides: Pyrethroids and Imidacloprid • Priority 2-4 pesticides: 2,4-D, 2,4-DP (phenoxy herbicide), o-Benzyl-p-chlorophenol, Chlorine Gas, Dithiopyr, (phenoxy herbicide), Neonics (Clothianidin, Dinotefuran, Thiamethoxam, Acetamiprid), Piperonyl butoxide (PBO) (pyrethroids synergist), Pyrethrins, Simazine, Tralopyril (Econeal), Triclosan, Zinc metal salts; others (schedule unknown)

DPR New Pesticide Registration Decisions

- Proposed new urban pyrethroids (five momfluorothrin products, one alpha-cypermethrin product and one transfluthrin product)
- Proposed expansion of bifenthrin use in non-residential urban locations
- Proposed new fipronil products: fipronil-bifenthrin landscaping product, termite product, fipronil-imidacloprid foam outdoor product, product for yellow jackets
- Proposed ant and termite product containing the proposed new pesticide broflanilide.
- Novaluron product that has conflicting label requirements
- Proposed copper-microparticle containing paint additive
- Others (schedule unknown)

Other DPR-related Items

- Discuss potential mitigation measures for imidacloprid in urban runoff
- Carbaryl – proposed regulations would restrict use and end sale of consumer products
- Fipronil mitigation measure implementation including outreach to professional applicators and effectiveness monitoring
- Pyrethroids – possible updates to water quality protection regulations and/or implementation of other mitigation measures
- Updates to Methodology for Evaluating Pesticide Registration Applications for Surface Water Protection – development of new and updated modules to continue to improve accuracy of urban evaluations
- Registration Application Surface Water Reviews – continue to follow up on communications requesting review of all storm drain products, outdoor antimicrobials, and swimming pool additives

Water Boards

- State Water Board Provisions for Toxicity Assessment and Control, which include statewide numeric water quality objectives for both acute and chronic toxicity and an implementation program to control toxicity
- STORMS Urban Pesticides Amendments
- Pesticides 303(d) listings
- Pesticide TMDL implementation requirements for permittees

Appendix: Regulatory Participation Outcomes and Effectiveness Assessment Summary Tables

See companion document.

Pesticides Subcommittee Annual Report and Effectiveness Assessment 2018-2019

Appendix:
Regulatory Participation Outcomes and
Effectiveness Assessment Summary Tables

California Stormwater Quality Association



Final Report
August 2019

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2,4-DP (June 2019)

Boric Acid (November 2018)

Copper (November 2018)

Deltamethrin (February 2019)

Dichlobenil (November 2018 and April 2019)

Hydramethylnon (June 2019)

Indoxacarb (November 2018 and April 2019)

MCPA (November 2018)

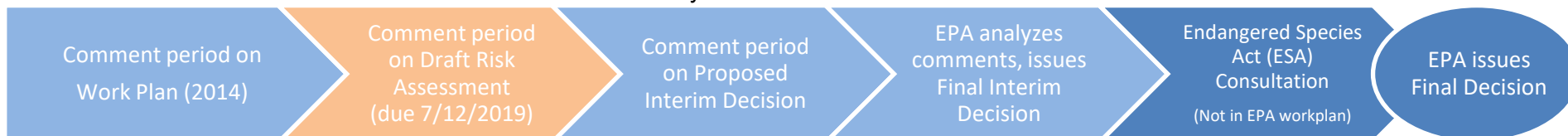
Nanosilver (November 2018)

Pyriproxyfen (November 2018)

Spinetoram/Spinosad (April 2019)

Zinc and Salts (November 2018)

Pesticide: 2,4-DP, EPA-HQ-OPP-2013-0726
Use: Phenoxy herbicide with urban uses.
Why we care: Commonly used herbicide that is toxic to aquatic plants and some aquatic invertebrates. Highly water soluble.
Actions taken: In 2014, the Central Valley and SF Bay Regional Water Quality Control Boards both submitted comment letters on the draft Work Plan, based on part on scientific information provided by CASQA.
Status: EPA released the Draft Risk Assessment in May 2019.



Next steps: The Proposed Interim Decision will likely be released in 2020.
Recommendation: Keep on tracking list and watch for Proposed Interim Decision.

2014 Comments to EPA from the SF Bay Regional Water Quality Control Board on the Draft Work Plan	EPA Response	Did EPA incorporate the Water Board's comment?
<p>Aquatic toxicity data: "For the 2,4-DB and 2,4-DP registrations, we support the stated requirements for aquatic toxicity data." (Statement of support of EPA's request during the Work Plan process.)</p>	<p>EPA noted that there was "no data" or that "data was not available" for many species. (pp.4-7)</p>	<p>No. Although EPA requested aquatic toxicity data from the registrants in accordance with the Work Plan, the registrants did not provide aquatic toxicity data for many species, including estuarine/marine invertebrates. EPA did not enforce its data requirement.</p>
<p>Degradates: "We strongly encourage EPA to request data for fate and aquatic toxicity for 2,4-DCP, a degradate of both these herbicides as well as of 2,4-D...2,4-DB and 2,4-DP are used to control weeds in turf, are commonly used in urban areas, and are readily available in retail stores. They have relatively high water solubility and move to surface waters via rain runoff and irrigation overflow." (Note: Central Valley Regional Water Control Board had a similar comment.)</p>	<p>EPA notes that its previous assessment identified concern regarding the degradate DCP, but EPA chose not to quantitatively incorporate it into the current assessment. (p. 4)</p>	<p>No. Despite noting evidence of toxicity of both degradates, and acknowledging the lack of information, EPA concluded that there are no risk concerns.</p>

<p>Consider urban environments: “It is imperative that EPA fully consider their potential ecological risks in urban settings, including and in particular, the fate and aquatic toxicity impacts from the common degradate 2,4-DCP.”</p>	<p>EPA noted that 2,4-DP and its degradates was found in monitoring data from DPR, USDA Pesticide Monitoring Data, and the Federal Water Quality Portal (which includes USGS data). EPA noted that there is a lack of studies and monitoring data for DCP. “The maximum modeling values are several orders of magnitude lower than the monitoring data. The relative contribution of 2,4-DCP from other phenoxy herbicides into surface water and groundwater is a major uncertainty; however, 2,4-D is one of the most widely used phenoxy herbicides.” (p. 19)</p>	<p>No. EPA discounted degradate monitoring data due to lack of understanding of the degradate source. EPA did not fully consider ecological effects in urban settings for either 2,4-DP or DCP.</p>
<p>Cumulative risk: “(W)e encourage EPA to consider the cumulative risk of additive toxicities, both between 2,4-DB and 2,4-DP and also between these herbicides and other pesticides.” (Note: Central Valley Regional Water Control Board had a similar comment.)</p>	<p>EPA did not address the effect of cumulative risk in the Risk Assessment.</p>	<p>No. EPA did not do a cumulative risk assessment for these related herbicides.</p>

Pesticide: Boric Acid/ Sodium Salts, such as Sodium Tetraborate Pentahydrate (BioGuard Optimizer, ProTeam Supreme)
Use: Pool chemical (pH stabilizer); EPA-HQ-OPP-2009-0306
Why we care: Current labels do not forbid discharging pool/hot tub water with this chemical to natural water bodies, storm drains, gutters, and there are no requirements to contact local authorities before discharging to the sewer system.
Actions taken: CASQA and BACWA sent EPA a comment letter on the Proposed Interim Decision in July 2017.
Status: EPA released the Interim Registration Review Decision in August 2018.



Next steps: ESA Consultation is required but unlikely to begin before 2022. Then EPA will issue a Final Decision.
Recommendation: No action is needed at this time. Keep on tracking list and watch for future ESA consultation process.

CASQA Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
<p>Add these sentences to all labels: <i>“Before draining a treated pool, spa, or hot tub, contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool or spa water to any location that flows to a gutter or storm drain or natural water body unless discharge is allowed by state and local authorities”</i>, which would make the label consistent with other recently updated labels for pool chemicals. (Previous CASQA comment had suggested slightly different wording, but CASQA and POTW colleagues worked with EPA on revised language that addresses differences in discharge requirements around the nation.)</p>	<p>Despite a request from industry to not prohibit discharge of pool water to landscape and water bodies, EPA agreed with CASQA's comments and added these two sentences to all pool chemical labels that contain boric acid/ sodium salts. EPA also thanked CASQA for its input and support with this process.</p>	<p>YES</p>

Pesticide: **Copper Compounds; EPA-HQ-OPP-2010-0212**
Use: Swimming pool treatments and other various conventional and antimicrobial uses
Why we care: They pose a significant risk to water quality in urban and suburban areas. Numerous surface waters that receive urban runoff are impaired by copper (i.e., on the CWA 303(d) list) and many have Total Maximum Daily Loads (TMDLs), and San Francisco Bay has a site-specific copper objective and management program that requires continued pollution prevention activity.
Actions taken: CASQA, the National Municipal Stormwater Alliance and the SF Water Board sent EPA comment letters on the Proposed Interim Decision in July 2017 (BACWA/NACWA determined letters were unnecessary). CASQA, the SF Water Board, BACWA, and NACWA sent comments on the Draft Risk Assessment in 2016. CASQA, the SF Water Board, and Tri-TAC sent letters commenting on Registration Review in 2010.
Status: EPA released the Interim Registration Review Decision in December 2018.



Next steps: ESA Consultation is required but unlikely to begin before 2022. Then EPA will issue a Final Decision.
Recommendation: No action is needed at this time. Keep on tracking list and watch for future ESA consultation process.

CASQA Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
<p>CASQA stated that all storm drain applications of copper should be prohibited. EPA responded that some applications are acceptable as long as applicators try to avoid simultaneous applications. (CASQA knows that this is not possible to manage since various agencies, businesses, and private citizens could be using copper at different points in the storm drain system.)</p> <p>Further, EPA proposes that labels must state a maximum annual application rate of 2 pounds active ingredient (0.5 pounds metallic copper) per drain per year for storm drain root control--a recommendation in direct conflict with the CWA</p>	<p>In responding the National Municipal Stormwater Alliance (NMSA), EPA responded to CASQA's comments: EPA thanks the NMSA for comments and additional information. EPA agrees that the use of copper pesticides in MS4 systems runs contrary to the requirements of the MS4 NPDES permit and will add label language prohibiting such uses. For drainage systems that are not subject to the requirements of an MS4 permit, EPA will continue to allow the use of copper root control products with advisory statements and risk mitigation language. EPA expects that the prohibition of applications to MS4</p>	<p>Partially</p> <p>EPA will be prohibiting applications of copper compounds directly into MS4 and other stormdrain systems. Unfortunately, the revised language allows for private entities with storm drains that flow into public storm drain systems to continue to apply copper root control chemicals into their storm drains. Any such use could contribute a significant slug load of copper into the public stormdrain system.</p>

<p>and NPDES permits. Such applications would be essentially uncontrollable by municipal separate storm sewer system (MS4) agencies, because they would have no way of knowing when and where they are use, and because regulation of pesticide use by local agencies is precluded by law in many states, including California.</p> <p>Chemical root control is unnecessary for storm drains. In storm drain systems –unlike sanitary sewers– root intrusion is not a common problem. When clearing storm drains is necessary, non-chemical methods like hydroflushing or mechanical clearing have long been used and are standard industry practice. While clearing is not typically done for roots, when storm drain lines are cleared, to comply with MS4 NPDES permits, discharges are treated for pollutant removal (e.g., sediment) and/or diverted into sanitary sewer systems.</p> <p>We recommend that EPA consider using language that is included on other registered root-control products: “Do not use in storm, field or other drains unless effluent is treated in a sanitary sewer system.”</p>	<p>systems will support risk management goals by greatly reducing the amount of allowable scenarios in which copper may be applied to storm drains that discharge directly to surface waters.</p> <p>EPA’s revised language:</p> <p><i>“Stormwater Advisory Statement: This product may be applied for the purposes of root intrusion control in storm drains or storm sewers that can discharge directly or indirectly into ephemeral or permanent waterbodies. This product must not be used in any municipal or public storm sewer or “MS4” system, or any storm drain system otherwise covered under an NPDES MS4 discharge permit. Copper will accumulate with repeated applications in the waterbodies to which treated storm drains/sewers discharge. To the extent possible, avoid simultaneous treatments of multiple drain systems that discharge to the same waterbody. Staggering applications to individual stormwater collection points to allow interceding storm events to clear the product from previously treated drains can help reduce the impact to aquatic organisms in receiving waterbodies. Development of and adherence to, a pesticide management plan for storm drains is encouraged.”</i></p> <p><i>“Maximum annual application rate of 0.5 lbs metallic copper per drain per year. This product may not be used in municipal or public storm drains and storm sewers.”</i></p>	
<p>CASQA concurs with OPP’s findings that the use of copper-based pesticide products in pools and spas may pose a significant threat to organisms in the aquatic environment. Because pesticide labels with adequate mitigation are an essential line of defense to prevent toxic impacts on receiving waters, we support EPA’s</p>	<p>The Agency thanks CASQA, NMSA and SFBRWQCB for their comments and support for proposed label language for swimming pools, hot tubs, and spas.</p>	<h1>YES</h1>

<p>proposal to include label language first developed for lithium hypochlorite:</p> <p><i>“Before draining a treated pool, spa, or hot tub, contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool or spa water to any location that flows to a gutter or storm drain or natural water body unless discharge is allowed by state and local authorities.”</i></p>		
<p>CASQA requests that the labeling language be expanded to include products for outdoor fountains. CASQA requests that EPA additionally require the pool and spa draining language be placed on labels for copper products sold for use in outdoor fountains for same reasons that EPA has required this language for pool products. Similar to pools and spas, fountains are also be drained regularly for maintenance, with potential adverse water quality consequences similar to those associated with draining pools and spas.</p>	<p>EPA is moving forward with the expansion of pool, hot tub, and spa discharge language to include outdoor fountains.</p> <p><i>“Before draining a treated [pool.] [spa.] [hot tub.] or [fountain] contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool or spa water to any location that flows to a gutter, storm drain or natural water body unless discharge is allowed by state and local authorities.”</i></p>	<p style="text-align: center;">YES</p> <p>EPA’s revised language requires consultation with local authorities, which is a move in the right direction. However, the discharge ban (second sentence) does not include hot tubs or fountains. It appears that this may have been overlooked by EPA.</p>

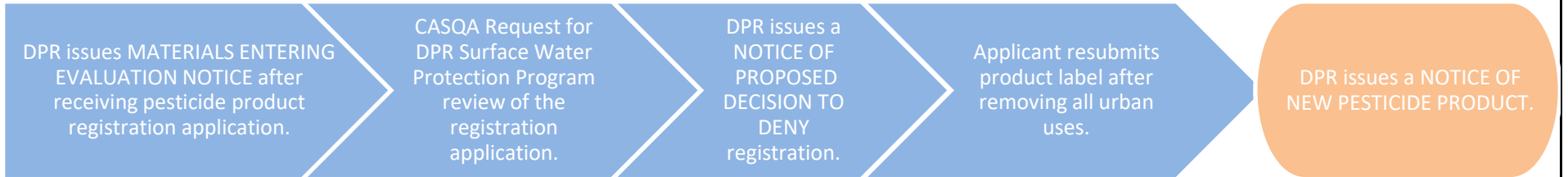
Pesticide: Deltamethrin; EPA–HQ–OPP–2009–0637

Use: Insecticide used for bedbugs, ants, cockroaches (among other uses). Applicant had initially proposed a new urban screen product in CA.

Why we care: Pyrethroid. Highly toxic to aquatic invertebrates. Monitoring data exceeding benchmarks, 303(d) listings, TMDLs, CWA Priority Pollutant.

Actions taken: CASQA Pesticide Subcommittee consultants noted that a new deltamethrin product (a screen material for urban areas) was being considered for registration in CA. Dave Tamayo (County of Sacramento) sent a request in May 2018 that DPR’s Surface Water Protection Division perform an evaluation of this product. DPR issued a Notice of Proposed Decision to Deny (based on surface water evaluation) on Dec. 7, 2018.

Status: Applicant resubmitted product label--removing all urban uses--and DPR issues a Notice of New Pesticide Product on February 15, 2019.



Next steps: No further action required, since applicant withdrew all urban uses of the product.

CASQA Action:	Result:
<p>CASQA Pesticide Subcommittee consultants noted that a new deltamethrin product (a window/door screen material for urban areas) was being considered for registration in CA by DPR. Dave Tamayo (County of Sacramento) sent a request in May 2018 that DPR’s Surface Water Protection Division perform an evaluation of this product.</p>	<p>Due to the request from the CASQA Pesticide Subcommittee, DPR performed an evaluation of this product and the subsequent Environmental Monitoring Evaluation (including modeling) did <i>not</i> support registration. DPR subsequently issued a Notice of Proposed Decision to Deny the product. The applicant subsequently resubmitted the product after removing all urban uses from the product label. The actions of the CASQA Pesticide Subcommittee successfully prevented this high-risk product from being labeled for urban use in California.</p>

Pesticide: Dichlobenil, EPA-HQ-OPP-2012-0395
Use: Root control in sewer lines (almost 94% of use is root control)
Why we care: Dichlobenil is a root control chemical, commonly used in sewers but currently permitted to be used in storm drains. It is known to be toxic to fish and aquatic invertebrates.
Actions taken: CASQA, BACWA, NACWA, Tri-TAC, and SF Bay Water Board commented on the Work Plan in 2012. CASQA, BACWA, NACWA, and SF Bay Water Board the Draft Risk Assessment in 2017. Most recently, CASQA, BACWA and SF Bay Water Board sent EPA comments on the Proposed Interim Decision in October 2018.
Status: EPA released the Proposed Interim Registration Review Decision in September 2018.



Next steps: EPA will analyze comments and issue a Final Interim Decision. ESA Consultation is required but unlikely to begin before 2022.
Recommendation: No action is needed at this time. Keep on tracking list and watch for Interim Decision.

CASQA Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
<p>CASQA's primary concern regarding registration of dichlobenil root control products is the potential for it to be used in "storm sewers, drain lines, and drains." Use of dichlobenil in storm drains could harm aquatic organisms and cause violations of the Clean Water Act (CWA).</p> <p>CASQA is pleased that EPA's Proposed Interim Decision includes label language <u>prohibiting</u> product use in storm, field, and other drain systems that do not discharge to a sanitary sewer system for treatment. The proposed label prohibitions harmonize with FIFRA and CWA implementation and help to prevent impacts to receiving water aquatic life beneficial uses resulting from dichlobenil pollution in discharges of urban runoff via municipal storm drain systems.</p>	<p>In the Proposed Interim Registration Review Decision (Sept. 2018) EPA noted that it would be adding the following label language to all labels:</p> <p><i>"Do not use in storm, field, or other drains unless effluent is treated in a sanitary sewer system."</i></p>	<p>YES</p>

Pesticide: Dichlobenil, EPA-HQ-OPP-2012-0395
Use: Root control in sewer lines (almost 94% of use is root control)
Why we care: Dichlobenil is a root control chemical, commonly used in sewers but currently permitted to be used in storm drains. It is known to be toxic to fish and aquatic invertebrates.
Actions taken: CASQA, BACWA, NACWA, Tri-TAC, and SF Bay Water Board commented on the Work Plan in 2012. CASQA, BACWA, NACWA, and SF Bay Water Board the Draft Risk Assessment in 2017. CASQA, BACWA and SF Bay Water Board sent EPA comments on the Proposed Interim Decision in October 2018.
Status: EPA released the Final Interim Registration Review Decision in March 2019.

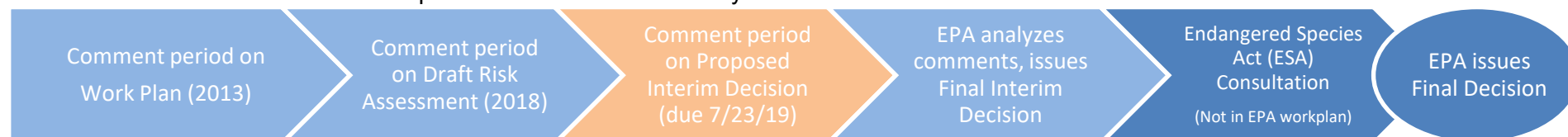


Next steps: ESA Consultation is required but unlikely to begin before 2022.

Recommendation: Keep on tracking list and watch for Interim Decision.

CASQA Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
<p>CASQA's primary concern regarding registration of dichlobenil root control products is the potential for it to be used in "storm sewers, drain lines, and drains." Use of dichlobenil in storm drains could harm aquatic organisms and cause violations of the Clean Water Act (CWA).</p> <p>CASQA is pleased that EPA's Proposed Interim Decision includes label language <u>prohibiting</u> product use in storm, field, and other drain systems that do not discharge to a sanitary sewer system for treatment. The proposed label prohibitions harmonize with FIFRA and CWA implementation and help to prevent impacts to receiving water aquatic life beneficial uses resulting from dichlobenil pollution in discharges of urban runoff via municipal storm drain systems.</p>	<p>In the Proposed and Final Interim Registration Review Decisions (Sept. 2018 and March 2019, respectively) EPA noted that it would be adding the following label language to all labels:</p> <p><i>"Do not use in storm, field, or other drains unless effluent is treated in a sanitary sewer system."</i></p>	<p>YES</p>

Pesticide: **Hydramethylnon**, EPA–HQ–OPP–2012–0869
Use: Broadcast treatment of ants and other invertebrates in urban settings. Also used in agriculture.
Why we care: Pyrethroid substitute; highly toxic to fish and freshwater invertebrates; accumulates in sediments.
Actions taken: In 2013, CASQA and SF Bay Regional Water Quality Control Board each submitted comment letters on the Draft Work Plan. CASQA reviewed the 2018 Preliminary Ecological Risk Assessment but did not comment as it did not identify major errors.
Status: EPA released the Proposed Interim Decision in May 2019.



Next steps: **Comments are due on the Proposed Interim Decision on July 23, 2019.** The Final Interim Decision will likely be released in 2020.

Recommendation: Keep on tracking list and watch for Final Proposed Interim Decision.

CASQA Comments to EPA on the Draft Work Plan (2013)	EPA Response	Did EPA incorporate CASQA's comment?
<p>Evaluate the path to urban runoff. Modify the aquatic risk assessment problem formulation, work plan, and data requirements to address transport via urban runoff to surface waters, particularly from impervious surfaces. Examples of many of the necessary changes appear in EPA's final Registration Review Work Plans for bifenthrin and permethrin, reflecting EPA's improved urban water quality risk assessment procedures.</p>	<p>In the Preliminary Ecological Risk Assessment (ERA), EPA acknowledged that there was significant risk due to the use of hydramethylnon (ERA, p. 50) and in the 2019 Proposed Interim Decision (PID) listed several proposed mitigation measures, including updates to labels (PID, pp. 17-18). "To reduce the potential for runoff into urban waters, the EPA proposes to clarify proper use of broadcast applications in areas with impervious surfaces (e.g., driveways and patios), in conjunction with standardizing a rain advisory across labels. EPA is proposing to update the current environmental hazard statement for fish toxicity to include a warning for aquatic invertebrates as well." (PID, p. 13) The rain advisory states to "Avoid making applications if it is likely to rain within 24 hours of application."</p>	<p>Partial incorporation. Added new label language about environmental hazards, a rain advisory, and avoidance of broadcast applications on impervious surfaces. Many of the mitigation measures are weakly worded such as the rain advisory using "avoid" instead of "is prohibited."</p>

<p>Evaluate sediments. Require additional assessments of the toxicity of hydramethylnon to sediment dwelling, benthic macroinvertebrates in the risk assessment.</p>	<p>Although EPA agreed (in 2013 Final Work Plan) to model sediments, there was no sediment analysis provided in the Risk Assessment and therefore sediments were not addressed in the PID.</p>	<p>No.</p>
<p>Consider degradates. Require development of commercially applicable analytical methods for hydramethylnon and its major degradates.</p>	<p>Although EPA initially stated (in 2013 Final Work Plan) that it would consider degradates and request degradate data from registrants, it appears that this was not done.</p>	<p>No. Analysis of degradates is not mentioned in the PID.</p>
<p>Lengthen review timeline. Modify the proposed registration review timeline to reflect a reasonable period for public review of the draft risk assessment, as the proposed 30-day public comment period is inadequate for review of these highly technical documents.</p>	<p>A 60-day comment period was allowed for the next review cycle.</p>	<p>Yes.</p>
<p>Consider cumulative effects of multiple pesticides.</p>	<p>Although EPA initially stated (in 2013 Final Work Plan) that it would consider multi-residue monitoring data and evaluate degradates and mixtures to the extent possible, this analysis was not done.</p>	<p>No.</p>
<p>Use California DPR Sales Data.</p>	<p>EPA acknowledged DPR data and noted that all reviewers are welcome to submit data. (EPA's 2013 Response to Comments, p.6)</p>	<p>Yes. DPR sales data was used in the Risk Assessment.</p>

Pesticide: Indoxacarb EPA-HQ-OPP-2013-0367, (Advion, Arilon, Activyl pet flea product)
Use: Outdoor insect control; also used in pet “spot-on” treatments and in agriculture
Why we care: Indoxacarb is a priority for CASQA due to its toxicity to aquatic life in surface waters, and it and its degradates’ ability to persist and accumulate in soils and sediments.
Actions taken: CASQA, the SF Bay Water Board, and the Central Valley Water Board commented on the Draft Work Plan in 2013. CASQA, BACWA, Tri-TAC, and the SF Bay Water Board commented on the Draft Risk Assessment in Nov. 2017.
Status: EPA released the Proposed Interim Registration Review Decision in August 2018.



Next steps: EPA will analyze comments and issue a Final Interim Decision. ESA Consultation is required but unlikely to begin before 2022.
Recommendation: No action is recommended at this time. Keep on tracking list and watch for final Interim Decision.

CASQA Comments to EPA	EPA Response	Did EPA incorporate CASQA’s comment?
Require that no outdoor application be made when rainfall is forecast within 48 hours.	In the Aug. 2018 Proposed Interim Registration Review Decision, the EPA decided that future labels will contain wording specifying a 24-hour window (instead of the 48-hour window that CASQA requested). The wording is constructed as informational and is not a clear application prohibition.	Partial incorporation.
Perimeter band: Utilize efficacy data to determine the smallest treated area that will achieve target pest control.	EPA has proposed that the band be reduced from 10 feet, down to 5 feet from house and 2 feet up the wall. EPA notes that “(t)he technical registrant for non-agricultural uses has agreed to this label language.” It is unknown if EPA utilized efficacy data to determine the smallest treated area that will achieve target pest control. This treatment area is larger than DPR has allowed for California products. It would apply in California only to a single granular product registered prior to DPR’s establishment of its urban runoff review procedures.	Partial incorporation.
Prohibit application of granular products to any impervious surface.	This comment was fully incorporated.	YES

Prohibit application of granular product where product may contact surface water, storm drain, gutter, etc.	This comment was fully incorporated.	YES
Require immediate "sweep back" of any granules that are accidentally on impervious surfaces.	This comment was partially incorporated, as future labels will direct users to sweep back. The wording is constructed as informational; it is not a clear requirement.	Partial incorporation.

Pesticide: Indoxacarb EPA-HQ-OPP-2013-0367, (Advion, Arilon, Activyl pet flea product)
Use: Outdoor insect control; also used in pet “spot-on” treatments and in agriculture
Why we care: Indoxacarb is a priority for CASQA due to its toxicity to aquatic life in surface waters, and it and its degradates’ ability to persist and accumulate in soils and sediments.
Actions taken: CASQA, the SF Bay Water Board, and the Central Valley Water Board commented on the Draft Work Plan in 2013. CASQA, BACWA, Tri-TAC, and the SF Bay Water Board commented on the Draft Risk Assessment in Nov. 2017.
Status: EPA released the Final Interim Registration Review Decision in March 2019.



Next steps: ESA Consultation is required but unlikely to begin before 2022.

Recommendation: Keep on tracking list and watch for final Interim Decision.

CASQA Comments to EPA	EPA Response	Did EPA incorporate CASQA’s comment?
Require that no outdoor application be made when rainfall is forecast within 48 hours.	In the Proposed and Final Interim Registration Review Decisions, the EPA decided that future labels will contain wording specifying a 24-hour window (instead of the 48-hour window that CASQA requested). The wording is constructed as informational and is not a clear application prohibition.	Partial incorporation.
Perimeter band: Utilize efficacy data to determine the smallest treated area that will achieve target pest control.	EPA has proposed that the band be reduced from 10 feet from the house--down to 5 feet from house and 2 feet up the wall. The new label language allows the end-product user to determine the effectiveness of the product by allowing them to “(a)pply just enough product to be effective but in a band of no more than a total of 7 feet in width.” EPA notes that “(t)he technical registrant for non-agricultural uses has agreed to this label language.” It is unknown if EPA utilized efficacy data to determine the smallest treated area that will achieve target pest control. This treatment area is larger than DPR has allowed for California products. It would apply in California only to a single granular product registered prior to DPR’s establishment of its urban runoff review procedures.	Partial incorporation.

Prohibit application of granular products to any impervious surface.	This comment was fully incorporated.	YES
Prohibit application of granular product where product may contact surface water, storm drain, gutter, etc.	This comment was fully incorporated.	YES
Require immediate “sweep back” of any granules that are accidentally on impervious surfaces.	This comment was partially incorporated, as future labels will direct users to sweep back. The wording is constructed as informational; it is not a clear requirement.	Partial incorporation.

Pesticide: Indoxacarb, EPA-HQ-OPP-2013-0367
Use: Outdoor insect control
Why we care: Indoxacarb is a priority for CASQA due to its toxicity to aquatic life in surface waters, and it and its degradates' ability to persist and accumulate in soils and sediments.
Actions taken: CASQA Pesticide Subcommittee consultants noted that an existing indoxacarb product (a bait for fire ants) was requesting a product label change in California in both the Materials Entering Evaluation Notice and the Notice of Proposed Decisions to Register Pesticide Products on 3/14/19. The Subcommittee consultants noted that an important part of the label stipulating clean-up practices was omitted from the proposed revised label. They notified DPR of this omission, and DPR pulled the product from the registration process.
Status: The product was pulled from the California registration process on 3/21/19.

DPR issues MATERIALS ENTERING EVALUATION NOTICE and NOTICE of PROPOSED DECISION TO REGISTER PESTICIDE PRODUCT after receiving pesticide product registration application for label change.

CASQA Pesticide Subcommittee requested that DPR check applicaiton to see if revised label language was correct.

DPR pulls product update from the registration process. (Applicant will have to reapply with corrected label.)

Next steps: Continue tracking indoxacarb registrations. If applicant re-submits product, review to make sure that proposed label language is corrected.

CASQA Action:	Result:
<p>CASQA Pesticide Subcommittee consultants noted that applicants for an existing indoxacarb product (a bait for fire ants) were requesting a product label change in California in both the Materials Entering Evaluation Notice and the Notice of Proposed Decisions to Register Pesticide Products on 3/14/19. It was noted that some previously omitted portions of the standard environmental hazards language was added in Section 2.3 ("<i>This pesticide is toxic to fish and aquatic invertebrates.</i>" and "<i>Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.</i>"). However, the Workgroup consultants noted that an important part of the label stipulating clean-up practices was omitted from the proposed revised label. Specifically, the revised label deletes the sentence: "<i>Cover, incorporate, or clean up granules that are spilled.</i>" They notified DPR of this omission.</p>	<p>Due to the request from the CASQA Pesticide Subcommittee, DPR pulled the product from the registration process. The actions of the CASQA Pesticide Subcommittee successfully prevented this high-risk product from having important environmental safeguards removed from its label.</p>

Pesticide: MCPA; EPA-HQ-OPP-2014-0180
Use: Phenoxy herbicide, commonly formulated with other pesticides. MCPA is frequently applied at locations that could run off into urban storm drainage systems, such as on right-of-ways.
Why we care: Toxic to aquatic plants. Toxic to some aquatic invertebrates.
Actions taken: CASQA has been tracking EPA actions on this pesticide since 2014. The Central Valley Water Board commented on the Work Plan in 2014.
Status: EPA released the Draft Risk Assessment in December 2018.



Next steps: EPA will analyze comments and issue a Proposed Interim Decision.
Recommendation: No action is needed at this time. Keep on tracking list and watch for Proposed Interim Decision.

From EPA's Draft Risk Assessment:	Response from CASQA's Perspective:
<p>Non-agricultural use is common nationally, with >1,318,000 pounds used for this purpose each year, mostly on turf. For "rights-of-way", >25,000 pounds is used nationwide each year. Up to 3 pounds can be used at a time for spot treatment.</p>	<p>MCPA could be used on or near impermeable surfaces in "right-of-ways" that could cause runoff to aquatic environments. Unknown if runoff is concentrated enough to be toxic.</p>
<p>EPA considered monitoring data submitted by DPR: California Department of Pesticide Regulations (Cal DPR) submitted monitoring data for MCPA to include in the registration review risk assessment. The monitoring was conducted in four large urban areas in northern and southern California, including the greater Sacramento area, the San Francisco Bay area, the Los Angeles area, and the San Diego area. The purpose of the monitoring was to assess urban pesticide use and water quality in urban drainage and receiving water from stormwater runoff and baseflow in California's major urbanized areas. Of the 63 pesticides/degradates analyzed for, 30 different pesticides (including degradates) above their analytical reporting limit (18 insecticides and 12 herbicides) were detected in urban waters. The conclusion of the study was that rain storms drive most MCPA into urban surface waters. MCPA was more frequently found during rain runoff than during dry flow sampling (Ensminger and Kelley, 2011). The overall MCPA frequency of detection was 24%; if trace detections are considered, frequency increased to 32% in four sampling sites monitored in 2008 and 2009. In this study, MCPA was detected along with 30 different pesticides and degradates. The main herbicides detected besides MCPA were 2,4-D, triclopyr, dicamba,</p>	<p>EPA considered the monitoring data submitted by DPR and by acknowledging that MCPA enters urban creeks during wet weather events.</p>

<p>diuron, and pendimethalin. The summary of monitoring results for MCPA is presented in Table 5.1 below. The table also provides a summary of additional data collected in rivers, creeks, storm drains, and outfalls, that were collected until July 2016, and include some of the MCPA urban project data within. (p. 16)</p>	
<p>EPA found low-level, but significant risks to aquatic plants. Only pastureland/rangeland had predicted exceedances, but the rights-of-way modeling did not address the allowable 3 pound “spot” applications, which could occur near drainage systems. (Instead, 1.5-pound per acre applications were the only ones modeled).</p>	<p>EPA’s modeling does not yet address non-agricultural uses very well and might underestimate MCPA concentrations in urban runoff.</p>
<p>EPA did not complete a cumulative risk assessment of this plus the many other phenoxy herbicides. In comments on the Registration Review workplan, the Central Valley Water Board noted the high toxicity of phenoxy herbicides to algae and aquatic macrophytes as well as aquatic invertebrates and the frequent detection of multiple phenoxy herbicides together in surface water. It requested that EPA consider the cumulative additive toxicity of the phenoxy herbicides as a group in its ecological risk assessment.</p> <p>According to EPA “EPA appreciates the need to address cumulative risk from mixtures of pesticides both within and across modes of action. EPA, FWS, and NMFS collectively engaged the National Academy of Sciences (NAS) on the issue of mixtures as part of the broader approach to conduct ESA compliant pesticide risk assessments. As noted by the NAS report, the ability to quantitatively assess risk from mixtures (tank, formulated product, and environmental) is perhaps the most daunting challenge facing EPA and the Services. EPA currently considers cumulative mixture toxicity where data are available on combined effects from one or more compounds. EPA acknowledges that mixtures represent a consideration that may influence the toxicity of the active ingredient; however, there are many uncertainties and limitations to quantitatively assessing the impact of mixtures on the overall risk picture. As the NAS noted, there are significant challenges to incorporation of mixtures analyses into the risk assessment process including the lack of a generic peer-reviewed method to assess the risks from mixtures, uncertainty on the temporal aspects of exposure to mixture constituents (e.g. each constituent behaves differently once in the environment), lack of knowledge about mechanism of action in non-targets, and uncertainty on the portability of observed interactions across taxa. EPA and the Services have made the issue of developing an approach for assessing mixtures toxicity a priority for future risk assessments.”</p>	<p>The lack of cumulative evaluation of phenoxy herbicides risks leaves a gap that may be under-protective of water quality depending on the actual cumulative risks, which are currently unknown.</p>

Pesticide: Nanosilver, EPA-HQ-OPP-2011-0370
Use: Swimming pool algaecide, fabric treatments, materials preservatives (including for outdoor paint).
Why we care: Nanosilver is a priority due to its toxicity to aquatic organisms and the numerous silver 303(d) listings.
Actions taken: BACWA, NACWA, CASQA, the SF Water Board, and Tri-TAC sent EPA a letter in response to the Work Plan in 2012.
Status: EPA released the Final Work Plan in October 2018.



Next steps: The EPA does not solicit comments on Final Work Plans. The next opportunity to comment is on the Draft Risk Assessment.

Recommendation: No action is needed at this time but this pesticide should continue to be tracked.

CASQA Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
CASQA provided scientific papers & citations to EPA. For example, CASQA shared that research found that a portion of poly(vinylpyrrolidone)-coated silver nanoparticles placed directly into simulated wetlands was mobile between environmental compartments and bioavailable. Another study indicated that particle size may affect bioavailability.	The citations provided in the comments generally refer to public literature information on nanomaterials, which typically differ from submitted pesticidal nanosilver chemistries sufficiently to make data comparisons invalid. EPA anticipates requiring studies for each unique registered nanosilver chemistry and will consider studies from the open literature, including those submitted by registrants, to the extent that appropriate comparisons are possible with respect to the chemistries and use patterns at issue.	TBD
What are the fate, transport and effects on aquatic life of nanosilver discharged directly to surface waters?	The workplan is designed to obtain additional data and other information in order to conduct risk assessments of potential exposures through registered uses of nanosilver products. (EPA has required a slate of special tests to characterize nanoparticles). The information from these studies, existing information, and other data from the open literature will be used to characterize the aquatic	TBD

	risks, as appropriate. If CASQA is aware of specific studies that the Agency does not currently have, please submit them to the Chemical Review Manager.	
What is the potential for nanosilver to accumulate in aquatic and terrestrial food chains? Recent research indicates that gold nanoparticles biomagnify in a terrestrial food chain.	There are presently insufficient data to prepare a more current assessment of these scenarios for each unique active ingredient included in this case. The workplan is designed to obtain data and other information sufficient to make this determination as part of the registration review risk assessment process.	TBD
Are nanoparticles able to deliver silver ions to new environmental locations, perhaps within organisms that take them up? For example, filter-feeding organisms have been shown to be more sensitive to nanosilver, perhaps because they are ingesting and accumulating the particles.	<p>The workplan is designed to obtain data and other information, regarding silver nanoparticle/ion transport, and the potential sensitivity of filter-feeding organisms and other aquatic receptors as part of the risk assessment process.</p> <p>It is unclear at this point whether the EPA's data requirements will provide the information necessary to address this question in detail.</p>	TBD
What are the risks of nanosilver pesticides in final products? It is important that EPA evaluate the environmental risks associated with the final product that is sold to the consumer, including any carrier material. For example, nanoscale pesticides are used in products like treated wood and fabrics that are not ordinarily labeled as pesticides. In some of these products, the nanoscale material is created during the treatment of the material. ¹⁰ In addition, EPA should also evaluate the impacts of disposal of final products treated with nanosilver, particularly products that consumers would not normally consider as hazardous, such as fabric. California's hazardous waste standard for total silver content is 500 milligrams per kilogram.	<p>The planned assessment is intended to evaluate the risks of the specifically manufactured nanosilver particles as they are released from treated articles. For example, EPA has required data to characterize leaching from paints and fabrics. Often EPA only evaluates releases from manufacturing treated products, so this is a positive development.</p> <p>Exposures from disposal of treated products is likely less than the maximum estimated exposures from direct use and thus such exposures are assessed as part of the broader assessment.</p>	TBD
<p>We request that EPA specifically evaluate these uses for their potential environmental exposures.</p> <ul style="list-style-type: none"> • Swimming Pool Algaecide • Fabric Treatments 	The workplan is designed to obtain data and other information in order to conduct risk assessments of potential aquatic exposures through registered uses of nanosilver products.	TBD

<ul style="list-style-type: none"> Materials Preservatives 	<p>Data requirements include paint and textile leaching and pool product environmental fate studies.</p>	
<p>CASQA expressed concern that the nanosilver registration review docket does not provide the level of detail often included in most OPP environmental risk assessment work plans. The Environmental Summary primarily focuses on fabric treatments, and does not address risks, data gaps or data requirements pertaining to other registered uses. CASQA cited the Bifenthrin Registration Review workplan as example of how EPA could develop a more robust and informative assessment plan for nanosilver.</p>	<p>The Environmental Summary primarily focused on fabric treatments because at the time it was written, there was only one product registered as nanosilver, which was used for fabric treatments. This Final Work Plan includes more products and more uses (e.g. pool uses) and so has expanded the focus of the data requirements and risk assessments accordingly. Also, the use of the bifenthrin work plan as an example is not appropriate for nanosilver because there are no previous assessments to rely upon for nanosilver.</p> <p>Before issuing the final workplan, EPA requested that all manufacturers of silver-containing pesticides provide nanoparticle content information. Responses were received from many (but apparently not all) manufacturers. The list of products in the current workplan includes all products currently known to contain nanosilver.</p> <p>During registration review, all uses of all registered nanosilver products will be assessed. However, as with other pesticides, future nanosilver products will continue to be held to these same standards. Thus, if registrants wish to register new uses for their products, for example, the Agency will require data and other information consistent with that described in this FWP to address the proposed uses.</p>	<p>TBD</p>
<p>To detect pollutants, local, state and federal surface water quality monitoring programs need analytical methods with sufficiently low detection limits that are practicable in commercial and government analytical laboratories. There are no such methods for nanoparticles, though it is especially important to have sufficiently sensitive analytical methods for environmentally</p>	<p>Existing analytical instrumentation/techniques are being modified for nanosilver detection in the above sample matrices. (This is required for EPA to accept the various required environmental testing data). Most detection methods require a breakdown of the physical nanoparticle for quantitation. At the same</p>	<p>TBD</p>

<p>relevant matrices such as surface water, sediments and soil. We believe that the manufacturer, at the time of registration of its product, should be responsible for development of these methods. CASQA requests that EPA require the registrants to develop water, soil and sediment chemical analysis methods for nanosilver with appropriate method detection limits. California DPR has already established specifications for pesticide analysis method development, which EPA may draw from to develop a data requirement.</p>	<p>time, not all detection methods are adequate for particle analysis. But, as research advances, as it has greatly in the past few years, more techniques will be either coupled or newly developed for nanosilver. Proposals and test protocols for non-standard test methods should be discussed with the Agency prior to being conducted.</p>	
<p>Like BACWA, CASQA is concerned that toxicity related to nanosilver could be additive with other forms of silver pesticides, including silver nitrate, silver chloride, and colloidal and ionic silver. Because there is relatively little information about the effects of nanosilver on aquatic life, we support the ecological data requirements for freshwater and marine settings.</p>	<p>The Agency concurs with the comment that toxicity related to nanosilver could be additive with other forms of silver pesticides.</p>	<p>TBD</p>
<p>CASQA looks to EPA to ensure that pesticide regulatory processes adequately consider potential water quality impacts, so that in the future, water quality impacts are prevented before they result in CWA Section 303(d) impaired waters listings. Because local agencies in most states do not have authority to regulate pesticide uses or application patterns, it is the responsibility of federal and state pesticide regulators to control pesticide uses sufficiently to prevent surface water toxicity.</p>	<p>The Agency acknowledges your comment and plans to ensure that pesticide regulatory processes adequately consider potential water quality impacts to prevent potential for future incidents that lead to a change to impaired waters listings under the Clean Water Act Section 303(d).</p>	<p>TBD</p>

Pesticide: Pyriproxyfen, EPA-HQ-OPP-2011-0677
Use: Indoor/ outdoor insecticide used to control fleas, roaches, and ants
Why we care: The EPA's ecological risk assessment – which omitted applications in storm drains - nevertheless found significant chronic risks to aquatic invertebrates. The actual water quality risks are unclear due to shortcomings in EPA risk assessment methodologies.
Actions taken: BACWA, NACWA, and SF Bay Water Board sent EPA comments on the Proposed Interim Decision in March 2018.
Status: EPA released the Proposed Interim Registration Review Decision in February 2018.



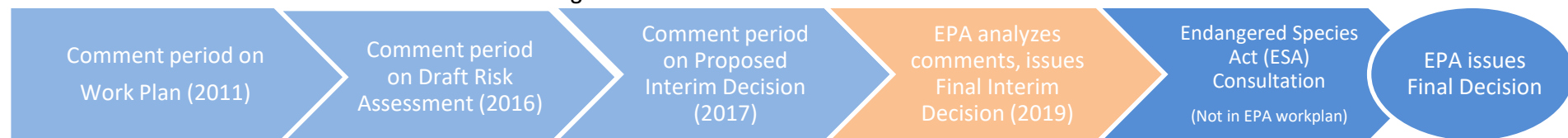
Next steps: EPA will analyze comments and issue a Final Interim Decision. ESA Consultation is required but unlikely to begin before 2022.

Recommendation: No action is needed at this time. Keep on tracking list and watch for Interim Decision.

Water Board Comments to EPA (based on scientific information provided by CASQA)	EPA Response	Did EPA incorporate Water Board's comment?
<p>The ecological risk assessment should more fully assess the impacts of pyriproxyfen applications to storm drain catch basins, particularly for mosquito abatement. While the risk assessment properly recognizes the connection between catch basins and surface water, it assigns catch basin discharges only to times when rain events occur. Even in our semi-arid urban areas, discharges regularly occur during dry weather due to over-irrigation and pumping of groundwater into the storm sewer collection system.</p>	<p>The EPA neglected to respond to this comment.</p>	<p style="text-align: center;">NO</p>
<p>The ecological risk assessment found significant chronic risks to aquatic invertebrates from outdoor uses of pyriproxyfen. Given the likelihood of significant risks, mitigation options should be evaluated for the pyriproxyfen uses that are most important from an urban runoff perspective. These include applications directly to storm drains (referred to as “sewer catchments” in the risk assessment), structural perimeter applications, broadcast applications to impervious surfaces and turf, and use at nurseries. Existing mitigation measures for agricultural uses, such as buffer zones and drift prevention, are not applicable to the urban context. We request that U.S. EPA evaluate mitigation options for these outdoor urban uses of pyriproxyfen. In addition, because pyriproxyfen may be less hazardous than available alternatives of outdoor pest control, we request that the benefits assessment compare pyriproxyfen risks to risks</p>	<p>The EPA neglected to respond to this comment.</p>	<p style="text-align: center;">NO</p>

associated with other insecticides similarly used in urban settings, including for mosquito abatement.		
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Pesticide: **Spinetoram** EPA-HQ-OPP-2011-0666 and **Spinosad** EPA-HQ-OPP-2011-0667
Use: Outdoor insecticide for fire ant mounds; used directly in storm drains and catchments for mosquito control; also used for pet flea control (cats)
Why we care: High aquatic toxicity and highly toxic degradates. Persistent in aquatic ecosystems.
Actions taken: CASQA and the SF Bay Water Board commented on the Draft Work Plan in 2011. BACWA and NACWA commented on the Draft Risk Assessment in 2016.
Status: EPA released the Final Interim Registration Review Decision in March 2019.



Next steps: ESA Consultation is required but unlikely to begin before 2022.

Recommendation: Keep on tracking list and watch for final Interim Decision.

CASQA Comments to EPA	Did EPA incorporate CASQA's comment?
EPA's Registration Review process must address urban uses. The Analysis Plan (Section VII of the Problem Formulation document) describes only agricultural runoff modeling to evaluate exposure of aquatic organisms to Spinosad and Spinetoram and is silent on urban runoff modeling. The conceptual model and risk analysis modeling approach needs to explicitly include urban sources/pathways.	Partially incorporated. EPA used its "turf" scenario to model urban use, which is not a perfect match for how the product is used on fire ant mounds. EPA did not model the other non-agricultural uses, including use inside storm drains and pet flea control.
The Risk Assessment must include consideration of the potential ecological effects resulting from direct application of Spinosad and Spinetoram to storm drainage systems (e.g., catch basins) for mosquito control.	Not incorporated.
The environmental fate and effects of pesticides are very active areas of research among both academic institutions and government agencies, and the literature is growing rapidly. It is essential for U.S. EPA to acquire and include all relevant data within the Risk Assessment. For example, a recent journal article documents a Spinosad LC50 for <i>C. dubia</i> of 1.78 ppb, much lower than is documented in the Problem Formulation.	Incorporated.
Given the relatively high Koc values for both Spinosad and Spinetoram and their degradates, and the rapid partitioning of these pesticides from water to sediment, CASQA believes additional study is needed to quantify the environmental effects of these pesticides on benthic invertebrates.	Incorporated. Benthic invertebrates were included in the analysis.

CASQA encourages EPA to pursue development of a protocol for quantitative assessment of cumulative impacts of pesticide mixtures, as this appears to be a significant factor contributing to the observed toxicity in urban creeks.

Not incorporated.

Pesticide: Zinc and Zinc Salts; EPA–HQ–OPP–2009–0011
Use: Swimming pool algicide, herbicide for moss, material preservative, wood preservative.
Why we care: Highly toxic to aquatic invertebrates. 303(d) listings, TMDLs, CWA Priority Pollutant.
Actions taken: CASQA has been tracking EPA actions on this pesticide since 2009.
Status: EPA released the Draft Risk Assessment in December 2018.



Next steps: EPA will analyze comments and issue a Proposed Interim Decision. No ESA consultation is currently planned.
Recommendation: Continue tracking, including how EPA responds to partner agencies who sent written comments on risk assessment.

From EPA’s Draft Risk Assessment:	Response from CASQA’s Perspective:
<p>EPA did not quantitatively assess discharges. It made unsupported qualitative claims that use in swimming pools, spas, and fountains will not cause any direct or indirect adverse effects:</p> <p><i>“The algicide use in swimming pools, hot-tubs and spas will have little exposure to nontarget organisms because the biocide treated water would be contained in the pool, hot-tub or spa and not exposed to nontarget organisms. The only potential exposure scenario would occur when the pool or spa is drained for cleaning and the treated water released. The amount of zinc added to the environment from this scenario would be expected to be low and not add significantly to the natural levels of zinc.” (p.4)</i></p> <p><i>“The Agency has no expectation that the antimicrobial uses of zinc salts will cause any direct or indirect adverse effects to endangered or threatened species. EPA has made a “no effects” determination for zinc salts under the Endangered Species Act (ESA) for all listed species and designated critical habitat for that species.” (p.4)</i></p>	<p>If EPA had conducted an assessment of the effects of zinc released to the from pools, spas, and fountains, it would have predicted exceedance of the zinc acute water quality criteria in creeks and could have examined potential impacts on stormwater.</p> <p>Because EPA identified no significant risk EPA is unlikely to require that product labels include the requirement to contact local agencies before discharging treated water from pools, spas, hot tubs, and fountains.</p>
<p>EPA Acknowledges TMDLs but states that there is no way of understanding how and if pesticides affect these streams.</p>	<p>Although zinc is ubiquitous in the environment, that does not preclude the need to evaluate concentrated discharges of zinc-containing swimming pool water.</p>

<p><i>“Based on the EPA Office of Water (OW) website, there are 276 streams (333 including tributaries) in the U.S. with zinc impairments and associated TMDLs. These streams were located across the geographical U.S. Of these streams, 97 are located in the western U.S. (CA, CO, MT) and 28 were located in Arkansas. Zinc is a ubiquitous metal that is present in water from a variety of sources and cannot be traced to any pesticidal use.” (p. 14)</i></p>	
<p>EPA did not use the zinc water quality criteria to evaluate water quality risks. Despite knowing that zinc salts degrade to zinc ions, EPA based its risk assessment on registrant-submitted toxicity data for salts:</p> <p><i>“... toxicity values for zinc found in the literature demonstrated higher toxicity levels than those found in the submitted studies....Since the Agency has submitted studies testing the actual pesticide active ingredients, which are more complete than the open literature citations, the data from these submitted studies will be used as the ecotoxicity endpoints.” (p. 15)</i></p>	<p>The most sensitive aquatic toxicity endpoint that EPA used in its evaluation (170 ug/L acute; 90 ug/L chronic – Table 2, p. 15) is slightly higher than EPA’s National Recommended saltwater aquatic life water quality criteria 90 ug/L acute; 81 ug/L chronic), but lower than the typical freshwater criterion of 120ug/L (this hardness-based value depends on local conditions).</p>
<p>EPA mentions wood treated with zinc but did no quantitative analysis. Without any examination of effects in areas where treated wood is used, EPA assumed that there would be no risk due to the low market share of a single type of product (ammoniacal copper zinc arsenate [ACZA]), which it is used in less than 1% of all treated wood products. (p. 13). Without any calculations, EPA stated “The incremental addition of zinc resulting from antimicrobial uses of zinc and zinc salts is expected to be insignificant compared to levels of naturally occurring zinc.”</p>	<p>EPA should prepare at least a rough quantitative estimate of pesticide releases into surface waters to justify any claim that releases are negligible. In this case, there is potential for localized effects in creeks and other small water bodies where treated wood is used.</p>

Annual Reporting for FY 2018-2019

**Regional Supplement for
New Development and Redevelopment**

**San Francisco Bay Area
Municipal Regional Stormwater Permit**



September 2019



B A S M A A

Alameda Countywide
Clean Water Program

Contra Costa
Clean Water Program

Fairfield-Suisun
Urban Runoff
Management Program

Marin County
Stormwater Pollution
Prevention Program

Napa Countywide
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Flood &
Wastewater District

To Whom It May Concern:

We certify under penalty of law that this document was prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

James Scanlin, Alameda Countywide Clean Water Program

Courtney Riddle, Contra Costa Clean Water Program

Kevin Cullen, Fairfield-Suisun Urban Runoff Management Program

Matt Fabry, San Mateo Countywide Water Pollution Prevention Program

Adam Olivieri, Santa Clara Valley Urban Runoff Pollution Prevention Program

Jennifer Harrington, Vallejo Flood & Wastewater District

Bay Area

Stormwater Management

Agencies Association

P.O. Box 2385

Menlo Park, CA 94026

650.365.8678

info@basmaa.org

**MRP Regional Supplement for New Development and Redevelopment
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MRP Regional Supplement for New Development and Redevelopment Annual Reporting for FY 2018-2019

INTRODUCTION

This Regional Supplement has been prepared to report on regionally implemented activities complying with portions of the Municipal Regional Stormwater Permit (MRP), issued to 76 municipalities and special districts (Permittees) by the San Francisco Bay Regional Water Quality Control Board (Water Board). The Regional Supplement covers new development and redevelopment activities related to the following MRP provisions:

- C.3.j.i.(2)(g) Green Infrastructure Facility Sizing Analysis, and
- C.3.j.iii. Participate in Processes to Promote Green Infrastructure.

These regionally implemented activities are conducted under the auspices of the Bay Area Stormwater Management Agencies Association (BASMAA), a 501(c)(3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area. Most of the 2018-19 annual reporting requirements of the specific MRP Provisions covered in this Supplement are completely met by BASMAA Regional Project activities, except where otherwise noted herein or by Permittees in their reports. Scopes, budgets and contracting or in-kind project implementation mechanisms for BASMAA Regional Projects follow BASMAA's Operational Policies and Procedures as approved by the BASMAA Board of Directors. MRP Permittees, through their program representatives on the Board of Directors and its committees, collaboratively authorize and participate in BASMAA Regional Projects or Regional Tasks. Depending on the Regional Project or Task, either all BASMAA members or Phase I programs that are subject to the MRP share regional costs.

GREEN INFRASTRUCTURE PLANNING AND IMPLEMENTATION

C.3.j.i.(2)(g) Green Infrastructure Facility Sizing Analysis

MRP Provision C.3.j.i.(2)(g) states that Green Infrastructure Plans should include requirements that stormwater treatment facilities “*be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d.*” The Provision further states that for street projects that are not Regulated Projects:

... Permittees may collectively propose a single approach with their Green Infrastructure Plans for how to proceed should project constraints preclude fully meeting the C.3.d. sizing requirements. The single approach can include different options to address specific issues or scenarios. That is, the approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that situation. The approach should also consider whether a broad effort to incorporate Hydromodification controls into green infrastructure, even where not otherwise required, could significantly improve creek health and whether such implementation may be appropriate, plus all other information, as appropriate (e.g., how to account for load reduction for the PCBs or mercury TMDLs).

MRP Provision C.3.d. contains sizing criteria. These include the option to size facilities to

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treat at least 80% of the total runoff over the life of the project, using local rainfall data.

Provision C.3.c.i. states that LID treatment measures are harvesting and use, infiltration, evapotranspiration, and biotreatment (bioretention). Bioretention systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate.

In FY 16-17, the BASMAA Development Committee initiated a project to address provision C.3.j.i.(2)(g). This project used continuous simulation modeling to evaluate relationships of facility size to facility performance to develop an approach for implementing green infrastructure projects when there are constraints on facility size.

The project included the following technical tasks:

- Adapt existing continuous simulation models that simulate bioretention performance.
- Compile and update long-term hourly rainfall records at six Bay Area locations.
- Run continuous simulations and evaluate outputs to address questions.
- Present the outputs in the form of charts and equations.
- Document the work in a brief technical memo.

The project was initiated in March 2017 and by the end of FY 16-17, the BASMAA Development Committee had received and discussed the initial results and analysis of the model simulations across the six selected rain gauges and a range of bioretention sizing factors and considered and agreed upon some additional analyses to run.

In FY 17-18, the additional analyses were conducted and reviewed, and the project was completed in December 2017. In January 2018, the BASMAA Board of Directors approved the report *Green Infrastructure Facility Sizing for Non-Regulated Street Projects* as a BASMAA final product subject to the following conditions: the report is watermarked "Do Not Use, Cite, or Quote" and the report's distribution is limited to only BASMAA member Programs until companion implementation guidance is completed so the report is not used inappropriately.

The BASMAA Development Committee formed the Green Infrastructure Facility Sizing Work Group in December 2017 to develop regional guidance on how to use the modeling results to size GI measures under specific design scenarios and constraints. The Work Group continued its work through the end of FY 17-18.

In FY 18-19, the Work Group completed development of the draft guidance in October 2018 and worked with Regional Water Board staff over the next 6 months to review and provide comments. In May 2019, the BASMAA Board of Directors approved the *Guidance for Sizing Green Infrastructure Facilities in Street Projects* as a final product. Shortly thereafter, both the report (*Green Infrastructure Facility Sizing for Non-Regulated Street Projects*) and the guidance were posted to the BASMAA website.

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C.3.j.iii. Participation in Processes to Promote Green Infrastructure

This provision requires:

(1) The Permittees shall, individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.

The BASMAA activities described in this section provide compliance for MRP Permittees with this provision. This section describes: 1) activities and accomplishments during FY 18-19; and 2) a plan and schedule for new and ongoing efforts to participate in processes to promote green infrastructure (GI).

Activities and Accomplishments during FY 18-19

Grant – Urban Greening Bay Area

Urban Greening Bay Area is a large-scale, grant-funded effort to re-envision Bay Area urban landscapes to develop stormwater-friendly dense, green urban infrastructure that addresses challenges associated with climate change, infiltrates or captures stormwater and pollutants near their sources, and in turn, promotes improved water quality in San Francisco Bay. *Urban Greening Bay Area* is funded by an EPA Water Quality Improvement Fund grant awarded to the Association of Bay Area Governments (ABAG), a joint powers agency acting on behalf of the San Francisco Estuary Partnership (SFEP), a program of ABAG. The term of the *Urban Greening Bay Area* grant project was July 1, 2015 to June 30, 2018, but the term was extended to December 31, 2019 and additional funding provided to support follow-up implementation.

BASMAA is one of the subrecipients of the grant and took the lead on two of the grant project tasks – a Regional Green Infrastructure Roundtable process and a Design Charrette, both of which were implemented between May 2016 and May 2018.

The Regional Roundtable was a two-year process, with work groups as needed, to identify and develop a list of recommendations for integrating GI and stormwater management funding and investments with future climate change and transportation investments within the region. The Roundtable included convening meetings with local, regional, and state stakeholders, agencies, elected officials, and staff to produce draft and final task reports that identified and recommended possible legislative fixes, agency agreements, consolidated funding mechanisms, and other means and actions as appropriate. The Roundtable used innovative participatory processes that included key experts, regulators, decision-makers, and other stakeholders to share information, solicit and discuss ideas and solutions, and to identify next steps (i.e., develop a

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“roadmap”). The Final Roadmap of Funding Solutions for Sustainable Streets¹ was completed in April 2018. Following completion of the Roadmap, BASMAA and SFEP formed a Roadmap Committee to guide future implementation of the Roadmap.

The Design Charrette task involved coordinating with the cities of San Mateo and Sunnyvale to conduct a Bay Area design charrette to develop cost-effective and innovative “typical” designs for integrating GI with bicycle and pedestrian improvements at roadway intersections. The overall goal of developing standardized, transferable designs was to make progress in addressing the high cost of design, implementation, operations, and maintenance that inhibits the widespread use of GI and LID features.

Work products of the Urban Greening Bay Area grant are posted at: <http://www.sfestuary.org/urban-greening-bay-area/#planning> . The Planning section includes documents related to the Regional Roundtable and the Implementation section includes documents related to the Design Charrette.

During FY 18-19, BASMAA's participation in activities to implement the Roadmap of Funding Solutions for Sustainable Streets included:

- Conducted initial coordination with the Metropolitan Transportation Commission (MTC) and Caltrans to clarify GI eligibility in federal transportation grants (Roadmap Specific Action 1-1);
- Developed a scope of work for convening the Roadmap Committee that will oversee implementation of the Roadmap (Roadmap Specific Action 3-5);
- Coordinated with representatives of the U.S. Environmental Protection Agency (USEPA), San Francisco Bay Regional Water Quality Control Board (Regional Water Board), San Francisco Estuary Partnership (SFEP), MTC, Save the Bay, and SPUR, to begin preparation of a Roadmap fact sheet (Roadmap Specific Action 3-7); and
- Held a Roadmap Implementation Strategy Session conference call led by Save The Bay on May 7, 2019.

Other Participation and Comments

In addition to the *Urban Greening Bay Area* grant efforts described above, Countywide Program representatives participated in the following forums related to GI promotion:

- Matthew Fabry (C/CAG, representing SMCWPPP and BASMAA) attended initial meetings with RWQCB, BAFPA, SFEP, and MTC to discuss ways to integrate stormwater issues into MTC efforts, including Plan Bay Area. Three meetings have happened to date since March 2019.

¹ https://www.sfestuary.org/wp-content/uploads/2018/05/Roadmap_Funding_Solutions_Sustainable_Streets_FINAL_reduced.pdf

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- Matthew Fabry (C/CAG, representing SMCWPPP) and Jill Bicknell and Peter Schultze-Allen (EOA, representing SCVURPPP) participated in workshops held by Save The Bay on Bay Smart Communities and the development of a subsequent report on the topic.
- Matthew Fabry (C/CAG, representing SMCWPPP) participated in the ReNUWit “Stormwater for Water Supply” workshop on July 25-26, 2019, and presented information on efforts to manage stormwater via GI, including larger regional facilities that can help recharge groundwater. This workshop was part of a larger effort by ReNUWit to create a “Bay Area One Water Network.”
- Matthew Fabry (C/CAG, representing SMCWPPP) and Jill Bicknell (EOA, representing SCVURPPP) participated in several meetings of the organization Transportation Choices for Sustainable Communities, a research and policy institute whose mission is to “advance understanding and support for sustainable transportation as an essential component of livable communities and cities”. The organization is interested in sponsoring a workshop in Spring 2020 that includes a focus on green streets.

Plan and Schedule for New and Ongoing Efforts

The plan and schedule provided below show how BASMAA will support its member agencies to collectively and regionally implement the requirements of MRP Provision C.3.j.iii during FY 19-20 and through the remainder of the current permit term. The requirements of Provision C.3.j.iii may change in the reissued MRP and may affect the planning and scheduling of participation in the promotion of GI during the next permit term.

Continue Ongoing Efforts to Participate in Processes to Promote GI

During FY 19-20 and through the end of the permit term for the current MRP (December 31, 2020 or later if extended), BASMAA will continue ongoing efforts to participate in processes to promote GI as described below.

Urban Greening Bay Area. BASMAA will continue to participate in the Urban Greening Bay Area Project's ongoing activities with regard to the initial implementation of prioritized specific actions in the 2018 Roadmap of Funding Solutions for Sustainable Streets (Roadmap). The Roadmap identifies specific actions to improve the funding of projects that include both complete streets improvements and GI, and is intended to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of GI measures into local infrastructure projects, including transportation projects. Various specific actions included in the Roadmap address coordinating the timing of funding from different sources, GI designs and design criteria, potential modifications of processes to evaluate projects for funding, and coordination regarding the potential development of cooperative in-lieu programs. The following ongoing activities are anticipated to continue during the period of July 2019 through December 2020:

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- O-1. Complete the ongoing coordination with the Metropolitan Transportation Commission (MTC) and Caltrans to clarify GI eligibility in federal transportation grants (Roadmap Specific Action 1-1).
- O-2. Complete the preparation of a Roadmap fact sheet (Roadmap Specific Action 3-7). The fact sheet is anticipated to advise municipalities on how GI may be included in One Bay Area Grants (OBAG)-funded projects.
- O-3. Complete the redesign of the Roadmap webpage (Roadmap Specific Action 3-2). This may include preparing new content, such as a case study of a Sustainable Streets project with multiple funding sources.
- O-4. Implement an action plan that BASMAA is developing to hold an initial meeting of the Roadmap Committee, a regional body that will oversee implementation of the Roadmap (Roadmap Specific Action 3-5).
- O-5. Continue to participate in ongoing meetings with RWQCB, BAFPA, SFEP, and MTC to discuss ways to integrate stormwater issues into MTC efforts, including Plan Bay Area.

New Efforts to Participate in Processes to Promote GI

Between July 2019 and December 31, 2020, BASMAA may initiate the following new activities to further implement the Roadmap and participate in other ways to promote GI:

- N-1. Hold a strategy session with representatives of other Roadmap stakeholders – such as the USEPA, Regional Water Board, SFEP, MTC, Save The Bay, and SPUR – to prioritize additional activities to implement the Roadmap.
- N-2. Initiate one additional specific action included in the Roadmap, identified as a priority during the strategy session described above. For example, this may consist of the preparation of guidance on how local agencies can “package” Sustainable Street projects for specific grants (Roadmap Specific Action 2-4).
- N-3. Participate (via Matthew Fabry, SMCWPPP) in EPA’s Environmental Finance Advisory Board to respond to a request from Congress for a report looking at funding sources for stormwater and the adequacy of those sources to support the needs of stormwater management programs. Other California-based participants include Jerry Bradshaw (SCI Consulting Group), Drew Kleis (City of San Diego), and Bethany Bezak (Tetra Tech).
- N-4. Work with Transportation Choices for Sustainable Communities and other sponsors to plan a Bay Area workshop on sustainable transportation and green streets in Spring 2020.

Schedule

A schedule for implementing the proposed tasks for new and ongoing efforts to promote GI is presented below.

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Schedule for New and Ongoing Efforts to Participate in Processes to Promote GI

Planned Activities (Ongoing and New)	Q3 2019			Q4 2019			Q1 2020			Q2 2020			Q3 2020			Q4 2020			
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
O-1. Complete federal transportation grant coordination	■																		
O-2. Complete Roadmap Fact Sheet				■															
O-3. Redesign Roadmap Webpage				■															
O-4. Plan/hold initial meeting of Roadmap Committee				■															
O-5. Continue meetings with MTC and other agencies to integrate stormwater issues into transportation planning	■																		
N-1. Roadmap Strategy Session													■						
N-2. One New Roadmap Specific Action																	■		
N-3. Participate in EPA Environmental Finance Advisory Board	■																		
N-4. Participate in Sustainable Transportation/GI Workshop	■																		

- ◆ Submit final document to relevant regional, State, and federal agencies
- ◆ Meeting with relevant regional, State, and federal agencies, and other applicable stakeholders
- Activity conducted by BASMAA and/or countywide or local programs