

September 30, 2017

Bruce Wolfe, 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 2016/17 ANNUAL REPORT**

Dear Mr. Wolfe:

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) is pleased to submit the attached Fiscal Year 2016/17 Annual Report. This report describes Municipal Regional Permit (MRP) compliance activities conducted at the regional and countywide levels on behalf of all of SMCWPPP's member agencies. 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 2016/17 Annual Report and BASMAA's associated regional reports were 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 its 22 member agencies 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,



Matthew Fabry
Program Manager

Attachment: SMCWPPP FY 2016/17 Annual Report



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

FY 2016-17 Annual Report



September 30, 2017

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
CRM:	Constituent Relationship Management
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:	Stormwater NPDES Municipal Regional Permit
MS4:	Municipal Separate Storm Sewer System
NPDES:	National Pollutant Discharge Elimination System
OAL:	California Office of Administrative Law
O&M	Operations and Maintenance
OSH:	Orchard Supply Hardware

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
UGBA:	Urban Greening Bay Area
WLA:	Waste Load Allocation
WY:	Water Year

EXECUTIVE SUMMARY

INTRODUCTION

This FY 2016/17 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 2016/17. SMCWPPP's activities benefit all 22 of its member agencies: 15 cities, five towns, the County of San Mateo, and the San Mateo County Flood Control District. Each member agency 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 2016/17.

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) for issues of regional importance to San Mateo County jurisdictions. The C/CAG Board of Directors is comprised of a local elected city council representative from each city and town, 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 member agencies with complying with the NPDES municipal stormwater 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 2016/17, 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/):

- August 2016: approved the appointment of Ray Chan, Director of Public Works, to represent the City of Millbrae on the Stormwater Committee.
- September 2016: approved a resolution authorizing the C/CAG Executive Director to enter into agreements with the Alameda County Clean Water Program and the law firm of Meyers Nave for joint legal representation of stormwater unfunded mandate test claims filed by C/CAG member agencies, at a cost not to exceed \$35,000 for FY 2016/17.

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

- October 2016: approved the appointment of Sean Rose, Director of Public Works, to represent the Town of Woodside on the Stormwater Committee. Approved a resolution authorizing the C/CAG Executive Director to execute a Task Order with Urban Rain|Design in an amount not to exceed \$86,745 for technical support services to the Countywide Water Pollution Prevention Program for FY 2016/17.
- November 2016: approved the appointment of Ray Towne, Interim Public Works Director, to represent the City of South San Francisco on the Stormwater Committee.
- December 2016: approved the draft Countywide Stormwater Resource Plan and authorized C/CAG's Executive Director to release it for public review and comment.
- February 2017: approved the appointments of Marty Hanneman, City Engineer, and Denice Hutten, Associate Engineer, to represent the Town of Atherton and the City of Half Moon Bay, respectively, on the Stormwater Committee. Approved a resolution adopting the San Mateo County Stormwater Resource Plan.
- March 2017: approved a resolution authorizing a two-year agreement with the Bay Area Stormwater Management Agencies Association (BASMAA) in an amount not to exceed \$282,426 for implementing regional stormwater projects. Approved the appointment of John Fuller, Public Works Director, to represent the City of Daly City on the Stormwater Committee. Received a presentation on progress toward meeting trash load reduction requirements.
- May 2017: Presentations of 1st and 2nd Place High School Green Infrastructure Contest Winners from Menlo-Atherton High School (Atherton) and Carlmont High School (Belmont).
- June 2017: Approved Amendment Number 3 to the rain barrel rebate funding agreement with the Bay Area Water Supply and Conservation Agency, extending the term through June 30, 2018 for no additional cost. Authorized the C/CAG Executive Director to execute Task Orders with EOA, LWA, and SGA in amounts not to exceed \$1,685,861, \$557,500, and \$325,000, respectively, for technical support services to the Countywide Water Pollution Program for FY 2017/18.

Program Manager

C/CAG's Program Manager oversees the overall Countywide Program, serving as staff to the C/CAG Board and liaison among C/CAG's member agencies, 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 C/CAG's member agencies at regional and statewide meetings and manages technical consultants that support programmatic activities. C/CAG hired an additional stormwater staff member in November 2016 to assist 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 and Technical Advisory Committees, the Program Manager and staff participated in the following activities during the FY 2016/17 reporting year:

- BASMAA: The Program Manager continued representing the Countywide Program on the Board of Directors (re-elected Chair in March 2017). Program manager and staff participate in monthly Board meetings, BASMAA regional project meetings, and BASMAA committee meetings;
- CASQA: The Program Manager continued serving on the Board of Directors, participated in/attended monthly Board meetings/calls, quarterly meetings, strategic planning meetings, and the annual conference;

- San Francisco Estuary Partnership Implementation Committee: The Program Manager continued serving on the committee representing the municipal stormwater perspective, participating in quarterly meetings;
- C/CAG staff developed a Safe Routes to School/Green Streets Infrastructure Pilot Program under which \$2 million of local vehicle registration fees will be distributed to C/CAG member agencies for constructing demonstration projects that integrate Safe Routes to School and stormwater improvements at intersections and mid-block crossings. The program was developed during FY 2016/17, with the final Pilot Program being approved by the C/CAG Board in July 2017, including releasing the Call for Projects to member agencies. Details on this program can be found on C/CAG's website [here](#). These projects will help member agencies in regard to Green Infrastructure implementation as well as load reductions for pollutants of concern.
- Presentations by Program Manager: numerous presentations (e.g., at workshops, conferences, C/CAG meetings, city council meetings);
- 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 (participated in quarterly grant status meetings and as a member of the Green Infrastructure Roundtable and Design Charrette task teams).

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 the member agencies 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 six times during FY 2016/17 (August, November, January, March, April and June) 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 2016/17. 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 2016/17 (July 21 and March 10). 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 particular 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 during FY 2016/17. SMCWPP has also established various subcommittees and work groups to the TAC that continued to meet periodically throughout FY 2016/17 to help implement the different aspects of the MRP, as summarized 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, 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 Committee. Details on the Committee can be found on C/CAG’s [website](#). The ad-hoc and new standing committees received two presentations on the Countywide Program activities during FY 2016/17, a summary of stormwater planning efforts in August, and a summary of program activities relevant to countywide flooding and sea level rise issues in May.

SUMMARY OF ACCOMPLISHMENTS

This FY 2016/17 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 briefly summarize how SMCWPPP provided assistance in FY 2016/17 in implementing the MRP for each of these 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, and routine repair and maintenance activities of municipal facilities and infrastructure. Most MRP-required Provision C.2 Municipal Operations tasks are implemented individually by each SMCWPPP member agency. 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 and the implementation of Municipal Operations tasks are coordinated through the SMCWPPP Public Works Municipal Maintenance Subcommittee.

During FY 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.2, with input and assistance provided by the Public Works Municipal Maintenance Subcommittee. Accomplishments included the following:

- Held four Public Works Municipal Maintenance Subcommittee meetings.
- Held a joint meeting between the Public Works Municipal Maintenance Subcommittee and the Parks Maintenance and IPM Work Group (this was one of the above four meetings).
- Developed a trash full capture device operations and maintenance (O&M) tracking template to assist member agencies to comply with MRP Provision C.10.b.i.
- Developed a pesticide tracking template in coordination with the Parks Maintenance and IPM Work Group to assist member agencies to comply with pesticide tracking and reporting requirements in MRP Provision C.9.a.

C.3 New Development and Redevelopment

In the reporting year FY 2016/17 projects regulated by Provision C.3 continued to meet stormwater treatment requirements using low impact development (LID) measures, including infiltration, evapotranspiration, rainwater harvesting and use, and biotreatment. During FY 2016/17, SMCWPPP provided compliance assistance with MRP Provision C.3 (and MRP Provision C.6 Construction Site Controls) through the New Development Subcommittee. The subcommittee met quarterly with good participation from municipal staff.

SMCWPPP's accomplishments during FY 2016/17 include the following major tasks to assist member agencies with implementation of Provision C.3:

- Updated the NDS on the new requirements taking effect in FY 2016/17 in the reissued MRP.
- Updated guidance documents, checklists, and fact sheets for consistency with new MRP requirements.
- Updated and posted on SMCWPPP's website Version 5.0 of SMCWPPP's C.3 Stormwater Technical Guidance. The update included significant revisions to make the Guidance consistent with new requirements in the reissued MRP and other information to assist member agencies in complying with Provision C.3.
- Held the 2017 Inspector Training workshop on February 1, 2017, which focused on stormwater treatment system installation and operation and maintenance (O&M) inspections and requirements.
- Held the 2017 New Development (C.3) Workshop, entitled "Stormwater Controls for Regulated Development Projects and Green Infrastructure Projects", on June 21, 2017.

- Participated in the BASMAA Development Committee and led its Biotreatment Soil Mix (BSM) Tree-Design Work Group to share information on how to integrate urban forestry with stormwater treatment designs, following-up on the “BSM and Trees Roundtable” event on June 30, 2016.
- Continued a countywide effort to develop different model components of the Green Infrastructure (GI) Plans required by MRP Provision C.3.j. The model components were for local member agency review, use and/or modification in their local GI Plans.
- Held six meetings of a San Mateo Countywide GI Technical Advisory Committee (GI TAC) to participate in the development, review, and selection of elements in the model countywide GI Plan, and to educate GI TAC members.
- Supported member agencies in their preparation of GI Plan Workplans that were required to be approved by their governing body, mayor, city manager, or county manager by June 30, 2017.
- Developed a strategy for preparing a suite of GI Design Guides for San Mateo County Permittees.
- Conducted a variety of GI outreach activities, including various presentations by the Program Manager, a GI presentations to high schools, rain barrel program promotion, and social media posts.
- Developed a draft Countywide Stormwater Resource Plan that was released for public and stakeholder review in December 2016, hosted three public meetings about the plan throughout the County, incorporated written comments from the public and stakeholders, obtained approval by C/CAG, and submitted to the State Water Resources Control Board in February 2017.
- Supported the development of Proposition 1 implementation grant applications by the Cities of San Mateo and Redwood City that included a suite of multi-benefit stormwater projects.

C.4 Industrial and Commercial Site Controls

An important goal of SMCWPPP's Commercial, Industrial and Illicit Discharge (CII) component is to assist member agencies in controlling the discharge of pollutants in stormwater from commercial and industrial businesses to the maximum extent practicable. SMCWPPP member agencies are responsible for complying with various business inspection requirements under MRP Provision C.4. SMCWPPP's CII component assists member agency 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.

During FY 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of MRP Provision C.4, with input and assistance provided by the CII Subcommittee. Accomplishments included the following:

- Held three CII Subcommittee meetings.
- Assisted San Mateo County with responding to an August 31, 2016 Notice of Violation (NOV) issued by the Regional Water Board, including participating in a January 2017 training for San Mateo County Environmental Health (CEH) inspectors.

- Assisted Permittees with responding to a January 30, 2017 letter from Regional Water Board staff to 18 cities in San Mateo County regarding compliance with business inspection and illicit discharge control requirements. This included facilitating a February 15, 2017 special meeting to discuss a joint response, updating the SMCWPPP Business Inspection Plan (BIP) template, updating the SMCWPPP Enforcement Response Plan (ERP) template, and holding a special meeting on April 25, 2017 to review the updated templates.
- Assisted individual cities with responding to NOV's or requests for clarifications issued in May 2017 by the Regional Water Board.

C.5 Illicit Discharge Detection and Elimination

Another important goal of SMCWPPP's CII component is to assist member agencies effectively prohibit the discharge of illicit, non-stormwater discharges to the municipal storm drain system. SMCWPPP member agencies are responsible for controlling non-stormwater discharges prohibited by MRP Provision C.5. SMCWPPP's CII component assists member agency 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 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of MRP Provision C.5, with input and assistance provided by the CII Subcommittee. Accomplishments included the following:

- Developed a regional inventory of mobile businesses.
- Mailed information on mobile business BMPs to businesses on the regional inventory.
- Updated the table of stormwater enforcement actions against mobile businesses to share countywide with stormwater inspectors.
- Updated the SMCWPPP C.4/C.5 Enforcement Response Plan (ERP) template.

C.6 Construction Site Control

During FY 2016/17, SMCWPPP continued to provide compliance assistance with MRP Provision C.6 (and MRP Provision C.3) through the New Development Subcommittee (described above under C.3. New Development and Redevelopment).

SMCWPPP's accomplishments during FY 2016/17 include the following major tasks to assist member agencies with implementation of Provision C.6:

- Conducted a construction site controls training for the California Building Inspectors Group (CALBIG) on September 21, 2016;
- Printed 1,500 copies of the Construction Site Inspection Form and distributed them to the Subcommittee members; and
- Conducted the February 1, 2017 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;
- To encourage residents to adopt less polluting and more environmentally beneficial practices; and
- To increase resident's 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 runoff 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. SMCWPPP's accomplishments during FY 2016/17 include the following major tasks to assist member agencies with implementation of Provision C.7:

- Partnered with Bay Area Water Conservation Supply Agency (BAWSCA) on a Rain Barrel outreach campaign that received 1,060 website page views. Distributed 900 rain barrel rebate forms and received 45 rebate applications from residents. Over 1,000 rain barrels have been installed to-date in San Mateo County under the rebate program.
- Partnered with San Mateo County Environmental Health Services (CEH) on a campaign to reduce littering of cigarette butts.
- Coordinated Coastal Cleanup Day for 4,145 volunteers, raising awareness of the event and the consequences of littering behaviors.
- Received 171 residents into the car wash program, with 262 car wash coupons redeemed, raising awareness of the pollution that results from residential car washing.
- Gained 5,133 new Facebook fans and reached 10,617 users with stormwater pollution prevention Facebook messaging.
- Gained 1,927 new Twitter followers and reached 81,452 Twitter users with stormwater pollution prevention messaging.
- Sent four newsletters to a list of 2,643 opt-in subscribers with topics covering eco-friendly gardening practices, local cleanup events and stormwater pollution prevention tips.
- Received 20,228 visitors to the SMCWPPP website, which focuses on stormwater pollution prevention messaging and resources.
- Participated in 11 community and citizen involvement events in San Mateo County, to speak one-on-one with residents, perform demonstrations, and hand out collateral materials.
- Planned and launched a countywide school outreach program that asked students to submit green infrastructure proposals, reaching approximately 200 students.
- Performed Point of Purchase outreach with Our Water Our World materials to five hardware stores in San Mateo County while training store employees on eco-friendly alternatives to pesticides.
- Promoted outreach messaging to residents regarding eco-friendly alternatives to pesticides in SMCWPPP's newsletter, website and social media channels.

C.8 Watershed Quality Monitoring

On behalf of its member agencies, 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, a complete documentation of all water quality monitoring data collected from October 1, 2016 through September 30, 2017 (i.e., Water Year 2017 or WY2017) will be presented in SMCWPPP's Urban Creeks Monitoring Report, which will be submitted to the Water Board by March 31, 2018.

In addition, in accordance with MRP Provision C.8.f., Pollutants of Concern (POC) Monitoring, SMCWPPP will submit by October 15, 2017 a report describing the planned allocation of sampling effort for POC Monitoring for WY2018 and what was accomplished for POC Monitoring during WY2017. 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 Urban Creeks Monitoring Report, as described above.

C.9 Pesticides Toxicity Control

The primary objective of MRP Provision C.9 is to prevent the impairment of urban streams by pesticide-related toxicity, and thereby implements requirements of the *TMDL for Diazinon and Pesticide-related Toxicity for Urban Creeks* in the region. Permittees are required to implement a pesticide toxicity control program that addresses their own and others' use of pesticides within their jurisdictions that pose a threat to water quality and that have the potential to enter the municipal stormwater conveyance system. Most MRP-required Provision C.9 tasks are implemented individually by each SMCWPPP member agency. 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 Pesticides Toxicity Control is mainly coordinated through the Parks Maintenance and Integrated Pest Management (IPM) Work Group.

During FY 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.9, with input and assistance provided by the Parks Maintenance and IPM Work Group. Accomplishments included the following:

- Held two meetings of the Parks Maintenance and IPM Work Group. As mentioned in Section 2 (C.2 Municipal Operations), also held an additional joint meeting between the Public Works Municipal Maintenance Subcommittee and the Parks Maintenance and IPM Work Group.
- Developed periodic update documents with relevant pesticide-related news, events and regulatory developments for the Parks Maintenance and IPM Work Group.
- Conducted SMCWPPP's Annual Landscape IPM Training Workshop in March 2017.
- Continued coordinating with San Mateo County Agriculture / Weights and Measures.
- Continued to participate in the Department of Pesticide Regulation (DPR) grant to implement IPM techniques at multi-family residential buildings.
- Participated in relevant BASMAA and CASQA activities.

- Continued to maintain retail partnerships at 10 top-tier stores (e.g., Home Depot and OSH) within San Mateo County. Tasks included ordering materials, organizing outreach collateral, checking in with store managers, and providing outreach to residents.
- Educated hardware store employees to become program messengers and pass on the pollution prevention message to customers. Conducted five in-store trainings for store employees.
- Conducted outreach at community events to educate customers on less toxic alternatives to commercial pesticides and fertilizers.

C.10 Trash Load Reduction

MRP Provision C.10 Trash Load Reduction tasks are implemented by each SMCWPPP member agency. SMCWPPP helps agency staff to understand trash load reduction requirements and develops various tools needed to effectively plan, implement, and report on compliance with trash management activities. 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 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 an on-land 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.

During FY 2016/17, SMCWPPP completed the tasks described below in support of member agency trash management activities conducted in compliance with the above requirements.

- Coordinated and facilitated four meetings of the Trash Subcommittee and two meetings of the Litter Work Group.
- Assisted SMCWPPP member agencies in revising trash generation and management area maps and delineating trash full capture treatment areas in GIS.
- Continued to implement SMCWPPP's Trash Assessment Strategy, including conducting nearly 500 on-land visual trash assessments at 186 sites, maintaining the on-line trash assessment database to allow member agencies access to "real-time" load reduction estimates, and providing guidance to member agencies on MRP operation and maintenance requirements and standard operating procedures for trash full capture systems.
- Collated and standardized data from 41 trash hot spot assessments and cleanups, and entered the data into the SMCWPPP hot spot database.
- Began creating the Draft *Litter Reduction Toolkit for Multi-family Dwellings* to provide guidance

to member agency staff on BMPs for reducing litter at properties in San Mateo County.

- Distributed the report on *Litter Practices Recommendations for Solid Waste Franchise Agreements* to member agencies.
- Coordinated with the SMCWPPP Public Information and Participation (PIP) Subcommittee on countywide school outreach and countywide litter campaign branding efforts.
- Finalized and distributed maps to member agency staff of container overages and abandoned waste based on information from franchised haulers and municipal staff.
- Tracked the implementation of BASMAA's Tracking California's Trash project funded by the State Water Resources Control Board.
- Participated in the development and submittal of the *BASMAA Receiving Waters Trash Monitoring Program Plan*, which was in response to MRP provision C.10.b.v.
- Assisted member agencies in developing information necessary for reporting trash load reductions with their FY 2016/17 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 has been accomplished through participation in BASMAA regional projects.

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 pollution prevention, source control, and treatment control measures, including source control, stormwater treatment, green infrastructure, and other measures. SMCWPPP and its member agencies addressed this requirement 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 Executive Officer of the Regional Water Board.

Beginning with this 2016/17 Annual Report, Permittees must report on the use of the methodology to demonstrate progress toward achieving the mercury and PCBs load reductions required in this permit term. SMCWPPP's and its member agencies' efforts 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 (*Load Reduction Reporting and Control Measures Plan for Mercury and PCBs in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 contains the report.

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. During FY 2016/17, SMCWPPP worked proactively to make an early start on development of approaches for quantifying mercury and PCBs loads in San Mateo County, and developing approaches to performing the RAA to demonstrate that future control measures will provide sufficient pollutant load reductions to meet the permit requirements and countywide portions of TMDL wasteload allocations.

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. During FY 2016/17, SMCWPPP assisted its member agencies 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. Cumulatively, CEH had over 23,000 electronic or in person Fish Smart program impressions for FY 2016/17.

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.

SMCWPPP's and its member agencies' efforts 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 (*Load Reduction Reporting and Control Measures Plan for Mercury and PCBs in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 contains the report.

MRP 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. During FY 2016/17, SMCWPPP staff participated in the BASMAA regional project that is addressing Provision C.12.e., including serving as the BASMAA project manager.

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 ppm or greater in applicable structures at the time such structures undergo demolition, so that PCBs do not enter municipal storm drain systems. During FY 2016/17, SMCWPPP staff participated in the BASMAA regional project to develop an implementation framework, guidance materials, and tools to assist Permittees in developing programs to manage PCBs-containing materials and wastes during building demolition, including serving as the BASMAA project manager.

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 provision is being addressed through a multi-year project by the Regional Monitoring Program (RMP) to develop a series of conceptual models of PCBs in Priority Margin Units (PMUs). During FY 2016/17, SMCWPPP and BASMAA staff participated in the RMP PCBs Work Group to help oversee this project.

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. During FY 2016/17, SMCWPPP assisted its member agencies 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. Cumulatively, CEH had over 23,000 electronic or in person Fish Smart program impressions for FY 2016/17.

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 2016/17 include the following tasks to assist member agencies with implementation of Provision C.13:

- Continued to train municipal inspectors on the MRP requirements and BMPs for architectural copper installation, cleaning, and treating.
- Provided BMP information related to managing discharges from pools, spas and fountains that contain copper-based chemicals 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.

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. During FY 2016/17, SMCWPPP continued to assist municipal staff with understanding the MRP's requirements and made available for their use various MRP compliance support materials. The SMCWPPP CII Subcommittee facilitates and coordinates providing this assistance to the member agencies for a variety of different types of non-stormwater discharges that may be conditionally exempted.

In addition, during FY 2016/17 SMCWPPP's PIP component conducted selected activities to help San Mateo County Permittees comply with outreach requirements in Provision C.15.b.iv. Individual Residential Car Washing Discharge and Provision C.15.b.vi. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering, including the following:

- SMCWPPP conducted outreach to encourage San Mateo County residents to use car washes rather than washing their cars at home. The car wash program was designed to increase awareness of hazardous pollutants that come from washing cars and encourage residents to wash their cars at eco-friendly commercial car washes.
- SMCWPPP 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 quarterly newsletter and blog. Additional messaging was provided through SMCWPPP's Point of Purchase program, where OWOW materials were distributed that educate residents about eco-friendly pesticide alternatives.
- SMCWPPP promoted planting of drought tolerant, native vegetation through our online media channels, including social media and the SMCWPPP quarterly newsletter and blog. Messaging focused on the environmental benefits of planting native plants, including their tolerance to drought. Resources were included to identify native plants and how to plant and maintain them.

SECTION 1

INTRODUCTION

BACKGROUND

This FY 2016/17 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 2016/17. SMCWPPP's activities benefit all 22 of its member agencies: 15 cities, five towns, the County of San Mateo, and the San Mateo County Flood Control District. Each member agency 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 2016/17.

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 member agencies 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 2016/17, 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/):

- August 2016: approved the appointment of Ray Chan, Director of Public Works, to represent the City of Millbrae on the Stormwater Committee.

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

- September 2016: approved a resolution authorizing the C/CAG Executive Director to enter into agreements with the Alameda County Clean Water Program and the law firm of Meyers Nave for joint legal representation of stormwater unfunded mandate test claims filed by C/CAG member agencies, at a cost not to exceed \$35,000 for FY 2016/17.
- October 2016: approved the appointment of Sean Rose, Director of Public Works, to represent the Town of Woodside on the Stormwater Committee. Approved a resolution authorizing the C/CAG Executive Director to execute a Task Order with Urban Rain|Design in an amount not to exceed \$86,745 for technical support services to the Countywide Water Pollution Prevention Program for FY 2016/17.
- November 2016: approved the appointment of Ray Towne, Interim Public Works Director, to represent the City of South San Francisco on the Stormwater Committee.
- December 2016: approved the draft Countywide Stormwater Resource Plan and authorized C/CAG's Executive Director to release it for public review and comment.
- February 2017: approved the appointments of Marty Hanneman, City Engineer, and Denice Hutten, Associate Engineer, to represent the Town of Atherton and the City of Half Moon Bay, respectively, on the Stormwater Committee. Approved a resolution adopting the San Mateo County Stormwater Resource Plan.
- March 2017: approved a resolution authorizing a two-year agreement with the Bay Area Stormwater Management Agencies Association (BASMAA) in an amount not to exceed \$282,426 for implementing regional stormwater projects. Approved the appointment of John Fuller, Public Works Director, to represent the City of Daly City on the Stormwater Committee. Received a presentation on progress toward meeting trash load reduction requirements.
- May 2017: Presentations of 1st and 2nd Place High School Green Infrastructure Contest Winners from Menlo-Atherton High School (Atherton) and Carlmont High School (Belmont).
- June 2017: Approved Amendment Number 3 to the rain barrel rebate funding agreement with the Bay Area Water Supply and Conservation Agency, extending the term through June 30, 2018 for no additional cost. Authorized the C/CAG Executive Director to execute Task Orders with EOA, LWA, and SGA in amounts not to exceed \$1,685,861, \$557,500, and \$325,000, respectively, for technical support services to the Countywide Water Pollution Program for FY 2017/18.

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 C/CAG's member agencies, 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 C/CAG's member agencies at regional and statewide meetings and manages technical consultants that support programmatic activities. C/CAG hired an additional stormwater staff member in November 2016 to assist 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 and Technical Advisory Committees, the Program Manager and staff participated in the following activities during the FY 2016/17 reporting year:

- BASMAA: The Program Manager continued representing the Countywide Program on the Board of Directors (re-elected Chair in March 2017). Program manager and staff participate in monthly Board meetings, BASMAA regional project meetings, and BASMAA committee meetings;
- CASQA: The Program Manager continued serving on the Board of Directors, participated in/attended monthly Board meetings/calls, quarterly meetings, strategic planning meetings, and the annual conference;
- San Francisco Estuary Partnership Implementation Committee: The Program Manager continued serving on the committee representing the municipal stormwater perspective, participating in quarterly meetings;
- C/CAG staff developed a Safe Routes to School/Green Streets Infrastructure Pilot Program under which \$2 million of local vehicle registration fees will be distributed to C/CAG member agencies for constructing demonstration projects that integrate Safe Routes to School and stormwater improvements at intersections and mid-block crossings. The program was developed during FY 2016/17, with the final Pilot Program being approved by the C/CAG Board in July 2017, including releasing the Call for Projects to member agencies. Details on this program can be found on C/CAG's website [here](#). These projects will help member agencies in regard to Green Infrastructure implementation as well as load reductions for pollutants of concern.
- Presentations by the Program Manager:
 - C/CAG Ad-hoc Water Committee ("[Stormwater Planning](#)," August)
 - CASQA Annual Conference ("[Integrated Stormwater Planning in San Mateo County](#)," September)
 - C/CAG Board of Directors ("Stormwater Program Highlights 2015-16," October)
 - C/CAG Stormwater Committee ("[Stormwater Resource Plan and Reasonable Assurance Analysis](#)," November)
 - A Leadership Conversation on Green Infrastructure (Participated on the "Greening, Housing, and Transportation breakout panel," December)
 - C/CAG Board of Directors ("[Stormwater Resource Plan for San Mateo County](#)," December)
 - C/CAG Congestion Management and Environmental Quality Committee ("[Stormwater Resource Plan for San Mateo County](#)," December)
 - Stormwater Resource Plan Public Workshops ("[San Mateo County Stormwater Resource Plan](#)," Menlo Park, Millbrae, and Pacifica, January)
 - C/CAG Board of Directors ("[Stormwater Resource Plan for San Mateo County](#)," February)
 - Belmont City Council ("Municipal Regional Stormwater Permit," February)
 - C/CAG Board of Directors ("[Current Status of Trash Load Reductions and Other Trash Management/Monitoring Activities in San Mateo County](#)," March)
 - BAWSCA Groundwater Reliability Partnership meeting ("[San Mateo Countywide Stormwater Resource Plan](#)," March)

- EPA stormwater financing forum (“[Municipal Stormwater Funding Challenges](#),” March)
 - C/CAG Stormwater Committee (“[Countywide Program Preliminary 2017-18 Budget](#),” May)
 - San Bruno City Council (“Green Infrastructure Planning,” May)
 - C/CAG Countywide Water Coordination Committee (“[Stormwater Management in San Mateo County](#),” May)
 - County Office of Education’s Safe Routes to School Coordinators Meeting (“Safe Routes to School & Green Streets Infrastructure Pilot Program,” May)
 - C/CAG Board of Directors (“[Technical Support to the Countywide Program](#),” June)
- 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 (participated in quarterly grant status meetings and as a member of the Green Infrastructure Roundtable and Design Charrette task teams).

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 the member agencies 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 six times during FY 2016/17 (August, November, January, March, April and June) 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 2016/17. 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 2016/17 (July 21 and March 10). 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 of the member agencies, 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 particular 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 Municipal Regional Permit;
 - 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 member agencies.

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 particular 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 2016/17.

SMCWPPP has also 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 2016/17 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, 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 Committee. Details on the Committee can be found on C/CAG’s [website](#). The ad-hoc and new standing committees received two presentations on the Countywide Program activities during FY 2016/17, a summary of stormwater planning efforts in August, and a summary of program activities relevant to countywide flooding and sea level rise issues in May.

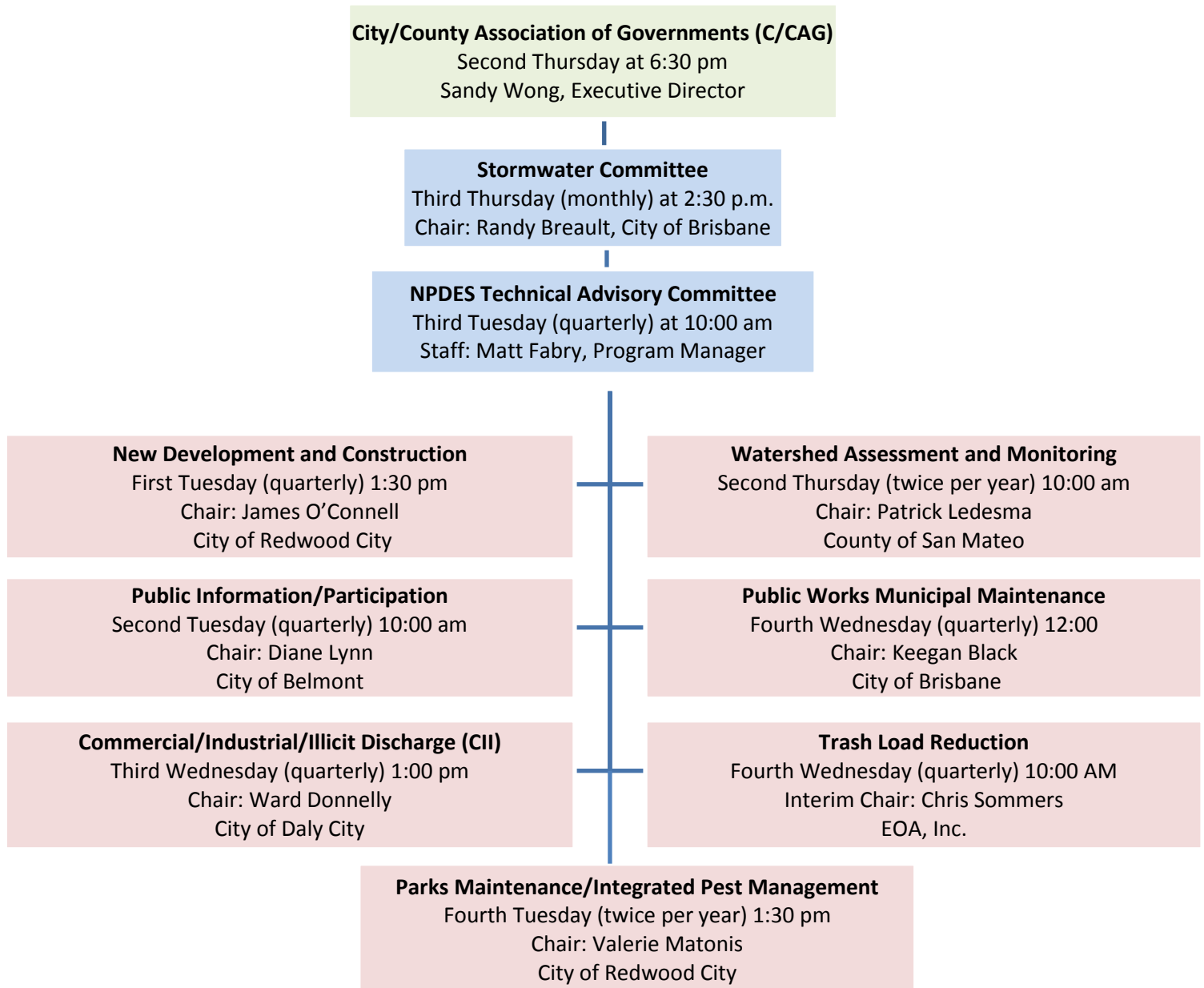
ORGANIZATION OF REPORT

This FY 2016/17 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 2016/17 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 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

During FY 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.2, with input and assistance provided by the Public Works Municipal Maintenance Subcommittee. Accomplishments included the following:

- Held four Public Works Municipal Maintenance Subcommittee meetings;
- Held a joint meeting between the Public Works Municipal Maintenance Subcommittee and the Parks Maintenance and IPM Work Group (this was one of the above four meetings);
- Developed a trash full capture device operations and maintenance (O&M) tracking template to assist member agencies comply with MRP Provision C.10.b.i; and
- Developed a pesticide tracking template in coordination with the Parks Maintenance and IPM Work Group to assist member agencies 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.

Atherton staff chaired the Subcommittee through December 2016. Keegan Black from the City of Brisbane has chaired the Subcommittee since January 2017. The Subcommittee met four times in FY 2016/17 with good participation by municipal staff, as shown by the attendance list, included in Appendix 2. One of the four meetings held was a joint meeting with the Parks Maintenance and IPM Work Group to discuss implementation and compliance with MRP Provision C.9 (Pesticides Toxicity Control) requirements related to municipal activities.

A stormwater BMP vendor provided a presentation at one of the FY 2016/17 Subcommittee meetings. Countywide Program staff also facilitated discussions at meetings about storm drain cleaning activities, corporation yard BMPs, tidal gates, residential “fix it” apps, storm drain system repairs, performance of trash full capture devices and drain inlet protection devices.

Program Materials

Since the MRP was adopted, 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 (www.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 member agencies 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 member agencies 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 Maintenance and Caltrans’ Storm Water Quality Handbook Maintenance Staff Guidance.

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. During FY 2010/11, SMCWPPP developed the “Stormwater Pump Station Dry Season DO Monitoring and Inspection Form” to assist member agencies in developing a systematic and efficient way to collect MRP-required DO monitoring and inspection information.

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.

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. SMCWPPP plans to review the template annually and update as needed to reflect any updates to the data tables on the DPR website.

FUTURE ACTIONS

FY 2017/18 activities planned by SMCWPPP to assist member agencies 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.

SECTION 3

C.3 NEW DEVELOPMENT AND REDEVELOPMENT

INTRODUCTION

This section describes SMCWPPP's activities to assist member agencies in complying 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). The NDS was chaired at the beginning of the year by Pam Boyle-Rodriguez, representing the City of Burlingame, then by Harris Siddiqui, representing the City of Menlo Park, and finally by James O'Connell, representing the City of Redwood City, who is the current chair. SMCWPPP also obtained input and direction from agency representatives through the NDS. The NDS met four times in FY 2016/17 with good participation by municipal staff, as shown by the attendance list, included in Appendix 3.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP's accomplishments during FY 2016/17 include the following major tasks to assist member agencies with implementation of Provision C.3:

- Updated the NDS on the new requirements taking effect in FY 2016/17 in the reissued MRP.
- Updated guidance documents, checklists, and fact sheets for consistency with new MRP requirements.
- Updated and posted on SMCWPPP's website Version 5.0 of SMCWPPP's C.3 Stormwater Technical Guidance. The update included significant revisions to make the Guidance consistent with new requirements in the reissued MRP and other information to assist member agencies in complying with Provision C.3.
- Held the 2017 Inspector Training workshop on February 1, 2017, which focused on stormwater treatment system installation and operation and maintenance (O&M) inspections and requirements.
- Held the 2017 New Development (C.3) Workshop, entitled "Stormwater Controls for Regulated Development Projects and Green Infrastructure Projects", on June 21, 2017.
- Participated in the BASMAA Development Committee and led its Biotreatment Soil Mix (BSM) Tree-Design Work Group to share information on how to integrate urban forestry with stormwater treatment designs, following-up on the "BSM and Trees Roundtable" event on June 30, 2016.

- Continued a countywide effort to develop different model components of the Green Infrastructure (GI) Plans required by MRP Provision C.3.j. The model components were for local member agency review, use and/or modification in their local GI Plans.
- Held six meetings of a San Mateo Countywide GI Technical Advisory Committee (GI TAC) to participate in the development, review, and selection of work products related to key elements of the GI Plan requirements that can be customized by member agencies for use in their GI Plans, and to educate GI TAC members.
- Supported member agencies in their preparation of GI Plan Workplans that were required to be approved by their governing body, mayor, city manager, or county manager by June 30, 2017.
- Developed a strategy for preparing a suite of GI Design Guides for San Mateo County Permittees – 1. Policy and Overview; 2. Buildings and Sites; 3. Sustainable Streets; 4. C.3 Regulated Projects; and 5. Operations and Maintenance.
- Conducted a variety of GI outreach activities, including various presentations by the Program Manager, a GI presentations to high schools, rain barrel program promotion, and social media posts.
- Developed a draft Countywide Stormwater Resource Plan (SWRP) that was released for public and stakeholder review in December 2016, hosted three public meetings about the plan throughout the County, incorporated written comments from the public and stakeholders, obtained approval of the SWRP by C/CAG, and submitted it to the State Water Resources Control Board in February 2017.
- Supported the development of Proposition 1 implementation grant applications by the Cities of San Mateo and Redwood City that included a suite of multi-benefit stormwater projects.

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 Mix (BSM) Products – SMCWPPP developed an updated BSM Supplier List, which is provided in Appendix 3. The NDS approved the update in August 2017. The document has been posted on the SMCWPPP website.
- C.3.h Inspection Enforcement Response Plan (ERP) – SMCWPPP prepared guidance for the NDS on the items that need to be included in a new ERP for Stormwater O&M inspections of existing treatment measures at regulated project sites. Each permittee was required by the MRP to create an O&M ERP by July 1, 2017. The guidance is posted on the SMCWPPP website and provided in Appendix 3.
- Stormwater Treatment System O&M Agreement guidance – SMCWPPP provided guidance to the NDS on recommended elements of Stormwater O&M Agreements that are typically recorded with the regulated project deed. Templates and completed agreements were distributed.

2017 New Development (C.3) Workshop

SMCWPPP conducted the C.3 Workshop entitled “Stormwater Controls for Regulated Development Projects and Green Infrastructure Projects” on June 21, 2017 at the City of San Mateo Public Library. The full-day workshop was attended by 52 people including two staff members from the Regional Water Board. The workshop started with “basic training” providing an overview of stormwater post-construction controls and the requirements that are in the reissued MRP. This was followed by a presentation on the review and creation of Stormwater Control Plans. The next presentation provided guidance on how to size stormwater treatment systems. The afternoon began with a presentation on the requirements of the GI section of the MRP. This was followed by two GI presentations regarding the suite of guidance documents being developed by SMCWPPP and how to integrate GI with active transportation (cyclist and pedestrian) projects. The day wrapped up with a group exercise practicing the selection and siting of GI measures on example street situations, and a presentation on a planned Las Lomas School District (Atherton) GI project in collaboration with Caltrans. Copies of the workshop 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.

2017 Inspector Training (C.3.h) Workshop

SMCWPPP conducted the Inspector Training Workshop, entitled “Stormwater Inspections Workshop, Construction Sites and C.3. Stormwater Controls: Implementing the requirements in MRP Provision C.6 and C.3.h”, on February 1, 2017 at the City of San Mateo Public Library. The workshop was attended by 74 people. The morning half of the day focused on C.6 Construction Site inspections and is further described in Section 6 of this report. The afternoon session covered provision C.3.h with presentations on the requirements of the MRP, how to conduct installation inspections, and how to conduct O&M inspections. The day ended with a group exercise that used example sites, the standard inspection forms and breakout sessions to give attendees an interactive session allowing for discussion with other municipal staff on the elements of inspections. Copies of the workshop flyer, agenda, sign-in sheet, and evaluation form summary are provided in Appendix 3.

Green Infrastructure Plan

During FY 2016/17, SMCWPPP continued its efforts to develop countywide GI Plan model documents and language for review, comment, and eventual use or modification by member agencies to meet the requirements of the MRP.

Green Infrastructure Technical Advisory Committee (GI TAC)

SMCWPPP is continuing to work with and assist member agencies via the GI TAC. The central purpose of the GI TAC is to ensure consistent jurisdictional involvement with and formal review and comment on work products prepared by SMCWPPP. The GI TAC is also providing input reflective of local issues, needs, and opportunities that should be taken into account in the development of the countywide tools and model documents that will be used by local jurisdictions in their preparation of local GI Plans. The GI TAC meets on a quarterly basis unless additional meetings are necessary for workflow and MRP deadline purposes.

Six GI TAC meetings were held in FY 2016/17: September 21 and December 14, 2016, and January 27, February 22, April 17, and June 29, 2017. Topics and discussion items included:

- Elements of a GI Plan;
- Refinements to GI Plan Workplan annotated outline;
- Model plan update materials;
- Guidelines and standards approach, organization, and content;
- Reasonable Analysis Assurance (RAA) and its various inputs including new and redevelopment land use;
- Project prioritization, initial funding opportunities and approach, and GI Plan workplan development; and
- Deliverables and schedule.

GI Plan Development

SMCWPPP provided member agency representatives with various materials to support the development of their GI Plans. SMCWPPP and municipal staff participated in related discussions, including determining approaches to develop the various components needed to comply with the MRP requirements and milestone deadlines. These are all elements needed to complete a GI Plan Workplan and start a GI Plan. The development of countywide model documents for use and/or refinement by member agencies, and direction on how to achieve or complete other required elements, have been presented to member agencies for review and comment. Multiple avenues of coordination and outreach are being used to ensure a consistent GI Plan approach is understood and accepted by all member agencies.

SMCWPPP also developed a strategy for preparing a San Mateo Countywide suite of GI Design Guides that will include the following primary components:

1. Policy and Overview
2. Buildings and Sites
3. Sustainable Streets
4. C.3 Regulated Projects
5. Operations and Maintenance

Green Infrastructure Outreach

SMCWPPP's Program Manager gave various presentations on GI planning efforts in a variety of forums, including numerous presentations on development of the San Mateo County Stormwater Resource Plan, as detailed below:

- C/CAG Ad-hoc Water Committee ("[Stormwater Planning](#)," August)
- C/CAG Stormwater Committee ("[Stormwater Resource Plan and Reasonable Assurance Analysis](#)," November)
- C/CAG Board of Directors ("[Stormwater Resource Plan for San Mateo County](#)," December)
- C/CAG Congestion Management and Environmental Quality Committee ("[Stormwater Resource Plan for San Mateo County](#)," December)

- Stormwater Resource Plan Public Workshops (“[San Mateo County Stormwater Resource Plan](#),” Menlo Park, Millbrae, and Pacifica, January)
- C/CAG Board of Directors (“[Stormwater Resource Plan for San Mateo County](#),” February)
- Belmont City Council (“Municipal Regional Stormwater Permit,” February)
- BAWSCA Groundwater Reliability Partnership meeting (“[San Mateo Countywide Stormwater Resource Plan](#),” March)
- San Bruno City Council (“Green Infrastructure Planning,” May)
- C/CAG Countywide Water Coordination Committee (“[Stormwater Management in San Mateo County](#),” May)
- County Office of Education’s Safe Routes to School Coordinators Meeting (“Safe Routes to School & Green Streets Infrastructure Pilot Program,” May)

The Countywide Program performed additional GI outreach, as follows:

- Created and conducted a high school GI contest, with winning teams invited to present at the C/CAG Board of Directors meeting in May 2017;
- 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;
- Brought green streets posters to community events and discussed with residents;
- Wrote seven GI-related newsletter articles that were distributed to 2,585 people.
- During FY 2016/17, placed 15 social media posts related to GI (examples below), reaching 8,410 followers:
 - *Green infrastructure is a great way to prevent stormwater pollution by using vegetation, soils, and other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments. There are many different kinds we can use in San Mateo, such as rain gardens, green roofs, rain barrels, and pervious pavement.*
 - *Our program to educate and inspire students on stormwater pollution prevention and green infrastructure was a success! The kids with the best proposals for green infrastructure projects for their school presented and attended an award ceremony.*
 - *School safety never looked so green! Check out what San Mateo's Laurel Elementary School did to make their students safer walking to school while also incorporating green infrastructure - <http://bit.ly/2bcBSK2>*
 - *Check out San Mateo's new 'sustainable grounds' at City Hall. The new landscaping is a serene habitat and is creating an ecological system that is inviting to a variety of wildlife such as birds, bees, and insects - <http://bit.ly/2aqTHTt>*

Tracking and Reporting Progress on Green Infrastructure

SMCWPPP’s progress on development and implementation of methods to track and report implementation of GI in San Mateo County is described in a separate report (*Load Reduction Reporting*)

and Control Measures Plan for Mercury and PCBs in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017). Appendix 12 contains the report.

San Mateo Countywide Stormwater Resource Plan

The Countywide Stormwater Resource Plan (SWRP) provides an ideal opportunity for SMCWPPP to proactively plan for GI planning and San Francisco Bay mercury and PCBs TMDL implementation requirements, while providing essential information needed to explore funding needs and opportunities (e.g., Proposition 1 grants) for project implementation. SMCWPPP led the development of the SWRP to address stormwater and water resources planning needs within watersheds of San Francisco Bay and the Pacific Ocean coast. Development of the SWRP included:

- Compilation of GIS, hydrologic data, and reports to gain a thorough understanding of the watersheds and parallel planning efforts.
- Characterization of the physical and hydrologic watershed processes across the county.
- Screening of publicly owned parcels and street rights-of-way to identify opportunities for stormwater capture and GI projects, including onsite LID retrofit projects, green streets, and regional stormwater capture projects.
- Prioritization of projects based on a quantitative process considering: 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 effort resulted in the identification of theoretical LID retrofit, green streets, and regional stormwater capture projects. The process has screened theoretical projects on public parcels within every city and unincorporated County jurisdictions and ranked them into high, medium, and low priority. Table 3-1 provides a summary of the parcels screened for planning evaluations. Theoretical projects reflect the understanding of watershed conditions given the available datasets and a desktop evaluation. Further evaluation and additional data gathering is necessary to determine if the theoretical projects represent viable project opportunities.

Table 3-1. Theoretical Public Parcel Projects Screening Results for Planning Evaluations

Ranking	Regional Stormwater Capture	Green Street	Low Impact Development
High	152	1,962	223
Medium	393	5,326	648
Low	740	9,066	1,049

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. For a subset of the highest priority projects, SMCWPPP developed conceptual designs to gain an understanding of technical and planning-level cost considerations for project implementation. Concept plans were developed 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. An example project concept of a green street retrofit project (Middlefield Streetscape in the City of Redwood City) is provided in Appendix 3.

The SWRP was released for public and stakeholder review in December 2016, and SMCWPPP hosted three public meetings throughout the County to provide a summary of the plan, obtain stakeholder feedback, and gain buy-in. SMCWPPP obtain written comments from the public and stakeholders, and incorporated comments into a version of the SWRP that 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.

Early Implementation Opportunities – Funding for GI Projects

SMCWPPP developed the SWRP specifically to ensure San Mateo County MRP Permittees would be eligible to compete for Round 1 Proposition 1 stormwater implementation grants administered by the State Water Resources Control Board. Using the project concepts developed with the SWRP, SMCWPPP prepared two successful grant proposals for the Cities of San Mateo and Redwood City that included a suite of multi-benefit stormwater projects. These projects, which were collectively awarded \$1.24 million in funding, advance the goals of transforming the urban transportation infrastructure to integrate stormwater management systems that treat urban runoff as a resource and improve water quality in local creeks and San Francisco Bay, including helping to implement the Bay mercury and PCBs TMDLs.

- City of Redwood City Sustainable Streets Project: two green street projects: Middlefield Road Streetscape and Kennedy Middle School Safe Routes to School.
- City of San Mateo Sustainable Streets and Parking Lot Project: two green street projects: East Poplar Avenue and San Mateo Drive; one green parking lot: Beresford Park.

Concepts for these projects are included in Appendix 3. (In addition to these SMCWPPP-supported projects, the City of Daly City was also awarded \$10 million in Round 1 of the Proposition 1 stormwater grants for its Vista Grande Drainage Basin Improvement Project.)

Two regional project concepts developed with the SWRP were used to secure funding commitments from Caltrans through its Cooperative Implementation Agreement program. The two projects (concepts included in Appendix 3) and associated funding amounts are:

- City of South San Francisco: Orange Memorial Park (Phase 1), \$9.5 million
- Town of Atherton: Holbrook Palmer Park, \$13.6 million

C/CAG also developed a Safe Routes to School/Green Streets Infrastructure Pilot Program, which includes a Call for Projects for proposals to implement bike and pedestrian improvements with GI for stormwater management at intersections or mid-block crossings. C/CAG is funding the program with \$2 million in equal shares of local Safe Routes to School and stormwater funding, all from vehicle registration fees imposed by C/CAG on registered vehicles in San Mateo County. The Call for Projects was released in July 2017, with proposals due October 20, 2017. C/CAG will provide up to \$250,000 in grant funding to selected proposals. Projects must be completed by October 1, 2019.

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 develop GI Plans as required by the MRP.

Regional Collaboration

SMCWPPP participated in BASMAA's Development Committee (DC) throughout FY 2016/17, as in past years. Through the BASMAA DC, SMCWPPP participated in regional projects that assist SMCWPPP and its member agencies in meeting specific requirements of Provision C.3, as described below.

Biotreatment Soil Mix Specifications

SMCWPPP continues to support municipal staff and consultants who have questions on the review of submittals of BSM. SMCWPPP staff screens and works with companies 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. 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.

Biotreatment Soil Mix Specifications and Bioretention Design with Trees

As a result of the Biotreatment Soil Roundtable held on June 30, 2016, two regional work groups were formed: a Design Work Group to examine how to better incorporate trees into bioretention areas, and a Compost Work Group to continue to evaluate mix components. SMCWPPP staff took the lead on facilitating the Design Work Group. In FY 2016/17, the Design Work Group met three times to share and receive input on soil type and volume requirements for street trees and other design issues. Attendees included several arborists, GI consultants and municipal staff from parks departments and stormwater programs. The Work Group continues to grow as additional professionals are solicited. In FY 2017/18, the Work Group will review additional examples of tree-specific treatment measure designs, discuss soil and maintenance issues, and develop recommendations for design and maintenance of stormwater tree systems.

Regional Project on Alternative Sizing Criteria for GI Systems

BASMAA began implementing a regional project to evaluate approaches to treatment measure selection and sizing where GI project constraints preclude fully meeting the MRP Provision C.3.d sizing requirements, using hydrologic modeling analyses. SMCWPPP staff participated in the project oversight. A consultant was selected to assist with the project and presented initial findings and received comments at the June 1 BASMAA DC meeting. In FY 2017/18 the final results of the project will be incorporated into policy and guidance that will inform municipal GI plans.

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 is part of a team with the Association of Bay Area Governments (ABAG) and the San Francisco Estuary Partnership (SFEP) that received a grant from US EPA's San Francisco Bay Water Quality Improvement Fund 2015 grant program to conduct the Urban Greening Bay Area project. There are two primary components of the project: 1) a Regional GI Roundtable process to develop recommendations for integrating GI and stormwater management funding and investments with future climate change and transportation investments within the region; and 2) a Bay Area Design Charrette to develop cost-effective and innovative "typical" designs for integrating GI with bicycle and pedestrian improvements at roadway intersections, using actual intersections within the Cities of Sunnyvale and San Mateo. During FY 2016/17, BASMAA's accomplishments on the Urban Greening Bay Area project included the following:

- Design Charrette: The Design Charrette was held on November 1, 2016 to share information on improving the design of bulb-outs with bioretention facilities at typical intersections. The approximately 30 attendees split into four groups and produced design changes and recommendations for the two specific intersections in Sunnyvale and San Mateo. SMCWPPP staff attended the charrette. The Design Charrette summary and resulting designs for the intersections are available at www.sfestuary.org/urban-greening-bay-area . Final designs will be constructed at the San Mateo and Sunnyvale locations to serve as demonstration projects for other agencies throughout the Bay Area.
- GI Roundtable – The Roundtable will include convening up to four meetings with local, regional, and state stakeholders, agencies, elected officials, and staff to produce draft and final task reports that will identify and recommend possible legislative fixes, agency agreements, consolidated funding mechanisms, and other means and actions as appropriate. The first Roundtable meeting was held on March 28, 2017 and brought various transportation funding agencies together to hear the challenges of municipal agencies in getting funding for green street projects. There were 35 roundtable participants, plus many others in the audience. A second, more focused meeting on potential funding solutions and case studies was held on May 23, 2017. SMCWPPP staff participated in the Roundtable meetings.

FUTURE ACTIONS

In FY 2017/18, SMCWPPP plans to continue working with the NDS to conduct the following activities to assist member agencies to comply with MRP Provision C.3:

- Continue to exchange information on MRP implementation and other timely issues with member agencies through quarterly NDS meetings and the annual C.3 workshop.
- Update checklists, outreach flyers, and the C.3 Technical Guidance Manual as needed to respond to member agency issues, concerns and suggestions for improvement.
- Continue to collaborate with BASMAA and Bay Area countywide stormwater programs to update the BSM specifications, BSM suppliers list, and designs for biotreatment areas with trees. As budget allows, work with biotreatment mulch suppliers to develop better specifications for that product.
- Plan and conduct a C.3 workshop for municipal staff, to build on the training conducted in previous years, provide an update on GI Plan development and coordination, and provide municipal staff opportunities to conduct practice reviews of development project plans (tentatively scheduled for spring 2018).

- Develop the San Mateo Countywide suite of GI design guides.
- Continue working with BASMAA on issues related to MRP implementation, particularly the GI requirements and related sections.
- Continue coordinating and working with member agencies to develop and refine the countywide model components for the local GI Plans.
- Continue facilitating GI TAC meetings and provide support for local GI Plan development efforts, including working with the GI TAC to:
 - Finalize development of prioritization criteria for GI project opportunities;
 - Finalize process for tracking and mapping completed GI projects;
 - Continue development of model GI guidelines and standards;
 - Review and collaborate with BASMAA on a single approach to alternative sizing of GI treatment measures;
 - Conduct GI outreach and education with the public, staff, and elected officials; and
 - Evaluate GI funding opportunities and options.
- Support integration of GI supportive language in planning documents that member agencies are preparing or updating during the current permit term.
- Continue tracking and participating in the Urban Greening Bay Area project, including participating in the GI Roundtable meetings.

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 member agencies in controlling the discharge of pollutants in stormwater from commercial and industrial businesses to the maximum extent practicable. SMCWPPP member agencies are responsible for complying with various commercial and industrial business facility inspection requirements under MRP Provision C.4. SMCWPPP's CII component assists member agency 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 member agencies to comply with other MRP provisions that are discussed in other sections of this report (Sections 5, 13 and 15).

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

IMPLEMENTATION OF MRP PROVISIONS

During FY 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of MRP Provision C.4, with input and assistance provided by the CII Subcommittee. Accomplishments included the following:

- Held three CII Subcommittee meetings;
- Assisted San Mateo County with responding to an August 31, 2016 Notice of Violation (NOV) issued by the Regional Water Board, including participating in a January 2017 training for San Mateo County Environmental Health (CEH) inspectors;
- Assisted Permittees with responding to a January 30, 2017 letter from Regional Water Board staff to 18 cities in San Mateo County regarding compliance with business inspection and illicit discharge control requirements. This included facilitating a February 15, 2017 special meeting to discuss a joint response, updating the SMCWPPP Business Inspection Plan (BIP) template, updating the SMCWPPP Enforcement Response Plan (ERP) template, and holding an April 25, 2017 special meeting to review the updated templates; and
- Assisted individual cities with responding to NOVs or requests for clarifications issued in May 2017 by the Regional Water Board.

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 three times during FY 2016/17 with good participation by municipal staff, as shown by the attendance list, included in 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. In addition, the meetings provide a forum for a CEH representative to discuss the status of CEH inspections and hear municipal staff feedback on the process, since most San Mateo County cities have agreements with CEH for CEH staff to conduct stormwater inspections of certain businesses (i.e., sites that CEH already inspects for other reasons, including facilities with onsite hazardous materials and retail food facilities).

Ward Donnelly from the City of Daly City continued to chair the CII Subcommittee during FY 2016/17. Patrick Ledesma from CEH represented San Mateo County and some of the cities that have an agreement with CEH to conduct stormwater inspections of certain business facilities.

During FY 2016/17 subcommittee meetings, SMCWPPP staff focused on facilitating discussions about the findings and responses to the Regional Water Board's August 31, 2016 NOV to the County and the January 30, 2017 C.4 and C.5 compliance letter to 18 cities. (The City of San Mateo was included in the January 30, 2017 letter but no longer had an agreement with the County to perform stormwater inspections since city staff was conducting all inspections in their jurisdiction at that time.)

SMCWPPP staff assisted the County of San Mateo with its November 15, 2016 response to the Regional Water Board's August NOV. In addition, SMCWPPP staff assisted with a County of San Mateo inspector training on January 12, 2017, including giving two presentations at the training.

To assist with the cities respond to the Regional Water Board January 30, 2017 compliance letter, SMCWPPP staff updated the SMCWPPP BIP template and SMCWPPP ERP template. SMCWPPP staff organized a February 15, 2017 meeting to discuss a joint response to the Regional Water Board compliance letter. A meeting was also held on April 25, 2017 to walk cities through the updated SMCWPPP BIP and ERP templates and discuss city specific responsibilities. On April 28, 2017, SMCWPPP submitted a response letter on behalf of the 17 cities responding to the Regional Water Board compliance letter. In May 2017, seven cities received individual NOVs or letters requesting clarifications from the Regional Water Board. SMCWPPP staff assisted the cities to prepare responses, which were due by July 31, 2017.

At the March 16, 2017 Stormwater Committee meeting, and subsequently via an April 3, 2017 letter, CEH notified the 17 cities that it has stormwater inspection agreements with of its intention to terminate the agreements on December 31, 2017, due to staffing and cost concerns. The 17 cities are currently evaluating future options for maintaining MRP-compliant inspection programs.

FUTURE ACTIONS

FY 2017/18 activities planned by SMCWPPP to assist member agencies comply with MRP requirements in Provision C.4 include the following:

- Continue holding quarterly CII Subcommittee meetings.
- Hold a stormwater business inspector training workshop.

- As needed, assist member agencies with the transition from CEH performing stormwater inspections on their behalf through December 31, 2017 to cities being responsible for conducting all stormwater inspections, beginning January 1, 2018.
- Assist member agencies with the implementation of commercial and industrial stormwater inspection tasks, including continuing to assist with BIPs and associated prioritizing on inspections, data management, and 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 member agencies effectively prohibit the discharge of illicit, non-stormwater discharges to the municipal storm drain system. SMCWPPP member agencies are responsible for controlling non-stormwater discharges prohibited by MRP Provision C.5. SMCWPPP's CII component assists member agency 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 member agencies to comply with other MRP provisions that are discussed in other sections of this report (Sections 4, 13 and 15).

SMCWPPP's assistance with the MRP provisions listed above is coordinated through the CII Subcommittee. Further details about the CII Subcommittee were provided in Section 4 of this report.

IMPLEMENTATION OF MRP PROVISIONS

During FY 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of MRP Provision C.5, with input and assistance provided by the CII Subcommittee. Accomplishments included the following:

- Developed a regional inventory of mobile businesses;
- Mailed information on mobile business BMPs to businesses on the regional inventory;
- Updated the table of stormwater enforcement actions against mobile businesses to share countywide with stormwater inspectors; and
- Updated the SMCWPPP C.4/C.5 Enforcement Response Plan (ERP) template as reported in Section 4.

More information on each of these accomplishments is provided below.

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. The brochure is available on the SMCWPPP website (www.flowstobay.org).

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 in April 2015 an outreach message on Facebook that targeted mobile cleaner businesses. The posting included a link to the BMPs brochure. In March 2017, the PIP Subcommittee posted two additional outreach messages on Facebook targeting residents who hire carpet cleaners or pet groomers. The March 2017 messages and posting statistics are included in Appendix 5.

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. The regional inventory is included in Appendix 5. The Program mailed the SMCWPPP mobile business BMPs brochure to all of the businesses in the inventory in late June and early July 2017. The transmittal letter and BMPs brochure are included in Appendix 5.

In addition, the mobile businesses stormwater enforcement actions table was updated three times during FY 2016/17 and the updated information was made available on the SMCWPPP website (password-protected). CII Subcommittee representatives were informed when each update was completed.

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 2016-2017, Regional Supplement for Training and Outreach* (Appendix 11). SMCWPPP member agencies have continued to refer cleaners to BASMAA's website for surface cleaning training materials. BASMAA held a meeting on December 13, 2016 to discuss potentially expanding its surface cleaner training and recognition program to also include fleet washers and carpet cleaners. In addition, the BASMAA surface cleaner outreach materials will be updated to include the permanent water conservation requirements adopted in the water code.

FUTURE ACTIONS

FY 2017/18 activities planned by SMCWPPP to assist member agencies comply with MRP requirements in Provision C.5 include the following:

- Continue holding CII Subcommittee meetings.
- Assist member agencies with the implementation of illicit discharge detection and elimination tasks, including continuing to assist with data management, ERPs, and complaint tracking and follow-up.
- Help member agencies comply with the requirements for controlling mobile sources in MRP Provision C.5.e. SMCWPPP will continue its programs related to mobile business BMPs, including sharing enforcement information, periodically updating the regional enforcement inventory, and outreach activities. SMCWPPP will also continue to participate in BASMAA's related efforts, including the project to update surface cleaner materials.

SECTION 6

C.6 CONSTRUCTION SITE CONTROL

INTRODUCTION

This component of SMCWPPP assists member agencies 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 agency representatives through the Subcommittee when planning the trainings and other compliance assistance activities described below.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP's accomplishments during FY 2016/17 include the following major tasks to assist member agencies with implementation of Provision C.6:

- Conducted a construction site controls training for the California Building Inspectors Group (CALBIG) on September 21, 2016;
- Printed 1,500 copies of the Construction Site Inspection Form and distributed them to the Subcommittee members; and
- Conducted the February 1, 2017 Construction Site Inspector Workshop.

CALBIG Training Meeting

In FY 2016/17, SMCWPPP continued its partnership with CALBIG, a group in which many building inspectors from SMCWPPP member agencies participate. SMCWPPP staff conducted a construction site control training at the group's September 21, 2016 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, and tips for keeping construction inspection programs in compliance. Approximately 45 people attended the training, including agency inspectors, local stormwater program staff, and contractors. This was a large increase from the previous year's attendance of 18 staff. The meeting announcement, agenda and sign-in sheet are provided in Appendix 6.

Construction Site Inspection Form

In August of 2016, SMCWPPP staff printed and distributed 1,500 copies in triplicate form of the SMCWPPP Construction Site Inspection Report to member agencies. This form was last updated in May 2016. The SMCWPPP inspection data tracking template was also updated at that time.

2017 Construction Site Inspector Workshop

The 2017 Construction Site Inspector Workshop was held February 1, 2017 at the City of San Mateo Public Library's Oak Room and was attended by 72 people. The workshop began with presentations on (1) MRP C.6 requirements, (2) a large construction site case study, and (3) conducting construction site inspections, with a focus on filling out the Construction Site Inspection Report. This was followed by group exercises where attendees discussed BMP placement, reviewing SWPPP site maps, and inspection of specific BMPs. Appendix 6 includes a copy of the workshop flyer, agenda, sign-in sheet, and evaluation summary. Based on the evaluation forms submitted, attendees generally found that the workshop was valuable and indicated that it met their expectations. The afternoon half of the day focused on C.3.h stormwater treatment measure Operations and Maintenance (O&M) inspections and was described earlier in this report (see Section 3).

FUTURE ACTIONS

In FY 2017/18, SMCWPPP staff plans to work with the New Development Subcommittee to conduct the following activities to assist member agencies comply with MRP Provisions C.6:

- Continue to exchange information with member agencies through quarterly NDS meetings.
- Plan and conduct a Construction Site Inspector Workshop focusing on BMP inspections, Enforcement Response Plans and/or other topics of interest to the NDS.
- 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 resident's 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.

Summary of Accomplishments in FY 2016/17

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 four times in FY 2016/17 with good participation by municipal staff, as shown by the attendance list, included in Appendix 7.

SMCWPPP's PIP accomplishments during FY 2016/17 include the following:

- Partnered with Bay Area Water Conservation Supply Agency (BAWSCA) on a Rain Barrel outreach campaign that received 1,060 website page views. Distributed 900 rain barrel rebate forms and received 45 rebate applications from residents. Over 1,000 rain barrels have been installed to-date in San Mateo County under the rebate program.
- Partnered with San Mateo County Environmental Health Services (CEH) on a campaign to reduce littering of cigarette butts.
- Coordinated Coastal Cleanup Day for 4,145 volunteers, raising awareness of the event and the consequences of littering behaviors.
- Received 171 residents into the car wash program, with 262 car wash coupons redeemed, raising awareness of the pollution that results from residential car washing.

- Gained 5,133 new Facebook fans and reached 10,617 users with stormwater pollution prevention Facebook messaging.
- Gained 1,927 new Twitter followers and reached 81,452 Twitter users with stormwater pollution prevention messaging.
- Sent four newsletters to a list of 2,643 opt-in subscribers with topics covering eco-friendly gardening practices, local cleanup events and stormwater pollution prevention tips.
- Received 20,228 visitors to the SMCWPPP website, which focuses on stormwater pollution prevention messaging and resources.
- Participated in 11 community and citizen involvement events in San Mateo County, to speak one-on-one with residents, perform demonstrations, and hand out collateral materials.
- Planned and launched a countywide school outreach program that asked students to submit green infrastructure proposals, reaching approximately 200 students.
- Performed point-of-purchase outreach with Our Water Our World materials to five hardware stores in San Mateo County while training store employees on eco-friendly alternatives to pesticides.
- Promoted outreach messaging to residents regarding eco-friendly alternatives to pesticides in SMCWPPP's newsletter, website and social media channels.

IMPLEMENTATION OF MRP PROVISION C.7

C.7.b. Outreach Campaigns

In FY 2016/17, SMCWPPP focused on rain barrel rebates, and campaigns to address littering of cigarette butts and residential car washing as primary contributors to stormwater runoff pollution. The rain barrel program was promoted through offline, online, and community outreach tactics. For the cigarette butt campaign, SMCWPPP partnered with San Mateo County Environmental Health (CEH) to promote a program that encourages businesses to keep the area surrounding their storefronts free of cigarette butt litter. To address residential car washing pollution, SMCWPPP continued promoting the commercial car wash discount coupon program.

Rain Barrel Rebate Program

As a result of the California drought and in an attempt to pursue alternative approaches to public engagement, SMCWPPP partnered with the Bay Area Water Supply Conservation Agency (BAWSCA) in 2014 to implement a pilot countywide rain barrel rebate program. During FY 2016/17, 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. Over 1,000 rain barrels have been installed to-date in San Mateo County under the rebate program.

Prior to this partnership, the only agency in San Mateo County offering rain barrel rebates was the City of Millbrae. C/CAG provided BAWSCA with an additional \$25,000 in FY 2016/17 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. 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 2016/17, 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. A primary target was environmentally minded newcomers who have an interest in water conservation, pollution prevention, and do-it-yourself activities. A focused campaign was launched on April 22, 2017 to promote the program and additional efforts were made for Earth Day events throughout April.

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 (see Appendix 7). The tip cards helped to 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 hosted on the rain barrel page of the SMCWPPP web site (see Appendix 7). The "opt-in" map allows users to enter their location onto a map to demonstrate that they have installed a rain barrel and place themselves on a map of San Mateo County. By placing themselves on the map, all website visitors will see how many rain barrels are being used throughout San Mateo County. This helps to establish the social norm of rainwater harvesting and encourage others to join the movement. The opt-in map can be viewed at FlowsToBay.org/rainbarrel.

SMCWPPP also promoted the rain barrel rebate program via our social media channels on Facebook and Twitter. Educational posts were created to inform residents about the functions and benefits of rain barrels (Figure 7-1). SMCWPPP used posts showing photos of various rain barrels, while encouraging use of the "opt-in" map and using ads to reach a wider audience.

The PIP committee was provided with marketing material to promote the rain barrel rebate program (Appendix 7):

1. Pre-crafted copy and photos to be used for any medium that best suits their constituents;
2. Rain Barrel Tip cards to provide at community outreach events;
3. A link to the Rain Barrel Opt-in map to encourage residents to join the movement at FlowsToBay.org/rainbarrel.

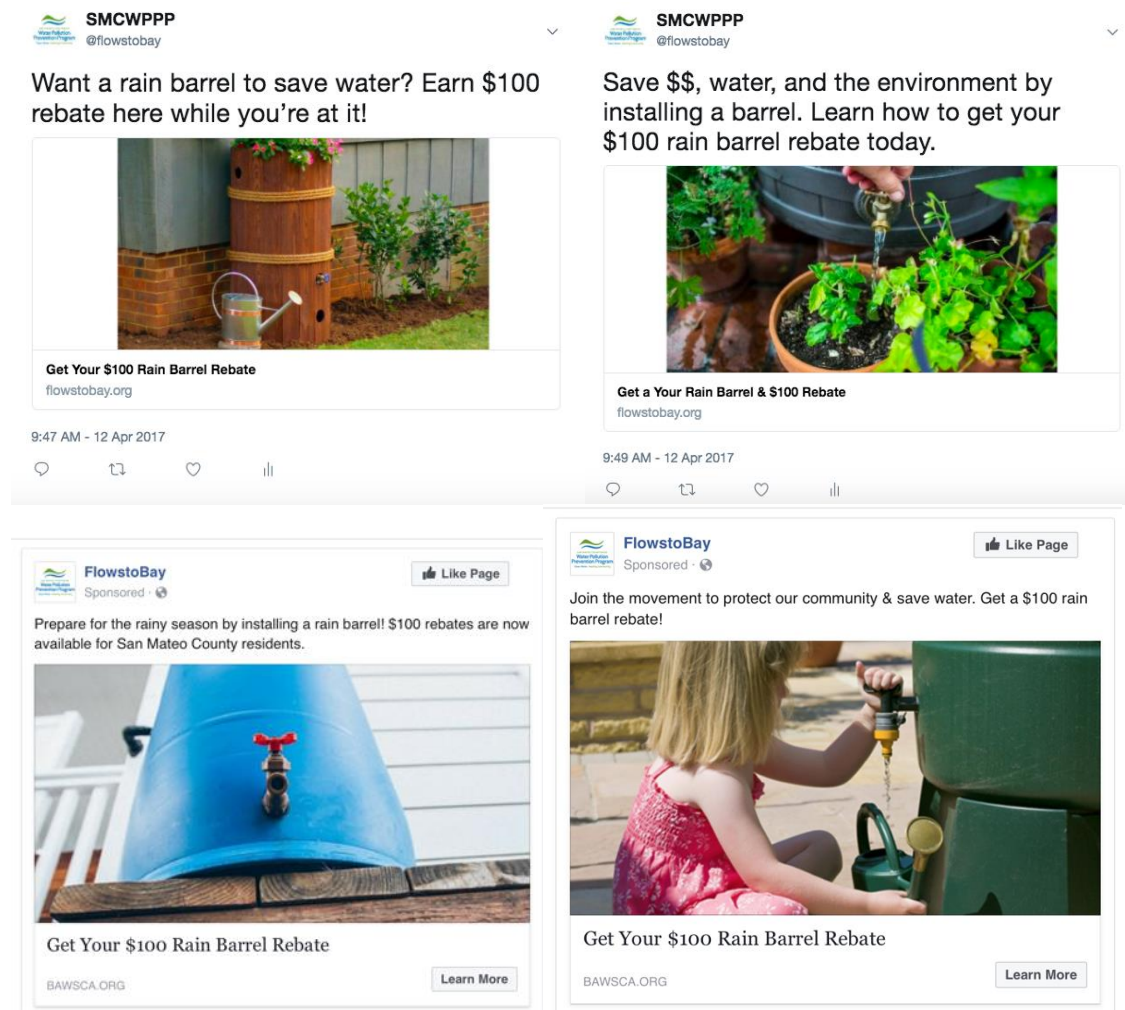


Figure 7-1. Social Media Posts (Facebook and Twitter Ads) Promoting Rain Barrel Rebates

Cigarette Butt Campaign

San Mateo County Environmental Health Services (CEH) created a program to reduce littering of cigarette butts. The program encourages businesses to keep the area surrounding their storefronts free of cigarette butt litter. A list of participating businesses, documents - including pledge forms and applications for businesses looking to join the campaign - can be found on the [San Mateo County Environmental Health Services Blog \(https://smcehs.wordpress.com/special-programs/cigbutts/\)](https://smcehs.wordpress.com/special-programs/cigbutts/). Other outreach included the distribution of pocket and auto ashtrays to various businesses and community events. Dual language stickers in Chinese and English were displayed on four receptacles installed in downtown Millbrae.

SMCWPPP partnered with CEH to promote the campaign, by including the campaign in our social media channels and in our monthly PIP newsletter, prompting PIP members to also distribute messaging supporting the program. The campaign successfully recruited 18 businesses to participate in the program as partners. In FY 2018/19, pre- and post-campaign measurements will be implemented to gain

a more in depth understanding of the impact on cigarette butt reduction. Figures 7-2 shows butts collected as part of the campaign. A picture of a participating business is shown in Figure 7-3.



Figure 7-2. Cigarette Butts Collected as Part of the Campaign



Figure 7-3. A Local Business Participating in the Campaign

Car Wash Program

During FY 2016/17, SMCWPPP conducted outreach to encourage residents to use car washes rather than washing their cars at home. The car wash program was designed to increase awareness of hazardous pollutants that come from washing cars and encourage residents to wash their cars at eco-friendly commercial car washes. Further details are provided in Section 15, C.15 Exempted and Conditionally Exempted Discharges.

C.7.c. Stormwater Pollution Prevention Education

SMCWPPP continued to use social media, the SMCWPPP website, and the quarterly 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. Both social media platforms experienced a significant increase in followers this reporting period. We gained 5,133 Facebook fans, reaching a total of 10,617 fans between July 1, 2016 and June 30, 2017. We gained 814 Twitter followers, reaching a total of 1,927 followers between July 1, 2016 and June 30, 2017.

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 themed posts from FY 2015/16 were replicated in FY 2016/17. Additional themes were created and aired during FY 2016/17 due to their popularity in our audience.

The following is a breakdown of tasks and evaluation metrics associated with social media activity for FY 2016/17:

- Continued utilizing Facebook and Twitter as a two-way communication tool to share and exchange information between SMCWPPP residents, businesses, nonprofits, and community stakeholders within San Mateo County on pollution prevention messages. Specific program messages included watershed protection, water pollution and Bay area marine news, wash water pollution prevention, household hazardous waste, and used motor oil & filter recycling content.
- Continued to utilize Facebook as the SMCWPPP web site's advertising platform to further promote messages.
- Facebook metrics (Figure 7-4):
 - Gained 5,133 Facebook fans, reaching a total of 10,617 Facebook fans.
 - Gained 440,570 total page impressions (number of people that viewed our page).
 - Gained 189,293 post impressions (number of people that viewed our posts).
 - Gained 2,007 interactions (likes, comments, and shares).

- Drafted a total of 223 Facebook posts.
- Twitter metrics (Figure 7-5):
 - Gained 814 Twitter followers, reaching a total of 1,927 Twitter followers.
 - Gained 81,452 tweet impressions.
 - Gained 1,250 engagements.
 - Drafted a total of 223 tweets.

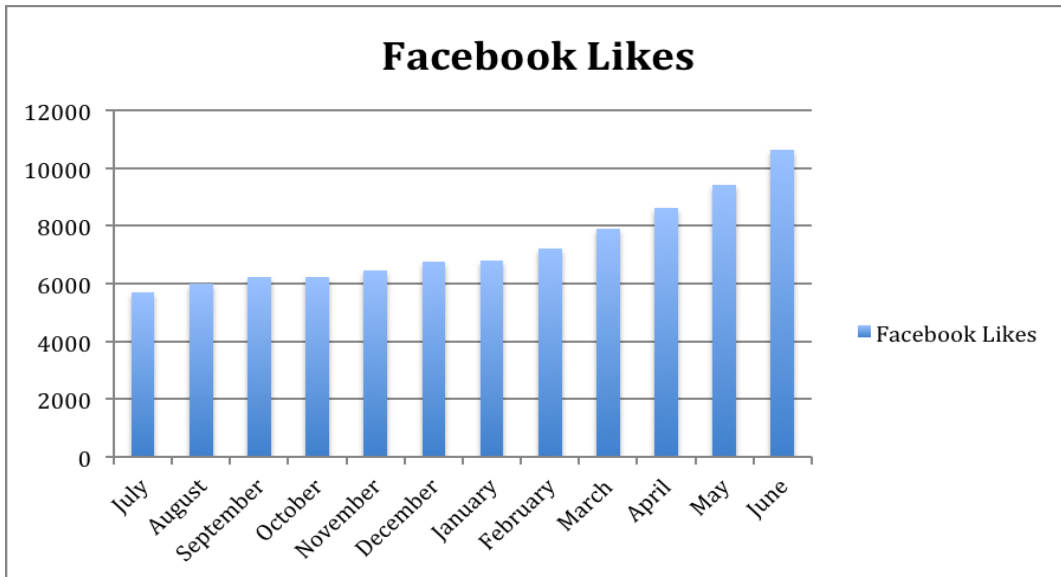


Figure 7-4. Number of Likes on the Flows to Bay Facebook Page, July 2016 – June 2017

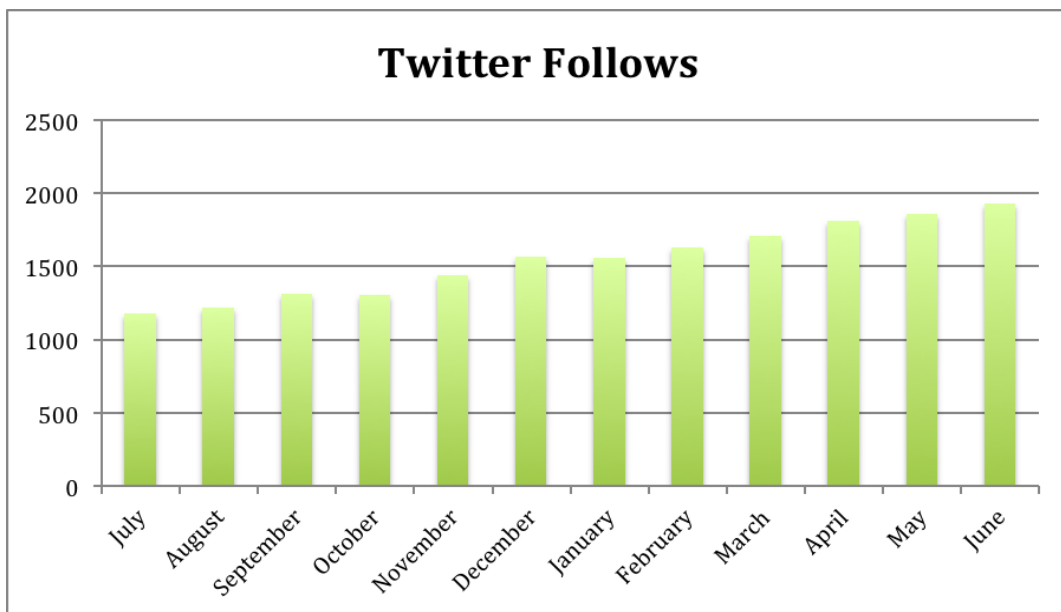



Figure 7-5. Number of Followers on the Flows to Bay Twitter Page, July 2016 – June 2017

Figure 7-6 presents some examples of FY 2016/17 Facebook Posts.

FlowstoBay
Published by S Groner Assoc [?] · April 27 ·

Prevent stormwater pollution by reducing the amount of plastic you use - here are 9 tips!



9 Tips for Living with Less Plastic - Less Plastic
Make a difference with these 9 simple tips for living with less plastic, avoiding single-use plastic products will reduce your impact on plastic pollution
LESSPLASTIC.CO.UK

Get More Likes, Comments and Shares
Boost this post for \$16 to reach up to 7,800 people.


1,862 people reached [Boost Post](#)

Nanci Sepulveda, Maureen Brown and 26 others · 26 Shares

Like Comment Share

FlowstoBay
Published by S Groner Assoc [?] · March 13 ·

Did you know that one gram of dog waste contains 23 million fecal bacteria? Dog waste that isn't picked up is a huge contributor to water pollution!



Get More Likes, Comments and Shares
Boost this post for \$16 to reach up to 7,800 people.


2,637 people reached [Boost Post](#)

Jaime Blue, AJ Andrews and 4 others · 2 Shares

Like Comment Share

FlowstoBay
Published by S Groner Assoc [?] · December 13, 2016 ·

With California facing a record breaking drought, getting a rain barrel is one of the best ways to save money and water. Visit our website for more benefits rain barrels bring as well as information on how to get your rain barrel rebate.



Rain Barrel Rebate Program | Flowstobay: San Mateo Countywide Water Pollution Prevention Program
1,000 square feet of roof surface can capture 625 gallons of water for every 1 inch of rainfall, that's over 11,000 gallons from one home per year!

[FLOWSTOBAY.ORG](#) [Learn More](#)


1,803 people reached [View Results](#)

41 · 1 Comment 12 Shares

Like Comment Share

FlowstoBay
Published by S Groner Assoc [?] · June 1 ·

Do YOU know why gardening with native plants is good for the environment? Using native species in your garden or landscape saves water, reduces water pollution, reduces the use of fertilizers and pesticides, and supports local wildlife preservation. Read more here:



Why Garden with Natives? - California Native Plant Society
While California's native plants have graced gardens worldwide for over a century, few of the landscapes designed for our state's gardens reflect the natural...
CNPS.ORG

Get More Likes, Comments and Shares
Boost this post for \$16 to reach up to 7,800 people.

356 people reached [Boost Post](#)

Donna Yolanda, Irene Spicher and 10 others · 2 Comments

Like Comment Share

Figure 7-6. Example FY 2016/17 Facebook Posts

In addition to the standard Facebook and Twitter social media activity, Facebook and Twitter Ad Campaigns ran from July 1, 2016 – June 30, 2017. These campaigns increased SMCWPPP’s reach to potential community members through the use of audience location and interest analytics. Specific ads were created for a targeted audience group on both social media platforms and ran on an appropriate monthly budget approved by SMCWPPP. Both social media ad campaigns drew a significant increase in followers during this reporting period. During the ad campaign, the Flows to Bay Facebook page received 10,598 new fans and the Twitter page received 309 new fans.

The following is a breakdown of tasks and evaluation metrics associated with the FY 2016/17 social media ad campaigns:

- Facebook ads:
 - July-June Campaigns: Tested multiple target audiences:
 - General Environmental Interest
 - Wildlife Interests
 - Gardening Interests
 - Pet Owners
 - Water Conservation
 - General/Pride
 - Green Infrastructure
 - Rain Barrel
 - Stormwater Resource Plan
 - Ran a total of 80 ads
 - Most successful audience was “Wildlife Interests” (1,699 likes, implemented starting in March 2017) followed by “Gardening Interests” (1,467 likes, implemented starting in March 2017), and “General Environmental Interest” (1,452 likes, implemented starting in July 2016)
 - Ads resulted in a total of:
 - 10,598 likes
 - 792 link clicks
 - 171,541 reach
 - \$0.67 per like on average
 - \$0.47 per click on average

Figure 7-7 presents some examples of FY 2016/17 Facebook Advertisements.

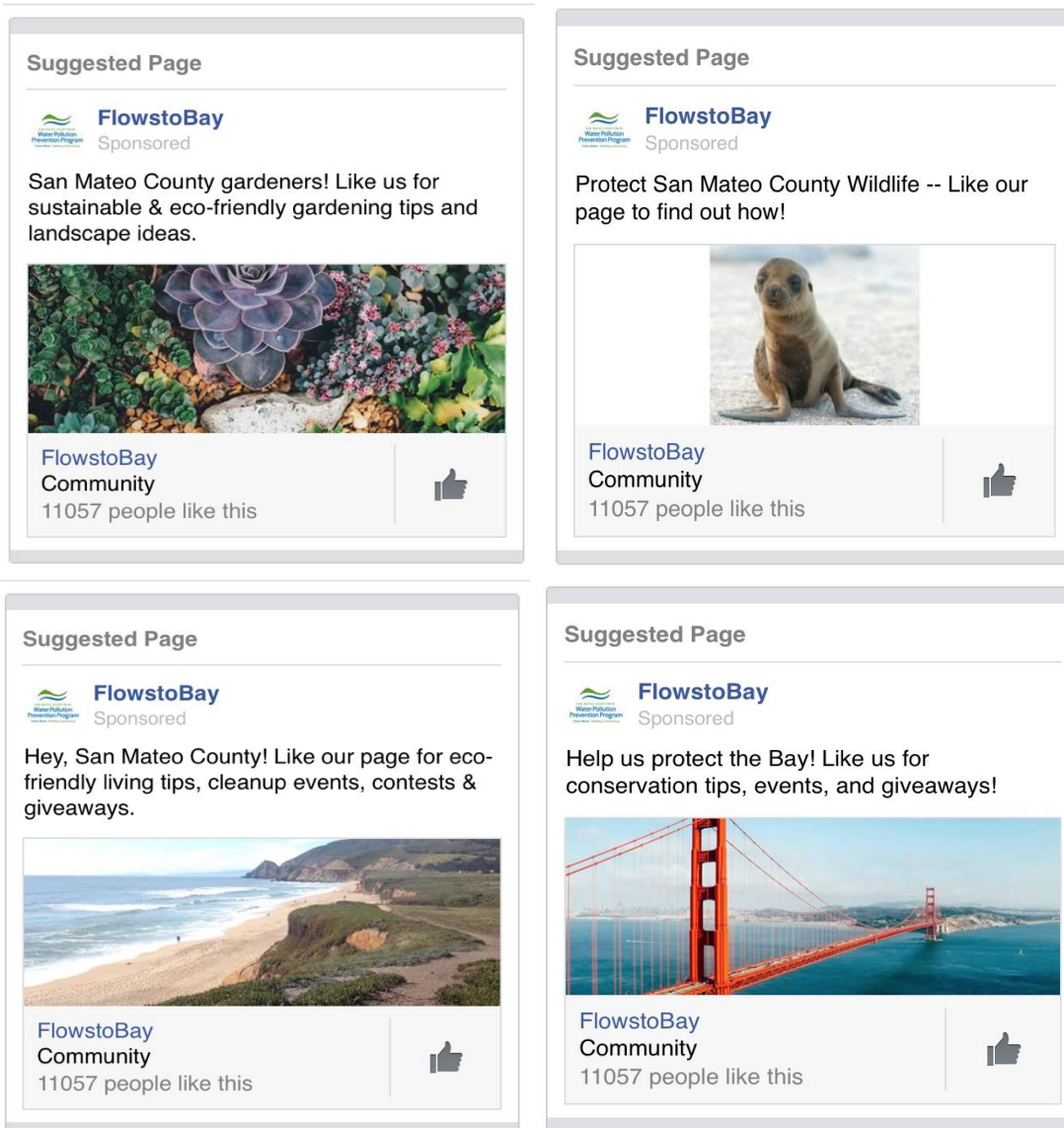


Figure 7-7. Example FY 2016/17 Facebook Advertisements

Newsletter

The SMCWPPP quarterly newsletter was utilized to publicize stormwater issues, watershed information, and stormwater pollution prevention options to residents. The community newsletter was sent out quarterly to our community newsletter subscriber list. SMCWPPP’s subscriber list reached a total of 2,643 subscribers in FY 2016/17. The following is a breakdown for each quarterly newsletter in the FY 2016/17 campaign:

Summer 2016 Newsletter

- 353 Recipients
- 26.1% Open Rate

- 4.5% Click Rate

Fall 2016 Newsletter

- 354 Recipients
- 26.6% Open Rate
- 7.1% Click Rate

Spring 2017 Newsletter

- 1,203 Recipients
- 24.4% Open Rate
- 4.4% Click Rate

Summer 2017 Newsletter

- 2,643 Recipients
- 28.1% Open Rate
- 5.3% Click Rate

SMCWPPP Website

The Program continued to maintain the SMCWPPP website (www.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, the creation of three new pages (rain barrel, stormwater resource plan and school outreach contest). 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 blog page for residents to review archived blog articles.
- Redesigned the rain barrel page.
- Created an "opt-in" map for residents to interact with the rain barrel page.
- Launched a webpage publicizing the school outreach page for residents.
- Launched a webpage to support and publicize the Stormwater Resource Plan (SWRP) that hosts: the SWRP, signups for the SWRP workshops, and a form collecting public feedback on the SWRP.
- Provided resources for 20,228 users with a total of 13,424 page views, allowing them to engage with content related to multiple topics (see website metrics chart below).
- Updated trainings page with latest reports and updates to provide transparent agency updates.
- Updated homepage components to allow general public to review up to date events pertaining to the SWRP, new blog articles and community events.
- Regularly updated events on website on a bi-monthly basis.

Additional website activities included:

- Monitored website visits on a daily and monthly basis.
- Used monthly data to inform decisions about which improvements to make to specific pages, for example the newsletter page.

Total statistics for website total visits, unique users, pageviews, and other significant website metrics for FY 2016/17 fiscal year are shown in Table 7-1.

Table 7-1. Cumulative data for the Flowstobay.org website for FY 2016-17

Time Period	Sessions (Total Visits)	Users (Unique)	Page Views (Unique)	New Visitors %	Returning Visitors %	Overall Bounce Rate
July 1, 2016 - June 30 2017	20,228	13,424	30,754	65.2%	34.8%	50%

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

Overview

SMCWPPP directly participated in eleven public outreach and citizen involvement events in FY 2016/17 in order to reach a wide array of residents in different parts of the County at popular events such as Earth Day festivals, the San Mateo County Fair and Coastal Cleanup Day. We tabled most events in person and also partnered with other County agencies (including CEH and the Office of Sustainability) and the individual Permittees to distribute our outreach materials and promote these events through their own channels.

SMCWPPP used online channels, such as Facebook, Twitter and the SMCWPPP website to promote events and gather volunteers. In addition, we collected a total of 349 signups from San Mateo County residents to join our email marketing program from the events we staffed. There was more of an emphasis however on one-on-one conversations about stormwater pollution and how residents can help reduce it with 773 total personal interactions. Event metrics are shown in Table 7-2.

Goals

- Educate residents on stormwater pollution prevention through personal interaction and educational materials.
- Build a database of contacts for residents interested in stormwater issues.
- Develop outreach partnerships with County agencies.

Tasks

- Create a database of events we will attend.
- Develop partnerships with County agencies and nonprofits.
- Promote events.
- Staff events.

- Provide post event summary and learnings.

Deliverables

- Event promotion materials.
- Post event summary table.

Outreach Materials

The following SMCWPPP items are given out at outreach events and 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’re the Solution” stormwater brochure - English and Spanish.
- Portable plastic ashtrays.
- Four children’s activity books: “Pest or Pal” (OWOW – Our Water, Our World), “Watershed Protection,” “Stormwater,” and “Don’t Be a Litterbug.”
- Children’s promotional materials with SMCWPPP logo/messages: pencils, fish and water drop erasers, crayons.
- General promotional materials with SMWPPP logo/messages: reusable bamboo utensils, stainless steel water bottles, fish carabiner, sunglasses, lunch bag, reusable chico bag (grocery style bags).
- “Dirty Dozen & Clean Fifteen” pocket guide to pesticides and produce.
- OWOW fact sheets and “Pests Bugging You?” booklet of fact sheets.
- OWOW low-flow hose nozzles.
- OWOW gardening gloves.
- “Too Toxic To Trash” comprehensive toxics disposal and pollution guide - English and Spanish.
- “Less Toxic Cleaning Alternatives” fact sheet - English and Spanish.
- The Healthy Home and Garden booklet.
- Used Oil and Filter Recycling Options postcard.
- Linked for Life list of recycling used oil and filter locations - English and Spanish.
- Rain Barrel Rebate application and post cards.
- Pet waste tip card/ fact sheet.
- Dog waste bag canisters.

New Outreach Materials Developed This Year (see Appendix 7)

- Stormwater tip cards - English, Chinese and Spanish.
- Rain barrel tip cards.
- Recycled water bottle pens.

Table 7-2. FY 2016-17 Public Outreach and Citizen Involvement Events and Metrics

Dates	Event Location	Event Name	Type of Event	Estimated Event Attendance	eNewsletter Signups	Estimated Reach
8/27/16	North Fair Oaks	Healthy Homes for Tenants	Public Outreach	N/A	N/A	N/A
9/17/16	San Mateo County	Coastal Cleanup Day	Citizen Involvement	4,339	N/A	N/A
9/24/16 – 9/25/16	Pacifica	Fog Fest	Public Outreach	850	86	175
1/26/17	San Carlos	Green Business Celebration & Networking	Public Outreach	200	35	50
4/1/17	San Mateo Event Center	Master Gardener's Spring Garden Market	Citizen Involvement	250	54	70
4/8/17	San Carlos	Earth Day at Shoreway Environmental Center (Rethink Waste)	Public Outreach	150	36	50
4/19/17	San Mateo	College of San Mateo Earth Day	Public Outreach	200	65	80
4/22/17	Pacifica	Pacifica Beach Coalition Ecofest and Earth Day of Action	Citizen Involvement	300	39	70
4/29/17	Belmont	Belmont Earth Day	Public Outreach	200	19	40
5/20/17	South San Francisco	Colma Creek Cleanup	Citizen Involvement	20	N/A	N/A
6/10/17 – 6/18/17	San Mateo	San Mateo County Fair	Public Outreach	116,000	15	238

Coastal Cleanup Day

Coastal Cleanup Day is a waterway and land cleanup held annually on the third Saturday of September. It is California's largest volunteer event of the year and brings community awareness to cleaning up and protecting the environment. This year Coastal Cleanup Day fell on September 17, 2016. 4,145 volunteers participated and picked up 22,788 pounds of trash and 3,882 pounds of recyclables. An estimated 347,206 pounds of debris has been removed since 2005 (Figure 7-8). Smchealth.org/ccd has accumulated a total of 3,435 pageviews, and 2,793 page entrances.

SMCWPPP promoted Coastal Cleanup Day by disseminating messaging, via social media, encouraging San Mateo County residents to attend Coastal Cleanup Day activities throughout the County.

Announcements and promotion were also conducted to our PIP members, via our monthly PIP newsletter and announcements at our PIP meetings. SMCWPP also distributed materials provided by CEH that promote Coastal Cleanup Day.

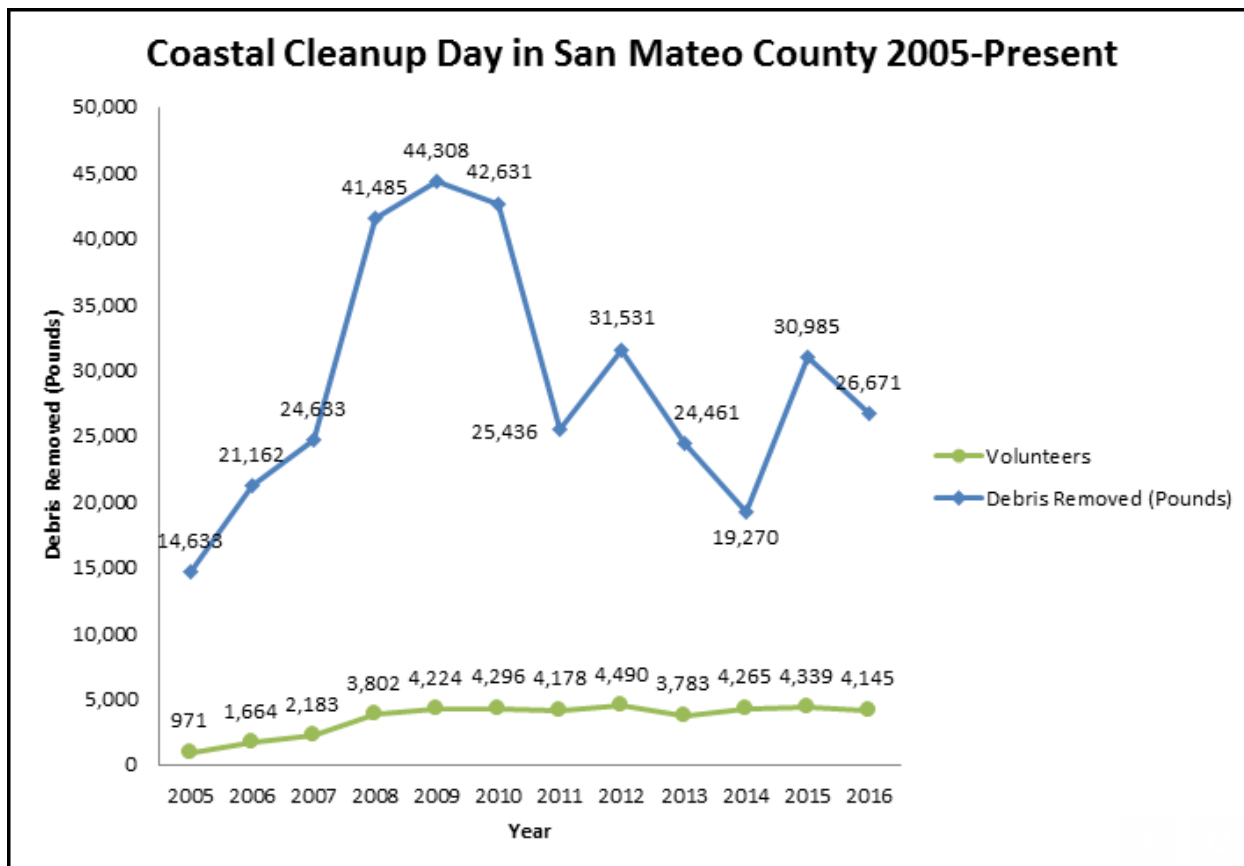


Figure 7-8. Debris Removed on Coastal Cleanup Day in San Mateo County from 2005 through 2016

C.7.e. Watershed Stewardship Collaborative Efforts

Rain Barrel Rebate Program

As described previously (Section C.7.b), during FY 2016/17 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. Over 1,000 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, social media content was posted on SMCWPPP's Facebook and Twitter social media platforms. Requests from partners to post and promote their messaging to our social media platforms included the following (see Appendix 7):

- Partner Event Promotion: 19 Posts

- Household Hazardous Waste: 6 posts
- Used Motor Oil/ Filter Recycling: 6 posts
- Wash Water Pollution Prevention: 6 posts
- Water Conservation Toolkit: 1 Post

Example Posts are shown in Figure 7-9.

FlowstoBay
January 17 · 🌐

Bob Reed's Auto Service in San Mateo is one of many auto stores that accepts used motor oil and filters from the public for free. Check out a list of local drop-off locations for easy disposal of electronics, used motor oil & filters, paint, fluorescent lights and batteries by clicking here.



Too Toxic To Trash | Flowstobay: San Mateo Countywide Water Pollution Prevention Program
Household hazardous waste (HHW) is considered to be any leftover or unused portions of chemical products you use in your kitchen, bathroom, garage,...

FLOWSTOBAY.ORG

347 people reached Boost Post

FlowstoBay
June 20 · 🌐

Attention mobile cleaning businesses: Make sure you aren't dumping your used water down storm drains. Wash water contains harmful pollutants and when it flows into storm drains it goes straight to local creeks, the Bay, and the Ocean without ANY treatment. Click here to see best management practices: <http://ow.ly/JPbtX>



Mobile Cleaning Business Best Management Practices (BMP's)
FLOWSTOBAY.ORG

FlowstoBay
April 26 · 🌐

Come out to Belmont's Earth Day Celebration this Saturday at Twin Pines Park. There will be a creek cleanup, children's activities, compost giveaways, environmental booths, prizes, fun, and more!



SATURDAY, APRIL 29 FROM 9AM-NOON @ TWIN PINES PARK
Event info: 650-595-7425

Thanks to our partners, many activities and resources will be available to the community during this event.

Belmont Earth Day Celebration 2017 | Flowstobay: San Mateo Countywide Water Pollution Prevention Program
FLOWSTOBAY.ORG

Figure 7-9. Example FY 2016/17 Social Media Posts Promoting Watershed Stewardship Collaborative Efforts

Collaborative Events

In FY 2016/17, SMCWPPP collaborated with partners to attend, host booths and distribute materials at three popular community events in San Mateo County (Table 7-3).

Table 7-3. List of FY 2016-17 Collaborative Events

Event	Location	Partner	Attendance
Coastal Cleanup Day	San Mateo County	CEH	4,339
Fog Fest	City of Pacifica	City of Pacifica	850
San Mateo County Fair	City of San Mateo	CEH and Office of Sustainability	116,000

C.7.f. School-Age Children Outreach

Overview

During January to March 2017, the FlowsToBay High School Green Infrastructure Contest solicited proposals for green infrastructure designs to apply at San Mateo County high school campuses. Four teachers led eight classes to submit proposals. Examples of the proposals submitted are shown in Figure 7-10. Participating teachers and classrooms were provided with a Green Infrastructure Toolkit and Contest Rules & Procedures to guide the students in their research, design, and presentation efforts. The students presented their proposals to the C/CAG Board of Directors (Figure 7-11). Teachers worked with approximately 200 10th - 12th grade students on these proposals, researching the benefits of green infrastructure in mitigating stormwater pollution issues that affected their high school campuses. Teachers selected the top proposals from their classes, which were then evaluated by SMCWPPP based on the criterion provided in the contest guidelines. Three top proposals were recognized with certificates and prizes.

The winning proposal was submitted by four students in Ms. Stephanie Owens' Biology and Environmental Science class at Menlo-Atherton High School. This proposal by students Alondra Perez Gomez, Danny Hernandez-Martinez, Kate Summers and Kevin Angel Gutierrez offered a solution to flooding in a parking lot that often makes student pick-up treacherous during the rainy season. Their design focused on replacing the impervious and slick asphalt throughout the parking lot with permeable pavement, which would allow stormwater runoff to infiltrate into the underlying soils, promoting pollutant treatment and groundwater recharge, and reducing flooding. The students also included a plan to place posters around the campus and near the affected areas to educate their classmates about permeable pavement, its purpose, and long-term benefits.

Table 7-4 summarizes teacher feedback on the high school green infrastructure contest.



Figure 7-10. Examples of Student Green Infrastructure Proposals for the High School Campuses



Figure 7-11. Students Presenting Proposal to the C/CAG Board of Directors

Materials Created

- FlowsToBay Contest Rules and Procedures.
- Teacher Green Infrastructure Toolkit.

Schools Reached

Menlo-Atherton High School, Atherton

- Teacher contact: Kristen Hughes, krhughes@seq.org.
- Course: Water: Environmental Chemistry.
- Students: 52.

Menlo-Atherton High School, Atherton

- Teacher contact: Stephanie Owens, sowens@seq.org.

- Course: Water: Biology and Environmental Science.
- Students: 60.

Carlmont High School, Belmont

- Teacher contact: Veronica Heintz, vheintz@seq.org.
- Course: Water: Green Technology and Engineering.
- Students: 40.

Woodside High School, Woodside

- Teacher contact: Shelley Coleman, scoleman@seq.org.
- Course: Water: California Liquid Gold CTE.
- Students: 46.

FUTURE ACTIONS

In FY 2017/18, SMCWPPP plans to continue working with the PIP Subcommittee to conduct the following activities to assist member agencies 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;
- Conduct outreach and involvement events as specified in the MRP and promote these events;
- Maintain and update SMCWPPP's www.flowstobay.org website as needed;
- Continue to support the Rain Barrel Rebate Program in partnership with BAWSCA, with C/CAG providing ongoing funding;
- Create a comprehensive program, sharing eco-friendly and stormwater pollution prevention practices, rebates and educational workshops with residents; and
- Build upon partnerships and expand the school outreach program to reach a larger portion of school aged children throughout San Mateo County.

Table 7-4. Summary of Teacher Feedback on the High School Green Infrastructure Contest

Name	Would you participate in this contest again next year?	Please explain your answer above.	Were the prompt and toolkit clear and detailed enough to guide your students through creating a green infrastructure project design for your school? If not, what would you recommend to improve them?	After this project, did your students demonstrate better knowledge of and/or interest in the problem of stormwater pollution and the importance of green infrastructure as a solution? If yes, in what ways was this new knowledge or interest demonstrated?	Are there other ways we could improve this contest to enhance students' grasp of stormwater pollution and green infrastructure solutions, as well as their role in addressing this issue?
Shelley Coleman	Yes	Possibly. Students were somewhat limited in ability to understand objective.	Examples of winners would be nice to see. Rubric was very convoluted and too long. Accessibility would be improved if entire submission was online.	Yes.	Simplify the process. Tell students if cost is an issue. Students have great ideas but there is no money to implement, so they tended to downscale considerably. Then it never happens on campus, and the problems continue to exist.
Stephanie Owens	Yes	I liked how the student's options were open-ended.	Yes. I would also include some recommended readings about each filtration strategy.	Yes, when we were out water testing at El Palo Alto park students mentioned that we need more rain gardens in the area. On campus, a new building has dry wells and the students picked up on that.	Well, since kids can't really implement anything at all, I would suggest adding value to a student-created drawing or sign. I know you suggested signage to be added to the presentation, but I think an actual rendering would help them to remember the project for years to come.
Kristen Hughes	Yes	Now that I know what the competition entails, it would be easier and I feel I could better incorporate it into my curriculum with advance notice.	No, I needed to adapt it for my students. I needed to source a lot of readings about different possible soft and hard scape options for them to learn from. I needed to adapt my regular storm water curriculum to add remediation options on campus.	I think they learned to look around them and see issues on campus. There was a lot of engagement in finding the problems around campus; less interest in the harder work to find solutions. My curriculum already included pollution in stormwater.	If you do the competition again next year I will include the chemical pollution testing and the hardscape/softscape remediation all in one project (this year we had already completed the chemical testing project)

Name	Would you participate in this contest again next year?	Please explain your answer above.	Were the prompt and toolkit clear and detailed enough to guide your students through creating a green infrastructure project design for your school? If not, what would you recommend to improve them?	After this project, did your students demonstrate better knowledge of and/or interest in the problem of stormwater pollution and the importance of green infrastructure as a solution? If yes, in what ways was this new knowledge or interest demonstrated?	Are there other ways we could improve this contest to enhance students' grasp of stormwater pollution and green infrastructure solutions, as well as their role in addressing this issue?
Veronica Heintz	Yes	This was a fantastic way to introduce the kids to green infrastructure--They got to apply it to something that matters to them and they can relate to!	Yes. I was only confused about the essay portion. I could not tell if that was required or not.	Yes! This is definitely true. I know they learned this because they have started applying it to other projects we have done since then and are audibly much more aware of the green infrastructure in their surroundings.	I was very thankful that you provided resources to aid in my very limited understanding, but I found the resources very confusing and almost endless. As a teacher, with no knowledge of green infrastructure myself, I didn't know where to start or how to gather all the information I needed to do the content justice. I found each link led to another and another and another link and I was lost about what resource I should stick to and where I should direct the kids for their own research and understanding. I found the San Mateo County Green Streets Design Handbook helpful, but so so long that there was no way I could read it all or expect the kids to.

SECTION 8

C.8 WATER QUALITY

MONITORING

On behalf of its member agencies, 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, a complete documentation of all water quality monitoring data collected from October 1, 2016 through September 30, 2017 (i.e., Water Year 2017 or WY2017) will be presented in SMCWPPP's Urban Creeks Monitoring Report, which will be submitted to the Water Board by March 31, 2018.

In addition, in accordance with MRP Provision C.8.f., Pollutants of Concern (POC) Monitoring, SMCWPPP will submit by October 15, 2017 a report describing the planned allocation of sampling effort for POC Monitoring for WY2018 and what was accomplished for POC Monitoring during WY2017. 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 Urban Creeks 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. Provision C.9 therefore 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 SMCWPPP member agency. 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 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.9, with input and assistance provided by the Parks Maintenance and IPM Work Group. Accomplishments included the following:

- Held two meetings of the Parks Maintenance and IPM Work Group. As mentioned in Section 2 (C.2 Municipal Operations), also held an additional joint meeting between the Public Works Municipal Maintenance Subcommittee and the Parks Maintenance and IPM Work Group.
- Developed periodic update documents with relevant pesticide-related news, events and regulatory developments for the Parks Maintenance and IPM Work Group.
- Conducted SMCWPPP's Annual Landscape IPM Training Workshop in March 2017.
- Continued coordinating with San Mateo County Agriculture / Weights and Measures.
- Continued to participate in the Department of Pesticide Regulation (DPR) grant to implement IPM techniques at multi-family residential buildings.
- Participated in relevant BASMAA and CASQA activities.

- Continued to maintain retail partnerships at 10 top-tier stores (e.g., Home Depot and OSH) within San Mateo County. Tasks included ordering materials, organizing outreach collateral, checking in with store managers, and providing outreach to residents.
- Educated hardware store employees to become program messengers and pass on the pollution prevention message to customers. Conducted five in-store trainings for store employees.
- Conducted outreach at community events to educate customers on less toxic alternatives to commercial pesticides and fertilizers.

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. Valerie Matonis from the City of Redwood City continued to chair the Work Group during FY 2016/17. It met two times with good participation by municipal staff, as shown by the attendance list, included in Appendix 9. In addition to these two meetings, the Parks Maintenance and IPM Work Group held a joint meeting with the Municipal Maintenance Subcommittee to discuss implementation and compliance with MRP Provision C.9 (Pesticides Toxicity Control) requirements related to municipal activities, including use of a pesticides tracking spreadsheet developed by SMCWPPP staff.

In FY 2016/17, SMCWPPP staff continued to develop a periodic update document describing relevant pesticide related news, events and regulatory developments, including upcoming IPM workshops and trainings. The update documents were distributed along with Parks and IPM Work Group meeting agenda packets.

Sixteenth Annual Landscape Integrated Pest Management Workshop

The sixteenth annual SMCWPPP Landscape IPM Workshop was held on March 8, 2017 at the City of Foster City's Library Community Center. The workshop was attended by 87 municipal staff and contractors and covered the following topics:

- Pesticides and Water Quality
- IPM for *Phytophthora* diseases and emerging pests from Southern California
- IPM for Landscape Management
- Bay-Friendly Landscaping Program and Principles for Municipal Landscape Management
- Implementing an IPM Program in the City of Davis
- Regulatory Update and Common Violations

Evaluation forms completed by the workshop's attendees included many positive comments and indicated that overall the workshop met their expectations. Appendix 9 includes the workshop agenda, attendance list and a summary of the evaluations. Other workshop materials are available on the SMCWPPP website (www.flowstobay.org).

Coordination with San Mateo County Agriculture / Weights and Measures

San Mateo County Agriculture / Weights and Measures staff attended both meeting of the Parks Maintenance and IPM Work Group and received information on water quality issues and the Municipal Regional Permit. In addition, SMCWPPP worked closely with San Mateo County Agriculture / Weights and Measures staff to provide Department of Pesticide Regulations Continuing Education Credits for participants in the Landscape IPM Workshop.

Department of Pesticide Regulation Grant

In May 2014, BASMAA received a Department of Pesticide Regulation (DPR) grant to implement IPM techniques at multi-family residential buildings. The project is focusing on structural pest controls that will be implemented in selected apartment buildings located in San Jose, East Palo Alto, Palo Alto and San Francisco. In FY 2016/17, SMCWPPP staff continued to participate in the grant project meetings and assisted with the development and review of project materials.

Participation in BASMAA and CASQA

Provision C.9.f requires Permittees to track and participate in regulatory processes relevant to pesticide toxicity control. During FY 2016/17, SMCWPPP accomplished this task by working with BASMAA and CASQA. For additional information, see *Pesticides Subcommittee Annual Report and Effectiveness Assessment - 2016-2017, California Stormwater Quality Association, Final Report, August 2017* (Appendix 11). In addition, SMCWPPP staff stayed current with pesticide controls and regulatory efforts by participating in selected CASQA Pesticide Committee meetings.

Point of Purchase Outreach

SMCWPPP conducted point-of-purchase outreach to home improvement store staff and customers at top-tier stores (e.g., Home Depot and OSH) with tips for proper use and disposal of pesticides and other lawn and garden chemicals. The purpose of reaching out to home improvement stores was twofold. First, store employees were educated about stormwater pollution and provided with pollution prevention tips and resources. This provides employees with the information needed to encourage San Mateo County residents to apply IPM practices and purchase lawn and gardening supplies accordingly. Second, program materials were provided directly to the public when they may be most receptive to hearing the message, via the point-of-purchase displays. All of these efforts helped to promote the regional Our Water Our World (OWOW) program.

SMCWPPP's training sessions consisted of educating associates about: (1) stormwater runoff, (2) where the local Household Hazardous Waste management facility is located, (3) their role in reducing pesticide use, (4) how to properly read a pesticide label, (5) the less-toxic pesticides sold in their stores, and (6) proper usage of pesticides and current pest problems/ less-toxic solutions to these problems. A total of 54 employees were trained at five stores. Table 9-1 shows the stores that received trainings for their employees and the hours spent at each store performing the following: (1) meeting with department heads/ managers to discuss current pest problems and training associates on such matters (maintenance/mentoring), (2) placing informational brochures of pest fact sheets in displays (pocket guide installation) (Appendix 9) and (3) displaying new shelf talkers (Appendix 9).

Table 9-1. FY 2016/17 San Mateo County IPM Instore Employee Trainings and Time Spent Updating the Display Materials

Store	Number of Associates Trained	Maintenance/Mentoring Time (hours)	Pocket Guide Installation Time (hours)	Shelf Talker Reset Time (hours)
Hassett's Hardware	15	0	0	0
Home Depot Colma	0	1	0.33	0
Home Depot Daly City	10	4	0.33	3
Home Depot East Palo Alto	0	0	0.33	0
Home Depot San Carlos	0	1	0.33	3
Home Depot San Mateo	13	4	0.33	3
Orchard Supply Hardware Foster City	11	4	0.33	3
Orchard Supply Hardware Millbrae	0	4	0.33	3
Orchard Supply Hardware Redwood City	0	0	0.33	0
Orchard Supply Hardware South San Francisco	5	2	0.33	0

Pest Control Contracting Outreach

During FY 2016/17, SMCWPPP implemented outreach, including outreach that directly targeted 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 the social media platforms Facebook and Twitter. Example social media posts are shown in Figure 9-1. The following is a breakdown of posts related to pest control promoted during FY 2016/17:

Facebook

- 12 posts
- 193 clicks/actions
- 6,502 reach

Twitter


- 3 tweets
- 16 engagements
- 1,289 impressions

In addition to social media posts, 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.

In addition, 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 to 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 was mailed to 47 businesses. Appendix 9 includes a copy of the letter.

FlowstoBay
July 18, 2016 · 🌐

Check out what Bay-Friendly gardeners are doing to maintain a healthy, less-toxic garden!



Managing Pests and Weeds Safely | StopWaste - Home, Work, School
Every gardener has to contend with unwelcome guests, be they plant or insect. Bay-Friendly gardeners seek to limit pest problems by fostering a healthy...
STOPWASTE.ORG

365 people reached Boost Post

👍 Rosa Navarro, Dilma Jurado and 5 others

👍 Like 🗨 Comment ➦ Share

FlowstoBay
July 28, 2015 · 🌐

NEED A PEST PROFESSIONAL? Check out our list of pest control operators trained in integrated pest management (IPM). They can help you get rid of unwanted insects while using less toxic products & practices.
<http://bit.ly/1S8JgyF>



Integrated Pest Management (IPM) Professionals
www.flowstobay.org

108 people reached Boost Post

👍 Like 🗨 Comment ➦ Share

FlowstoBay
July 27, 2016 · 🌐

Integrated pest management practices in the garden is a strategy that emphasizes less-toxic control solutions. Find out more about IPM practices here:



www.flowstobay.org
FLOWSTOBAY.ORG


406 people reached Boost Post

👍 5 🗨 1 Comment 1 Share

👍 Like 🗨 Comment ➦ Share

FlowstoBay
February 2 · 🌐

Ants: Friend or foe? Although Argentine ants are frequent invaders of homes, you may want to consider keeping a few around! Ants in moderate numbers can actually be beneficial because they eat many other pest insects, aerate the soil, and recycle dead animal and vegetable materials. Click here to find out how to prevent invasions and keep populations manageable using less toxic methods.



www.ourwaterourworld.org
OURWATEROURWORLD.ORG

174 people reached Boost Post

👍 Maureen Brown, Linda Kroosz and Leonora Jacobs

👍 Like 🗨 Comment ➦ Share



SMCWPPP @flowstobay
Did you know that litter, animal waste, auto fluids, and fertilizers and pesticides flow from storm drains into the bay and ocean untreated?
pic.twitter.com/9nstkEBzPA

Figure 9-1. Example Social Media Posts Promoting Pesticide Pollution Prevention

FUTURE ACTIONS

SMCWPPP activities planned for FY 2017/18 to assist member agencies comply with MRP requirements in Provision C.9 include the following:

- Continue to assist member agencies implement their IPM programs and policies, with input and assistance provided by the Parks Maintenance and IPM Work Group;
- Continue holding Parks Maintenance and IPM Work Group meetings twice per year;
- Continue to develop periodic update documents with relevant pesticide-related news, events and regulatory developments for the Parks Maintenance and IPM Work Group;
- Continue conduct annual landscape and/or structural IPM training workshops;
- Continue to coordinate with County Agriculture / Weights & Measures;
- Continue using signage and materials developed by BASMAA for the point-of-purchase program;
- Perform outreach messaging to residents on best practices for hiring pest control contractor certified in IPM via fact sheets, SMCWPPP's website (flowstobay.org), social media posts, and a quarterly newsletter; and
- Send direct mailers to pest control professionals that encourage IPM certification and education.

SECTION 10

C.10 TRASH LOAD REDUCTION

INTRODUCTION

Provision C.10 Trash Load Reduction tasks are implemented by each SMCWPPP member agency. 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. More detailed information about SMCWPPP's assistance in helping member agencies comply with MRP requirements in Provision C.10 is included in the following sections.

IMPLEMENTATION OF MRP PROVISIONS

MRP Provision C.10 (Trash Load Reduction) 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 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 an on-land 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.
- Maintain a Long-Term Trash Load Reduction Plan designed to achieve 100% trash reduction by July 2022.

During FY 2016/17, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.10 and the requirements listed above, with input and assistance provided by the SMCWPPP Trash Subcommittee and the Litter Work Group. Accomplishments included the following, which are further described later in this section:

- Coordinated and facilitated four meetings of the Trash Subcommittee and two meetings of the Litter Work Group.
- Assisted SMCWPPP member agencies in revising trash generation and management area maps and delineating trash full capture treatment areas in GIS.

- Continued to implement SMCWPPP’s Trash Assessment Strategy, including conducting nearly 500 on-land visual trash assessments at 186 sites, maintaining the on-line trash assessment database to allow member agencies access to “real-time” load reduction estimates, and providing guidance to member agencies on MRP operation and maintenance requirements and standard operating procedures for trash full capture systems.
- Collated and standardized data from 41 trash hot spot assessments and cleanups, and entered the data into the SMCWPPP hot spot database.
- Began creating the Draft *Litter Reduction Toolkit for Multi-family Dwellings* to provide guidance to member agency staff on BMPs for reducing litter at properties in San Mateo County.
- Distributed the report on *Litter Practices Recommendations for Solid Waste Franchise Agreements* to member agencies.
- Coordinated with the SMCWPPP Public Information and Participation Subcommittee (PIP) on countywide school outreach and countywide litter campaign branding efforts.
- Finalized and distributed maps to member agency staff of container overages and abandoned waste based on information from franchised haulers and municipal staff.
- Tracked the implementation of BASMAA’s Tracking California’s Trash project funded by the State Water Resources Control Board.
- Participated in the development and submittal of the *BASMAA Receiving Waters Trash Monitoring Program Plan*, which was in response to MRP provision C.10.b.v.
- Assisted member agencies in developing information necessary for reporting trash load reductions with their FY 2016/17 annual reports.

Participation and Coordination of the Trash Subcommittee

SMCWPPP’s 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 quarterly. Additional meetings are scheduled as necessary to address high priority issues.

During FY 2016/17, SMCWPPP staff facilitated four Trash Subcommittee meetings, which were chaired by Chris Sommers (EOA Managing Scientist). Participation by municipal staff in the Trash Subcommittee was good as shown by the FY 2016/17 attendance list which is included in Appendix 10.

During the Trash Subcommittee meetings in FY 2016/17, 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 member agency jurisdictions.
- BASMAA Receiving Water Monitoring Plan.
- FY 2016/17 Annual Report format for Provision C.10.
- SMCWPPP Trash Assessment Strategy, including on-land trash assessment locations in Trash Management Areas (TMAs).

- Corrections and/or revisions of baseline trash generation area maps originally submitted to the Regional Water Board in February 2014.
- The State Water Resources Control Board Proposition 84 Stormwater Monitoring and Planning grant project - *Tracking California's Trash*.
- Scoping of a SMCWPPP public education/outreach strategy on litter.
- Opportunities for collaboration with Caltrans.

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

SMCWPPP developed the *Pilot Trash Assessment Strategy* (Strategy) in FY 2013/14 on behalf of its member agencies. The Strategy was submitted to the Water Board on February 3, 2014 as part of member agency Long-Term Trash Load Reduction Plans, and is 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 full-scale in FY 2016/17 on behalf of and in collaboration with all member agencies.

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

Are the MS4 trash load reduction targets (i.e., 40%, 70%, and No Adverse Impacts) being achieved by SMCWPPP member agencies?

The primary environmental and programmatic indicators that SMCWPPP and member agencies currently track to answer this core management question are:

1. **Full Capture Systems** - The extent of areas effectively treated by trash full capture devices.
2. **Other Trash Controls** - Decreases in the levels of trash observed on-land and available to MS4s.
3. **Source Controls** – Reductions in the levels of litter prone items subject to source controls that observed in the environment.
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).
5. **Direct Discharge Programs** – The extent and magnitude of trash removed or prevented from entering a receiving water body from sources directly impacting those water bodies (e.g., illegal dumping into or illegal encampments in creeks).

In selecting the indicators above, SMCWPPP member agencies recognized that no one indicator could provide the information necessary to effectively determine progress made in reducing trash discharged from stormwater conveyance systems. 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 2016/17. Methods used to assess indicator 5 have not been implemented to-date because no member agency has submitted or implemented a direct discharge plan as outlined in the MRP. Additional information and the results of data collected to support indicators 1 - 4 can be found in the Annual Reports (see Sections 10 – Provision C.10.b.ii Parts A and B) of individual member agencies.

1. Full Capture Systems (Including Operation/Maintenance)

Devices and facilities meeting the trash full capture design criteria described in the MRP are effective trash controls if adequately maintained to ensure their capture efficiency. Consistent with the Long-Term Plan Framework and discussions with Regional Water Board staff, 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”. Additional trash reductions, therefore, are not needed in areas draining to and treated by, full capture devices.

In an effort to delineate the areas draining to full capture devices, SMCWPPP and member agencies have spent considerable time identifying and mapping these areas using a combination of field work and Geographical Information Systems (GIS) during FYs 2013/14, 2014/15, 2015/16 and 2016/17. Newly installed full capture devices are delineated and mapped as part of an annual update of individual member agency GIS full-capture device data layers. As a result, all drainage areas have been delineated for all devices installed to-date in San Mateo County. Trash reductions associated with these areas are calculated based on the baseline trash generation rates established on member agency trash generation maps.

Additionally, SMCWPPP completed the development of a Model Trash Full Capture Device O&M Verification Program in FY 15-16. 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 16-17, SMCWPPP continued to provide guidance to member agencies on MRP operation and maintenance requirements and standard operating procedures developed for member agencies as part of the Model Verification Program. Member agencies 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. Information regarding maintenance and operation of full capture devices (and any issues arising from the devices) can be found in member agency Annual Reports (see Sections 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 the on-land visual trash assessment (OVTA) protocol developed by Bay Area stormwater programs to observe changes in the levels of trash on streets, sidewalks and properties over time. The assessment protocol scores 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 member agencies. 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, on average conducting between 4 and 6 assessments at a site will allow detection of trash levels within an acceptable level of confidence. Currently, SMCWPPP annually conducts between 2 and 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 2016/17, results from assessments conducted in both FY 2015/16 and FY 2016/17 were averaged.

During FY 2016/17, SMCWPPP staff conducted nearly 500 OVTAs at over 180 assessment sites (averaging 1,000 feet in length). All sites (except for 59) were assessed a minimum of twice during FY 2016/17, with most sites being assessed three times. The results of the assessments were incorporated into member agency trash reduction estimates reported in Section C.10 (Provision C.10.b.ii Part B) of their FY 2016/17 Annual Reports. Additional assessments are planned for FY 2017/18, consistent with the SMCWPPP Trash Assessment Strategy. Since June 2014, SMCWPPP staff has conducted 1,800 OVTAs in San Mateo County.

Assessment results are stored in SMCWPPP's on-line *Visual Trash Assessment Database*. In FY 2016/17, SMCWPPP staff entered assessment results within one week of conducting an assessment, which allowed member agencies access to the results in relatively "real-time."

3. Source Controls (Via Surveys and Characterization Studies)

SMCWPPP member agencies have implemented 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 member agencies to eliminate the distribution of single-use plastic grocery bags and expanded polystyrene (EPS) food service ware in their jurisdictions. To assist member agencies in determining to what degree these ordinances have reduced the level of these products found in the environment, SMCWPPP staff utilized the findings of a study conducted in Santa Clara County between March 2015 and July 2017. As part of study, debris and trash were collected from large and small full-capture treatment systems within jurisdictions who 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 SMCWPPP member agencies 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)

Member agencies are also allowed to claim up to 10% trash load reduction for conducting trash cleanups in local water bodies above and beyond cleanups required by the MRP. SMCWPPP staff assists member agencies 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 member agency 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 one time per year for the term. To assist Permittees in meeting this requirement, SMCWPPP staff 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

cleanup activities conducted during the reporting period. Trash Hot Spot Activity Reports for individual Permittees are included in member agency Annual Reports.

During FY 2016/17, member agencies continued conducting annual cleanups and assessments required by the MRP. Results from this year's annual cleanups indicated that a total of 41 trash hot spot assessments and cleanups were conducted within SMCWPPP member agency jurisdictions.¹ Approximately 435 cubic yards of trash was removed from these hot spots during FY 2016/17. 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

MRP 2.0 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, and includes a robust monitoring design that will answer monitoring/management questions outlined in the MRP. A total of 225 creek, river and Bay shoreline sites (region-wide) are proposed for monitoring over the course of two years. Results will help inform future 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 is currently reviewing the comments and developing a response, including revisions to the Plan. Trash monitoring/assessment is scheduled to begin in October 2017 following approval by the Regional Water Board's Executive Officer.

Tracking California's Trash – Proposition 84 Grant

In 2013, BASMAA was awarded a Proposition 84 Stormwater Monitoring and Planning grant by the State Water Resources Control Board for a project entitled "Tracking California's Trash." SMCWPPP staff and member agencies actively participated in this project through FY 2016/17, when the project was completed. The project included three major tasks: 1) an initial evaluation of methods to monitor trash in the water column of receiving waters; 2) evaluating the on-land visual trash assessment (OVTA) method; and 3) evaluating the trash reduction performance of street sweeping and curb inlet screens. The project was funded for \$870,000, not including the over \$200,000 in match that was provided by the project partners, which included the City of San Jose, Oakland, Fremont and the Five Gyres Institute.

Evaluation of Water Column Monitoring Methods

As part of the project, the Five Gyres Institute conducted seven receiving water monitoring events at four sites (i.e., Colma Creek, San Mateo Creek, Coyote Creek and Arroyo Seco (Los Angeles)) between March

¹ Only hot spot cleanups and assessments conducted in compliance with MRP provision C.10.b.iii are included in the numbers presented in this paragraph. Some SMCWPPP member agencies 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 member agency Annual Reports for additional information.

2015 and May 2016. The Cities of San Jose, South San Francisco and Santa Mateo and the County of San Mateo participated in the receiving water monitoring portion of the project. The final project report can be found at <http://basmaa.org/Announcements/tracking-cas-trash-creek-monitoring-report>. The following findings were developed as a result of the project:

- Although the Project Team was successful in testing monitoring equipment, it ran into numerous issues that limited the project scope, including those related to permitting and safety.
- Sampling equipment used during the study was able to measure trash concentrations in the water column of creeks during base flow and small storm events, however, the deployment of equipment was very challenging and sampling during moderate to high flows was not feasible or safe with the equipment tested.

Evaluation of the OVTA Method

The evaluation of the OVTA protocol was conducted at seven study areas located in the cities of Fremont, Oakland, and San Jose. Quantitative monitoring of trash were conducted side-by-side with OVTAs were conducted at these sites. Quantitative monitoring included the removal of trash from streets, sidewalks, and storm drain inlets. The trash collected was characterized in terms of weight, volume, and item counts. OVTAs were conducted before, after and between street sweeping, and before and after rainfall events. Additionally, the results of approximately 3,100 OVTAs conducted at roughly 1,200 assessment sites by SMCWPPP and SCVURPPP were utilized to address the project's monitoring questions. The final project report can be found at <http://basmaa.org/Announcements/tracking-cas-trash-on-land-visual-assessments>. Findings from the study included the following:

- The relationships established between the volumes of trash observed on-land (streets and sidewalks), the trash volumes collected within storm drain inlets, and OVTA scores supports the use the OVTA protocol as an effective method to establish baseline trash generation and assess progress towards stormwater trash reduction goals.
- Average OVTA scores observed at roughly the mid-point between street sweeping events can adequately predict the volumes of trash that reach storm drain inlets and are available for transport to receiving water bodies.
- Because OVTA scores vary at moderate levels over time at sites, a few observations (2 to 4) at a site may provide the data necessary to establish a baseline level trash generation with a reasonable level of confidence.
- To demonstrate an improvement in an OVTA score at a site, municipalities should plan on conducting between 3 and 9 assessments at each site over a selected averaging period (e.g., two years).

Performance of Street Sweeping and Curb Inlet Screens as Trash Controls

For the street sweeping and curb inlet screen performance evaluation project, a total of 32 monitoring/assessment events were performed between late February 2015 and April 2016. The cities of Oakland, Fremont and San Jose collaborated on this portion of the project. The following findings were developed as a result of the project:

- Trash generally accumulated on streets at a much higher rates than sidewalks. Trash present on sidewalks, however, likely provides a consistent supply of trash to streets, which suggests that reductions in the amounts of trash on sidewalks adjacent to streets will assist municipalities in reducing the amount trash that is ultimately discharged by stormwater conveyances.

- Approximately 15-20% of the trash that accumulated on streets & sidewalks at the site monitored reached storm drain inlets.
- On average, between 66% and 99% of the trash present on streets at the study sites was removed by street sweeping. In areas generating “very high” levels of trash, sweeping 5x per week appears to reduce trash to “high” levels (i.e., 10-50 gallons/acre yr⁻¹). In areas generating “high” levels of trash, sweeping 1-2x per month appears to reduce trash to “moderate” trash generating levels (i.e., 5-10 gallons/acre yr⁻¹). Curb inlet screens significantly reduce the amount of trash transported to storm drain inlets from streets and sidewalks.
- Curb inlet screens appear to block approximately 65-70% of the trash (by volume) that would have entered an inlet if the screens were not in place. Additionally, inlet screens installed in “high” trash generating areas (in combination with street sweeping 2x per month) appear to achieve the full capture equivalency goal of 0-5 gallons per acre yr⁻¹.

Coordination with San Mateo Countywide Recycling Committee

To increase coordination among solid waste and recycling programs and SMCWPPP member agency 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 2016/17, 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.

Continuation of the Litter Work Group

Formed in March of 2014, SMCWPPP’s Litter Work Group continued in FY 2016/17. The Work Group coordinated litter reduction efforts among SMCWPPP, waste and stormwater program staff from municipalities of San Mateo County, the San Mateo Countywide Recycling Committee and waste collection and processing companies serving those jurisdictions. Representatives from the local hauling community; Rethink Waste (the South Bayside Waste Management Authority); stormwater and trash program municipal staff; and community members working on litter reduction efforts both in Santa Clara County and San Mateo County, attended three meetings in fiscal year 2016/17. The goals of the group are to develop a litter reduction program for San Mateo County related to waste issues and specific to its needs; develop BMPs for the waste collection industry; educate the public and those involved with litter control efforts; and to coordinate and share information with the Zero Litter Initiative in Santa Clara County.

The Litter Work Group completed the following tasks in FY 2016/17:

- Held meetings on the following dates: January 11 and June 30. Participation by municipal staff in the Work Group was good as shown by the FY 2016/17 attendance list which is included in Appendix 10. In addition to municipal staff, attendees included Recology - San Mateo County and South San Francisco Scavenger.
- Updated the FY 2016/17 Litter Work Group Work Plan with an additional task to create a toolkit of prioritized recommendations for municipal staff to reduce litter at Multi-Family Dwellings (MFDs) in their jurisdictions. The updated Work Plan is included in Appendix 10.
- Began creating a draft MFD Litter Reduction Toolkit for Municipal Staff with metrics and BMPs for reducing litter at properties in San Mateo County. The draft Toolkit will be finalized in FY 2017/18 and included in next year’s Countywide Program Report.

- Developed the FY 2017/18 Litter Work Group Work Plan including: finalizing the MFD Litter Reduction Toolkit; supporting the Litter Work Group meetings, organizing the 3rd Litter Roundtable with the theme of code enforcement and participation from municipal legal counsels, assisting the PIP Subcommittee with MFD improvements, and other countywide coordination efforts. The Work Plan is included in Appendix 10.
- Distributed the report on “Litter Practices Recommendations for Solid Waste Franchise Agreements” about reducing litter related to waste hauling in the County and coordinated with Rethink Waste on franchise agreement extension negotiations.
- Coordinated with the SMCWPPP PIP Subcommittee on countywide school outreach and countywide litter campaign branding efforts and attended three PIP Subcommittee meetings.
- Coordinated with PIP Subcommittee consultant, SGA, on tasks to reduce litter at multi-family dwellings in FY 2017/18.
- Finalized and distributed maps of container overages and abandoned waste in each participating jurisdiction to permittee staff using data collected from the franchised haulers and municipal staff.

FUTURE ACTIONS

FY 2017/18 activities that are planned by SMCWPPP to assist member agencies 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 on-land assessment database.
- Continued support for long-term plan implementation and control actions for trash management.
- Continued calculation and reporting on trash load reductions for each member agency.
- 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 FY 2017/18 Annual Report submittal.
- Continued implementation of the Litter Work Group Work Plan tasks, including completion of the Litter Reduction Toolkit for MFDs; and coordination and planning of the 3rd Litter Roundtable with municipal solid waste/recyclables haulers, in coordination with the San Mateo Countywide Recycling Committee and Permittee staff.
- Continued coordination and information sharing with the SMCWPPP PIP Subcommittee on countywide litter efforts.
- Continued coordination and information sharing with the Zero Litter Initiative in Santa Clara County.
- Implementation of the Trash Receiving Waters Monitoring Program Plan in San Mateo County creeks and shorelines.

- Identification and assessment trash generation on land areas >10,000 ft² that drain to private inlets, but connect to 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.
- Continued coordination with the GI and New Development Subcommittees (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 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 has been accomplished through participation in BASMAA regional projects.

Projects that address PCBs in addition to mercury and are described below in this section rather than Section 12 (PCBs Controls).

IMPLEMENTATION OF MRP PROVISIONS

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

SMCWPPP's and its member agency's activities to address MRP Provisions C.11/12.a., Implement Control Measures to Achieve Mercury/PCBs Load Reductions, are described in a separate report (*Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*) that is presented in Appendix 12.

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 pollution prevention, source control, and treatment control measures, including source control, stormwater treatment, green infrastructure, and other measures. SMCWPPP and its member agencies addressed this requirement 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 Executive Officer of the Regional Water Board.

Beginning with this 2016/17 Annual Report, Permittees must report on the use of the methodology to demonstrate progress toward achieving the mercury and PCBs load reductions required in this permit term. San Mateo County load reductions are described in the separate report mentioned in the previous section (*Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 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 the separate report mentioned in the previous section (*Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 contains the report.

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 worked proactively to make an early start on development of approaches for quantifying mercury and PCBs loads in San Mateo County, and developing approaches to performing the RAA to demonstrate that future control measures will provide sufficient pollutant load reductions to meet the permit requirements and countywide portions of TMDL wasteload allocations. The first step in this process included the 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.

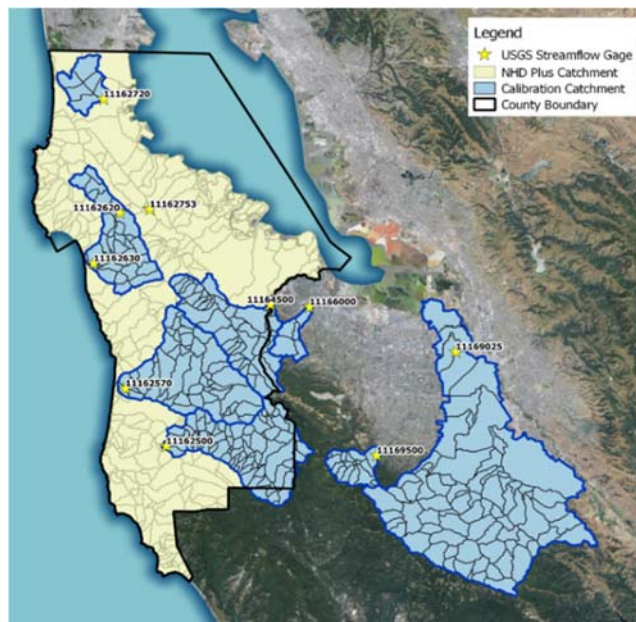


Figure 11-1. Model Domain of San Mateo County RAA

Early development of the baseline model provided SMCWPPP an opportunity to test methods for quantifying baseline mercury and PCB loads, and compare these loads with County portions of TMDL wasteload allocations for estimation of necessary load reductions to be met with control measures, including both green infrastructure and source controls. This provided SMCWPPP an opportunity to discuss early model results and share lessons learned with the Water Board and BASMAA, which contributed to recommendations in the BASMAA Bay Area Reasonable Assurance Analysis Guidance Document (RAA Guidance) completed in June 2017. For example, SMCWPPP developed methods for linking results of the LSPC baseline model with modeling assumptions produced by SFEI's Regional Watershed Spreadsheet Model (RWSM) for representation of baseline PCB loads. Linking to RWSM

takes advantage of the region-wide calibration efforts utilizing monitoring data collected throughout the Bay Area, and overcomes the limitations of model calibration based on the smaller PCBs monitoring dataset within the County. Results of this investigation were incorporated within the RAA Guidance.

SMCWPPP began linking 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 SWRP for LID retrofit, Green Streets, and regional stormwater capture projects, as well as projects of LID for new and redevelopment (C.3) and green infrastructure projects currently constructed. These efforts will continue into FY 2017/18, with results that will inform green infrastructure plan development.

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

Permittees are required to prepare a plan and schedule for mercury and PCBs control measure implementation and 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 begun developing modeling approaches for quantifying mercury and PCBs loads in San County and conducting the RAA. SMCWPPP will continue these efforts into FY 2017/18, along with continuing to develop a longer-term control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations.

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 its member agencies 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 (CEH). Fish Smart builds upon the San Francisco Bay Fish Project (www.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 2016/17, CEH conducted the following activities that target at-risk populations (e.g., subsistence fisherman) via its Fish Smart program:

- Maintained signs that were previously posted by CEH at 12 locations along the Bay's shore (e.g., at fishing piers) in the Cities of Brisbane, Burlingame, Redwood City, San Mateo, and South San Francisco.
- Provided new signs to the North Fair Oaks Community Center, Docktown Marina, and 9 fishing supply stores
- Continued to distribute educational materials (i.e., a Fish Project brochure entitled "Guide to Eating Fish and Shellfish from San Francisco Bay") at targeted locations:
 - CEH provided 50 brochures each to 4 marinas in San Mateo County.
 - CEH provided 50 brochures to Save Our Shores, a non-profit that works with boaters.
 - CEH attended 6 community health fairs and the San Mateo County Fair, where brochures were provided and where a spinning wheel game was played. Over 1,500 people were reached regarding Fish Smart and other CEH programs.
 - CEH provided brochures to 11 fishing supply stores in San Mateo County.
- Included a Fish Smart article in the Pollution Prevention Post Newsletter which was distributed to over 5,000 people electronically, and 800 people via hard copy.
- Presented the Fish Smart program to 14 San Mateo County employees from various departments.
- Posted an entry dated March 28th, 2017 about Fish Smart on the CEH blog which has been viewed 17 times based on a web page analytic report.
- Posted 3 social media posts on the program totaling 16,517 impressions combined.
- Maintained the smchealth.org/fishsmart webpage which received 538 views over a 10 month period

Cumulatively, CEH had over 23,000 electronic or in person Fish Smart program impressions for FY 2016/17.

FUTURE ACTIONS

SMCWPPP activities that are planned for FY 2017/18 to assist member agencies 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 (*Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 contains the report.

SMCWPPP also plans to continue to:

- Develop the RAA to support green infrastructure plan development and demonstration of mercury and PCBs load reductions to meet goals set by the MRP and TMDLs. 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 the development of green infrastructure plans.
- Develop a longer-term control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations.
- Assist its member agencies comply with the risk reduction program requirements by coordinating with and reporting on the Fish Smart program conducted by CEH. CEH plans to continue all of the Fish Smart activities described above.

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

SMCWPPP's and its member agencies' activities to address MRP Provisions C.11/12.a., Implement Control Measures to Achieve Mercury/PCBs Load Reductions, are described in a separate report (*Load Reduction Reporting and Control Measures Plan for Mercury and PCBs in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*) that is presented in Appendix 12.

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

For a description of SMCWPPP's and its member agencies' activities to address MRP Provisions C.11/12.b., please see Section 11 (C.11 Mercury Controls) and the separate report mentioned in the previous section (*Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 contains the report.

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

For a description of SMCWPPP's and its member agencies' activities to address MRP Provisions C.11/12.c., please see Section 11 (C.11 Mercury Controls) and the separate report mentioned in the previous sections (*Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 contains the report.

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

As described in Section 11 (C.11 Mercury Controls), SMCWPPP has begun developing modeling approaches for quantifying mercury and PCBs loads in San Mateo County and conducting the RAA. SMCWPPP will continue these efforts into FY 2017/18, along with beginning to develop a longer-term control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations.

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

MRP 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. PCBs are most likely present in material applied during the 1970s, so the focus of this investigation is on structures installed during this era. Permittees are required to collect at least 20 composite samples (throughout the permit-area) of caulk and sealants used in storm drains or roadway infrastructure in public rights-of-way and analyze this material for PCBs using methods that can detect a minimum PCB concentration of 200 parts-per-billion. Permittees are required to report the results of this investigation (including all data gathered) no later than the FY 2017/18 Annual Report.

To achieve compliance with Provision C.12.e, MRP Permittees have agreed to collectively conduct this sampling via a BASMAA regional project. SMCWPPP staff is participating in this regional project, including serving as the BASMAA project manager. This effort also contributes to partial fulfillment of pollutants of concern (POC) monitoring required in Provision C.8.f of the MRP to address source identification, one of the five management information needs identified in the MRP. Source identification monitoring focuses on identifying which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff.

In February 2017, BASMAA selected a consultant team to develop a study design for the caulk investigation and implement sampling for this investigation under the direction of a project management team (PMT) consisting of members of the BASMAA Monitoring and Pollutants of Concern (MPC) Committee. This project team has accomplished the following tasks through the end of FY 2016/17:

- Developed an overall project schedule.
- Developed draft and final study designs.
- Developed draft Sampling and Analysis Plan and Quality Assurance Project Plan.
- Developed screening criteria to inform selection of infrastructure for sampling.
- Began outreach efforts to recruit municipal partners to participate in the project.

Over the next fiscal year (FY 2017/18), the project team expects to complete all sampling and reporting for this project. The BASMAA PMT will continue to oversee the consultant team and ensure timely completion of all project deliverables, including a draft and final project 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 ppm or greater in applicable structures at the time such structures undergo demolition, so that PCBs do not enter municipal storm drain systems. Applicable structures include, at a minimum, non-residential structures constructed or remodeled between the years 1950 and 1980 with building materials such as

masonry and concrete with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt. Also, a Permittee is exempt from this requirement if it provides evidence acceptable to the Executive Officer in its 2016/17 Annual Report that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

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

1. 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;
2. A method for identifying applicable structures prior to their demolition; and
3. 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.
- 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 is continuing to conduct a multi-year regional project to assist MRP Permittees to achieve compliance with Provision C.12.f. SMCWPPP staff is continuing to participate in this regional project, including serving as the BASMAA project manager. The project is developing guidance materials, tools, protocols and training materials and conducting outreach. The goal is to assist Permittees to develop local programs to prevent PCBs from being discharged to municipal storm drains due to demolition of applicable buildings. Local agencies will need to tailor the BASMAA products for local use and train local staff to implement the new program.

During the previous fiscal year (FY 2015/16), BASMAA completed most of the first phase of the regional project, which was to prepare a scope-of-work and budget for developing the regional guidance materials, tools, protocols and training materials and conducting outreach.

Accomplishments during FY 2016/17 included:

- Revised and finalized the draft of a scope-of-work and budget developed during FY 2015/16.
- Convened a BASMAA Steering Committee to provide project oversight and guidance during the remainder of the project. The Steering Committee includes BASMAA Directors, countywide stormwater program staff, and Permittee staff from various relevant municipal departments. The Steering Committee held an initial meeting on June 19, 2017.
- Developed the project Technical Advisory Group (TAG), a small balanced advisory group formed from industry, regulatory, and Permittee representatives to provide review and input on selected project work products. The TAG is comprised of seven persons, with two representatives each from industry and state/federal regulatory agencies and three Permittee representatives (from large, medium and small municipalities).

- Developed drafts of the following initial project deliverables and distributed for review:
 - Coordination/communication strategy & overall project schedule.
 - Technical memorandum summarizing any new information & decisions needed by BASMAA at outset, including annotated table of regulatory drivers and relevant requirements.
 - Technical memorandum with state of the practice for ID of PCBs-containing building materials.
 - Industry stakeholder outreach materials.
 - Prioritized list of building materials potentially containing PCBs at ≥ 50 ppm.
 - Stakeholder contacts lists.
 - A memorandum describing the TAG, including its purpose, tasks, and proposed membership.

The project is continuing during FY 2017/18 with the overall schedule calling for completion of all project deliverables by the end of the fiscal year, with the exception of some training materials that will be completed early in FY 2018/19. Products under development during FY 2017/18 include:

- A protocol for pre-demolition building assessment for priority PCBs-containing materials.
- Model language for municipal adoption (e.g., via ordinance) of a new program to manage PCBs materials during building demolition, CEQA documents, and model supporting staff reports and resolutions, for each local agency to use as appropriate given its procedures.
- Supplemental demolition permit application materials, including forms, process flow charts, and applicant instructions.
- A conceptual approach for an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the new programs for controlling PCBs during demolition.
- Training and outreach materials to support implementation of the new program.

The BASMAA Steering Committee will continue to meet periodically to oversee development of the project deliverables. In addition, an initial TAG meeting and separate industry and regulatory stakeholder roundtable meetings will be conducted early in FY 2017/18 and full stakeholder group meetings will be held later in the fiscal year.

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

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. Permittees are required to submit in their FY 2016/17 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule.

This provision is being addressed through a multi-year project by the Regional Monitoring Program (RMP) to develop a series of conceptual models of PCBs in Priority Margin Units (PMUs). The PMU conceptual models represent four representative urban embayments along the Bay shoreline that integrate available information. The PMU conceptual models are intended to provide a foundation for future monitoring to track responses to load reductions and may eventually help guide planning of management actions. Three of the selected embayments receive drainage from pilot watersheds that were included in BASMAA's Clean Watersheds for a Clean Bay project. RMP documents available at the links below provide information that addresses this MRP requirement.

A general description and multi-year budget for this project is in the "PCBs" section of the RMP Multi-Year Plan available at:

http://www.sfei.org/sites/default/files/biblio_files/2017%20RMP%20Multi-Year%20Plan%20FINAL%20Approved%2020170117%20clean_rev_0.pdf

For background, objectives, project status, specific activities and a working schedule for the remaining deliverables summarized in the pilot/special study proposal for 2017 (approved by the RMP Steering Committee meeting on July 19, 2016), see pages 142-145 in the meeting packet available at:

<http://www.sfei.org/sites/default/files/events/20160719%20Bay%20RMP%20SC%20Agenda%20Package.pdf>

As of July 2017, the status and schedule for the conceptual model reports of individual PMUs is:

- Emeryville Crescent: final report April 2017, available at http://www.sfei.org/sites/default/files/biblio_files/Emeryville%20Crescent%20Draft%20Final%20Report%2005-02-17%20Final%20Clean_0.pdf
- San Leandro Bay: Phase 1 (interim) report June 2017, available at http://www.sfei.org/sites/default/files/biblio_files/Yee%20et%20al%202017%20Conceptual%20Model%20Report%20San%20Leandro%20Bay%20Phase%201.pdf; Phase 2 report (with additional monitoring data and conclusions/recommendations) planned for late 2017.
- Steinberger Slough: final report planned for late 2017.
- Richmond Harbor: draft partial report planned and budgeted for 2018, final report, originally proposed for 2018 (including integrative discussion of all 4 conceptual models), deferred until 2019 due to limited funding.

During FY 2016/17, BASMAA representatives to the RMP participated in the RMP PCBs Work Group's ongoing oversight of this project including:

- Design of Water Year 2017 monitoring in San Leandro Bay using supplemental funds to support robust development of the second conceptual model report in that PMU, and review of Phase 1 monitoring results.
- Review of the draft and/or final draft report deliverables for Emeryville Crescent and San Leandro Bay.

C.12.h. Risk Reduction Program

SMCWPPP is assisting its member agencies 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 (CEH). Please see Section 11 for additional details.

FUTURE ACTIONS

SMCWPPP activities that are planned for FY 2017/18 to assist member agencies 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 (*Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017*). Appendix 12 contains the report.

SMCWPPP also plans to continue to:

- Develop the RAA to support green infrastructure plan development and demonstration of mercury and PCBs load reductions to meet goals set by the MRP and TMDLs. 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 the development of green infrastructure plans.
- Develop a longer-term control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations.
- Participate in the BASMAA regional project to 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 in compliance with Provision C.12.e., including serving as the BASMAA project manager.
- Participate in the BASMAA regional project to develop an implementation framework, guidance materials, and tools to assist Permittees in developing programs to manage PCBs-containing materials and wastes during building demolition in compliance with Provision C.12.f., including serving as the BASMAA project manager.
- 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. One focus will be the conceptual model under development for Steinberger Slough in San Mateo County.
- Assist its member agencies comply with the risk reduction program requirements by coordinating with and reporting on the Fish Smart program conducted by CEH. CEH plans to continue all of the Fish Smart activities described above.

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 2016/17, 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 2016/17, 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 (www.flowstobay.com). Construction site inspectors received the information during the February 1, 2017 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 September 21, 2016 (see Section 6, Construction Site Control).

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. The Our Water Our World Maintenance Tips for Pools, Spas, and Fountains are available on the SMCWPPP website.

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 member 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 (www.flowstobay.org). Industrial inspectors receive information on this topic during SMCWPPP's CII training workshops.

FUTURE ACTIONS

FY 2017/18 activities planned by SMCWPPP to assist member agencies 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 2017/18 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 2017/18 Stormwater Business Inspector Training Workshop to assist them with ensuring through routine industrial facility inspections that proper BMPs are in place at industrial facilities likely to use copper or have sources of copper.
- Continue to provide outreach material and guidance via SMCWPPP's CII Subcommittee and PIP Subcommittee 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 its member agencies to implement this provision. SMCWPPP helps municipal staff to understand the MRP's requirements and to make available for their use various MRP compliance support materials. The SMCWPPP CII Subcommittee, discussed in Section 4, facilitates and coordinates providing this assistance to the member agencies for a variety of different types of non-stormwater discharges that may be conditionally exempted.

In addition, during FY 2016/17 SMCWPPP's PIP component conducted selected activities to help San Mateo County Permittees comply with outreach requirements in Provision C.15.b.iv. Individual Residential Car Washing Discharge and Provision C.15.b.vi. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering. These activities are described below.

IMPLEMENTATION OF MRP PROVISIONS

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

During FY 2016/17, SMCWPPP continued conducting outreach to encourage residents to use car washes rather than washing their cars at home. This practice helps keep soaps, automotive pollutants and environmental toxins from washing into San Mateo County storm drains. The car wash program was implemented May - August 2016 and was designed to increase awareness of hazardous pollutants that come from washing cars and encourage residents to wash their cars at eco-friendly commercial car washes.

To encourage the use of commercial car washes, SMCWPPP sent coupons for participating car washes to residents via text and email. Residents needed to opt-in to the coupon program by providing their email address, which was added to our list of stormwater interested residents. These residents also received SMCWPPP's quarterly newsletter with tips and best management practices for preventing pollution.

SMCWPPP staff's research into eco-friendly car wash locations within San Mateo County has resulted in a total of 11 car wash partnerships (Table 15-1).

Table 15-1. List of SMCWPPP’s Car Wash Partners

Car Wash Name	City/Zip
Ducky's Car Wash	San Mateo, 94401
Ducky's Car Wash	Menlo Park, 94025
Ducky's Car Wash	San Carlos, 94070
South City Car Wash	South San Francisco, 94080
Millbrae Express Car Wash	Millbrae, 94030
Jack's Car Wash	San Mateo, 94403
San Mateo Car Wash	San Mateo, 94403
Redwood City Car Wash	Redwood City, 94061
Eco Green Auto Clean	Redwood City, 94061
Westlake Touchless Car Wash	Daly City, 94015
Touchless Car Wash	Foster City, 94404

Car wash partner agreement forms were emailed to all car washes and collected before the start of program. Once the agreements were collected, instructions along with tracking materials were sent to all partners.

Database and Tracking

To track coupon subscribers, Call Loop and MailChimp accounts were set up to distribute text and email updates to the subscribers. Through Call Loop, users would text “CARWASH” to 38470, would be taken through a pre-approved response, and enter in their email address so that a coupon could be sent to them. From here, the emails were collected through Call Loop and would be transferred to the FlowsToBay MailChimp account and added to the car wash email list. A car wash coupon was then emailed to all participants on the first day of each month between May - August 2016.

Materials & Promotion

A new coupon was created for each month of the program and sent out to participants and subscribers at the beginning of each month to allow easy tracking (see Appendix 7).

Marketing materials were created to promote the car wash program on social media channels along with the SMCWPPP website (www.flowstobay.org) (see Appendix 7). Facebook Ads were launched to increase awareness of the campaign by San Mateo County residents.

Campaign Results

Participants were given the option to either sign-up for the coupon through the SMCWPPP website (www.flowstobay.org) or texting “CARWASH” to 38470. Table 15-2 shows monthly results for FY 2016/17, broken down by each sign-up option. Table 15-3 shows the number of coupons redeemed each month during FY 2016/17.

Table 15-2. Monthly Car Wash Coupon Sign-ups during FY 2016/17

Total Coupon Sign-ups		
Month	Website	Text
July	90	87
August	101	14

Table 15-3: Number of Car Wash Coupons Redeemed Each Month during FY 2016/17

Coupons Redeemed	
July	67
August	162

Campaign Lessons Learned

At the beginning of the campaign, it came to SMCWPPP’s attention that some of the participating car washes had discounts that varied from the standard 20% off. As a consequence SMCWPPP had to revise materials to include restrictions and bar codes on the coupons. In the future, it would be best to receive any restrictions or special barcodes at the beginning of the campaign. When it comes to barcodes for certain locations, the location itself will have to create the barcode and send it so that we know it will work at each individual location.

In addition, during the early stages of the campaign, SMCWPPP realized that car wash employees were not receiving training on how to track coupons. In June, SMCWPPP sent out a team to each car wash location to give a mini-training on what to expect and how to track the 20% off coupons from either cell phones or printed coupons. Once these trainings were completed, there was an increase in tracked coupon redemptions.

For future campaigns, it would be ideal to start promotion in mid-April to allow ample time for residents to hear about the program and receive their first coupons. Starting earlier would also allow car wash location to advertise on their websites/location and properly train their employees on how to track the coupons for us. It would also be beneficial for program representatives to visit the locations three times over the course of the campaign, beginning, middle and end, to answer any questions the locations may have and create a lasting relationship with them.

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

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:

- In FY 2016/17, SMCWPPP 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 quarterly newsletter and blog. Additional messaging was provided through SMCWPPP’s Point of Purchase program, where OWOW materials were distributed that educate residents about eco-friendly pesticide alternatives.

- In FY 2016/17, SMCWPPP promoted planting of drought tolerant, native vegetation through our online media channels, including social media and the SMCWPPP quarterly newsletter and blog. Messaging focused on the environmental benefits of planting native plants, including their tolerance to drought. Resources were included to identify native plants and how to plant and maintain them. Table 15-4 summarizes the reach of Facebook posts made on pesticide pollution prevention. Example Posts are shown in Figure 15-1.
- In FY 2016/17, SMCWPPP also continued to promote water-saving tips via social media.

Table 15-4. Summary of Facebook Posts on Pesticide Pollution Prevention Topics

Post Focus	Reach	Likes	Clicks
Native plants require fewer pesticides	1,500	1	5
Pesticides affecting bees	191	4	4
Harmful effects of PCBs	506	1,800	10
Native plants and pesticides	356	12	12

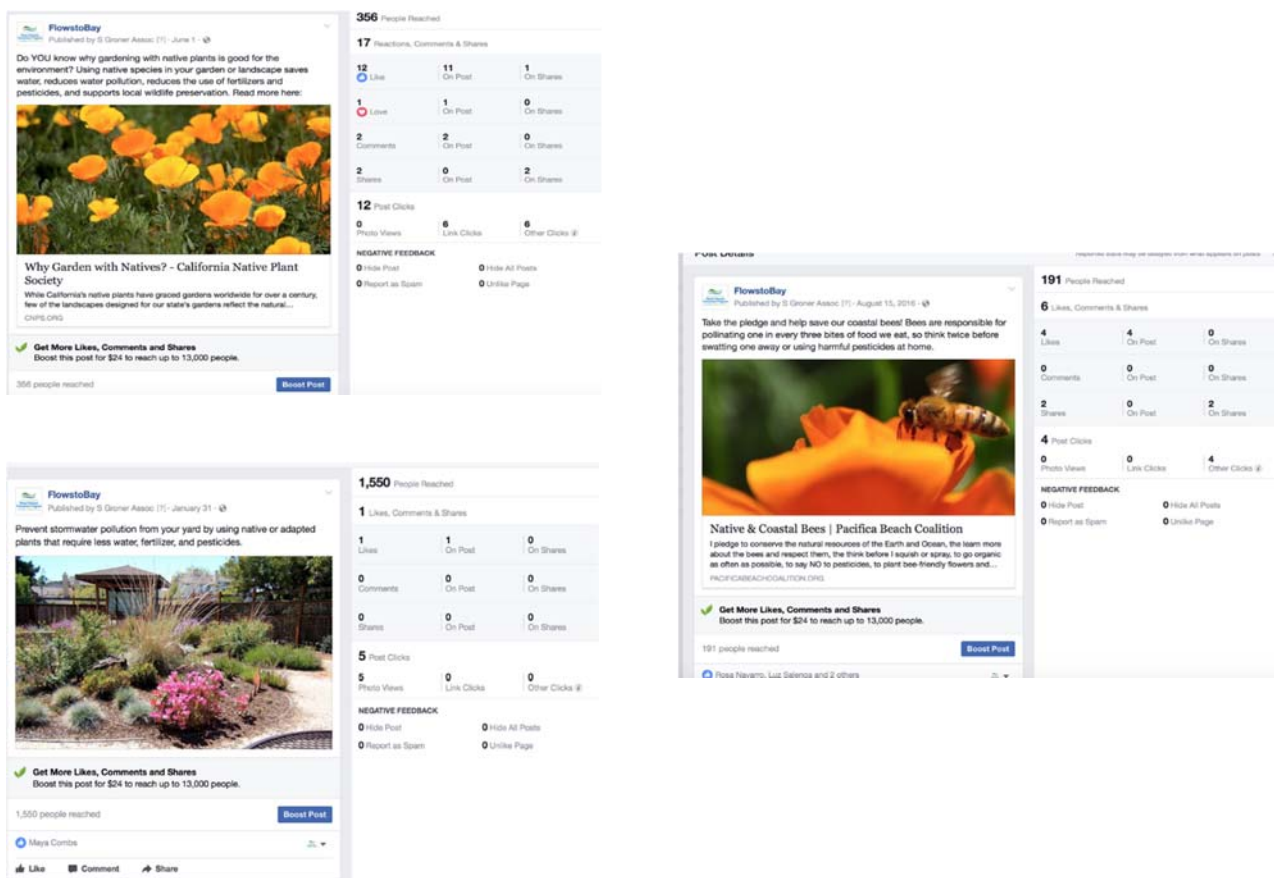


Figure 15-1. Social Media Posts on Pesticide Pollution Prevention

FUTURE ACTIONS

In FY 2017/18, SMCWPPP will continue to assist member agencies 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 2016/17

2016-17 Stormwater Committee Attendance			July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Agency	Representative	Position												
Atherton	Marty Hanneman	City Engineer										O		
Belmont	Afshin Oskoui	Public Works Director		X			X		X		X	X		X
Brisbane	Randy Breault	Public Works Director/City Engineer		X			X		X		X	O		X
Burlingame	Syed Murtuza	Public Works Director		X					X		X	O		O
Colma	Brad Donohue	Director of Public Works and Planning		O					X	C		X	C	X
Daly City	John Fuller	Public Works Director		O			O		O	A	X	X	A	X
East Palo Alto	Kamal Fallaha	City Engineer					O			N	X		N	
Foster City	Jeff Moneda	Public Works Director		X			X		X	C	X	X	C	X
Half Moon Bay	Denice Hutten	Associate Engineer								E		X	E	X
Hillsborough	Paul Willis	Public Works Director		X			X		X	L	X	X	L	X
Menlo Park	Justin Murphy	Public Works Director		O			X		X	E	X	X	E	X
Millbrae	Vacant		0							D			D	
Pacifica	Van Ocampo	Public Works Director/City Engineer					X		X			X		X
Portola Valley	Howard Young	Public Works Director									X			
Redwood City	Saber Sarwary	Supervising Civil Engineer		X			O		X		X			
San Bruno	Jimmy Tan	City Engineer		X			X				X	X		X
San Carlos	Jay Walter	Public Works Director		X			X		X		X	X		X
San Mateo	Brad Underwood	Public Works Director					O					X		X
South San Francisco	Eunejune Kim	Public Works Director		X			X		X			X		
Woodside	Sean Rose	Public Works Director							X		X			X
San Mateo County	Jim Porter	Public Works Director					X		X		X	X		X
Regional Water Quality Control Board	Tom Mumley	Assistant Executive Officer							O					

"X" - Committee Member Attended

"O" - Other Jurisdictional Representative Attended

Appendix 2

- Municipal Maintenance Subcommittee – Attendance List for FY 2016/17

Municipal Maintenance Subcommittee Meetings - FY 2016/17

NAME	MUNICIPALITY	Sept 28	Nov 30	Jan 25	May 24
Steve Tyler	Atherton	✓	✓	✓	
Dori Ganetsos	Atherton	✓			
Helen Luo	Atherton	✓			
Randy Ferrando	Belmont	✓	✓	✓	✓
Brandon Tyler	Belmont		✓	✓	✓
Tim Murray	Belmont	✓	✓	✓	
Keegan Black	Brisbane	✓		✓	✓
Kessel Crockeh	Brisbane	✓		✓	
Dustin Cohn	Brisbane		✓	✓	
Rick Horne	Burlingame				✓
Michael Heathcote	Burlingame	✓		✓	
Louis Gotelli	Colma	✓	✓	✓	✓
Jeff Fornesi	Daly City			✓	
Javier Barajos	Daly City		✓		✓
Dan Godwin	Daly City	✓		✓	
Cesar Vasquez	Daly City		✓		
Joe Stabile Sr.	Daly City	✓			
Robert Halvelson	Daly City			✓	
Jay Farr	East Palo Alto			✓	
Michelle Daher	East Palo Alto				✓
Jack Schulze	Foster City	✓	✓	✓	
Dan Barros	Half Moon Bay		✓		
Gary Francis	Hillsborough	✓	✓	✓	✓
Hugo Torres	Menlo Park	✓			
Gabriel Ortiz	Menlo Park	✓		✓	
Natividad Alamo	Menlo Park	✓		✓	
Michael Killigrew	Millbrae	✓			✓
Christopher Falzon	Millbrae	✓		✓	✓
John Erickson	Millbrae				✓
Matthew Vaz	Millbrae	✓			
Manny Marquez	Millbrae			✓	
Chris Martin	Pacifica				✓
Albert Munguis	Redwood City		✓		
Eddy Lopez	Redwood City		✓		
Rich Del Ben	Redwood City		✓	✓	
Victor Castaneda	Redwood City		✓	✓	
Eddie Pastrano	Redwood City	✓	✓	✓	✓
Vicki Sherman	Redwood City	✓	✓		✓
Dennis Bosch	San Bruno		✓		✓
Ted Chapman	San Bruno	✓	✓	✓	✓

Municipal Maintenance Subcommittee Meetings - FY 2016/17

NAME	MUNICIPALITY	Sept 28	Nov 30	Jan 25	May 24
Joe Ortiz	San Bruno				✓
Lou Duran	San Carlos			✓	
Sanl Sanfilippo	San Carlos	✓			
Luis Estrada	San Carlos		✓	✓	
Ted Rutledge	San Carlos	✓	✓	✓	✓
Mateo Pacheco	San Carlos				✓
Ryan Rasmussen	San Mateo County			✓	
Grant Ligon	City of San Mateo			✓	
Brian Weber	San Mateo County Mosquito & Vector Control District			✓	
Casey Stevenson	San Mateo County Mosquito & Vector Control District		✓	✓	✓
Kristin Kerr	EOA, Inc.	✓	✓	✓	✓

Appendix 3

- New Development Subcommittee – Attendance List for FY 2016/17
- SMCWPPP Biotreatment Soil Mix Supplier List
- Enforcement Response Plan Guidance
- Project Concepts
- Construction Site and Post-Construction Workshop – February 1, 2017
 - Registration Flyer
 - Agenda
 - Attendance List
 - Summary of Workshop Evaluations
- New Development Workshop – June 21, 2017
 - Registration Flyer
 - Agenda
 - Attendance List
 - Summary of Workshop Evaluations

New Development Subcommittee FY 2016/17 Meeting Attendance

Representing	Name	Phone Number	Meetings Attended			
			Aug	Nov	Feb	May
Atherton	Dori Ganetsos	650-752-0544	X	X	X	X
Belmont	Gilbert Yau/Brian Dong	650-595-7467			X	X
Brisbane	Ken Johnson	415-508-2120		X	X	X
	Julia Capasso	415-508-2129	X			
Burlingame	Jennifer Lee	650-558-7381		X		X
	Carolyn Critz	650-826-1554	X	X	X	
	Kevin Gardiner	650-558-7253				
Colma	Jonathan Kwan	650-757-8898	X		X	X
	Muneer Ahmed	650-757-8894	X		X	
Daly City	Mike Van Lonkhuysen	650-991-8158				X
	Cory Alvin	650-991-8156		X		
East Palo Alto	Michelle Daher	650-853-3197			X	
	Tiffany Deng					X
EOA/SMCWPPP	Jill Bicknell	408-720-8811 x 1	X	X	X	
	Peter Schultze-Allen	510-832-2852 x128	X		X	X
Foster City	Vivian Ma	415-271-3117		X	X	X
	Michael Ngo			X		
Half Moon Bay	Mark Lander	925-785-4518				
	Katherine Sheehan		X			
Hillsborough	Natalie Asai	650-375-7444	X		X	
	Ali Hatefi	650-375-7446		X		
Menlo Park	Michael Fu	650-330-6740	X			X
	Ebby Sohrabi	650-330-6740				
	Harris Siddiqui	650-330-6759	X	X	X	
Millbrae	Tanya Benedik	650-259-2339				
Pacifica	Christian Murdock	650-738-7444			X	
Portola Valley	Arly Cassidy					
	CheyAnne Brown				X	X
Redwood City	Vicki Sherman					X
	James O'Connell	650-780-5923	X	X	X	X
San Bruno	Matt Neuebaumer	650-616-7042	X	X	X	X
	Michael Smith	650-616-7062				
San Carlos	Paige Safe	650-802-4196	X	X	X	
San Mateo	Ken Pacini	650-522-7333	X	X	X	
	Grant Ligon	650-522-7296			X	X
County of San Mateo	Camille Leung	650-363-1826			X	X
	Breann Liebermann		X		X	X
	Olivia Boo	650-363-1818	X	X		
C/CAG	Matt Fabry	650-599-1419		X	X	X
	Reid Bogert	650-599-1433		X	X	X
South S.F.	Andrew Wemmer	650-829-3840				
	Rob Lecel	650-829-3882	X	X	X	
Woodside	Dong Nguyen	650-851-6790			X	
Water Board	Devender Narala	510-622-2309				

BIOTREATMENT SOIL MIX 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
L.H. Voss Materials, Inc.	Nyoka Corley	925-676-7910	5965 Dougherty Road	Dublin	94568	nyoka.corley@gmail.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.	Paul Truyts	650-333-1044 650-364-1730	345 Shoreway Road	San Carlos	94070	ptruyts@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	pleasanton_trucking@yahoo.com	www.pleasantontrucking.com
Recology Blossom Valley Organics	Denette Covarrubias	209-545-7718 209-597-1209	6133 Hammett Court	Modesto	95358	dcovarrubias@recology.com	www.recology.com/blossom-valley-organics-modesto
Redi-Gro Corporation	Sharon Yon	916-381-6063 800-654-4358	8909 Elder Creek Road	Sacramento	95828	redigropro@redi-gro.com	www.redi-gro.com
TMT Enterprises, Inc.	Matt Moore	408-432-9040	1996 Oakland Road	San Jose	95131	info@tmtenterprises.net	www.tmtenterprises.net

As of: 8/11/2017

Disclaimer: SMCWPPP provides this list of biotreatment soil mix 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 mix product including test results, adherence to the Attachment L specification 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 Attachment L of 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

SMCWPPP
Example Enforcement Response Plan Outline
Stormwater Treatment System O&M Inspections
February 14, 2017

Background

- ERP required by Order R2-2015-0049 Municipal Regional Permit (MRP) Provision C.3.h.ii.(7) to be developed and implemented by July 1, 2017
- MRP Provision C.3.h. contains requirements for conducting Operation and Maintenance (O&M) inspections of installed stormwater treatment systems, Hydromodification Management (HM) controls and pervious pavement systems $\geq 3,000$ square feet at Regulated Projects.
- The ERP will serve “as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance.”

Legal Authority

- Reference applicable City Ordinance/Municipal Code
- Reference applicable conditions of approval or other legally enforceable agreements/mechanisms for Regulated Projects such as Stormwater Operation and Maintenance Agreements that in addition to other provisions:
 - Grant site access to City/County representatives, mosquito and vector control agency staff and Water Board staff for inspections
 - Require the property owner to maintain the stormwater control measures in perpetuity and transfer that responsibility to any new owner in the future
 - Allow the municipality to maintain the stormwater control measures and recover the costs for such work in cases where the property owner is negligent in maintaining the stormwater control measures in good working order.

Enforcement Roles and Responsibilities

- Identify roles and responsibilities of staff involved in inspections and enforcement actions.

Enforcement Actions

- Develop criteria for enforcement responses. Discuss general guidance for enforcement actions and escalation including magnitude of violation, duration of violation, effect of violation on the receiving water, compliance history, good faith, etc.
- Discuss enforcement tools available, such as educational materials, verbal and written notice of violation, citations, cleanup requirements, administrative and criminal penalties.
- Provide guidance on appropriate use of enforcement tools for different field scenarios and/or common problems. (Note common problems can be found on the O&M Inspection Form templates).

Timely Correction of Violations

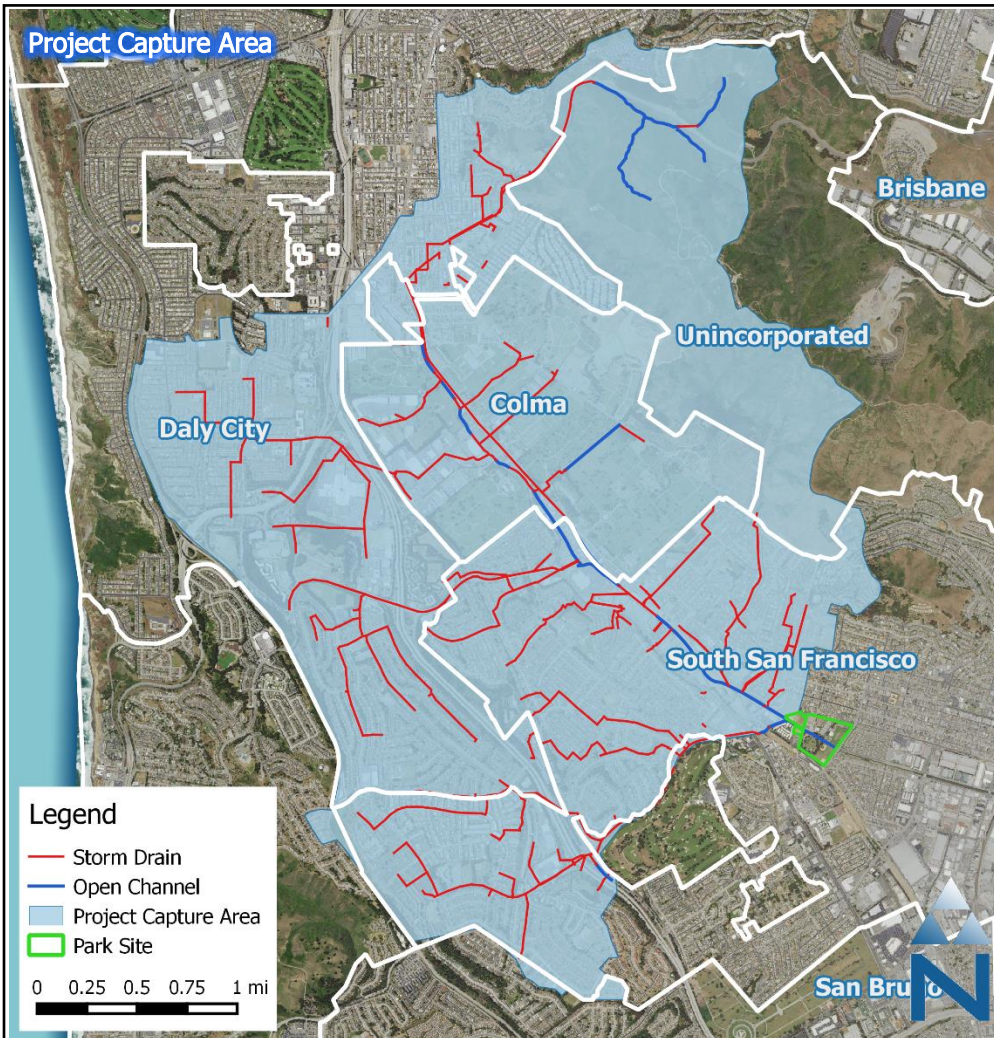
- Provide schedule for correcting violations. Response times must include the goal of correcting all violations no longer than 30 days after the inspector identifies a problem, unless a rationale is provided for requiring longer time period to come into compliance (*required by MRP*). Include goals for agency response times also (e.g. re-inspection, issuing NOVs, etc.).
- Provide description of procedures for follow-up inspections and enforcement actions.

Referral

- Procedures for referring a case to the district attorney or other relevant agencies for additional enforcement; as appropriate.

Recordkeeping

- Describe procedures used to maintain records demonstrating compliance and appropriate follow-up enforcement responses for facilities inspected. Data must be managed in electronic database or tabular format. O&M inspections should record the following information:
 - a. Name and address of project
 - b. Inspection Date
 - c. Type of inspection (e.g., installation, annual, follow up, spot)
 - d. Type(s) of pervious pavement systems inspected (e.g., pervious concrete, pervious asphalt, pervious pavers)
 - e. Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well) and an indication of whether the treatment system is an onsite, joint, or offsite system
 - f. Type of HM controls inspected
 - g. Inspection finds or results (e.g., proper installation, proper O&M, system not operating properly because of plugging, bypass of stormwater because of improper installation or maintenance, maintenance required immediately)
 - h. Type of Enforcement Actions taken, if any



Site Description:

This project concept consists of two offline subsurface infiltration chambers at Orange Memorial Park. The park is a prime location to site a regional stormwater capture project and captures stormwater from large portion of the upper Colma Creek watershed and multiple city and county jurisdictions. The potential capture area of the project is roughly 6,300 acres that drains portions of the cities of South San Francisco, Colma, and Daly City and Unincorporated San Mateo County. A stormwater capture project at this location would aid these jurisdictions in meeting stormwater permit compliance and alleviate flooding in the lower reaches of Colma Creek. The project would also contribute to reductions of high-priority pollutants discharged to San Francisco Bay (including TMDLs that require reductions of mercury and PCB loads), augment water supply by recharging the Westside groundwater basin, and provide community enhancement through integration with the recreational facilities of the park. With the incorporation of a hydrodynamic separator for pretreatment of diverted water from the creek, the project also provides the reduction of trash transported through the creek to the San Francisco Bay. The Orange Memorial Park Master Plan (2007) was referenced in this design to ensure that the concept is consistent with the goals of future development for the park.

Although not specifically included within this project concept, the project also provides the opportunity for future integration of Low Impact Development (LID) within parking lots of the park to provide further community enhancement and opportunities for public education of LID and other project components.

Drainage Characteristics

Capture Area (acres)	6,300
Impervious Area (%)	38
Dominant Land Use	Residential
Jurisdictions	South San Francisco, Colma, Daly City, Unincorporated San Mateo County

Site Information

Land Owner	City of South San Francisco
Street Address	Orange Ave, South San Francisco, CA 94080
Latitude/Longitude	37° 39' 13.1" N / 122° 25' 35.4" W
Watershed	Colma Creek



Concept for a Multi-jurisdictional Regional Stormwater Capture Project
Site: Orange Memorial Park (City of South San Francisco)





Structural Footprint

Site Description:

Two subsurface infiltration chambers will be considered on parcels owned by the City of South San Francisco to the west of Orange Memorial Park. Both parcels were acquired by the City of South San Francisco in 1996 and, while vacant, are included in plans for future park expansion. The first chamber (Project 1) will be located in the vacant parcel to the south of the Colma Creek channel. The second chamber (Project 2) will be located in portions of the vacant parcel to the north of the channel and the current park parcel. The Project 2 site represents the location of the future little league baseball fields according to the Master Plan. Runoff would be diverted directly from Colma Creek and details of the diversion structures will be determined during the design phase through coordination with the San Mateo County Flood Control District. A pretreatment unit (e.g. hydrodynamic separator) will be implemented to provide trash and sediment capture. Two projects are proposed to maximize the amount of available space used for the design and to provide an option for the City of South San Francisco to implement the design in two separate phases. This would allow the City to move forward with each phase separately as funding is acquired. The Master Plan also accounts for the possible purchase of the CalWater parcels along Chestnut Avenue for future park expansion, which could be used to expand Project 2 if that land becomes available. The proposed design (both chambers) would allow for the treatment of 26% of the 85th percentile, 24-hour runoff volume (36.4 of 142.4 ac-ft) for the Colma Creek watershed. As these volumes are completely removed via storage and infiltration, this provides an equivalent 26% reduction of pollutant loads for the storm event.

DISCLAIMER: All elements of this conceptual design are planning-level, based on desktop analysis. All assumptions and parameters must be re-evaluated during the detailed design process. Costs estimates are based on available data. Actual costs will vary.

Design Criteria

Precipitation, 85 th percentile, 24-hr storm (in)	0.83
Colma Creek Runoff Volume, 85 th percentile, 24-hr storm (ac-ft)	142.4
Colma Creek Peak Discharge, 85 th percentile, 24-hr storm (cfs)	309
Infiltration Rate (in/hr)	0.5

Project Characteristics	Project 1	Project 2
Stormwater Capture Process	Subsurface Infiltration Chamber	
Footprint (acres)	0.5	2.3
Design Height (ft)	12	12
Depth of Excavation (ft)	15	15
Pumping Requirements	Dependent on Geotechnical Investigation	
Design Volume (ac-ft)	6	27.6
24-hr Infiltration Volume (ac-ft)	0.5	2.3
Total Treatment Volume (ac-ft) ¹	6.5	29.9
Percent Treated ²	5%	21%

1 – sum of the Design Volume and 24-hr Infiltration Volume
 2 – percentage the 85th percentile 24-hr storm Runoff Volume that is treated



Example concrete infiltration chamber

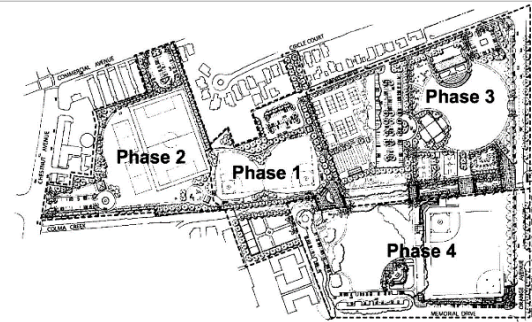
Concept for a Multi-jurisdictional Regional Stormwater Capture Project

Site: Orange Memorial Park (City of South San Francisco)



Project Implementation:

The figure to the left depicts the layout for the two subsurface infiltration chambers in relation to the planned improvements in the Orange Memorial Park Master Plan 2007. The figure below depicts the phased implementation of various areas of the park according to the Master Plan. The proposed infiltration chambers would coincide with Phase 1. Adding a stormwater component to the first phase of park improvements would likely garner enthusiasm for park enhancements and open avenues for funding. Phase 1 of the Master Plan can be further split into two sub-phases. The first sub-phase of park improvements would include Project 1 in the location of the future community gardens. The second sub-phase would include Project 2 at the little league baseball fields.

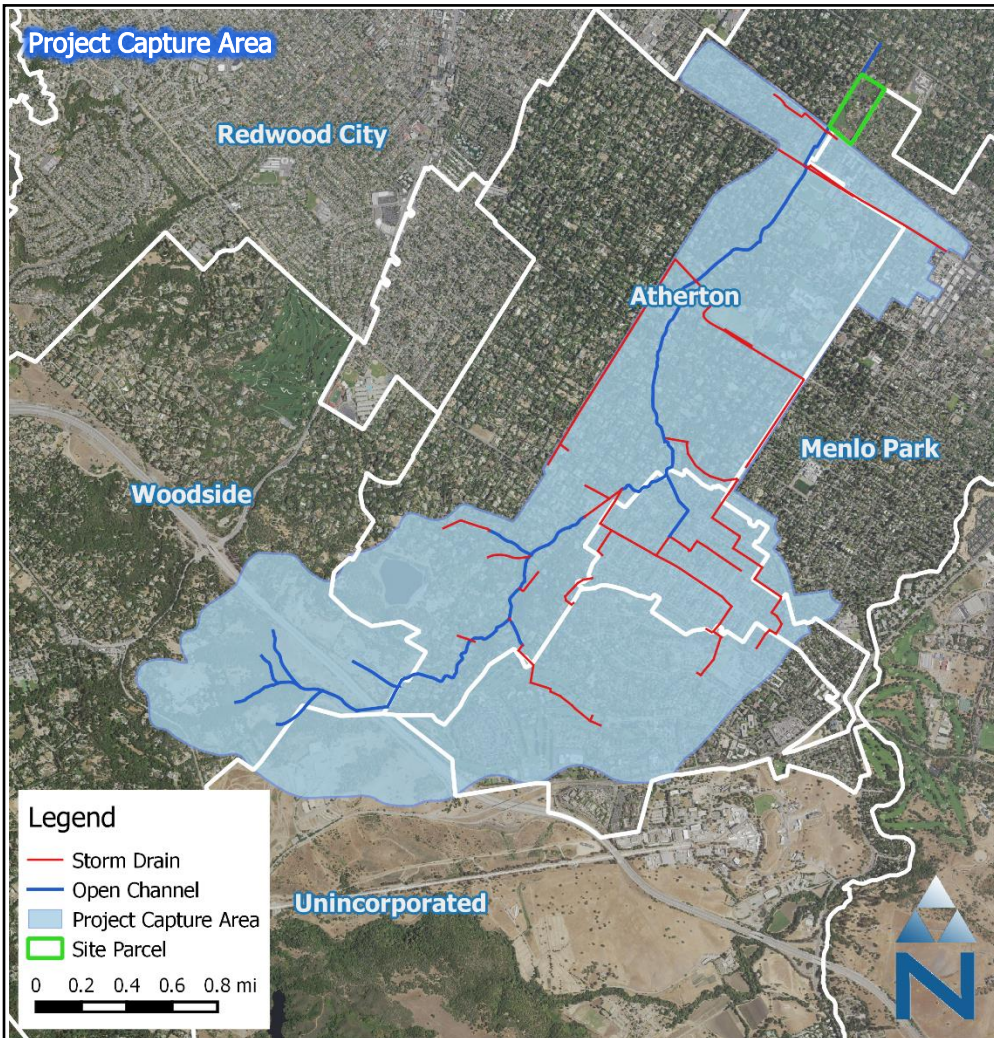


Cost Estimate for Infiltration Chamber south of Colma Creek (Project 1)				
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Removal	14,520	CY	\$50.00	\$726,000
Rubber Dam System	1	LS	\$80,000.00	\$80,000
Diversion Structure	1	LS	\$100,000.00	\$80,000
Hydrodynamic Separator Device	1	LS	\$90,000.00	\$100,000
Pump Structure	1	LS	\$1,000,000.00	\$1,000,000
Diversion Pipe (24" RCP)	100	LF	\$200.00	\$20,000
Infiltration Structure	9,680	CY	\$300.00	\$2,904,000
Restoration	21,780	SF	\$2.00	\$44,000
CONSTRUCTION SUBTOTAL				\$4,954,000
Mobilization (10% construction)				\$495,000
Contingency (25% construction)				\$1,239,000
Design (10% total)				\$669,000
TOTAL COST				\$7,357,000

Cost Estimate for Infiltration Chamber north of Colma Creek (Project 2)				
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Removal	55,660	CY	\$50.00	\$2,783,000
Rubber Dam System (dam from Project 1 can be utilized by both projects)				N/A
Diversion Structure	1	LS	\$150,000.00	\$150,000
Hydrodynamic Separator	1	LS	\$150,000.00	\$150,000
Pump Structure	1	LS	\$1,750,000.00	\$1,750,000
Diversion Pipe (24" RCP)	150	LF	\$200.00	\$30,000
Infiltration Structure	44,528	CY	\$300.00	\$13,358,000
Restoration	100,188	SF	\$2.00	\$200,000
CONSTRUCTION SUBTOTAL				\$18,421,000
Mobilization (10% construction)				\$1,842,000
Contingency (25% construction)				\$4,605,000
Design (10% total)				\$2,487,000
TOTAL COST				\$27,355,000

Concept for a Multi-jurisdictional Regional Stormwater Capture Project Site: Orange Memorial Park (City of South San Francisco)





Site Description:

This project concept consists of an offline subsurface infiltration chamber at Holbrook-Palmer Park, owned and operated by the Town of Atherton. This is an ideal site for a regional stormwater capture project because of its proximity to Atherton Creek and the potential to treat a large multi-jurisdictional area. The project would capture flows and associated pollutant loadings from a large portion of the upper Atherton Creek watershed, encompassing sections of the Towns of Atherton and Woodside, City of Menlo Park, and Unincorporated San Mateo County. The project would help to address known flooding issues in the lower reaches of the creek. The project would also contribute to reductions of high-priority pollutants discharged to San Francisco Bay (including TMDLs that require reductions of mercury and PCB loads), augment water supply by recharging the Santa Clara Valley groundwater basin, and provide community enhancement through integration with the recreational facilities of the park. With the incorporation of a hydrodynamic separator for pretreatment of diverted water from the creek, the project also provides the reduction of trash transported through the creek to the San Francisco Bay.

Although not specifically included within this project concept, the project also provides the opportunity for future integration of Low Impact Development (LID) within parking lots of the park to provide further community enhancement and opportunities for public education of LID and other project components.

DISCLAIMER: All elements of this conceptual design are planning-level, based on desktop analysis. All assumptions and parameters must be re-evaluated during the detailed design process. Costs estimates are based on available data. Actual costs will vary.

Drainage Characteristics

Capture Area (acres)	2,875
Impervious Area (%)	19
Dominant Land Use	Residential
Jurisdictions	Atherton, Menlo Park, Woodside Unincorporated San Mateo County

Holbrook-Palmer Park Sports Field



Legend

- Storm Drain
- Open Channel
- Project Capture Area
- Site Parcel

0 0.2 0.4 0.6 0.8 mi

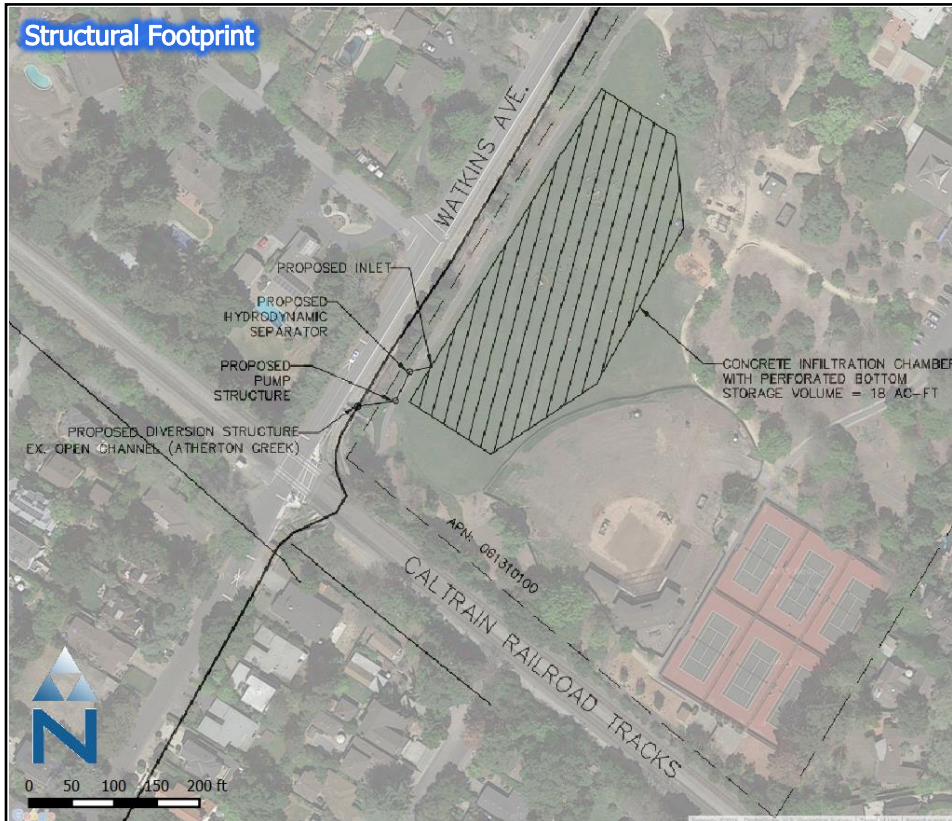
Site Information

Land Owner	Town of Atherton
Street Address	150 Watkins Ave, Atherton, CA 94027
Latitude/Longitude	37° 27' 44.9" N / 122° 11' 34.8" W
Watershed	Atherton Creek

Concept for a Multi-jurisdictional Regional Stormwater Capture Project
Site: Holbrook-Palmer Park (Town of Atherton)



Structural Footprint



Example concrete infiltration chamber



Example Hydrodynamic Separator

Design Criteria

Precipitation, 85 th percentile, 24-hr storm (in)	0.86
Runoff Volume, 85 th percentile, 24-hr storm (ac-ft)	65.90
Peak Discharge, 85 th percentile, 24-hr storm (cfs)	72
Infiltration Rate (in/hr)	0.5

Project Characteristics

Stormwater Capture Process	Subsurface Infiltration Chamber
Footprint (acres)	1.5
Design Height (ft)	12
Depth of Excavation (ft)	15
Pumping Requirements	Dependent on Geotechnical Investigation
Design Volume (ac-ft)	18
24-hr Infiltration Volume (ac-ft)	1.5
Total Treatment Volume (ac-ft) ¹	19.5
Percent Treated ²	30%

Cost Estimate

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Removal	36,300	CY	\$50.00	\$1,815,000
Rubber Dam System	1	LS	\$80,000.00	\$80,000
Diversion Structure	1	LS	\$150,000.00	\$150,000
Hydrodynamic Separator	1	LS	\$120,000.00	\$120,000
Pump Structure	1	LS	\$1,500,000.00	\$1,500,000
Diversion Pipe (24" RCP)	120	LF	\$200.00	\$24,000
Infiltration Structure	29,040	CY	\$300.00	\$8,712,000
Restoration	65,340	SF	\$2.00	\$131,000
CONSTRUCTION SUBTOTAL				\$12,532,000
Mobilization (10% construction)				\$1,253,000
Contingency (25% construction)				\$3,133,000
Design (10% total)				\$1,692,000
TOTAL COST				\$18,610,000

Project Description:

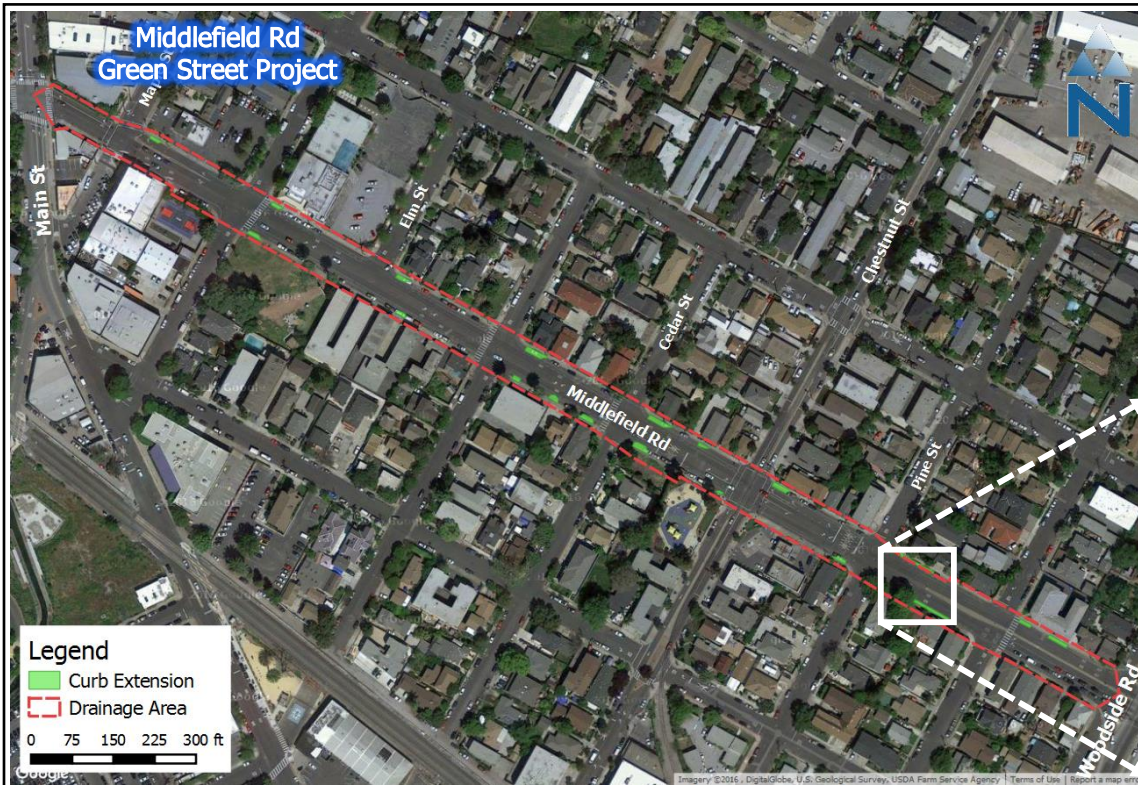
A subsurface infiltration chamber will be considered in the sports field of Holbrook-Palmer Park. The project site is in the south-west corner of the park and will be located just outside of the newly-renovated baseball field. Stormwater will be diverted directly from the channelized segment of Atherton Creek that borders the park along Watkins Avenue. Runoff would first be directed to a pretreatment unit (e.g. hydrodynamic separator) before being routed to the chamber. This will assist in removing trash and sediments from the creek while also reducing maintenance requirements of the chamber. The proposed design would allow for the treatment of 30% of the 85th percentile, 24-hr runoff volume (19.5 of 65.90 ac-ft) for the Atherton Creek watershed. As these volumes are completely removed via storage and infiltration, this provides an equivalent 30% reduction of pollutant loads for the storm event. While no major enhancements are planned for the sports field in the Holbrook-Palmer Park Master Plan (2015), the Master Plan noted that the field could be regraded to improve the playing surface. This project would provide the opportunity to coordinate with the field regrading effort once the chamber is installed.

¹ – sum of the Design Volume and 24-hr Infiltration Volume

² – percentage of the 85th percentile, 24-hr storm Runoff Volume that is treated

Concept for a Multi-jurisdictional Regional Stormwater Capture Project Site: Holbrook-Palmer Park (Town of Atherton)





Site Information	
Jurisdiction	City of Redwood City
Street Name	Middlefield Rd
Bounding Streets	Main St / Woodside Rd
Street Typology	Arterial
Co-Located Project	Middlefield Streetscape Project
Capture Area (acres)	4.16
Impervious Area (%)	90
85 th Percentile Rainfall (in)	0.85
Generated Runoff (ac-ft)	0.27



Site Description:

The proposed project consists of green street improvements along Middlefield Road between Main Street and Woodside Road. The street segment is approximately 2,250 feet long. Middlefield Road is an arterial street that is relatively narrow. Limited space is divided between bike lanes, multiple lanes each direction, turn lanes, and parking lanes. This presents a challenge with siting green infrastructure without sacrificing some usage of the roadway. Curb extensions are recommended as the primary treatment type. Segments of the street that feature two lanes may be reduced to single lanes to allow adequate area for improvements. Center medians can be removed to provide additional area. Curb extensions can also be placed at crosswalks to improve pedestrian safety while increasing stormwater capture capacity. Where lanes cannot be reduced, some parking may need to be removed.

The proposed improvements would capture 100% of the 85th percentile runoff volume (0.27 ac-ft) while providing flood risk mitigation, community enhancement, increased property values, safer pedestrian routes, and other multiple benefits.

DISCLAIMER: All elements of this conceptual design are planning-level. Locations of opportunities for placement of green infrastructure shown in the map are preliminary and subject to further site assessment and design. Percent imperviousness is based on best professional judgement. All design assumptions/parameters and cost estimates must be re-evaluated during the detailed design process.

Design Summary

Green Infrastructure Type	Design Width (ft)	Design Length (ft)	Capture Volume (ac-ft)
Bioretention (Curb Extension)	8	780	0.270

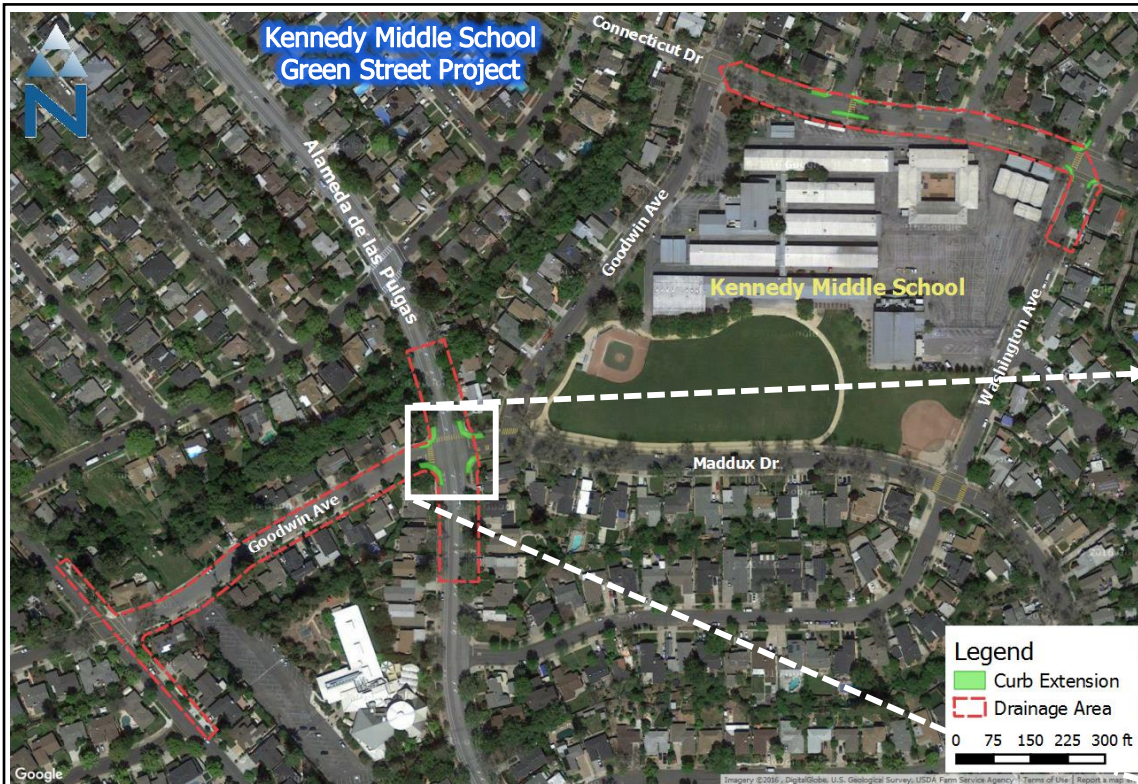
Cost Estimate

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Hauling	1,160	CY	\$50.00	\$58,000
Bioretention	6,240	SF	\$25.00	\$156,000
Curbs and Gutters	780	LF	\$17.25	\$14,000
CONSTRUCTION SUBTOTAL				\$228,000
Planning (20%), Mobilization (10%), Design (30%), Contingency (25%)				\$194,000
TOTAL COST				\$422,000

Concept for a Green Street Retrofit for Stormwater Capture

Site: Middlefield Road (City of Redwood City)





Site Information	
Jurisdiction	City of Redwood City
Street Name	Goodwin Ave & Connecticut Dr
Street Typology	High-Density Residential
Co-Located Project	Safe Routes to School
Capture Area (acres)	3.32
Impervious Area (%)	90
85 th Percentile Rainfall (in)	0.85
Generated Runoff (ac-ft)	0.21



Curb Extension with Curb Cut

Site Description:

The proposed project consists of green street improvements along Connecticut Drive between Goodwin Avenue and Washington Avenue, and the intersection of Goodwin Avenue and Alameda de las Pulgas. The site is characterized by high-density residential streets that border the John F. Kennedy Middle School. Curb extensions are recommended as the primary treatment type. This project will integrate with the Safe Routes to School Program to implement green infrastructure that will also improve pedestrian safety. Curb extensions are proposed at crosswalks to improve pedestrian visibility and decrease crossing distance. The project also presents an opportunity for public education and signage can be implemented to inform the public on the benefits of green infrastructure.

The proposed improvements would capture 100% of the 85th percentile runoff volume (0.21 ac-ft) while providing flood risk mitigation, community enhancement, increased property values, safer pedestrian routes, and other multiple benefits.

DISCLAIMER: All elements of this conceptual design are planning-level. Locations of opportunities for placement of green infrastructure shown in the map are preliminary and subject to further site assessment and design. Percent imperviousness is based on best professional judgement. All design assumptions/parameters and cost estimates must be re-evaluated during the detailed design process.

Design Summary

Green Infrastructure Type	Design Width (ft)	Design Length (ft)	Capture Volume (ac-ft)
Bioretention (Curb Extension)	12	405	0.210

Cost Estimate

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Hauling	900	CY	\$50.00	\$45,000
Bioretention	4,860	SF	\$25.00	\$122,000
Curbs and Gutters	405	LF	\$17.25	\$7,000
CONSTRUCTION SUBTOTAL				\$174,000
Planning (20%), Mobilization (10%), Design (30%), Contingency (25%)				\$148,000
TOTAL COST				\$322,000

Concept for a Green Street Retrofit for Stormwater Capture

Site: Kennedy Middle School Green Streets (City of Redwood City)



Site Information

Jurisdiction	City of San Mateo
Address	2720 Alameda de las Pulgas, San Mateo, CA 94403
Co-Located Project	Beresford Park Parking Lot Resurfacing
Capture Area (acres)	1.42
Impervious Area (%)	90
85 th Percentile Rainfall (in)	0.85
Generated Runoff (ac-ft)	0.09



Bioretention at a Parking Lot



Design Summary

Green Infrastructure Type	Design Width (ft)	Design Length (ft)	Capture Volume (ac-ft)
Bioretention (Rain Garden)	8	260	0.090

Cost Estimate

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Hauling	385	CY	\$50.00	\$19,000
Bioretention	2,080	SF	\$25.00	\$52,000
Curbs and Gutters	520	LF	\$17.25	\$9,000
CONSTRUCTION SUBTOTAL				\$80,000
Planning (20%), Mobilization (10%), Design (30%), Contingency (25%)				\$68,000
TOTAL COST				\$148,000

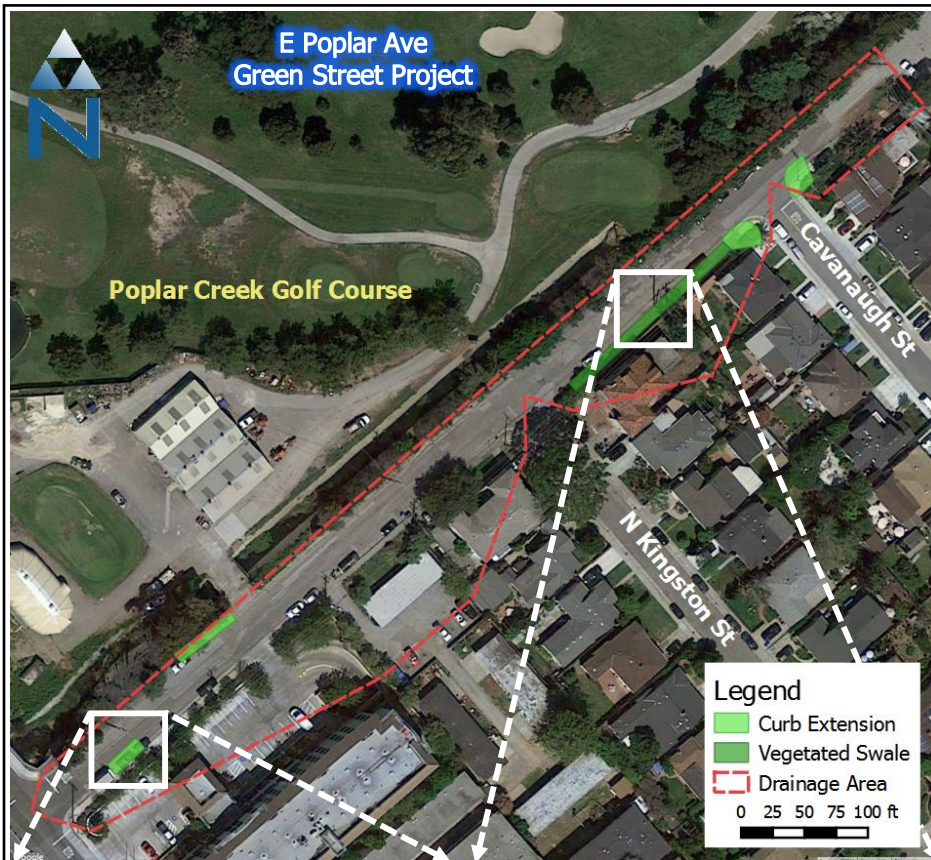
Site Description:

The proposed project consists of low impact development (LID) retrofits at the parking lot of Beresford Park along Alameda de las Pulgas. LID will be implemented to capture stormwater from on-site. Bioretention is recommended as the primary treatment type. Implementation of LID improvements will coincide with a resurfacing project for the parking lot. The parking lot layout depicted in the figure above is conceptual in order to show how a rain garden can be implemented in a typical parking lot. Actual traffic flow and available area for parking stalls must be evaluated separately during the actual design phase.

The proposed improvements would capture 100% of the 85th percentile runoff volume (0.09 ac-ft) while providing flood risk mitigation, community enhancement, increased property values, and other multiple benefits. Additionally, signage can be implemented to provide opportunities for public education on green infrastructure.

DISCLAIMER: All elements of this conceptual design are planning-level. Locations of opportunities for placement of green infrastructure shown in the map are preliminary and subject to further site assessment and design. Percent imperviousness is based on best professional judgement. All design assumptions/parameters and cost estimates must be re-evaluated during the detailed design process.

Concept for a Low Impact Development Retrofit for Stormwater Capture Site: Beresford Park Parking Lot (City of San Mateo)



Site Information

Jurisdiction	City of San Mateo
Street Name	E Poplar Ave
Bounding Streets	N Bayshore Blvd / Cavanaugh St
Street Typology	Low-Density Residential
Capture Area (acres)	1.67
Impervious Area (%)	70
85 th Percentile Rainfall (in)	0.85
Generated Runoff (ac-ft)	0.08

Site Description:

The proposed project consists of green street improvements along East Poplar Avenue, east of the Bayshore Freeway (US-101). The street segment is approximately 850 feet long. The street is considered low-density residential with development primarily on the south side of the street. Curb extensions are recommended as the primary treatment type and can be placed in such a way to maximize street parking. Curb extensions can occupy “no parking” zones that border lot entrances to perform the same function while also capturing stormwater. In addition to curb extensions, a vegetated swale can be considered between North Kingston Street and Cavanaugh Street, where there currently is no gutter. This would not provide stormwater capture but would provide the added benefits of slowing flows and increased infiltration.

The proposed improvements would capture 100% of the 85th percentile runoff volume (0.04 ac-ft) while providing flood risk mitigation, community enhancement, increased property values, and other multiple benefits.

DISCLAIMER: All elements of this conceptual design are planning-level. Locations of opportunities for placement of green infrastructure shown in the map are preliminary and subject to further site assessment and design. Percent imperviousness is based on best professional judgement. All design assumptions/parameters and cost estimates must be re-evaluated during the detailed design process.

Design Summary

Green Infrastructure Type	Design Width (ft)	Design Length (ft)	Capture Volume (ac-ft)
Bioretention (Curb Extension)	8	230	0.080
Vegetated Swale	3	175	-

Cost Estimate

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Excavation/Hauling	340	CY	\$50.00	\$17,000
Bioretention	1,840	SF	\$25.00	\$46,000
Vegetated Swale	525	SF	\$18.50	\$10,000
Curbs and Gutters	635	LF	\$22.00	\$14,000
CONSTRUCTION SUBTOTAL				\$87,000
Planning (20%), Mobilization (10%), Design (30%), Contingency (25%)				\$74,000
TOTAL COST				\$161,000



Concept for a Green Street Retrofit for Stormwater Capture

Site: East Poplar Avenue (City of San Mateo)





Save the Date!



Construction Site (C.6) Stormwater Inspections and Post-Construction (C.3) Stormwater Treatment Measure Installation Inspections

Training for Municipal Inspectors

Wednesday, February 1, 2017

City of San Mateo Public Library

55 W. 3rd Ave, San Mateo

9:00am – 4:00 pm

The morning session of this training workshop is for municipal staff who inspect construction sites for compliance with stormwater requirements in MRP **Provision C.6**. Workshop topics include:

- ✓ Regulatory refresher of Municipal Regional Stormwater Permit (MRP) requirements for construction site inspections,
- ✓ Changes in the recently reissued MRP,
- ✓ Construction BMPs and recognizing issues,
- ✓ Group exercise for determining inspection findings and appropriate enforcement actions.

The afternoon session of this training workshop is for municipal staff who conduct inspections for compliance with stormwater requirements in MRP **Provision C.3.h**. Workshop topics include:

- ✓ Regulatory refresher of Municipal Regional Stormwater Permit (MRP) requirements for C.3 stormwater treatment measure installation and O&M inspections,
- ✓ Changes in the recently reissued MRP,
- ✓ Inspecting stormwater treatment measures and recognizing issues,
- ✓ Group exercise for determining inspection findings and appropriate follow-up actions.

A registration announcement will be emailed in December.

Questions? Call Peter Schultze-Allen at 510-832-2852 ext. 128

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

This training is FREE and will include lunch.



**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS**

Implementing the requirements in MRP Provision C.6 and C.3.h

Wednesday, Feb 1, 2017

San Mateo Public Library – Oak Room
55 W. 3rd Avenue, San Mateo

WORKSHOP AGENDA

9:00 AM Registration and Refreshments

9:15 AM	Welcome and Introductions for Construction Site Stormwater Inspection (C.6) Training	Kristin Kerr <i>Program Staff</i>
9:20 AM	MRP C.6: FY 2016/17 Implementation	Kristin Kerr <i>Program Staff</i>
10:00 AM	Case Study: Local Coordination with Caltrans' Projects	Peter Schultze-Allen <i>Program Staff</i>
10:30 AM	Break	
10:45 AM	Inspecting Construction Sites	Kristin Kerr <i>Program Staff</i>
11:15 AM	Group Exercise	Peter Schultze-Allen <i>Program Staff</i>
12:00 PM	Registration and Lunch	
12:45 PM	Welcome and Introductions for Post-Construction Stormwater Treatment Control Inspections (C.3.h)	Kristin Kerr <i>Program Staff</i>
12:50 PM	MRP C.3.h: FY 2016/17 Implementation	Kristin Kerr <i>Program Staff</i>
1:20 PM	Installation Inspection Experience	Katherine Sheehan <i>CSG Engineering</i>
2:05 PM	Break	
2:20 PM	O&M Inspection Experience	Peter Schultze-Allen <i>Program Staff</i>
3:00 PM	Group Exercise	<i>Program Staff</i>
3:45 PM	Summary Remarks, Adjourn	Peter Schultze-Allen <i>Program Staff</i>

**** Attendance at this workshop is acceptable for 3 PDUs toward maintaining CPESC, CESSWI and/or CPSWQ certifications. ****

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Adams	Erica	X		County of San Mateo
Ahmed	Muneer	X	X	Town of Colma
Ariasp	Homayoon			County of San Mateo
Azzari	Zack	X	X	County of San Mateo, DPW
Badr	Bassam	X	X	CSG Consultants, Inc.
Black	Keegan	X		City of Brisbane
Bogert	Reid	X	X	C/CAG
Boo	Olivia	X	X	County of San Mateo
Bozorginia	Mahan	X	X	Town of Colma
Buck	Merrill	X	X	CSG Consultants, Inc.
Burklin	Scott	X		County of San Mateo
Burlison	Summer	X	X	County of San Mateo
Casagrande	Julie	X		County of San Mateo, DPW
Chan	Otis	X	X	City of San Mateo

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Chan	Catherine	X	X	CSG Consultants, Inc.
Chen	Allen	X	X	Town of Los Altos Hills
Chow	Lou	X	X	City of San Mateo
Donguines	Raymund	X	X	City of Pacifica
Edlund	Sven	X	X	City of San Mateo
Engle	Theresa	X		County of San Mateo, DPW
Francis	Aaron	X	X	County of San Mateo, DPW
Ganetsos	Dori	X	X	Town of Atherton
Giang	Bill	X	X	City of Millbrae
Gill	Sandeep	X		County of San Mateo, DPW
Gonzales	Eric	X	X	CSG Consultants, Inc.
Gonzalez	Mauricio	X	X	County of San Mateo, DPW
Hakhamaneshi	Rambod	X	X	CSG Consultants, Inc.
Hashem	Abdulkader	X	X	Town of Colma

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Hathaway	Mark	X		City of San Mateo
Hoang	Son	X	X	CSG Consultants, Inc.
Houseyni	Said Bilal	X	X	City of Redwood City
HUYNH	DAVID	X	X	Town of Atherton
Jackson	Emmett	X	X	County of San Mateo, DPW
Kammeier	Lindsay	X	X	Schaaf & Wheeler
Kenyon	Michelle	X	X	City of San Mateo
Kim	Kayla	X	X	County of San Mateo, DPW
Kim	Philip	X		City of Redwood City
Lander	Mark		X	CSG Consultants, Inc.
Lau	Kristen	X		County of San Mateo
Leung	Camile	X	X	County of San Mateo
Ligon	Grant	X	X	City of San Mateo
Lower	Mark		X	CSG Consultants, Inc.

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Ma	Vivian	X	X	City of Foster City
Morales	Carmelisa	X		County of San Mateo
Mostafavi	Saeid	X	X	CSG Consultants, Inc.
Navarro	Frank	X	X	CSG Consultants
Ngai	Lawrence	X	X	City of Pacifica
Oran	Alexandra	X	X	Schaaf & Wheeler
Pacini	Kenneth	X	X	City of San Mateo
Panglao	Ruemel	X	X	County of San Mateo
Pena	Tiare	X		County of San Mateo
Pons	Jeremiah	X	X	County of San Mateo
Ramirez	Michael	X		County of San Mateo
Richstone	Laura	X		County of San Mateo
Rieke	Axel	X	X	Northgate Environmental Management, Inc.
Safe	Paige	X	X	City of San Carlos

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Sharifi	Mehdi	X	X	CSG Consultants, Inc.
Sheehan	Katherine	X	X	CSG Consultants, Inc.
Shu	Diana	X	X	County of San Mateo
Siddiqui	Harris	X	X	City of Menlo Park
Smith	Sean	X		County of San Mateo
Smith	Robert	X		City of Pacifica
Swenson	Mark	X	X	City of San Mateo
TalliBel	Soha	X		City of Belmont
Todisco	Nichols	X	X	City of East Palo Alto
Ung	Mario	X	X	City of San Mateo
Varela	Carlos	X	X	Redwood City
Villegos	Agipilla	X	X	City of East Palo Alto
Wong	David	X	X	City of San Bruno
Yee	Theresa	X	X	County of San Mateo

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Yee	Elton	X	X	City of San Mateo
Yong	kelly	X	X	Redwood City
Yu	Fanny	X	X	City of East Palo Alto
Yu	Jay	X	X	City of San Mateo
TOTAL		72	57	



Evaluation Summary

C.3.h STORMWATER CONTROL MEASURES INSPECTOR WORKSHOP

San Mateo, CA

Wednesday, Feb. 1, 2017
Afternoon Session (MRP C.3.h)
Attendance: 56
Evaluations: 32 (57%)

1. **MRP C.3.h: FY 2016/17 Implementation** – Given by Kristin Kerr, Program Staff

Very Useful 24

Somewhat Useful 7

Not useful 0

Comments:

- Less direct reading off PPT and more anecdotes would be useful.
- Good reminders
- Use graphics, photos, PowerPoint
- Focus on updates for new MRP

2. **Installation Inspection Experience** – Given by Katherine Sheehan, CSG Engineering

Very Useful 30

Somewhat Useful 2

Not useful 0

Comments:

- Nice having a broad array of “real world” treatment measures and pavers projects to review.
- Good examples supported with pictures.
- Good anecdotes, detail and common mistakes discussion
- Maybe maintenance agreement content n/a to inspector training?
- I liked the pictures.
- Very good details for milestones for construction inspections
- Very good and helpful
- Great overview of in progress inspection for post construction BMPs – good detail

3. **O&M Inspection Experience** – Given by Peter Schultze-Allen, Program Staff

Very Useful 25

Somewhat Useful 4

Not useful 0

Comments:

- Good variety of examples
- Good examples supported with pictures for problems and issues in stormwater system.
- Good visuals, key themes not very coherent/integrated.
- I liked the pictures
- Liked the pictures, so maybe don't print them out on slide handouts. – Poor quality used more paper.
- Good pictures
- Visuals good
- Nice examples of BMPs in practice problems and solution.

4. Group Exercise – Program Staff

Very Useful 12

Somewhat Useful 5

Not useful 0

Comments:

- Good concept, but 1st exercise didn't really involve template checklist, so not too instructive (gross design failure)
- Good practice, interesting.

5. Did this training meet your expectations? Yes: 28

No: 0

6. What parts of the training were most useful to you?

- Great refresher course. Was useful seeing changeups to MRP and how they affect our inspections and plan review.
- Actual site pictures with explanations presented by the speaker.
- SCM
- O+M inspections FY 2016/17 implementation presentation
- Examples
- Caltrans and CSG mostly all topics
- Group exercise
- O&M Inspection Regulations: Inspection sample – what to look for.
- Many examples of different treatment systems.
- Picture examples!
- Topics regarding installation of new bio-retention systems
- Practical examples
- Installation and O&M Inspection experience

- Installation inspection experience. Gave use opportunity to see projects under construction which cannot be seen after completion of projects.
- Pictures and site visit anecdotes
- Pictures showing on the ground examples.
- O&M
- Details and overview, for both experts and newbies.

7. What would have made this training more useful?

- More light
- Actual projects, group discussions
- Some water, instead of just soft drinks.
- New innovation that may lead to better retention systems
- Do more/longer group exercises

8. What topics would you recommend for a future training?

- Can you discuss the contact time for bio-retention site – 24hrs, 48hrs, 72hrs?
- Keep the updated regulations and more real world examples coming – Thanks.
- Solutions to problems during inspections
- Greater depth of O&M agreements and issues with long-term O&M funding and implementation for G1 and LID.

9. General Comments?

- Long day!
- Excellent
- Thanks for the lunch.
- The workshop is helpful for me a non-expert
- Unfortunately whispering was distracting.
- First time attending – very informative
- Great job! Good attendance too!
- Thank you!
- It introduced the concepts a basic knowledge and the inspection examples/pics helped.
- Excellent!
- Landscape architects would benefit seeing the failings of LID.
- Cookies!!!



Annual “C.3” Workshop: Stormwater Controls for Regulated Development Projects and Green Infrastructure Projects

Wednesday, June 21, 2017
City of San Mateo Public Library
55 W. 3rd Ave, San Mateo
Morning Session: 9:00 am – Noon
Afternoon Session: 12:30 pm - 3:30 pm

Who should attend the **morning session on C.3?**

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

The **morning** session will include presentations on the following:

- ✓ A refresher presentation on the **Basics of C.3** and the MRP
- ✓ Requirements for development projects: how to review or develop a Stormwater Control Plan
- ✓ Design and sizing of stormwater treatment measures

Who should attend the **afternoon session on C.3.j?**

Municipal stormwater program coordinators, planning and public works staff, and consultants who manage, design, construct or maintain capital improvement program projects such as roadways, parks and urban forests and/or develop short and long-term municipal plans.

The **afternoon** session will include presentations on the following:

- ✓ Provision C.3.j requirements and overview
- ✓ Summary of forthcoming SMCWPPP Green Infrastructure guidance documents
- ✓ Integration of GI with roadways projects for cyclists and pedestrians
- ✓ Example of a school district property as a regional GI project

There will be no charge for the workshop. Morning refreshments and lunch will be served.

Registration link: _____

Note: a parking pass will now be required to park in the garage at the library during this workshop.

Registration deadline: **Friday, June 16, 2017**

Questions? Call Lillian at 510-832-2852 ext. 101 or email lquinata@eoainc.com



Annual "C.3" Workshop:

Stormwater Controls for Regulated Development Projects and Green Infrastructure Projects

Wednesday, June 21, 2017, 9:00 AM – 3:30 PM

















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

AGENDA

Registration and Refreshments	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 and LID	<i>Peter Schultze-Allen, EOA</i> 9:15 am – 10:00 am
C.3 Regulated Projects Preparing and Reviewing Stormwater Control Plans	<i>Kristin Kerr, EOA</i> 10:00 am – 10:45 am
BREAK	10:45 am – 11:00 am
C.3 Regulated Projects Stormwater Control Measure Design and Sizing	<i>Jill Bicknell, EOA</i> 11:00 am – 12:00 pm
LUNCH and Afternoon Registration	12:00 pm – 12:45 pm
Green Infrastructure (GI) Projects Overview of Provision C.3.j (GI) Requirements	<i>Jill Bicknell, EOA</i> 12:45 pm – 1:05 pm
GI Projects Overview of New GI Guidance Documents	<i>Phil Erickson, CD+A</i> 1:05 pm – 1:25 pm
GI Projects Integration with Pedestrian and Cyclist Infrastructure	<i>Phil Erickson, CD+A</i> 1:25 pm – 2:10 pm
BREAK	2:10 pm – 2:25 pm
School Districts and GI Projects Regional GI Project with Caltrans	<i>Eric Holm, Las Lomas Elementary School District</i> 2:25 am – 3:00 pm
GI Projects Group Exercise Selecting and Siting GI Measures	<i>Peter Schultze-Allen, EOA</i> 3:00 pm – 3:30 pm
Adjourn	3:30 pm

SMCWPPP
STORMWATER CONTROLS FOR REGULATED DEVELOPMENT PROJECTS
GREEN INFRASTRUCTURE PROJECTS
JUNE 21, 2017

B THRU K

Last Name	First Name	AM	LUNCH	PM	AGENCY	SIGNATURE
Black	Keegan	x	x	x	City of Brisbane	
Bogert	Reid	x	x	x	City/County Association of Governments of San Mateo	
Boo	Olivia	x	x		San Mateo county	
Bozorginia	Maziar	x	x	x	City of East Palo Alto	
Brown	CheyAnne	x	x	x	Town of Portola Valley	
Capasso	Julia	x	x	x	City of Brisbane	
caronongan	Cesar	x	x	x	CSG Consultants	
Casagrande	Julie	x	x	x	County of San Mateo DPW	
Chan	Catherine	x	x	x	CSG Consultants, Inc.	
Chow	Andrea		x	x	County of San Mateo	
Ciravolo	Laura	x	x	x	Sustainable Silicon valley	
Clark	Cindy	x	x	x	Sustainable Silicon Valley	
Critz	Carolyn	x	x	x	Veolia Water North America for City of Burlingame	
Deng	Tiffany	x	x	x	City of East Palo Alto	
Hakhamaneshi	Rambod	x	x	x	CSG Consultant	
Johnson	Ken	x	x	x	City of Brisbane	
kao	Jane	x	x	x	City of Millbrae	
Kenyon	Michelle	x	x	x	City of San Mateo	
Kim	Kathy	x	x	x	CSG Consultants	
Kim	Kayla	x	x	x	County of San Mateo	
Kwan	Jonathan		x	x	Town of Colma	

SMCWPPP
STORMWATER CONTROLS FOR REGULATED DEVELOPMENT PROJECTS
GREEN INFRASTRUCTURE PROJECTS
JUNE 21, 2017

L THRU U

Last Name	First Name	AM	LUNCH	PM	AGENCY	SIGNATURE
Lander	Mark	x	x	x	CSG Consultants	Mark Lander
Lee	Jennifer	x	x	x	City of Burlingame	Jennifer Lee
Lee	Richard	x	x		Works Dept	Richard Lee
Lee	Robin	x	x	x	Schaaf & Wheeler	Robin Lee
Leung	Camille	x	x	x	County of San Mateo	Camille Leung
Liebermann	Breann	x	x	x	San Mateo County	Breann Liebermann
Ligon	Grant	x	x	x	City of San Mateo	Grant Ligon
Louie	Selina	x	x	x	SF Bay Waterboard	Selina Louie
Ma	Vivian	<u>x</u>	x	x	City of Foster City	Vivian Ma
Murdock	Christian	x	x	x	City of Pacifica	Christian Murdock
O'Connell	James	x	x		City of Redwood City	James O'Connell
Osbah	Maggie	<u>x</u>	x	x	Works	Maggie Osbah
Pacini	Kenneth	x	x	x	City of San Mateo	Kenneth Pacini
Pascual	Henry	x	x	x	City of San Carlos	Henry Pascual
Pedro	Debbie	x	x	x	Town of Portola Valley	Debbie Pedro
Powell	Erika	x	x	x	San Mateo County	ERIKA POWELL
Robertson	Kathryn	x	x	x	City of San Carlos	Kathryn Robertson
Schrotenboer	Patti	x	x	x	Redwood City	Patti Schrotenboer
Sharifi	Mehdi	x	x	x	CSG Consultants, Inc.	Mehdi Sharifi
Sheehan	Katherine	x	x	x	CSG Consultants Inc	Katherine Sheehan
Tieu	Lily	x	x	x	Control Board	Lily Tieu
Tovmassian	Stephen	x	x	x	CSG Consultants	Stephen Tovmassian
Uppal	Paramjit	x	x	x	CSG Inc	Paramjit Uppal

**Stormwater Controls for Regulated Development Projects
and Green Infrastructure Projects**
City of San Mateo Library, Oak Room
55 W. 3rd Ave., San Mateo, CA 94402
Wednesday, June 21, 2017
9:00 a.m. – 3:30 p.m.

What Did You Think of the Following Presentations?

- 1. C.3 Regulated Projects, Basic Training on MRP Provision C.3 and LID –**
Peter Schultze-Allen, EOA

14 very helpful 10 somewhat helpful 0 not helpful

Comments:

- Brought a staff member who was not as familiar – she seemed to appreciate the overview
- Some of the pictures of biotreatment areas do not have 6 inches of ponding because inlet is at grade
- Very good for new reviewers
- Review of the provisions is helpful
- Being new to this, this was very helpful
- Good overview
- Good overview for large # of non-MRP focused staff (e.g. engineers/planners) in the room, with good level of detail also for pure SW focused staff
- Good refresher for newer staff that aren't familiar with the MRP and C3 requirements; short and sweet for people that are already familiar and to the part of changes
- Peter is always great. Was helpful to get confirmation of what my agency has been doing right, and what changes we need to make

- 2. C.3 Regulated Projects, Preparing and Reviewing Stormwater Control Plans –**
Kristin Kerr, EOA

20 very helpful 5 somewhat helpful 0 not helpful

Comments:

- Nice overview even for those of us who do not regularly do reviews
- Excellent presentation, with many examples including common errors
- Good design notes. Figure does not show energy dissipation at curb cuts. Mulch needs to be on landscape plan as landscape architects do not see civil plans.
- Brought up some good points
- I like examples of correct and incorrect control plan examples

- I like the examples of correct and incorrect control plan examples
- I really like the common error tips
- Information is clear; showing the “wrong” and “correct” ways and common errors are very helpful.
- Still confused by discussion of C.3/C.6 table “entire site” vs “roof, paving, other “breakdown.” I didn’t understand explanation
- Good presentation of all SCP resources and processes, with updates for expert audience members, comprehensive.

3. C.3 Regulated Projects, Stormwater Control Measure Design and Sizing – Jill Bicknell, EOA

18 very helpful 7 somewhat helpful 0 not helpful

Comments:

- Nice learning opportunity
- I like the clarification on the common errors on the C.3 checklists
- Perhaps a little too much calculation detail for audience. I would only show 4% and combo methods.
- Lots of math
- Speaker could have been more engaging; material was a bit dry
- More examples and ideas would be helpful to gain more ideas that could be applied.
- Nice to walk through an example
- Although very technical information, examples were very helpful
- Helpful to understand the relative outcomes of each sizing method, and their impacts on the site.
- Good introduction and examples of design/sizing strategies and formulas with resource references

4. Green Infrastructure (GI) Projects, Overview of Provision C.3.j (GI) Requirements – Jill Bicknell, EOA

18 very helpful 8 somewhat helpful 0 not helpful

Comments:

- Nice learning opportunity
- Already familiar with this topic
- Great introduction to GI
- Thanks for itemizing the requirements!
- Would like more details on required efforts to meet C3d sizing
- Not a planner so less relevant for my job. But nice resource links.
- Helpful for understanding the requirements and the goal to achieve
- Can you explain in the future how GI projects handle sizing? I’m confused how these small retrofits integrate with much larger tributary areas which wouldn’t meet typical LID sizing ratios. How do you prevent the small GI projects from being overwhelmed and washed out from the large existing street network.
- Succinct overview of key topic uniting both engineering and stormwater folks interests

5. GI Projects, Overview of New GI Guidance Documents – Phil Erickson, CD+A

12 very helpful 15 somewhat helpful 0 not helpful

Comments:

- Nice learning opportunity
- Already familiar with this topic
- More helpful to municipalities, not consultants
- Good explanation of process program is following
- Good to know what is coming
- Helpful status update and information regarding guidance documents that are being produced/drafted
- Very general, somewhat repetitive, not many concrete clear (e.g. visible, formatted) tables to present
- Too long. Lost me listening to discussion of future documents.

6. GI Projects, Integration with Pedestrian and Cyclist Infrastructure - Phil Erickson, CD+A

13 very helpful 13 somewhat helpful 1 not helpful

Comments:

- Nice learning opportunity
- More specific resources would be helpful (example of getting grant funding and specific challenges working through project implementation would be helpful)
- Helpful to know all challenges to GI
- Would be nice to identify key transportation officials from organizations like Caltrans, Caltrain and SamTrans
- It is nice to see different ideas and projects
- It is nice to see ideas from all over the country and see successful projects
- Helpful in understanding the timeline and origin of GI from other areas
- I was a little confused how this session directly related to stormwater compliance. I understand the benefit of taking the opportunity in a GI project to build non-auto transportation infrastructure, but it felt more focused on non-stormwater issues than it should have.
- Pretty nice, not always applicable to our stormwater work

7. GI Projects Group Exercise, Selecting and Siting GI Measures - Peter Schultze-Allen

12 very helpful 10 somewhat helpful 2 not helpful

Comments:

- I'd seen an example similar to this before, but helpful to talk through in a small group setting
- More exposure to project constraints would be helpful
- So many options for Castro Blvd.
- Great examples, fun activity
- Vague
- Everyone should not get the same exercise
- Very great presentation

- Group exercise helped to think of options of GI and sustainability for complete streets
- Visual examples of before and after were nice
- General examples roundtable discussion useful, but could present more innovative cost effective solutions

8. School Districts and GI Projects, Regional GI Project with Caltrans – Eric Holm, Las Lomas Elementary School District

14 very helpful 6 somewhat helpful 1 not helpful

Comments:

- Very interesting
- Interesting project, nice to learn more about schools and how they operate
- Cool! Exciting to hear about partnerships between schools and municipalities working together to address flooding and stormwater issues.
- Interesting to hear about projects in the area and the issues associated with it
- Very interesting. Thanks for sharing
- Very interesting project crammed into an existing footprint

Did this workshop meet your expectations? 27 Yes 0 No

Suggestions for future workshop topics:

- More interactive exercises
- Developing for GI plan
- Report on existing system and performance
- Report on cost vs benefit
- Common difficulties/tough to review aspects for C.3 per checklist review or SW Control Plan review; lessons learned for getting jurisdictions' engineering and stormwater/compliance staff to work together

General Comments:

- Nice overview
- Not a lot of new information (thankfully!) but a good refresher overall
- I already knew the topics, but there were interesting tidbits
- Thanks
- When putting together the various policy documents, please include sample calculations for sizing the facilities
- Infiltration systems require on-site infiltration data
- Retention, detention systems require minimum contact time to allow sediment to drop; need time for microbes to remove pollutants
- Self-treating areas need to be marked on plans so that they don't build on it in a different phase; also needs calculation to size the no build zone
- Lunch was great
- I liked the way the day was organized – C.3 regulated vs GI
- I liked the interactive group exercise to break up all the PowerPoint presentations
- Thank you for paper handouts

- More examples of plan review (what to look for, checklist of things that the plan should contain)
- It is helpful to have links to all the guideline documents used. They are easy to access. It would be helpful to go over issues with reporting and being open about those issues.
- The staff is always so helpful, knowledgeable, and supportive!
- Good range of topics, level of detail, and accommodations (especially food!)
- Thank you

Appendix 4

- CII Subcommittee – Attendance List for FY 2016/17


SMCWPPP Commercial/Industrial/Illicit Discharge (CII) Subcommittee Attendance – FY 2016/17

Name	Agency	Sep 21	Dec 20	Mar 15
Bozhena Palatnik	City of Belmont		✓	✓
Randy Breault	City of Brisbane		✓	
Keegan Black	City of Brisbane		✓	✓
Carolyn Critz	City of Burlingame	✓	✓	✓
Jennifer Lee	City of Burlingame			✓
Ward Donnelly	City of Daly City		✓	✓
Michele Daher	City of East Palo Alto		✓	✓
Norm Dorais	City of Foster City	✓		✓
Katherine Sheehan	City of Half Moon Bay/ City of San Carlos			✓
Azalea Mitch	City of Menlo Park			✓
Rob Diamond	City of Menlo Park	✓	✓	
Kevin Cesar	City of Millbrae	✓		✓
Cliff Ly	City of Millbrae	✓		✓
Raymund Donguines	City of Pacifica	✓		
Vicki Sherman	City of Redwood City	✓	✓	
Paige Safe	City San Carlos		✓	
Mark Swenson	City of San Mateo	✓		✓
Sven Edlund	City of San Mateo	✓		✓
Grant Ligon	City of San Mateo			✓
Andy Wemmer	South San Francisco		✓	
Daniel Garza	South San Francisco	✓		✓
Pat Ledesma	County of San Mateo	✓	✓	
Reid Bogert	SMCWPPP Staff		✓	✓
Kristin Kerr	EOA, Inc.	✓	✓	✓

Appendix 5

- Facebook Post for Mobile Cleaners Outreach
- BMP Brochure for Mobile Cleaners
- SMCWPPP Regional Mobile Cleaning Business Inventory

SMCWPPP March 5, 2017 Facebook Post Carpet Cleaner Mobile Business Outreach Message



FlowstoBay
Published by S Groner Assoc [?] · March 5 · 🌐

Do YOUR carpet cleaners dispose of their dirty water properly, or do they dump it into our storm drains? Wash water from mobile cleaning is NOT just dirt and water, and can go from storm drains straight to local creeks, the Bay, and the Ocean without ANY treatment. Make sure the company you use follows these best management practices: <http://ow.ly/JPbtX>



232 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


2 Post Clicks

0 Photo Views	1 Link Clicks	1 Other Clicks ⓘ
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NEGATIVE FEEDBACK

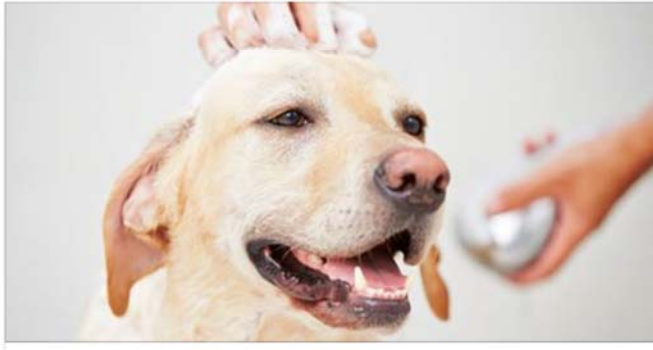
0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

SMCWPPP March 20, 2017 Facebook Post Pet Groomer Mobile Business Outreach Message



FlowstoBay
Published by S Groner Assoc [?] · March 20 · 🌐

Wash water from mobile pet groomers is not just dirt and water, and has toxic chemicals that get into our waterways. Make sure your mobile washing businesses are following the Best Management Practices (BMPs) to comply with stormwater pollution prevention regulations: <http://ow.ly/JPbtX>



119 People Reached

4 Likes, Comments & Shares

3 Likes	3 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
1 Shares	0 On Post	1 On Shares

0 Post Clicks

0 Photo Views	0 Link Clicks	0 Other Clicks ⓘ
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NEGATIVE FEEDBACK

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

June 30, 2017

To Owners and Operators of Mobile Businesses in San Mateo County:

The enclosed Best Management Practices brochure for Mobile Businesses has been developed by the San Mateo Countywide Water Pollution Prevention Program (Program) The Program is administered by the City/County Association of Governments (C/CAG), a joint powers agency representing each incorporated city and town in the county and the County of San Mateo.

We are writing to let businesses know that **it is illegal to drain or dump wash water from your activities into gutters, sidewalks, streets, or storm drains.** Since water entering the storm drain system is not treated in any way, pollutants that are flushed into the storm drain system end up contaminating our creeks, the San Francisco Bay, and the ocean. Draining wash water into storm drains will damage sensitive habitats and kill wildlife. It is important that wash water from mobile businesses be discharged properly.

Please take the time to read the information provided. You may need to change cleaning practices to ensure your business is not contributing to local water pollution. Educating your employees about these issues and making sure contractors you hire are properly disposing wastewater generated is very important. The brochure will help you convey these messages to your employees and contractors.

Thank your commitment to protecting our local water. If you have any questions about the information contained in this packet or would like more brochures, please call the Program at 650-599-1406.

Sincerely,



Matthew Fabry
Manager, Countywide Water Pollution Prevention Program

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 and 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.

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.

Options for Disposal

- Never** drain wash or rinse water into streets, gutters, parking lots, or storm drains.
- 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.
 - Direct water to landscaping or gravel surfaces. Wash water must completely soak into vegetation before you leave the site.

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.



Three Steps to Remember Before You Clean

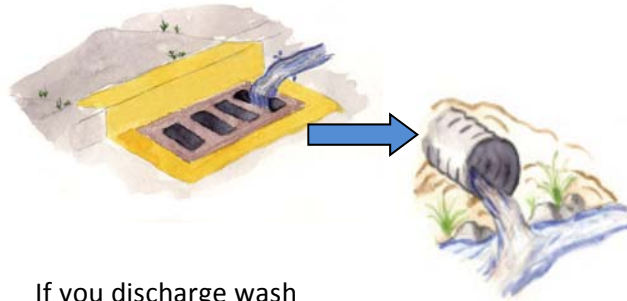
1. **Be a BASMAA Recognized Mobile Cleaner**
Take the online “mobile surface cleaning” training from BASMAA (Bay Area Stormwater Management Agencies Association). This program will train you on how to clean different surfaces in an environmentally acceptable way and publish your name as a trained cleaner. Visit www.basmaa.org.
2. **Ask Your Local Inspector**
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.
3. **Divert and Collect Wash Water**
Cover the storm drains to prevent wash water from entering and divert wash water to the sanitary sewer system if permitted to do so. Small amounts may be diverted to landscaped areas, if appropriate.

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 Wastewater Treatment Plant.....	(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 Wastewater Treatment Facility	(650) 726-0124
Silicon Valley Clean Water	(650) 594-8411 ext. 140
South San Francisco/San Bruno Water Quality Control Plant.....	(650) 877-8555
Palo Alto Regional Water Quality Control Plant	(650) 329-2598
San Francisco’s Southeast Treatment Plant.....	(415) 648-6882
West Bay Sanitary District	(650) 321-0384

Protect the Bay, the Ocean, and Yourself!

When wash water flows into storm drains it goes straight to local creeks and the Bay or Ocean without any cleaning or filtering.



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.**

For More Information About
Stormwater Pollution Prevention

www.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 and artwork of this brochure.

Best Management Practices
for

MOBILE BUSINESSES

Carpet Cleaners
Vehicle Washers or 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, our Bay, and our Ocean.

SMCWPPP Regional Mobile Cleaning Business Inventory

Last Update: January 2017

Name	Mailing Address	City	Zip Code	Contact Name	Contact Email	Mobile Business Type
A Dent Artist	50 W 3rd Ave	San Mateo	94402			Mobile Dent Repair
A+ Luxury Dog and Cat Grooming				Stacy Kart	stacy.kart@gmail.com	Pet grooming
A1 Carpet Cleaning	2341 Fleetwood Dr.	San Bruno	94066	Remberto		Carpet cleaning
AB&C Services	1860 El Camino Real Ste. 55	Burlingame	94010	Al Begazo	contact@abcservicesf.com	House cleaning/power washing
AIM Blind & Drapery	990 Industrial Rd Ste 107	San Carlos	94070		customerservice@aimonsite.com	blind and drape cleaning
All Surface Cleaning	107 36th Ave	San Mateo	94403		Edgarpuluc@icloud.com	Marble/Terrazo cleaning & power washing
Alpha Grooming	1325 Howard Ave,	Burlingame	94010	Carlos Chaves	contact@alphagroomingpetsalon.com	pet washing
Alpha Grooming Pet Salon	1325 Howard Ave,	Burlingame	94010			pet grooming
American House Cleaning Service	164 Jefferson Dr. Ste. D	Menlo Park	94025		team@americanhousecleaning.com	Carpet cleaning
Anchor Detailing	1323 Rollins Rd	Burlingame	94010			Auto Detailing/Car Wash
Araya Clean Property Services	3182 Campus Dr, Suite 422	San Mateo	94403		jimmcdonald@arayaclean.com	Power washing/building services
Aussie Pet Mobile					http://petgroomingsouthbay.com	pet washing
Aussie Pet Mobile South Bay						Pet grooming
Auto Detail Factory		Redwood City			autodetailfactory@gmail.com	Auto Detailing/Car Wash
Auto Werks	960 Edgewater Boulevard	Foster City	94404	Kevin Grundmann	kevin@Autowerksdetailing.com	Auto Detailing/Car Wash
B & G Chem-Dry	1918 Hillman Ave	Belmont	94002			Carpet cleaning/water damage restoration
Bakers Chem Dry	18 Adrian Crt	Burlingame	94010			Carpet cleaning
Bay Area Power Wash	751 Laurel St	San Carlos	94070			power washing
Bay Area Power Wash	4751 Laurel St #402	San Carlos	94070			window/gutter/building/cement cleaning
Bayside Detailing	254 San Pedro Rd.	Daly City	94014	David Barroso		Car washing/detailing
BCG Morales Cleaning Services	P.O. Box 5114	Redwood City	94063		bcgmorales@yahoo.com	house cleaning
Big Al's Commercial Cleaning	P.O. Box 55252	Hayward	94544	Tim Covington		Commercial cleaning
Brite & Shine Cleaning svcs						house cleaning
Brite Carpet Care	PO Box 36023	San Jose	95158			Carpet cleaner
Callaway Cleaning and Painting						Gutter and house cleaning
Car Detailing						Car washing/detailing
Careful Clean	1914 Spring St.	Redwood City	94063			window and pressure washing
Carlson's Pressure Washing	307 Barton Way	Menlo Park	94025			Pressure washing and deck cleaning/treatment
Carpet Cleaning Burlingame	577 Airport Blvd Ste 920	Burlingame	94010			Carpet/rug/upholstery/mattress/boat cleaning, water damage restoration
Carpet Cleaning Menlo Park						Carpet cleaning
Central Bay Painting	14272 Doolittle Dr	San Leandro	94577	Robert Lee		Painters
Chem-Dry	1514 Newlands Ave	Burlingame	94010			Carpet/leather/tile cleaning
Christy's Mobile Grooming		Foster City			styleme@christysmobile.com	pet washing
Classic Pet Grooming	572 Arastradero Rd	Palo Alto	94306			pet washing
Claudio's Janitorial Services	872 Resota St	Hayward	94545		claudiosjservices@yahoo.com	Carpet cleaner
CLC Mobile Detailing					CLCMobileDetailing@gmail.com	Auto Detailing/Car Wash

Name	Mailing Address	City	Zip Code	Contact Name	Contact Email	Mobile Business Type
Clean Carts	226 S. 24th St.	San Jose	95116	Trinidad	jbernardino@cleancarts.com hsandoval@cleancarts.com jseverino@cleancarts.com	Shopping cart cleaning/maintenance and pressure washing
Clean Sweep Services	14375 Saratoga Ave	Saratoga	95070	Eric Leonard	eric@cleansweep-inc.com	Street sweeping and pressure washing
Coit	865 Hinckley Road	Burlingame	94010			carpet cleaning
Colors on Parade	P.O. Box 601855	Sacramento	95860	Jan Steele		
Complete Cleaning	1312 Maple St	San Mateo	94402			house cleaning
Coronado's Carpet Cleaning	595 6th Ave	Menlo Park	94025		icoronado81@yahoo.com	Carpet/tile/grout/upholstery cleaning
Crystal Clear Window cleaning and Pressure Washing	467 Capistrano Ave	San Francisco	94112			window/gutter/building/cement cleaning
Curb Appeal Pressure Washing	103 Ross Way	Brisbane	94005	Steve Kerekes	curb-appeal@sbcglobal.net	Interior/exterior cleaning
Dad and Son LLC Apartment						house cleaning
Dan Sullivan Painting	PO Box 1837	San Mateo	94401			Painting/power washing
Detail Greenie						Auto Detailing/Car Wash
Dirty Dog Mobile Grooming	2403 Fulton St	San Francisco	94118			Pet grooming
Dog Gone Walking	Madison Ave	Redwood City	94061		info@doggonewalking.net	pet washing
Don's Window Cleaners	P.O. Box 7392	Menlo Park	94026			Window washing, building maintenance, house cleaning, dry cleaning
DoubleTake Auto Spa	43122 Christy St	Fremont	94538		info@dtautospa.com	Auto Detailing/Car Wash
Dynamic Carpet Cleaning & Restoration	2050 Gateway Pl	San Jose	95110		safegrdcc@yahoo.com	house cleaning
Eco Clean-Window Cleaning and Pressure Washing						window/gutter/building/cement cleaning
Elite Auto Detail				Phil Wong	123philwong@gmail.com	Auto Detailing/Car Wash
Enlightened Views Window Cleaning				Bart Draper	Bart@enlightenedviews.com	Window/solar power cleaning and pressure washing
Ernest Carpet Cleaning				Ernesto Gonzalez		Carpet cleaner
Ernie's Carpet Cleaners	50 Woodside Plaza Ste 319	Redwood City	94061		ernies.carpet@gmail.com	Carpet Cleaners
Express Mobile Detailing						Auto Detailing/Car Wash
Exterior Pressure Wash					EXTERIORPRESSUREWASH@HOTMAIL.	Pressure washing
Five Star Auto Detailing				David Siress	david@siress.net	Auto Detailing/Car Wash
Fleetwash	1162 Bessemer Ave	Manteca	95337	Ralph Colonna		Car washing
Fresh and Natural	P.O. Box 55321	Hayward	94545	Allen Nguyen		Mobile food truck
Fresh N Clean Express					info@freshncleanexpress.com	Auto Detailing/Car Wash
G & G Carpet, Rug, Upholstery, & Tile Clean	951 Old County Rd Ste 16	Belmont	94002			Carpet/rug/upholstery/tile cleaning
Gary's Cleaning Services	P.O. Box 863	San Carlos	94070		garyscleaning@gmail.com	Window/gutter/power washing
gAuto	6619 N. Scottsdale Road	Phoenix	85250		service@gauto.com	Auto Detailing/Car Wash
Genesis Home Services	916 S Claremont St	San Mateo	94402			house cleaning
Glamour Auto Painting	247 Avalon Dr.	Daly City	94015	Junior Joseph		Car washing/repair/painting
Global Green Carpet Care	2201 Shoreline Dr Ste 2112	Alameda	94501			carpet cleaning
Go Mobile Auto Detailing						Auto Detailing/Car Wash
Good Housekeeping	1115 Himmel Ave	Redwood City	94061	John Watt		carpet and floor cleaning

Name	Mailing Address	City	Zip Code	Contact Name	Contact Email	Mobile Business Type
Goodbye Dents						Auto Detailing/Car Wash
Healthy Choice Carpet Cleaning	88 1st Ave.	Daly City	94014	John Stewart	healthychoice63@yahoo.com	Carpet cleaning
High Quality Detailing					SERVICE@HIGHQUALITYDETAILING.CO	Auto Detailing/Car Wash
High Quality House Cleaning	1289 Reamwood Ave Ste G	Sunnyvale	94085	Maria Flores		house and carpet cleaning
Home Service Auto Detailing						Car washing/detailing
Hoodz	1357 San Mateo Ave., Suite 1	South San Francisco	94080	Andrew Conti		Exhaust hood/filter and floor/mat cleaning
Indy Express Mobile Detail	PO Box 2002	Menlo Park	94025		stratazoom@hotmail.com	Auto Detailing/Car Wash
Jay's Mobile Detail					jaysmobiledetail@gmail.com	Auto Detailing/Car Wash
JB Mobile Detailing						Car washing/detailing
Jim's Painting & Waterproofing Company	1179 Alicante Dr	Pacifica	94044			Painting & power washing
Jose's Cleaning Services	941 Hill St	Belmont	94002			Carpet/rug/window cleaning
JS Interiors and Dent Repair						Body Shops, Mobile Dent Repair, Auto Upholstery
Julio's Mobile Vehicle Waxing Detailing		San Francisco	94112			Car washing/detailing
KR Surface Industries	180 Constitution Drive #6	Menlo Park	94025	Rory K. Stevens	rstevens@krsurface.com	Construction/power washing
Krystal Kleen					krystalkleen@yahoo.com	Janitorial/building services
L & G Mobile Truck Wash	1112 Gaillardia Way	East Palo Alto	94303			Truck/car wash
Lane Cleaning Services	405 El Camino Real	Menlo Park	94025			Carpet cleaning
Lazos Cleaning Solutions				Luis Lazo	luis@lazoscleaningsolutions.com	Carpet cleaner
Lewis Carpet & Upholstery Cleaners	2658 Spring St Ste A	Redwood City	94063			house cleaning
M&M Mobile Auto Detailing						Car washing/detailing
M. Bright Painting	2027 Kings Ln	San Mateo	94402			Exterior/interior washing/painting
Magic Hands Auto Detailing						Auto Detailing/Car Wash
Margie's Mobile Pet Services						Pet grooming
Master Plumbing	650 Vaqueros Rd., Bldg G	Mt. View	94043	Mike Smith		Plumbing
McNevin Cleaning	810 Stanton Rd	Burlingame	94010		service@mcnevincleaning.com	house and carpet cleaning
Mena's Cleaning Services						house, carpet and gutter cleaning
Metro Surface Wash	350 Bay St. Ste. 100-343	San Francisco	94133	Anthony Lau		Surface washing
Michael's Mobile Pet Grooming						Pet grooming
Mike Mac Concrete Pumping	711 Pacific Ave. Apt. 618	San Francisco	94133	Mike Mac		Concrete pumping
Mobile and Salon Grooming (aka Classic Pet Grooming)				Connie	connie@classicpetgrooming.com.	pet washing
Mobile Pet Grooming San Francisco		San Francisco				pet washing
Multi-Craft Auto Body Shop	917 California Dr	Burlingame	94010			Auto Detailing/Car Wash
Nick Mejia Painting	124 N Railroad Ave	San Mateo	94401			Painting & power washing
North Pacific Painting	80 Glenn Way, Suite #4	San Carlos	94070		masoud@northpacificpainting.com	Painting & power washing
Omni Cart Services	P.O. Box 366	Mentor, OH	44061	Phillip Hagan	Lgph3@yahoo.com	Equipment maintenance/repair
Onyx Armour Mobile Automotive Detailing	1221 Saratoga Ave. Suite 100	Santa Clara	95051		support@onyxarmour.com	Auto Detailing/Car Wash
Orlando Trujillo Painting Contractor, Inc.	6 South Amphlett Blvd.	San Mateo	94401		otpaint@mindspring.com	Painting & power washing
Oscar's Carpet Cleaning	753 4th Avenue	San Bruno	94066	Motino Oscar, Orlando Cruz		carpet cleaning
Pansini Auto Spa	3850 Main St	Oakley	94561	Tylor Pansini		Auto Detailing/Car Wash
Paramount Detailworkz					paramountdetailworkz@gmail.com	Auto Detailing/Car Wash
Pariclin Janitorial Services	3508 Hoover St	Redwood City	94063			house cleaning
Paul's Mobile Detailing	55 Oak Street	San Francisco	94102	Paul Dickerson		Auto Detailing/Car Wash

Name	Mailing Address	City	Zip Code	Contact Name	Contact Email	Mobile Business Type
Peninsula Chem dry	101 Industrial Rd Ste 9	Belmont	94002			carpet cleaning
Peninsula Power Wash	3358 Marisma Street	San Mateo	94403	Kevin Banas	ckirbyrdaefe@yahoo.com/kevin@peni	Power washing
Perfect Shine Housekeeping	555 Bryant St	Palo Alto	94301			house cleaning
Pooch & Bubbles House Call Pet Grooming Service						Pet grooming
Porfirio's Steam Carpet Cleaning	352 Filbert St.	Half Moon Bay	94019			Upholstery/carpet/tile cleaning & auto detailing
Power Shine Mobile Wash	Po Box 23551	San Jose	95123			Car washing/detailing
Professional Service C						home and carpet cleaning
Puma Power Wash	435 23rd St.	San Francisco	94107	Guy Triger		Pressure washing
Ray's House Cleaning Services	2077 Scott Blvd	Palo Alto	94301			house cleaning
Reflection Auto Detail & Mechanics						Auto Detailing/Car Wash
Rosas Brothers	PO Box 7862	Oakland	94601	Victor		Concrete/sawcut
RX3 Mobile Detail					info@rx3autodetail.com	Auto Detailing/Car Wash
Sary's House Cleaning	30 Columbia Ave	Redwood City	94063			house cleaning
ServiceMaster by the Bay	110 Glenn Way #7	San Carlos	94070		servicemasterbythebay@yahoo.com	Janitorial/building services
ServiceMaster Of San Mateo	439 Eccles Ave	South San Francisco	94080			carpet cleaning
Servpro of Belmont San Carlos	40 Cape Hattaras Court	Redwood Shores	94065		servpro9332rjd@gmail.com	Carpet cleaning and restoration
Shear Pets Mobile Cat & Dog Grooming salon		San Francisco			booking@shearpets.com	pet washing
Silicon Valley House Cleaning Siteler	P.O. Box 54275	San Jose	95154		info@siliconvalleyhousecleaning.com	house cleaning
						Auto Detailing/Car Wash
Solis House Cleaning	1929 Crisanto Ave	Mountain View	94040			house and office cleaning, power washing
Soto's Mobile Auto Detailing	655 Oak Grove Ave	Menlo Park	94026			Car washing/detailing
Sovereign Motor Group						Auto Detailing/Car Wash
Sparkle Brite CO	1036 15th Ave	Redwood City	94063			house cleaning
Stanley Steemer	3041 Teagarden St	San Leandro	94577			carpet cleaning
Steri-Clean	28302 Industrial Blvd Ste B	Hayward	94545			general cleanup services
Sunrise Painting Inc.	80 Cabrillo Hwy N	Half Moon Bay	94019		info@sunrisepaintinginc.com	Painting & power washing
Tamayo's Services	580 7th Ave.	Menlo Park	94025	Ramon Tamayo	Ramontamayo43@gmail.com	Landscaping and pressure washing
Technic Auto Center	1302 Old County Rd	Belmont	94002			Auto Detailing/Car Wash
The Oriental Carpet	707 Santa Cruz Ave	Menlo Park	94025			Carpet sale/installation/repair
Tom's Handyman Services	46 Buffalo Ct	Pacifica	94044		tborgshandyman11@gmail.com	Handyman projects/power washing
Tony Addy's Building Services	1951 O'Farrell St Unit 115	San Mateo	94403			Power washing/building services
Torres Cleaning & Maintenance	P.O. BOX 5469	Redwood City	94063			Carpet/tile/window cleaning & power washing
Toscano Carpet Cleaning	216 Ivy Drive	Menlo Park	94025	Fidelina Toscano		Carpet cleaning
Total Cleaning	1050 Crestview Dr	Mountain View	94040			house cleaning
United Auto Spa				Aaron Lasnover		Auto Detailing/Car Wash
V & G Window Carpet & Housecleaning Ser	50 Woodside Plz Ste 539	Redwood City	94061		vgwindowcleaning@att.net	carpet and house cleaning
Vera's Auto Detailing	1762 Spokane St.	Modesto	95358		verasautodetail@gmail.com	Auto Detailing/Car Wash
Vet Pronto						Vetinarian
Washing Wizard	481 Bermuda Dr	San Mateo	94403			Power washing/pressure cleaning
Washtech	422 Quadrant Ln	Foster City	94404			Power washing/car wash
Westlake Construction Services	1 Skyline Plaza	Daly City	94015	Gordon Graham		

Name	Mailing Address	City	Zip Code	Contact Name	Contact Email	Mobile Business Type
White Flowers Cleaning Service	1379 Hollybourne Ave	Menlo Park	94025			house cleaning
White Glove Cleaning Service	50 Woodside Plaza	Redwood City	94061	Fernanda Rosa		house cleaning
White Glove Mobile Detailing						Auto Detailing/Car Wash
Who Let the Dogs Out	1819 Polk St. #363	San Francisco	94109	Lauren	info@dogsoutsf.com	Pet grooming
Window Genie of Peninsula						window/gutter/building/cement cleaning

Appendix 6

- CALBIG Meeting: Construction Site Stormwater Compliance – September 21, 2016
 - Announcement flyer
 - Agenda
 - Attendance list
- Stormwater Training for Construction Site Inspectors – February 1, 2017
 - Announcement Flyer
 - Agenda
 - Attendance List
 - Summary of Workshop Evaluations



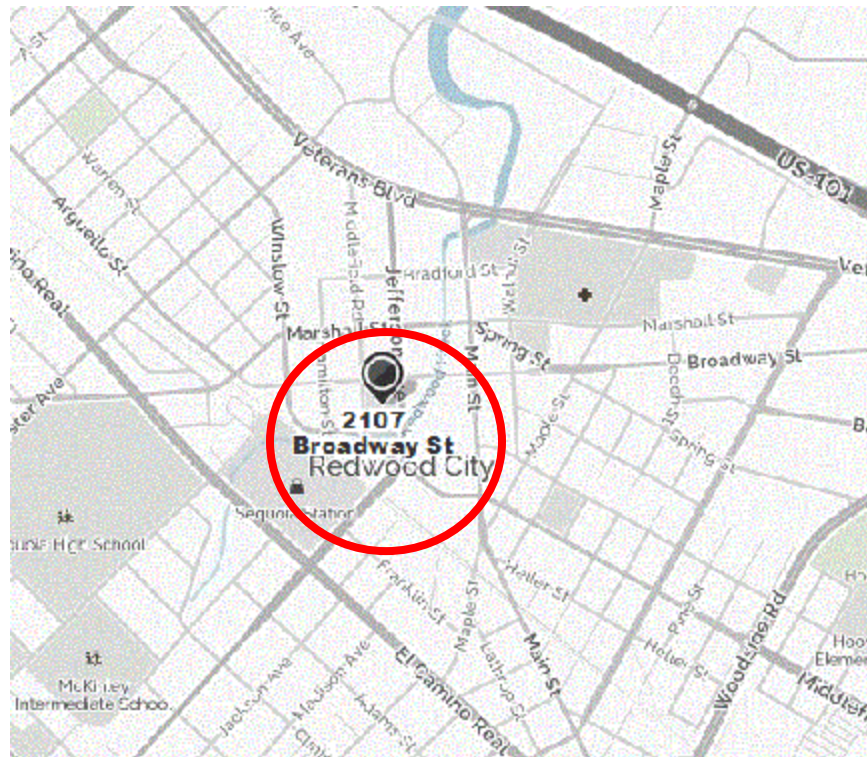
CALBIG MEETING ANNOUNCEMENT

2016 Stormwater Requirements for Construction Sites

(See Below)

This month's CALBIG meeting will be held on Wednesday, September 21, 2016 from 11:30am to 1pm at (**please note**):
The Old Spaghetti Factory, 2107 Broadway St., Redwood City, CA 94063.

For directions see map below:



Directions: Take US 101; Exit at Whipple Ave.;

Fee: \$20 in cash or check payable to CALBIG

Lunch: Your choice from one of the following Pasta Classics with: 1) Mushroom Sauce, 2) Rich Meat Sauce, or 3) White Clam Sauce, accompanied by a crisp green salad with creamy pesto dressing; and their signature spumoni ice cream for dessert.



Speaker: Peter Schultze-Allen, EOA, Inc.

Topic: Stormwater Requirements for Construction 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 Old Spaghetti Factory
2107 Broadway Street
Redwood City, CA
September 21, 2016**

Agenda

Registration/Seating	11:30 - 11:45
Michael Clarke, President - Welcome and Pledge of Allegiance	11:45 - 11:48
Len Matchniff, Vice President - Upcoming, 2017-Topic Schedule	11:48 - 11:51
John McCabe, Secretary - Motion to Approve: August 10th Mins.	11:51 - 11:54
Farris Hix, Treasurer - CALBIG's Account Balance Report	11:54 - 11:57
Michael Gorman, Board Director - Upcoming ICC Training	11:57 - 12:00
Keynote Speaker: Peter Schultze-Allen, EOA, Inc.	12:00 - 1:00
Michael Clarke, President - Coming Attractions & Adjournment	1:00

Out of consideration for our restaurant commitment and the potential size of our group, it is imperative that we have an accurate head count.

Please RSVP to Michael Gorman at either (mgorman@smcgov.org or thegormanfamily@earthlink.net) by **(please note earlier deadline) 5:00 PM, Friday, September 15th.**

Thank you !

Attendance – September 21, 2016

First	Last	City or Business	Email	Initial	Paid
Brad	Andersen	Andersen Associates	andersenassociates@comcast.net		
Dawn	Anderson	As It Stands	gonedawning@yahoo.com		
Timothy	Anderson	City of Hillsborough	Tanderson@Hillsborough.net		
Kathy	Anderson	City of Atherton	Kanderson@ci.atherton.ca.us		
Greg	Anderson	City of Los Altos	Greg.anderson@ci.los-altos.ca.us		
Les	Arias	City of Redwood City	Larias@redwoodcity.org		
Darcy	Axiaq	City of Redwood City	XDaxiaq@redwoodcity.org	X	X
Charlie	Blanchard	City of San Mateo	cblanchard@cityofsanmateo.org		
Vince	Badillo	V.B. Electric	vince@vbelectric.com		
Kirk	Ballard	City of Los Altos	Kirk.Ballard@ci.los-altos.ca.us		
Don	Bartlett	City of Foster City	dbartlett@fostercity.org		
Rick	Bellew	City of Redwood City	rbellew.redwoodcity.org		
Tanya	Benedik	City of Millbrae	Tbenedik@ci.millbrae.ca.us		
Gordon	Blancher	City of Sunnyvale	Gblancher@ci.sunnyvale.ca.us		
Paul	Bosman	City of Los Altos	Paul.bosman@ci.los-altos.ca.us		
Dave	Brakebill	City of Redwood City	dbrakebill@redwoodcity.org	X	X
Roy	Bronold	City of San Bruno	rbronold@sanbruno.ca.gov		
Kirk	Buckman	City of Belmont	Kbuckman@Belmont.Gov		
Andrew	Burke	Town of Atherton	aburke@ci.atherton.ca.us		
Rini K.	Bunje	City of Menlo Park	rkunje@menlopark.org		
James	Caccia	Caccia Plumbing Inc	Jc@cacciaplumbing.com		
Geno	Caccia	Caccia Plumbing Inc	gc@cacciaplumbing.com		
Henry	Calilong	City of Burlingame	hcalilong@burlingame.org		
Patty	Camacho	County of San Mateo	ppcamacho@smcgov.org	X	X
Benjamin	Campbell	County of San Mateo	bcampbell@smcgov.org	X	X
Hector	Carlos	County of San Mateo	hcarlos@smcgov.org	X	X
Rigoberto	Caro	City of Burlingame	rcaro@burlingame.org		
Marco	Cavelieri	City of Burlingame	Mcavelieri@burlingame.org		
Allen	Chan	County of San Mateo	afchan@smcgov.org		
Stephen	Chan	County of San Mateo	sxchan@smcgov.org		
Alice	Chen	County of San Mateo	achen@smcgov.org		
Jason	Chen	Town of Woodside	jchen@woodsidetown.org		
Michael	Clarke	City of San Bruno	mclarke@sanbruno.ca.gov	X	X
Martin	Cooper	City of Foster City	Mcooper@Fostercity.org		
Paul	Cowan	City of South San Francisco	paul.cowan@ssf.net		
Michael	Crivello	County of San Mateo	mcrivello@smcgov.org		
Fred	Cullum	4LEAF, Inc.	frecul@comcast.net		
Michael	Cully	City of Colma	mike.cully@colma.ca.gov	X	X
Connie	Davies	City of Burlingame	Cdavies@burlingame.org		
Steve	Diaz	City of Redwood City	sdiaz@redwoodcity.org		
Tony	Dini	Cal Electric Company	Tdini@calelectric.com		
Eric	Dreesman	City of Foster City	Edreesman@fostercity.org		
Don	Dutcher	City of Sunnyvale	Ddutcher@ci.sunnyvale.ca.us		
Robert	Dunbar	City of Palo Alto	Robert.Dunbar@cityofPaloAlto.org		
Matt	Farrell	City of San Carlos	mfarrell@cityofsancarlos.org	X	X
Ryan	Featherstone	CSG Consulting Inc	ryfe09@yahoo.com		
Jeff	Frishof	Eagle One Services LLC	Jfrishof@yahoo.com		

Dino	Francesconi	City of Belmont	Dfrancesconi@belmont.gov		
Michael	Gorman	County of San Mateo	mgorman@smcgov.org	X	X
Christian	Greene	City of Los Altos	cgreene@losaltosca.gov		
Mike	Greenlee	Town of Atherton	mgreenlee@ci.atherton.ca.us		
Bob	Haggett	CSG Consulting, Inc.	bobh@csgengr.com		
Miles	Hancock	County of San Mateo	mhancock@smcgov.org		
Douglas	Hansen	CodeCheck	Douglas@codecheck.com		
Jay	Harrison	City of Santa Clara	jharrison@santaclaraca.gov		
Farris	Hix	City of Redwood City	Fhix@redwoodcity.org		
David	Hirzel	Building Design / Lic. # 436465B	dhbd@sbcglobal.net	X	X
Farris	Hix	City of Redwood City	fhix@redwoodcity.org		
Wayne	Hoss	County of San Mateo	whoss@smcgov.org		
Robert	Johnson	CSM Bldg Inspection Student	Rjohn163@my.smccd.edu		
Sean	Kelley	California Electric Co	skelley@caelectric.com		
Nicole	Kinahan	City of Burlingame	nkinahan@burlingame.org		
Jim	Kirkman	City of South San Francisco	Jim.Kirkman@SSF.net		
Daniel	Kulda	City of San Carlos	dkulda@cityofsancarlos.org	X	X
JoAnn	Kurz	Town of Woodside	Jkurz@woodsidetown.org		
David	Lasater	Town of Atherton	dlasater@ci.atherton.ca.us		
John	La Torra	CSG Consulting, Inc.	johnl@csgengr.com		
Stephen	Lau	City of San Mateo	slau@cityofsanmateo.org		
Jamie	Lee	City of Redwood City	jlee@redwoodcity.org		
Sheila	Lee	City of Santa Clara	slee@santaclaraca.gov		
Chai	Lor	CSG Consultants, Inc.	Chail@Csgengr.com		
Christina	Lucchini	City of Redwood City	Clucchini@redwoodcity.org		
Robert	Luna	City of East Palo Alto	rluna@cityofeastpaloalto.org		
Brooks	MacNeil	City of Burlingame	Bmacneil@burlingame.org		
Umesh	Maharaj	City of San Bruno	Umaharaj@sanbruno.ca.gov	X	X
Barry	Mammini	City of South San Francisco	Barry.mammini@SSF.net		
Jeanne	Mangerich	San Francisco State Univ	mangerichj@gmail.com		
Lane	Manuel	City of Santa Clara	lmanuel@santaclaraca.gov		
Leonard	Matchniff	City of Foster City	lmatchniff@fostercity.org	X	X
Greg	Maselli	City of Los Altos	gmaselli@losaltosca.gov		
Daniel	Mauldin	City of San Carlos	dmauldin@cityofsancarlos.com		
John	McCabe	City of Menlo Park	jjmccabe@menlopark.org		
Maureen	McCann	Town of Hillsborough	mmccann@hillsborough.net		
Joe	McCluskey	City of Burlingame	jmcccluskey@burlingame.org		
Rick	McManis	City of East Palo Alto	rmcmanis@cityofepa.org		
Tim	McMillian	City of Santa Clara	tmcmillian@santaclaraca.gov		
Cedric	McNicol	City of South San Francisco	Cedric.mcnicol@ssf.net		
Robert	Moreno	City of Santa Clara	rmoreno@santaclaraca.gov		
John	Murphy	City of San Bruno	jmurphy@sanbruno.ca.gov	X	X
Val	Mandapat	City of Daly City	vmadapat@dalcity.org		
Mike	Munson	CSG Consultants, Inc.	mikem@csgengr.org	X	X
Mark	Nolfi	City of Belmont	Mnolfi@Belmont.gov		
Michael	O'Connell	County of San Mateo	moconnell@smcgov.org		
Kelly	O'Dea	City of Redwood City	kodea@redwoodcity.org		
Anthony	Ortiz	Shums Code Consultants	tony.ortiz@shumscoda.com		
Andrei	Oustinov	City of Santa Clara	Aoustinov@santaclaraca.gov		
Tino	Padilla	City of San Bruno	Tpadilla@sanbruno.ca.us	X	X
Rhonda	Parkhurst	City of Palo Alto	Rhonda.Parkhurst@CityofPaloAlto.org		

Russ	Perone	CSG Consulting, Inc.	russp@csgengr.com		
Diana	Perkins	City of Sunnyvale	Dperkins@ci.sunnyvale.ca.us		
Jeremiah	Pons	County of San Mateo	jpons@sanmateo.org	X	X
Will	Racanelli	Town of Hillsborough	wracanelli@hillsborough.net	X	X
Reggie	Ramos	CSG Consulting, Inc.	Reggie_amos@yahoo.com		
Michael	Renner	Town of Atherton	mrenner@ci.atherton.ca.us		
Douglas	Rider	CSG Consultants, Inc.	doug@csgengr.com		
Erik	Rietdorf	City of South San Francisco	erik.rietdorf@ssf.net		
Elizabeth	Rider	City of South San Francisco	elizabeth.rider@ssf.net		
Ryan	Rucher	Town of Woodside	rrucker@woodsidetown.org		
Adam	Sanders	Town of Atherton	asanders@ci.atherton.ca.us		
Amery	Sandoval	County of San Mateo	Asandoval@smcgov.org		
Ana	Santiago	County of San Mateo	amsantiago@smsgov.org		
John	Sayers	City of Palo Alto	John.Sayers@CityofPaloAlto.org		
Vivian	Seto	Town of Colma	vivian.seto@colma.ca.gov		
Jerry	Schaell	CSG Consultants, Inc.	jschaell@csgengr.com		
Thomas	Silipin	City of Redwood City	Tsilipin@redwoodcity.org		
Leigh	Simpson	Bay Area Electric	Lacasame@aol.com		
Troy	Smith	County of San Mateo	tsmith@smcgov.org		
Steven	Solorio	City of Redwood City	ssolorio@redwoodcity.org		
John	Taecker	Underwriters Labatory	John.K.Taecker@ulA		
Joe	Travers	City of Daly City	jtravers@dalycity.org		
Bill	Tott	City of Santa Clara	btott@santaclaraca.gov		
Bud	Starmer	City of Palo Alto	bud.starmer@cityofpaloalto.org		
Chris	Valley	City of San Carlos	cvalley@cityofsancarlos.org		
Ken	Vitorelo	City of San Carlos	Kvitorelo@cityofSanCarlos.org		
Mike	Wayne	City of Redwood City	Mwayne@redwoodcity.org		
Skip	Walker	Walker Prop. Evaluation	HomeInspection@SanBrunoCable.com	X	X
Bruce	Welch	City of Daly City	rbwelch@dalycity.org		
Shauna	Williams	City of San Bruno	swilliams@sanbruno.ca.gov		
Shellie	Woodworth	City of Mountain View	shellie.woodworth@mountainview.gov		
Ray	Yniguez	Town of Hillsborough	Ryniguez@Hillsborough.net		
Wing	Yee	CSG Cosultants, INC.	MichelleCheung074@hotmail.com		
Homer	Yim	Simpson StrongTie	Hyim@strongtie.com		
Erica	Adams	County of San Mateo	eadams@smcgov.org	X	X
Olivia	Boo	County of San Mateo	oboo@smcgov.org	X	X
Melisa	Ross	County of San Mateo	mross@smcgov.org	X	X
Laura	Richstone	County of San Mateo	Lrichstone@smcgov.org	X	X
Angelia	Chaves	County of San Mateo	achaves@smcgov.org	X	X
Carmelisa	Morales	County of San Mateo	cjmorales@smcgov.org	X	X
Joan	Kling	County of San Mateo	jkling@smcgov.org	X	X
Otis	Chan	County of San Mateo	ochan@smcgov.org	X	X
Joe	LaClair	County of San Mateo	jlaclair@smcgov.org	X	X
Scott	Burlin	County of San Mateo	sburlin@smcgov.org	X	X
Vivian	Ma	City of Foster City	vma@fostercity.org	X	X
Michael	Ngo	City of Foster City	mngo@fostercity.org	X	X
Lawrence	Tam	City of Foster City	ltam@fostercity.org	X	X
Christian	Murdock	City of Pacifica	murdockc@ci.pacifica.ca.us	X	X
Ryan	Marquez	City of Pacifica	marquezr@ci.pacifica.ca.us	X	X

Lawrence	Ncai	City of Pacifica	ncai@ci.pacifica.ca.us	X	X
Mark	Hathaway	City of San Mateo	mhathaway@cityofsanmateo.org	X	X
M.	Kenyon	City of San Mateo	mkenyon@cityofsanmateo.org	X	X
Leo	Chow	City of San Mateo	lchow@cityofsanmateo.org	X	X
Ken	Pacini	City of San Mateo	kpacini@cityofsanmateo.org	X	X
Jai	Reij	City of San Mateo	jreij@cityofsanmateo.org	X	X
Otis	Chan	City of San Mateo	ochan@cityofsanmateo.org	X	X
Keith	Weimer	Town of Portola Valley	kweiner@portolavalley.net	X	X
Nelson	Pureco	WC-3	nelson@wc-3.com	X	X
Chuck	Venook	WC-3	chuch@venook.com	X	X
Amor	Hasenin	WC-3	amorh@wc-3.com	X	X
			-		



Save the Date!



Construction Site (C.6) Stormwater Inspections and Post-Construction (C.3) Stormwater Treatment Measure Installation Inspections

Training for Municipal Inspectors

Wednesday, February 1, 2017

City of San Mateo Public Library

55 W. 3rd Ave, San Mateo

9:00am – 4:00 pm

The morning session of this training workshop is for municipal staff who inspect construction sites for compliance with stormwater requirements in MRP **Provision C.6**. Workshop topics include:

- ✓ Regulatory refresher of Municipal Regional Stormwater Permit (MRP) requirements for construction site inspections,
- ✓ Changes in the recently reissued MRP,
- ✓ Construction BMPs and recognizing issues,
- ✓ Group exercise for determining inspection findings and appropriate enforcement actions.

The afternoon session of this training workshop is for municipal staff who conduct inspections for compliance with stormwater requirements in MRP **Provision C.3.h**. Workshop topics include:

- ✓ Regulatory refresher of Municipal Regional Stormwater Permit (MRP) requirements for C.3 stormwater treatment measure installation and O&M inspections,
- ✓ Changes in the recently reissued MRP,
- ✓ Inspecting stormwater treatment measures and recognizing issues,
- ✓ Group exercise for determining inspection findings and appropriate follow-up actions.

A registration announcement will be emailed in December.

Questions? Call Peter Schultze-Allen at 510-832-2852 ext. 128

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

This training is FREE and will include lunch.



**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS**

Implementing the requirements in MRP Provision C.6 and C.3.h

Wednesday, Feb 1, 2017

San Mateo Public Library – Oak Room
55 W. 3rd Avenue, San Mateo

WORKSHOP AGENDA

9:00 AM	Registration and Refreshments	
9:15 AM	Welcome and Introductions for Construction Site Stormwater Inspection (C.6) Training	Kristin Kerr <i>Program Staff</i>
9:20 AM	MRP C.6: FY 2016/17 Implementation	Kristin Kerr <i>Program Staff</i>
10:00 AM	Case Study: Local Coordination with Caltrans' Projects	Peter Schultze-Allen <i>Program Staff</i>
10:30 AM	Break	
10:45 AM	Inspecting Construction Sites	Kristin Kerr <i>Program Staff</i>
11:15 AM	Group Exercise	Peter Schultze-Allen <i>Program Staff</i>
12:00 PM	Registration and Lunch	
12:45 PM	Welcome and Introductions for Post-Construction Stormwater Treatment Control Inspections (C.3.h)	Kristin Kerr <i>Program Staff</i>
12:50 PM	MRP C.3.h: FY 2016/17 Implementation	Kristin Kerr <i>Program Staff</i>
1:20 PM	Installation Inspection Experience	Katherine Sheehan <i>CSG Engineering</i>
2:05 PM	Break	
2:20 PM	O&M Inspection Experience	Peter Schultze-Allen <i>Program Staff</i>
3:00 PM	Group Exercise	<i>Program Staff</i>
3:45 PM	Summary Remarks, Adjourn	Peter Schultze-Allen <i>Program Staff</i>

**** Attendance at this workshop is acceptable for 3 PDUs toward maintaining CPESC, CESSWI and/or CPSWQ certifications. ****

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Adams	Erica	X		County of San Mateo
Ahmed	Muneer	X	X	Town of Colma
Ariasp	Homayoon			County of San Mateo
Azzari	Zack	X	X	County of San Mateo, DPW
Badr	Bassam	X	X	CSG Consultants, Inc.
Black	Keegan	X		City of Brisbane
Bogert	Reid	X	X	C/CAG
Boo	Olivia	X	X	County of San Mateo
Bozorginia	Mahan	X	X	Town of Colma
Buck	Merrill	X	X	CSG Consultants, Inc.
Burklin	Scott	X		County of San Mateo
Burlison	Summer	X	X	County of San Mateo
Casagrande	Julie	X		County of San Mateo, DPW
Chan	Otis	X	X	City of San Mateo

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Chan	Catherine	X	X	CSG Consultants, Inc.
Chen	Allen	X	X	Town of Los Altos Hills
Chow	Lou	X	X	City of San Mateo
Donguines	Raymund	X	X	City of Pacifica
Edlund	Sven	X	X	City of San Mateo
Engle	Theresa	X		County of San Mateo, DPW
Francis	Aaron	X	X	County of San Mateo, DPW
Ganetsos	Dori	X	X	Town of Atherton
Giang	Bill	X	X	City of Millbrae
Gill	Sandeep	X		County of San Mateo, DPW
Gonzales	Eric	X	X	CSG Consultants, Inc.
Gonzalez	Mauricio	X	X	County of San Mateo, DPW
Hakhamaneshi	Rambod	X	X	CSG Consultants, Inc.
Hashem	Abdulkader	X	X	Town of Colma

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Hathaway	Mark	X		City of San Mateo
Hoang	Son	X	X	CSG Consultants, Inc.
Houseyni	Said Bilal	X	X	City of Redwood City
HUYNH	DAVID	X	X	Town of Atherton
Jackson	Emmett	X	X	County of San Mateo, DPW
Kammeier	Lindsay	X	X	Schaaf & Wheeler
Kenyon	Michelle	X	X	City of San Mateo
Kim	Kayla	X	X	County of San Mateo, DPW
Kim	Philip	X		City of Redwood City
Lander	Mark		X	CSG Consultants, Inc.
Lau	Kristen	X		County of San Mateo
Leung	Camile	X	X	County of San Mateo
Ligon	Grant	X	X	City of San Mateo
Lower	Mark		X	CSG Consultants, Inc.

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Ma	Vivian	X	X	City of Foster City
Morales	Carmelisa	X		County of San Mateo
Mostafavi	Saeid	X	X	CSG Consultants, Inc.
Navarro	Frank	X	X	CSG Consultants
Ngai	Lawrence	X	X	City of Pacifica
Oran	Alexandra	X	X	Schaaf & Wheeler
Pacini	Kenneth	X	X	City of San Mateo
Panglao	Ruemel	X	X	County of San Mateo
Pena	Tiare	X		County of San Mateo
Pons	Jeremiah	X	X	County of San Mateo
Ramirez	Michael	X		County of San Mateo
Richstone	Laura	X		County of San Mateo
Rieke	Axel	X	X	Northgate Environmental Management, Inc.
Safe	Paige	X	X	City of San Carlos

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Sharifi	Mehdi	X	X	CSG Consultants, Inc.
Sheehan	Katherine	X	X	CSG Consultants, Inc.
Shu	Diana	X	X	County of San Mateo
Siddiqui	Harris	X	X	City of Menlo Park
Smith	Sean	X		County of San Mateo
Smith	Robert	X		City of Pacifica
Swenson	Mark	X	X	City of San Mateo
TalliBel	Soha	X		City of Belmont
Todisco	Nichols	X	X	City of East Palo Alto
Ung	Mario	X	X	City of San Mateo
Varela	Carlos	X	X	Redwood City
Villegos	Agipilla	X	X	City of East Palo Alto
Wong	David	X	X	City of San Bruno
Yee	Theresa	X	X	County of San Mateo

**STORMWATER INSPECTIONS WORKSHOP:
CONSTRUCTION SITES AND C.3 STORMWATER CONTROLS
SAN MATEO PUBLIC LIBRARY
FEB. 1, 2017**

LAST	FIRST	AM	PM	AGENCY
Yee	Elton	X	X	City of San Mateo
Yong	kelly	X	X	Redwood City
Yu	Fanny	X	X	City of East Palo Alto
Yu	Jay	X	X	City of San Mateo
TOTAL		72	57	



Evaluation Summary

CONSTRUCTION SITE STORMWATER INSPECTOR WORKSHOP

San Mateo, CA

Wednesday, Feb. 1, 2017
Morning Session (MRP C.6)
Attendance: 72
Evaluations: 39 (54%)

1. MRP C.6: FY 2016/17 Implementation – Given by Kristin Kerr, Program Staff

Very Useful 28

Somewhat Useful 11

Not useful 0

Comments:

- Great overview of updates for MRP 2.0
- This covered important aspects of my position/job duties.
- Appropriate level of detail, may want to remind audience of what constitutes illicit discharge – examples
- Good to know the new regulations and other new information
- Good introductory presentation for new inspectors.
- Would like to see data on how we are doing.
- What was the pollution impact in 2009 (Baseline) and what is that today. <PMDL values>
- Need to see more detailed information
- Less direct reading off slides, more anecdotes would be useful.
- It would be helpful – if information was presented with colorful graphics/PowerPoint. Use picture graphics in lieu of text description.

2. Case Study: Local Coordination with Caltrans' Projects – Given by Peter Schultze-Allen
Program Staff

Very Useful 28

Somewhat Useful 10

Not useful 1

Comments:

- Interesting! Complex project. Good example with recommended solutions.
- Good example
- Would be best if Pam was able to answer questions. Shows how difficult it can be to work with Caltrans

- A small scale case study (single family homes, etc.) may also be useful for jurisdictions with predominantly SFD's.
- Working with large contractors
- Discuss enforcement options.
- City paid \$5M to this project. Did they review the plans and specs?
- Shameful no construction management.
- Would be more helpful if original presentation creator presented this
- Unrealistic comments regarding local agency's ability to control Caltrans contractor.
- Case studies are always welcomed!
- Anecdotes good, effective at presenting on behalf of author.
- Case studies very helpful
- Presented an interesting problem where jurisdiction authority was unclear. Good to see their mistakes so we won't make the same ones – i.e figure out communication lines before construction.

3. **Inspecting Construction Sites** – Given by Kristin Kerr, Program Staff

Very Useful 36

Somewhat Useful 1

Not useful

Comments:

- Detailed conversation was useful.
- Helpful instruction for construction site enforcement.
- Always good to review BMP's
- Repeat question/comment made from inspector. This will ensure everyone heard the question/comment.
- Porta Potty companies in this area should be notified secondary containment is mandatory.
- Good examples. Maybe a few more positive examples.
- Good anecdotes
- It would be helpful – if information was presented with colorful graphics/PowerPoint. Use picture graphics in lieu of text description.
- Good walk through for those of us who aren't inspectors. Helps to know what things they look for in the field so we can require in at the planning stage.

4. **Group Exercise** – Given by Courtney Siu, Program Staff

Very Useful 24

Somewhat Useful 13

Not useful

Comments:

- Loved the map exercise!
- Fun interactive put knowledge into place.
- Helpful to work with other agencies. Listen to others ideas/experience/recommendations.

- Rather than break out – would be more helpful to have guided discussion walking through several examples
- Should have a legend and let each person design BMP placement/type.
- Hillside site would have been better.
- Good exercise!
- Good example project.
- Directions a little unclear. I would like to see a group exercise next time, so please don't eliminate.
- Applied exercise served as good training.

5. Did this training meet your expectations? Yes: 35 No: 0

- Comprehensive overview
- Was okay
- Very helpful for my job position

6. What parts of the training were most useful to you?

- The Caltrans example (2)
- Photos of sites, group activities
- Municipal Regional Permit C.6 FY 2016/17 Complementation presentation
- Erosion control measure examples and sediment measures are always helpful to see
- Picture examples
- The case study and meeting other representatives from other agencies.
- For a beginner, it's a very useful tool since this training covers basic knowledge, requirements and a small workshop.
- Learning about the requirements (even "NM" requires enforcement action)
- The need to keep electronic inspection reports on file.
- Examples, case study
- Case studies (101 Interchange)
- C.6 Implementation and form requirements
- Inspection Report
- Filling out the stormwater checklist
- Construction Site
- BMP placement and practices
- Good refresher
- Applicable for my position
- Examples
- Introduction to implementation
- Overview of new regulations
- The installation checklist and covering information to refresh in a shorthanded way to show bullet information
- Overall group discussion.

- It was helpful to think through the application of the regulations.
- Exercise and overview of required tracking
- Group exercise and real life example
- Updates/changes
- Case study (2)
- Group exercise
- Anecdotes, applied exercise
- All but enjoyed most the case study.
- Examples on-site controls.
- The training was all very useful and informative
- BMP's examples
- All good (2)
- Review of permit
- Case study and inspecting construction sites
- BMP review
- Map exercise and MRP requirements in practice.

7. What would have made this training more useful?

- More examples (2)
- Clear slides and training material
- SFO example
- Good as is
- Links to relevant websites
- Review before rainy season
- More real life experience project demonstration and discussions
- Examples of successful/unsuccessful enforcement from instructors and field inspectors
- Helpful ways to deal with contractors.
- Deadlines for actions.
- I thought the training was very useful as is.
- Bring in a construction contractor to speak from their perspective.
- How we can communicate with each other better to get win-win outcome
- Some perspective for planners i.e. people who are not inspectors.
- More analysis of problem/tricky areas of MRP 2.0
- To have some video (2)
- More examples of good BMP in residential SFR projects
- Hillside example
- Couldn't hear audience comments

8. What topics would you recommend for a future training?

- More interactive/critical think exercises
- Just keep us up to date (Thanks)
- More training on Inspection Forms
- Record keeping responsibilities
- Excellent
- Installation of BMPs
- What to do when a non-permitted potable washer flows into SD system or adjacent creek?
- Enforcement options/fines
- More case studies
- Agencies communicating/working together
- Smaller scale case study (residential, etc)

9. General Comments?

- Thank you! (3)
- Excellent!
- Supply just tap water for drinking
- Helpful information for my position as a right of way construction inspector.
- Awesome!
- Great workshop!
- Please arrange the erosion control measure and other BMP's measure vendors. It was always useful talking to them
- Water
- It would be helpful to get a USB of slides.
- Some of the wording in the handout(copies) are not clear and it would be beneficial to have access to the PowerPoint slides to be able to see the small print that is visible in the Power Point but not on the handouts.
- Would be interesting to learn who gets inspector evaluations and where they go
- Sheet or slide of action points for authorities, such as, established BMP sheet to provide to contractors/architect for plan check
- Diary for inspection (excel example)
- BMP handbook available at counter/website
- Training was very long and the later sessions were not as easy to follow

Appendix 7

- Public Information and Participation Subcommittee – Attendance List– FY 2016/17
- Rain Barrel Tip Card
- Flowtobay.org Rainbarrel Opt-In Map
- Car Wash Coupon Designs
- Car Wash Social Media Image
- Stormwater Tip Cards – English
- Recycled Water Bottle Pens
- Rain Barrel Rebate Program Copy with Photos
- Social Media Partner Posts

Public Information and Participation Subcommittee

AGENCY	NAME	ALTERNATE	ALTERNATE	PHONE	Sep. 13, 2016	#####	March 14, 2017	June 13, 2017
C/CAG	Matt Fabry							
C/CAG	Reid Bogert					X	X	
Atherton	Stephanie Bertollo-Davis			650-752-0544				X
Belmont	Diane Lynn			650-595-7425	X	X	X	X
Brisbane	Shelley Romriell	Keegan Black		415-508-2130	X			
Burlingame	Jennifer Lee	Carolyn Critz		650-558-7381			X	X
Colma	Muneer Ahmed	Jason Chen		650-757-8888				
Daly City	Ward Donnelly			650-991-8200		X		X
East Palo Alto	Michelle Daher			650-853-3197				
Foster City	Jack Shulze	Norm Dorais		650-286-3543		X		
Half Moon Bay	Mark Lander			650-522-2562		X		
Hillsborough	Rachelle Ungaretti							
Menlo Park	Rebecca Lucky	Jason Ino		650-330-6765 / 650-330-6762	X		X	X
Millbrae	Shelly Reider			650-259-2444	X	X	X	X
Pacifica	Yessika Dominguez	Raymond Donquines		650-738-3767	X			
Portola Valley	Brandi de Garmeaux	Howard Yound	Adrienne Smith	650-851-1700	X			
Redwood City	Vicki Sherman	Christopher Fajikos	Adrian Lee	650-780-7472	X	X		X
San Bruno	Jim Burch	Ted Chapman	William Li				X	X
San Carlos	Kathryn Robertson				X	X		X
San Mateo City	Grant Ligon (Chair)	Sven Edlund	Mark Swenson/ Sarah Sched	650-522-7349		X	X	X
San Mateo Co	Aaron Francis			650-599-1457		X		
San Mateo Co	Breann L.	Edelzar Garcia		650-363-4077		X	X	X
So. San Francisco	Daniel Garza	Rob Lecel		650-829-3880	X	X		
So. San Francisco	Andrew Wemmer	Braden Christenser					X	X
Woodside	Dong Nguyen			650-851-6790				
SGA	Whitney Schmucker							X
SGA	Audrey Taylor							
EOA	Peter Schultz-Allen	Kristin Kerr	Jon Konnan	510-832-2852 x 128	X		X	X

Rain Barrel Tip Card



TIPS

FOR RAIN BARREL MAINTENANCE

Now that you know about rain barrels, follow these steps to catch every last R.A.I.N. drop.

TIPS

ON RAIN BARREL BENEFITS

Consider capturing rainwater to S.A.V.E. the environment, water, and money.

R A I N

Rebate! Get up to \$100 back on an approved rain barrel at Flowstobay.org/rainbarrel.

Achieve more water savings by connecting multiple barrels.

Inspect your rain barrel for cracks to keep out mosquitoes and other insects.

Notice when your rain barrel gets full and harvest your rainwater to use around your garden.



Interested in saving more rain water?
We make it easy to learn more about rainwater harvesting at flowstobay.org

S A V E

Save water! Rain barrels are the easiest way to capture and store rainwater for garden use.

Accelerate water conservation by encouraging your neighbors to join the movement and install a rain barrel.

Value your hard-earned money! Save on your water bill.


Eliminate and reduce water pollution by capturing rainwater before it goes down the storm drain.



flowstobay.org
<https://www.facebook.com/flowstobay>
@flowstobay | info@flowstobay.org
(650) 599-1406








FlowsToBay.org/rainbarrel Opt-in Map

 **SAN MATEO COUNTYWIDE Water Pollution Prevention Program**

[Preventing Pollution...](#) [At Home](#) [In the Garden](#) [At Work](#) [In My Community](#) [About Our Program](#)




GET INVOLVED!





Sign Up For Our Newsletter!

Participate In An Event

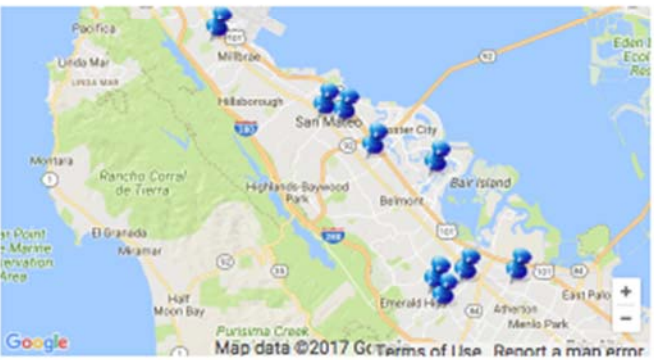
-  **Household Hazardous Waste Collection - Menlo Park**
August 12, 08 am to 12 pm
[MORE INFO >](#)
-  **11th Annual Downtown Block Party - Menlo Park**
August 16, 05 pm to 08 pm
[MORE INFO >](#)
-  **Household Hazardous Waste Collection - Daly City**
September 9, 08 am to 12 pm
[MORE INFO >](#)

[More Events >](#)

-  [Report illegal dumping](#) in your area.
-  [Properly dispose](#) of your toxic waste.

Rain Barrel Rebate Program

Join the Movement!



Put Yourself on the Map

Hey San Mateo Residents! Join your neighbors in the rain barrel movement. Enter your address below to put yourself on the map and show that you're using a rain barrel to catch every last drop. Thank you for doing your part for water conservation and pollution prevention.

All address information will remain confidential and will not be publicly displayed. By placing yourself on the map you will also receive our monthly newsletter.

First Name *
Full Address *
E-mail *

Get a Rain Barrel Rebate [Here](#)











Car Wash Coupon Designs



Car Wash Social media image



Stormwater tip cards - English (front & back)

<p>CLEAN WATER IS A TEAM EFFORT.</p>	 <h2>What is stormwater pollution?</h2> <p>When it rains, water flows over sidewalks, streets, and parking lots, carrying pollutants like trash, pesticides and dog waste into our storm drains. That stormwater runoff washes straight into our creeks, ocean and bay, harming wildlife and our quality of life.</p>  <p>flowstobay.org</p> <p>WE'RE SOCIAL! Visit us at flowstobay.org info@flowstobay.org</p>    <p><small>Printed on recycled paper</small></p>	<p>CLEAN WATER IS A TEAM EFFORT.</p>  <h2>What can you do?</h2> <ul style="list-style-type: none">• Never dump anything down storm drains.• Pick up litter.• Clean up after your pet.• Bring your car to the car wash.• Install a rain barrel.• Use less toxic pest control products.• Participate in local cleanups. <p>Spread the word!</p>  <p>flowstobay.org</p> <p>WE'RE SOCIAL! Visit us at flowstobay.org info@flowstobay.org</p>    <p><small>Printed on recycled paper</small></p>
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Recycled Water Bottle Pens



Rain Barrel Rebate Program Copy with Photos

Prepare for the next rainy season by installing a rain barrel. Rebates up to \$100 are now available for San Mateo County residents. Visit FlowsToBay.org/rainbarrel for more info.



Save money, water, and the environment with a rain barrel. Get a \$100 rain barrel rebate at FlowsToBay.org/rainbarrel!



Join the movement to protect our community & to save water. Earn a \$100 rain barrel rebate by visiting FlowsToBay.org/rainbarrel.



Want a rain barrel? Earn a \$100 rebate while you're at it! Visit FlowsToBay.org/rainbarrel for more information.



Hey San Mateo County! Receive a \$100 rebate on a rain barrel today. Visit FlowsToBay.org/rainbarrel for more information.



Social Media Partner Posts

Topic	Copy (from most recent to oldest)
BAWSCA/Rain Barrel	Do you have a rain barrel? Put yourself on the map and show your neighbors in San Mateo County that you've joined the movement to use rainwater as a resource!
City of Brisbane/Partner Request	@Brisbanelibrary now has Home Energy and Water Saving Toolkits! Stop by to check them out and view it here!
City of Colma/Event Promotion	Successful creek cleanup last weekend at Colma Creek with @countyofsanmateo and many volunteers to working together to restore the bay. Tons of trash was picked up and prevented from getting into the beautiful creek.
Environmental Health/. Partner Request	Mobile auto detailing businesses can contribute a huge amount of stormwater pollution. Discarded wash water from these mobile business is often poured into storm drains where toxic chemicals and other pollutants then threaten our waterways and wildlife. Implementing these Best Management Practices (BMPs) is easy and is required for compliance with stormwater pollution prevention regulation: http://ow.ly/JPbtX
City of Millbrae/Partner Request	Are you a beginner in landscape design or planning to replace your lawn with a water efficient landscape? Come out for a step-by-step overview of basic landscape design principles at the Designs in Landscape Architecture Workshop in Millbrae this Wednesday night!
PaintCare/ HHW recycling	Spring painting? Have leftover paint from last year you no longer want? Recycle it at over 20 locations in San Mateo County with PaintCare! Find a location at www.paintcare.org
Environmental Health/ Motor Oil	Save time, money and our environment: change your car's oil less often. Many cars can go 10,000 or more miles without an oil change. Find out how far your car can go at www.checkyournumber.org
City of Burlingame/Event Promotion	Come see @BurlingameCityHall at Streets Alive! Parks Alive! this Sunday, May 7! There will be live music a bounce house, class demonstrations, and information on water conservation.
City of San Bruno/Event Promotion	Join your neighbors and friends for fun, food and community service on May 6 at Operation Clean Sweep, San Bruno's annual 'Clean up the City' event!
City of Belmont/ Earth Day Event	Come out to Belmont's Earth Day Celebration this Saturday at Twin Pines Park. There will be a creek cleanup, children's activities, compost giveaways, environmental booths, prizes, fun, and more! http://www.belmont.gov/Home/Components/Calendar/Event/4724/142
Pacifica Beach Coalition/ Event Promotion	Head out to the beach this Saturday for one of @PacificaBeachCoalition's beach clean-up!
BAWSCA/Promotion	There are many environmental and economic benefits of using a rain barrel. Residents in San Mateo County can even collect rebates up to \$100 per barrel! Learn more about rain barrels here:

San Francisco Bay Gardeners/Event Highlight	We had a great time at @SFBaygardeners spring market last Saturday! We were so excited to talk to local gardeners about sustainable and Bay-friendly gardening practices.
SMC Sustainability Academy/Event Promotion	TOMORROW- Join County of San Mateo's Sustainability Academy and your fellow community members to learn about sea level rise, its potential impacts in our community, and what you can do to get involved! Get more information here: http://bit.ly/2mOHP0S
Environmental Health/Client Request	Flea-killing chemicals that we use on our pets gets into our household water -- and our wastewater treatment plants aren't getting it out! Read more about this issue here: http://bit.ly/2ILOQ4P
Environmental Health/Partner Request	Be COOL and do the right thing by disposing of used antifreeze properly. Check out smchealth.org/usedoil for disposal locations (call ahead to see if there is a disposal fee). Save time & bring your used motor oil and filter to one of these recycling locations too!
BAWSCA/Rain Barrel	Don't miss out on the \$\$ saving next time it rains-- get your rain barrel and rebate today! http://FlowsToBay.org/rainbarrel
City of Millbrae/Request	Come out to Millbrae's Rainwater Harvesting & Graywater Reuse Workshop on March 1! You'll learn all about harvesting rainwater and capturing graywater to use in your garden and landscape. Click here for more details. http://FlowsToBay.org/node/1875
City of Palo Alto/Request	South County residents have leftover paint, chemicals, propane tanks or other hazardous waste at home? Come to our next event in East Palo Alto on Feb. 25. Open to all residents. Go to our website to make an appointment today! smchealth.org/hhw
Environmental Health/Client Request	Are dead batteries piling up around your home? Don't forget to recycle them! There's lots of ways to properly dispose of them from curbside or bringing to a local store. Check our website for more information: smchealth.org/batteries
Environmental Health/Request	<i>*scheduled earlier:</i> Each year, Keep America Beautiful awards CLPP grants to its affiliates, local governments, business improvement districts, downtown associations, parks and recreation areas, and other organizations dedicated to eradicating litter and beautifying their communities. YOU can start making a change in your community to reduce the amount of cigarette litter by implementing a local Cigarette Litter Prevention Program (CLPP) and educating adult smokers on the proper disposal of their cigarette butts. Get more information and apply for the grant by February 15th! https://www.surveymonkey.com/r/9TT8LZK
BAWSCA/Rain Barrel	Rain barrels help to maintain a healthy urban watershed by reducing the amount of water used to irrigate your garden and by reducing the amount of runoff that would otherwise drain untreated into our precious waters. Check out our latest blog to read all the benefits and information on getting a rain barrel. http://www.FlowsToBay.org/blog/2016/11/rain-barrels-and-rebates-for-saving-water

BAWSCA/Rain Barrel	With all of the recent rain, it's the perfect time to get a rain barrel! Visit our website to find out how to get your rain barrel and rebate. http://www.FlowsToBay.org/rainbarrel
BAWSCA/Rain Barrel	With California facing a record-breaking drought, getting a rain barrel is one of the best ways to save money and water. Visit our website for more benefits rain barrels bring as well as information on how to get your rain barrel rebate.
Office of Sustainability/Event Promotion	Come out to a FREE workshop hosted by San Mateo's Office of Sustainability, discussing the basics of starting your own backyard composting system on December 3!
Watershed Groups/Request	Check out 4 of over 60 locations in San Mateo County where you can recycle used oil and filters for free in this video featuring Das Auto Service of Daly City, Toyota Scion Specialist of Redwood City, Max Motors of San Carlos, and Half Moon Bay Auto Repair in Half Moon Bay!
City of Pacifica/Event Promotion	Join us this weekend as we celebrate the sun, sand and surf at The Pacific Coast Fog Fest in Pacifica all weekend!
BAWSCA/Rain Barrel	Happy first day of fall! Take advantage of our mild seasons and plant fall vegetables and plants in your home garden, and don't forget to install rain barrels to take advantage of any seasonal storms!
City of San Bruno/Event Promotion	Pancakes and native plants are a perfect combo! Head to the @San Bruno Mountain Watch Annual Pancake Breakfast fundraiser this Sunday, 9am-12pm, at the Mission Blue Nursery for a tasty breakfast and the chance to buy some native plants for your garden.
City of Pacifica/Event Promotion	Roll up your sleeves SMC, it's time for another Pacifica Beach Cleanup! Head down to Mussel Rock Beach tomorrow from 9am-11am and help make our coastline and waterways a little bit more beautiful.
Master Gardeners/Event	Get ready for fall this Saturday with the @Master Gardeners of San Mateo & San Francisco and their workshop on how to successfully start a fall and winter vegetable garden!
Sierra Club/Event Promotion	Make the last days of summer count and join the local Sierra Club Chapter on some of their hiking events around SMC!

Appendix 9

- Parks Maintenance & IPM Work Group Attendance List FY 2016/17
- Landscape Integrated Pest Management Workshop – March 8, 2017
 - Agenda
 - Attendance List
 - Summary of Workshop Evaluations
- Letter to Pest Control Professionals
- Point-of-Purchase Outreach Materials

**San Mateo Countywide Water Pollution Prevention Program
Parks Maintenance IPM Work Group Attendance List - FY 2016/17**

Contact Information			Attendance		
MUNICIPALITY	REPRESENTATIVE	EMAIL	8/23/2016	11/29/2016	1/25/2017 (joint-meeting with Municipal Maintenance Subcommittee)
Atherton	Steve Tyler	styler@ci.atherton.ca.us			X
Belmont	Daniel Ourtiague	dourtiague@belmont.gov			
	Jonathan Gervais	Jgervais@belmont.gov			
	Matt Ward	mward@belmont.gov		X	
Brisbane	Joe Friars	jfriars@ci.brisbane.ca.us	X		X
	Keegan Black	kblack@ci.brisbane.ca.us	X		X
Burlingame	Rich Holtz	Rholtz@burlingame.org	X		
	Bob Disco	bdisco@burlingame.org			
Colma	Louis Gotelli	Louis.Gotelli@colma.ca.gov			X
	Brian Dossey	brian.dossey@colma.ca.gov			
Daly City	Paul Thompson	pthompson@dalycity.org	X	X	
	Jeff Fornesi	jfornesi@dalycity.org			X
	Dennis Bray	dbray@dalycity.org			X
East Palo Alto	Jay Farr	jfarr@cityofepa.org			X
	Michelle Daher	mdaher@cityofepa.org			
	Fanny Yu	fannyu@cityofepa.org			
	Jim Woods	jwoods@cityofepa.org			
Foster City	Dorte Drastrup	ddrastrup@fostercity.org	X	X	
Half Moon Bay	Dan Barros	DBarros@hmbcity.com			
Hillsborough	Garry Francis	gfrancis@hillsca.org		X	X
	John Mullins	jmullins@hillsborough.net			
Menlo Park	David Mooney	damooney@menlopark.org	X		
	Sheena Ignacio	smignacio.menlopark.org			
Millbrae	Ken Crosetti	kcrosetti@ci.millbrae.ca.us			
	John Gianoli	jgianoli@ci.millbrae.ca.us			
Pacifica	Ron Fascenda	fascendar@ci.pacifica.ca.us			
	A. Clark	clarka@ci.pacifica.ca.us			
	Jean Pierre Elissetche		X		
	Raymond Donguines	donguinesr@ci.pacifica.ca.us			
Portola Valley	Howard Young	hyoung@portolavalley.net			
	Tony Macias	tmacias@portolavalley.net			
Redwood City	Valerie Matonis	vmatonis@redwoodcity.org	X	X	X
	Terence Kyaw	TKyaw@redwoodcity.org			
	Vicki Sherman	vsherman@redwoodcity.org		X	
	Daniel Burton	dburton@redwoodcity.org			
	Francisco Espinoza	fespinoza@redwoodcity.org			
San Bruno	Rene Walsh	rwalsh@ci.sanbruno.ca.us			
	Danielle Brewer	DBrewer@sanbruno.ca.gov			

**San Mateo Countywide Water Pollution Prevention Program
Parks Maintenance IPM Work Group Attendance List - FY 2016/17**

Contact Information			Attendance		
MUNICIPALITY	REPRESENTATIVE	EMAIL	8/23/2016	11/29/2016	1/25/2017 (joint-meeting with Municipal Maintenance Subcommittee)
San Carlos	Arturo Burgueno	aburgueno@cityofsancarlos.org			
	Paige Safe	psafe@cityofsancarlos.org		X	
City of San Mateo	Mike Blondino	mblondino@cityofsanmateo.org			
	Sarah Scheidt	sscheidt@cityofsanmateo.org			
	Jim Burch	JBurch@sanbruno.ca.gov			
	Grant Ligon	gligon@cityofsanmateo.org			X
	Dennis Pawl	dpawl@cityofsanmateo.org			
San Mateo Co. Parks	Stephen Kraemer	SKraemer@smcgov.org			
	Maria Mastrangelo	mmastrangelo@co.sanmateo.ca.			
	Sam Herzberg	SHerzberg@co.sanmateo.ca.us			
	Scott Lombardi	slombardi@co.sanmateo.ca.us			
	Ramona Arechiga	TRArechiga@smcgov.org			
	Andrea Chow	Achow@smcgov.org			
	J Hannen	jhannen@co.sanmateo.org			
	Julie Casagrande	jasagrande@co.sanmateo.ca.us			
	Matthew DelCarlo	madelcarlo@smcgov.org			
	Michele Laskowski	mlaskowski@smcgov.org	X		
	Kim Springer	kspringer@smcgov.org			
Suzanne Bontempo	suzannebontempo@gmail.com				
SM County PW	Jeff Pacini	JPacini@co.sanmateo.ca.us			
County Agriculture Weights and Measures	Richard Garcia	rgarcia@co.sanmateo.ca.us		X	
	Jeremy Wagner	JWagner@smcgov.org	X		
	M Marelich	mmarelich@smcgov.org			
	Maria Mastrangelo	mastrangelo@smcgov.org			
	Fred Crowder	fcrowder@co.sanmateo.ca.us			
SSF	Donald Louie	douie@ssf.net	X		X
	Brian Brunelli	brian.brunelli@ssf.net			X
	Enrico Reyes	enrico.reyes@ssf.net			
Woodside	Dong Nguyen	DNguyen@woodsidesidetown.org			
	Sean Rose	Srose@woodsidesidetown.org			
UCCE/UC IPM	Andrew Sutherland	amsutherland@ucanr.edu			
EOA	Jon Konnan	jkonnan@eoainc.com			
	Vishakha Atre	vatre@eoainc.com	X	X	X
SMCWPPP	Matt Fabry	mfabry@smcgov.org		X	
	Reid Bogert	rbogert@smcgov.org		X	
Other Attendees					



AGENDA

Landscape Integrated Pest Management (IPM) Workshop (Sponsored by SMCWPPP Parks Maintenance and IPM Workgroup)

Wind Room, Library Community Center

1000 E. Hillsdale Blvd.

Foster City, CA 94404

Wednesday, March 8, 2017

10:30 a.m. – 3:00 p.m.

Registration and Lunch	10:30 am – 11:00 am
Welcoming Remarks Valerie Matonis, <i>Redwood City</i>	11:00 am – 11:05 am
Pesticides and Water Quality Vishakha Atre, <i>EOA</i>	11:05 am – 11:15 am
IPM for <i>Phytophthora</i> diseases and emerging pests from Southern California Igor Lacan, <i>UC Cooperative Extension</i>	11:15 am – 12:00 pm
Break	12:00 pm – 12:15 pm
IPM for Landscape Management - the New Organic Toolbox Thomas Quick, <i>Growmore, Inc.</i>	12:15 pm – 12:55 pm
Bay-Friendly Landscaping Program and Principles for Municipal Landscape Management Peter Schultze-Allen, <i>EOA, BFQP</i>	12:55 pm – 1:20 pm
Break	1:20 pm – 1:30 pm
Implementing an IPM Program in the City of Davis Martin Guerena, <i>City of Davis</i>	1:30 pm – 2:00 pm
Regulatory Update, Common Violations, and Safe Use and Mixing Ione Yuen, <i>San Mateo County Agriculture/Weights and Measures</i>	2:00 pm – 3:00 pm
Closing Remarks Valerie Matonis, <i>Redwood City</i>	3:00 pm – 3:05 pm

Landscape Integrated Pest Management (IPM) Workshop
Wind Room, Library Community Center
March 8, 2017

	Last Name	First Name	Agency
1	Acker	Alan	City of Menlo Park
2	Aizawa	Brian	City of Redwood City
3	Armenta	Marty	City of Foster City
5	Banda-Izaguirre	Luis	City of Burlingame
6	Barros	Dan	City of Half Moon Bay
7	Bergstrom	Paul	Loral Landscaping
8	Braas	Kelley	City of Daly City
9	Bravo	Tony	City of Redwood City
10	Bravo	Omar	City of redwood city
11	Bray	Dennis	City of Daly City
12	Burgueno	Arturo	City of San Carlos
13	Cardenas	Jorge	Loral Landscaping
14	Evans	Charles	City of Redwood City
15	Chiamos	Peter	City of Foster City
16	Clark	Aren	City of Pacifica
17	Crescenzi	Nicholas	City of Daly City
18	Cunha	Carlos	City of San Mateo
19	Dahl	Clay	Town of Hillsborough
20	Delaney	James	City of Burlingame
21	DeOliveira	Joao	City of San Bruno
22	Di Lorenzo	Lisa	San Mateo County Parks
23	Drastrup	Dorte	City of Foster City
24	Duran	Lou	City of San Carlos
25	Eastman	Rob	City of Half Moon Bay
26	Echeverria	Jamie	City of Foster City
27	Elissetche	Jean	City of Pacifica
28	Espinoza	Francisco	City of Redwood city

Landscape Integrated Pest Management (IPM) Workshop
Wind Room, Library Community Center
March 8, 2017

	Last Name	First Name	Agency
29	Espinoza	Jesus	City of Redwood city
30	Finocchiaro	Domenic	City of Burlingame
31	Francis	Gary	Town of Hillsborough
32	Friars	Joe	City of Brisbane
33	Fukudome	Glenn	City of Redwood City
34	Gonzalez	Rosalio	City Of Redwood City
35	Gotthardt	Garrett	City of Foster City
36	Harmison	Robin	City of Foster City
37	Hedges	Linda	City of Burlingame
38	Herbert	Dominique	City of Redwood City
39	Hollis	Mike	City of Redwood City
40	Holtz	Richard	City of Burlingame
41	Joo	Grant	County of San Mateo
42	Kapler	Dan	Brightview Landscape Development
43	Kieffer	Ed	City of Menlo Park
44	Kioa	Lava	City of Foster City
45	Kraemer	stephen	San Mateo County Parks
46	Ligon	Grant	City of San Mateo
47	Louie	Donald	City of SSF
48	Lundgaard	Ryan	San Mateo County Parks
49	MacDonald	Devon	City of Foster City
50	Mailau	Paul	City of Burlingame
51	Martinez	Jose	City of San Mateo
52	Matonis	Valerie	City of Redwood City
53	Mejia	Chris	City of Burlingame
54	Melgar	Lenin	City of East Palo Alto
55	Moreno	Leonardo	Redwood City

Landscape Integrated Pest Management (IPM) Workshop
Wind Room, Library Community Center
March 8, 2017

	Last Name	First Name	Agency
56	Munoz	Genaro	City of Foster City
57	Newman	John	City of Burlingame
58	Niehuser	Paul	City of San Bruno
59	Olvera	Gabriel	Loral Landscaping
60	O'Neill	Peggy	Community Board
61	Pappas	Stephen	City of Burlingame
62	Penisini	Sharom	City of Redwood City
63	Perez	Leno	City of Menlo Park
64	Perez Rubio	Elga	City of San Mateo
65	Poss	Nancy	San Mateo County Agriculture Dept.
66	Pulido	Mario	City of East Palo Alto
67	Reed	Bruce	City of San Mateo Park Dept.
68	Renteria	Estevan	City of Pacifica
69	Ryan	Matthew	City of Foster City
70	Salazar	Raul	City of Foster City
71	Schaffer	Kurt	City of Foster City
72	Schroeder	Nazmeen	City of Foster City
74	Smith	Miles	City of Foster City
75	Stevens-Nappi	Mike	City of Belmont
76	Thompson	Paul	City of Daly City
77	Thompson	Tim	City of San Bruno
78	Tschierschky	Zack	City of Burlingame
79	Urruty	Alain	City of Belmont
80	Valencia	Miguel	City of East Palo Alto
81	Venezia	Dan	City of San Bruno
82	Ventura	Wilber	City of Foster City
83	Vetter	Steve	City of San Bruno

Landscape Integrated Pest Management (IPM) Workshop
Wind Room, Library Community Center
March 8, 2017

	Last Name	First Name	Agency
84	Walsh	Rene	City of San Bruno
85	Ward	Matt	City of Belmont
86	Weber	Daniel	City of Foster City
87	Wheeler	Howard	Loral Landscaping



Evaluation Form Summary

Number of Attendees: 87

Number of Evaluations: 25

**Landscape Integrated Pest Management Workshop
SMCWPPP Parks Maintenance and IPM
Wind Room, Library Community Center
1000 E. Hillsdale Blvd., Foster City, CA 94404
Wednesday, March 8, 2017
10:30 a.m. – 3:00 p.m.**

What Did You Think of the Following Presentations?

- 1. Pesticides and Water Quality – Vishakha Atre, EOA**
17 very helpful 8 somewhat helpful 0 not helpful
- 2. IPM for Phytophthora diseases and emerging pests from Southern California – Igor Lacan, UC Cooperative Extension**
21 very helpful 4 somewhat helpful 0 not helpful
- 3. IPM for Landscape Management – the New Organic Toolbox – Thomas Quick, Growmore, Inc.**
17 very helpful 8 somewhat helpful 0 not helpful
- 4. Bay-Friendly Landscaping Program and Principles for Municipal Landscape Management – Peter Schultze-Allen, EOA, BFQP**
19 very helpful 6 somewhat helpful 0 not helpful
- 5. Implementing an IPM Program in the City of Davis – Martin Guerena, City of Davis**
17 very helpful 6 somewhat helpful 0 not helpful
- 6. Regulatory Update, Common Violations, and Safe Use and Mixing – Ione Yuen, San Mateo County Agriculture/Weights and Measures**
20 very helpful 3 somewhat helpful 0 not helpful

Did this workshop meet your expectations? 24 Yes 0 No

Suggestions for future workshop topics:

- Composting and uses.
- Drought tolerant planting.
- Research on what the risk is to applicators to the exposure of pesticides.
- Designing out the use of sprays.
- None, keep it the same.
- Water conservation.
- More on biological controls.
- Do not have the same subjects covered by local CAPCA/PAPA seminars.
- More information on staying compliant with Healthy Schools Act regulations.
- Bees and organics.

General Comments:

- New organic toolbox and the commercial-focused presentations could be a bit more concise and centered on municipal practitioners.
- Great class!
- Good food, good talks. Keep up the good work!
- It was great!
- Very good agenda and location.
- Great lunch.
- Good job.
- Thank you for offering this.
- Some presentations were rushed – need more time to impart their information.
- Great speakers.
- We should get 3.5 hours of CEU's if the workshop is 3.5 hours long.



August 22, 2017

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. 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 www.flowstobay.org/pestcontrol.

Sincerely,

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

Point of Purchase Outreach Materials

POP Shelf talkers



POP Display of Pest Fact Sheet



Appendix 10

- Trash Subcommittee Attendance List – FY 2016/17
- Litter Work Group Attendance List – FY 2016/17
- FY 2016/17 Litter Work Group Work Plan

Trash Work Group Meeting Attendance – FY 2016/17

Name	Agency	Phone	E-Mail	09/19/16	12/01/16	03/02/17	06/12/17
Steve Tyler	Town of Atherton	(650) 752-0541	styler@ci.atherton.ca.us				
Randy Ferrando	City of Belmont	(650) 595-7464	rferrando@belmont.gov	X	X	X	X
Tim Murray	City of Belmont	(650) 222-6460	tmurray@belmont.gov		X		X
Leticia Alvarez	City of Belmont	(650) 595-7469	lalvarez@belmont.gov				
Dianne Lynn	City of Belmont	(650) 595-7425	dlynn@belmont.gov				
Brandon Tyler	City of Belmont	(650) 222-5240	btyler@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	X	X
Shelley Romriell	City of Brisbane	(415) 508-2128	sromriell@ci.brisbane.ca.us		X		
Keegan Black	City of Brisbane	(415) 728-7986	kblack@ci.brisbane.ca.us			X	X
Karen Kinser	City of Brisbane	(415) 508-2133	kkinser@ci.brisbane.ca.us				
Randy Breault	City of Brisbane	(415) 508-2131	rbreault@ci.brisbane.ca.us				
Jerry Flanagan	City of Brisbane	(415) 508-2137	jflanagan@ci.brisbane.ca.us				
Rob Mallick	City of Burlingame	(650) 558-7673	rmallick@burlingame.org			X	
Mike Heathcote	City of Burlingame	(650) 558-7679	mheathcote@burlingame.org			X	X
Jennifer Lee	City of Burlingame	(650) 558-7381	jlee@burlingame.org				X
Louis Gotelli	Town of Colma	(650) 333-0295	louis.gotelli@colma.ca.gov		X	X	
Muneer Ahmed	Town of Colma	(650) 757-8894	Muneer.ahmed@colma.ca.gov	X			
Brad Donohue	Town of Colma	(650) 757-8888	Brad.donohue@colma.ca.gov				
Jeff Fornesi	City of Daly City	(650) 991-5752	jfornesi@dalycity.org				
John Fuller	City of Daly City	(650) 991-8039	jfuller@dalycity.org				X
John Sanchez	City of Daly City	(650) 991-8265	jsanchez@dalycity.org	X	X	X	
Ryan Brunmeier	City of Daly City	(650) 991-8065	rbrunmeier@dalycity.org				X
Michelle Daher	City of East Palo Alto	(650) 853-3197	mdaher@cityofepa.org	X			
Jay Farr	City of East Palo Alto	(650) 853-3105	jfarr@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	
Daniel Barros	City of Half Moon Bay	(650) 636-3753	dbarros@hmbcity.com				
Mark Lander	City of Half Moon Bay	(650) 522-2562	markl@csgengr.com	X	X	X	X
Gary Francis	Town of Hillsborough	(650) 375-7506	gfrancis@hillsborough.net		X	X	
Vanessa Marcadejas	City of Menlo Park	(650) 330-6768	VAMarcadejas@menlopark.org				
Brian Henry	City of Menlo Park	(650) 330-6799	bphenry@menlopark.org		X	X	X

Name	Agency	Phone	E-Mail	09/19/16	12/01/16	03/02/17	06/12/17
Craig Centis	City of Millbrae	(650) 259-2369	ccentis@ci.millbrae.ca.us				
Mike Killigrew	City of Millbrae	(650) 259-2374	mkilligrew@ci.millbrae.ca.us		X	X	
Raymund Donguines	City of Pacifica	(650) 738-3767	donguinesr@ci.pacifica.ca.us			X	X
Ron Fascenda	City of Pacifica	(650) 738-3762	Fascendar@ci.pacifica.ca.us				
Howard Young	Town of Portola Valley	(650) 851-1700 X214	hyoung@portolavalley.net				
Terrance Kwan	City of Redwood City	(650) 780-7466	TKyaw@redwoodcity.org				
Adrian Lee	City of Redwood City	(650) 780-7468	alee@redwoodcity.org				
Vicki Sherman	City of Redwood City	(650) 780-7468	vs Sherman@redwoodcity.org	X	X	X	X
Dennis Bosch	City of San Bruno		dbosch@sanbruno.ca.gov		X	X	X
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	X
Lou Duran	City of San Carlos	(650) 743-6769	lduran@cityofsancarlos.org				
Paige Safe	City of San Carlos	(650) 802-4196	psafe@cityofsancarlos.org		X		
Sarah Scheidt	City of San Mateo	(650) 522-7385	sscheidt@cityofsanmateo.org	X	X	X	X
Grant Ligon	City of San Mateo	(650) 823-1285	gligon@cityofsanmateo.org			X	X
Roxanne Murray	City of San Mateo	(650) 522-7346	rmurray@cityofsanmateo.org				
Rob Lecel	City of So. San Francisco	(650) 829-3882	rob.lecel@ssf.net				
Andrew Wemmer	City of So. San Francisco	(650) 829-3883	andrew.wemmer@ssf.net		X	X	X
Braden Christensen	City of So. San Francisco	(650) 829-3883	braden.christensen@ssf.net				
Julie Casagrande	County of San Mateo - DPW	(650) 599-1457	jasagrande@co.sanmateo.ca.us		X	X	X
Dewayne Johnson	County of San Mateo - DPW	(650) 222-3125					
Breann Liebermann	County of San Mateo		bliebermann@smcgov.org			X	X
Kevin Lu	County of San Mateo		khlu@smcgov.org			X	X
Diana Shu	County of San Mateo		dshu@co.sanmateo.ca.us				
Lillian Clark	County of San Mateo		lclark@co.sanmateo.ca.us			X	
Rachael Londer	County of San Mateo	(650) 363-4077	rlonder@smcgov.org	X			
Andrea Chow	County of San Mateo	(650) 363-4133	achow@smcgov.org				
Tim Swillinger	County of San Mateo- Environmental Health	(650) 372-6245	tswillinger@co.sanmateo.ca.us				
James Counts	SMC Mosquito and Vector Control District	(650) 642-4846	james@smcmad.org				
Chindi Peavey	SMC Mosquito and Vector Control District	(650) 344-8592	cpeavey@smcmad.org				
Dong Nguyen	Town of Woodside	(650) 851-6790	dnguyen@woodsidesidtown.org	X			
Katherine Sheehan	CSG Consultants	(650) 522-2506	katherines@csgengr.com				X

Name	Agency	Phone	E-Mail	09/19/16	12/01/16	03/02/17	06/12/17
Whitney Schmucker	SGA, Inc.	(510) 224-5086	wshmucker@sga-inc.net			X	
Ian Hull	ERM	(925) 708-0650	hulli@samtrans.com			X	X
Chris Sommers	EOA, Inc.	(510) 832-2852 X109	csommers@eoainc.com	X	X	X	X
John Fusco	EOA, Inc.	(510) 832-2852 X130	jrfusco@eoainc.com	X	X	X	X
Peter Schultze-Allen	EOA, Inc.	(510) 832-2852 X128	pschultze-allen@eoainc.com				
Kristin Kerr	EOA, Inc.	(510) 832-2852 X122	kakerr@eoainc.com				
No. Attending				12	20	29	24

**San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) 2016-17
Litter Work Group**

Name (e-mail)	Phone	Agency	1/11/2017	6/30/2017
Matt Fabry mfabry@smcgov.org	650-599-1419	CCAG/SMCWPP	X	X
Reid Bogert rbogert@smcgov.org		CCAG/SMCWPP	X	X
Diane Lynn dlynn@belmont.gov	650-595-7425	City of Belmont		
Randy Ferrando rferrando@belmont.gov		City of Belmont	X	
Keegan Black kblack@ci.brisbane.ca.gov	415-508-2131	City of Brisbane	X	
Jennifer Lee jlee@ Burlingame.org	650-558-7381	City of Burlingame		X
Louis Gotelli lgotelli@colma.ca.gov		Town of Colma		
Michelle Daher mdaher@cityofepa.org	650-853-3197	City of East Palo Alto		
Norm Dorais ndorais@fostercity.org		City of Foster City	X	
Paramjit Uppal puppal@hillsborough.net		Town of Hillsborough	X	
Gary Francis gfrancis@hillsborough.net		Town of Hillsborough	X	
Shelly Reider sreider@ci.millbrae.ca.us	650-259-2444	City of Millbrae	X	X
Vicky Sherman vsherman@redwoodcity.ca.us		City of Redwood City	X	
Ted Chapman tchapman@sanbruno.ca.gov		City of San Bruno	X	X
Roxanne Murray rmurray@cityofsanmateo.org	650-522-7346	City of San Mateo	X	
Grant Ligon gligon@cityofsanmateo.org		City of San Mateo		X
Andrew Wemmer Andrew.Wemmer@ssf.net	650-829-3883	City of South SF	X	X
Justin Lovell Justin.Lovell@ssf.net		City of South SF	X	
Breann Liebermann bliebermann@smcgov.org		San Mateo County Sustainability	X	X
Kevin Lu klu@smcgov.org		San Mateo County Sustainability	X	X
Lillian Clark lclark@smcgov.org	650-599-1447	San Mateo County		X
Julie Casagrande icasagrande@smcgov.org	650-599-1457	San Mateo County Public Works		
Gino Gasparini ggasparini@recology.com	650-598-8254	Recology-SM County	X	X

**San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) 2016-17
Litter Work Group**

Name (e-mail)	Phone	Agency	1/11/2017	6/30/2017
Yvette Madera ymadera@recology.com	650-598-8242	Recology-SM County		X
Monica Devincenzi MDevincenzi@republicservices.com	650-756-1130 x224	Republic Services		
Susan Kennedy skennedy@ssfscavenger.com	925-437-2510	South SF Scavenger	X	X
Teresa Montgomery teresa@ssfscavenger.com	650-589-4020	South SF Scavenger		X
Whitney Schmucker wschmucker@sga-inc.net		SGA Inc.	X	X
Audrey Taylor ataylor@sga-inc.net	714-421-1834	SGA Inc.	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	EOA Inc.	X	X



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

SMCWPPP Litter Work Group

*Work Plan for the Remainder of FY 2016-17
and Proposed Tasks for FY 2017/18*

May 12, 2017

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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 40% before July 1, 2014, 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.

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, Republic Daly City and Recology San Bruno; Rethink Waste (the South Bayside Waste Management Authority); stormwater and trash program municipal staff; and community members and consultants working on litter reduction efforts both in Santa Clara County and 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 comment are included as Attachment A.

Work Group Tasks Completed from 2014 through December of 2016

The Litter Work Group completed the following tasks in previous fiscal years:

- The Work Group coordinated the 1st Annual Litter Roundtable event in June 2014 that focused on various aspects of container management.
- At Work Group meetings held between August 2014 and May 2015, the Work Group discussed and prioritized issues for the 2nd Roundtable Event. Attendees representing the City of San Mateo, County of San Mateo, City of East Palo Alto, City of Brisbane, City of South San Francisco, Recology San Mateo, South San Francisco Scavenger, South Bayside Waste Management Authority (Re-Think Waste) and SMCWPPP were present at the meetings.
- The Work Group organized the County's 2nd Annual Litter Roundtable event for municipal staff and waste hauling company staff. The meeting was held on June 24, 2015 at the San Mateo Public Library and focused on commercial waste container management. The thirty-one attendees included municipal staff and their respective waste haulers. Using a five-step guided discussion with a matrix of issues for reducing litter focusing primarily on commercial waste container management issues, the attendees outlined possible outreach efforts for their community and through dialogue, learned about the existing programs from their haulers.
- The Work Group met several times in in FY 2015-16, and completed the following tasks:
 - Approved with the Trash Committee, a Work Plan for FY 15-16
 - A report on "Litter Practices Recommendations for Solid Waste Franchise Agreements"
 - Compiled data for the Illegal Dumping and Container Overage maps
 - Coordinated with the Public Information and Participation (PIP) Subcommittee, City of San Mateo and County of San Mateo staff on countywide litter outreach campaigns
 - In November of 2016, the Litter Work Group completed the draft Illegal Dumping and Container Overage maps and distributed them to the member agencies for review.

WORK PLAN OBJECTIVES

To assist municipalities with achieving the 70%, 80% and 100% trash/litter reduction goals in the MRP, the SMCWPPP Trash Committee and Litter Work Group developed this work plan to achieve the following objectives:

- **Improve Litter Reduction Efforts at Multi-Family Residential Properties** – For various reasons, multi-family residential properties often have higher litter generation rates than single family properties. These reasons can include: lack of sufficient on-site staff to oversee problems areas; lack of incentive for property owners to subscribe for sufficient waste removal services, lack of incentive for residents to sort and discard of materials properly; and internal waste systems such as garbage chutes than can over time become sources of litter and disincentivize waste reduction efforts. For discarded materials that are generated on-site, multi-family residential property owners typically contract with a private waste hauling company for the collection, processing and disposal services. This is typically the same company that the associated municipality has also entered into a franchise agreement with to provide waste services for the whole community. The franchise agreement (and sometimes the jurisdiction's municipal code) specifies the terms and manner in which materials will be collected and often will have specific provisions related to collection, container management and litter. When containers for the discarded materials are not sized correctly, overflows can lead to litter before, during or after the servicing of those containers. Working with multi-family properties can be challenging for many reasons: difficulties with bulky item collection, high tenant turnover, tenant communication challenges, lack of incentive to reduce garbage generation, and low levels of landlord management/participation on-site.

***Objective:** Reduce litter generation at Multi-Family residential properties through targeted outreach, assistance and other efforts.*

- **Improve Illegal Dumping Enforcement**- Municipalities and their franchised collection companies often work together to reduce and clean up incidences of illegal dumping on public property. Illegal dumping on private property is usually referred to municipal code enforcement officers who contact the private property owner and require the owner to abate the material. Code enforcement activities vary between jurisdictions. Best practices can be identified and information shared between the agencies.

***Objective:** Increase effectiveness of illegal dumping enforcement and reduce litter through sharing of best management practices.*

- **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.*

- **Coordinate with Litter Reduction Partners** – The California Department of Transportation (Caltrans) is taking action to reduce litter. This important player in solving the trash problem in San Mateo County is subject to requirements for trash reduction that are separate from the city/county permit requirements. Municipalities are collaborating with Caltrans on educating the public about litter reduction, street sweeping, litter removal (on-land cleanups) and improved trash bin/container management programs. 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 and Caltrans to further reduce litter.*

WORK PLAN TASKS FOR THE REMAINDER OF FY 2016-17

To achieve these objectives and address the recommendations of the Litter Work Group, the following tasks are proposed for the remainder of FY 2016-17:

- 1. Finalize the Draft Container Coverage and Illegal Dumping Maps** - The Program will make requested adjustments to the draft maps distributed to member agencies in late 2016 and communicate with additional hauling companies and municipal staff as requested. Final maps will be completed for each applicable member agency.
- 2. Develop a Multi-Family Property Litter Reduction Tool Kit for Municipal Staff** - The Program will produce a compilation of practices and tools for improving litter reduction efforts at multi-family residential properties such as tenant/management communication, hauler coordination, right-sizing of containers, tenant/management education, behavior change practices, signage examples, and tenant/management incentive tools. The compilation will be presented in a tool kit document that includes associated appendices and links to materials. The following elements will be developed for the toolkit:
 - **Legal Authority** – Review and discussion of franchise agreements, local and county health codes, local municipal codes, zoning and enforcement codes, and state codes such as the one requiring adequate space for storage of recyclables.
 - **Communication with Property Owners and Residents** – Acquiring, maintaining and using service address, mailing addresses, billing addresses of both the properties as well as individual units.
 - **Hauler Service Practices** – Container types, driver communication, access to and movement of containers for servicing and other issues that govern servicing of multi-family properties.
 - **Signage and Other Education Materials** – Effective use of these materials for litter reduction based on other efforts.
 - **Outreach Methods and Materials** – Internally by property and HOA managers as well as external from city staff and haulers.
 - **Containers for In-Unit Use** – Types, costs and effective use of containers that can be provided to residents for use of storing materials in kitchens etc.
 - **Property and HOA Manager Communication** – Working with on-site staff to reduce litter.
 - **Billing Review** – Ensuring that property owners and managers understand how to read their waste billing statements and that they are taking advantage of incentives to reduce litter and waste to landfill.

- **Minimum Service Requirements** – Reviewing, adjusting or creating minimum levels of service that the jurisdiction or the hauler may have for multi-family properties.
- **Ownership, Demographics and Data** – The various types of Multi-Family housing and the possible correlation between the type of housing and litter generation such as ownership, turnover rates, cultural and economic factors.
- **Measuring Success** – Gathering of data for baseline and post-campaign measurements.
- **Site Specific, Local and Regional Branding** – Examples and templates for municipal staff use.

The Program will develop an annotated outline of the tool kit for review and comment by the Litter Work Group. Based on comments received, a draft tool kit document will be developed for comment/review. A final document will be developed based on input from the Litter Work Group.

During this task, the Program will continue to coordinate with the PIP Subcommittee to investigate options for a litter-focused outreach effort that includes a consistent message across different sectors. It is our understanding that a campaign focusing on the Multi-Family sector will be initiated in FY 17-18. EOA will provide input on branding and logos that will be developed through the PIP efforts so that they can also be used for litter prevention efforts.

3. **Litter Work Group Facilitation** – To support Tasks 1 and 2, 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.

PROPOSED WORK PLAN TASKS FOR FY 2017-18

For FY 2017-18, the Litter Work Group proposes to conduct the following tasks:

1. **Plan and Coordinate a 3rd Roundtable Event Focusing on Illegal Dumping** – The Program will coordinate a roundtable event with Permittee legal counsel, management staff and code enforcement officials to share information and best practices for reducing illegal dumping in communities and the administrative, legal and practical challenges to doing so. All communications and outreach regarding the roundtable will be handled through this tasks, including agenda preparation, speaker identification and coordination, and facility and food/beverage coordination.
2. **Education, Communication and Outreach**
 - A. **Enhanced Coordination with Caltrans on Trash Management** – The Program will enhance communications with the California Department of Transportation (Caltrans) by coordinating and facilitating a forum between member agency and Caltrans staff. A total of three (3) coordination meetings will be held to discuss improvements on litter reduction/prevention actions, including the installation of trash capture devices and implementation of other control measures. Coordination topics may include illegal dumping response, full capture system installation and maintenance, and on/off ramp litter removal. Meeting coordination, agenda and summary preparation, and action item documentation and follow up will be developed/conducted through this task.
 - B. **Coordinate with the PIP Subcommittee on a Multi-Family Litter Campaign** – The Program will continue to coordinate with the PIP Subcommittee on a campaign focusing on the Multi-Family sector in FY 17-18. 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.
 - C. **Coordinate with ZLI and Share Information on Litter Reduction Efforts** – The Program will continue to share information and best practices with the Santa Clara Valley Zero Litter

Initiative (ZLI) during FY 17-18. As requested and within the budget allotted, the Program will attend ZLI meetings and webinars.

- 3. Litter Work Group Facilitation** - To support Tasks 1 and 2, 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 the remainder of FY 16-17 are included in Table 1 and for FY 17-18 in Table 2. 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 Remainder of FY 16-17 Tasks, Schedule and Estimated Costs.

Task #	Task	Description	Start Date	Complete Date	Estimated Program Cost
1	Finalize Mapping Task from FY 15-16	Finalize the draft container overage and illegal dumping maps for the permittees in the first round of the task. Reach out to the remaining communities for more data for additional maps.	March 2017	June 2017	\$2,000
2	Develop Multi-Family Toolkit and Coordinate with PIP Consultant	Compile best practices, model policies, guidance and tools for reducing litter at Multi-family properties. Coordinate with the PIP on the development of a Multi-Family Outreach Campaign for FY 17-18.	March 2017	June 2017	\$11,000
3	Litter Work Group Facilitation	Convene up to two Litter Work Group meetings/calls, provide agendas and summaries.	March 2017	June 2017	\$4,000
			Total Cost		\$17,000

Table 2. SMCWPPP Trash Committee and Litter Work Group Proposed FY 17-18 Tasks, Schedule and Estimated Costs.

Task #	Task	Description	Start Date	Complete Date	Estimated Program Cost
1	Roundtable Event #3	Coordinate and facilitate 3 rd Roundtable Event on illegal dumping	July 2017	June 2018	\$7,500
2.A	Enhanced Coordination with Caltrans	Coordinate and facilitate 3 meetings with Caltrans and follow up on action items to enhance the coordination between Caltrans and member agencies.	July 2017	June 2018	\$15,000
2.B	Coordinate with the PIP Subcommittee	Attend meetings/calls, provide feedback on draft materials, and respond to inquiries from PIP consultants.	July 2017	June 2018	\$3,500
2.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 2017	June 2018	\$1,000
3	Litter Work Group Facilitation	Convene up to four Litter Work Group meetings/calls, provide agendas and summaries.	July 2017	June 2018	\$8,000
			Total Cost		\$35,000

Attachment A. Response to Comments from SMCWPPP Litter Work Group Members on the Proposed Work Plan for FY 16-17 and FY 17-18

Commenter	Agency	Comment	EOA Response
Breann Liebermann	County of San Mateo	The Work Plan looks good.	NA
Roxanne Murray	City of San Mateo	I found it (the work plan) to be comprehensive. 1. Outreach targeted to a specific audience is key. In the commercial sector outreach needs to be specific to restaurants, bars, office buildings, retail and medical offices as each has a different waste stream with best practices specific to their needs. 2. MFD's need outreach specific to property owners and property managers and separately for tenants as they each have different viewpoints and both need to be addressed. 3. I think outreach and clear easy to understand messaging is key to changing behavior.	We agree with all the comments and will strive to reflect that in the work products.
Diane Lynn	City of Belmont	No Comments	NA
Andrew Wemmer	City of South San Francisco	Thanks for putting it together. I don't have any comments on the Work Plan at this time.	NA
Lillian Clark	County of San Mateo	1. I think there is some duplication of efforts for Multifamily dwellings due to all of the work agencies/recycling specialists/ recycling coordinators are already spending on MFD's for illegal dumping and compliance with AB 341 and AB 1826. 2. A move in and move out guide for tenants was created some years ago by Rethinkwaste perhaps it could be found and updated with litter information. We would accomplish two issues reduction in illegal dumping and litter.	EOA will coordinate with other stakeholders and evaluate previously developed information to avoid duplication of efforts and to the extent possible build upon existing outreach materials (e.g., guide developed by Rethink Waste).

Commenter	Agency	Comment	EOA Response
Shelly Reider	City of Millbrae	<p>Overall the plan looks good!</p> <ol style="list-style-type: none"> 1. While I don't know the steps/actions that breakdown the costs, it seems a lot for Caltrans (\$15,000) and facilitation of meetings. 2. I realize a lot is involved in the Litter Roundtable meetings. I would just like to see action results for all of us! I mean this in a very positive way! 	<ol style="list-style-type: none"> 1. Coordination with Caltrans is multifaceted and will involve group and individual meetings with specific City and Caltrans staff which will take resources. Our goal is to reach tangible outcomes and actions related to the trash nexus between Caltrans and member agencies. Based on our experience in Santa Clara County, this will take time and effort on behalf of EOA staff to coordinate the dialogue between these agencies and find agreement on projects/actions that can be implemented in the short-term for trash control. For these reasons, we think the budget is consistent with the level of effort it will take to reach these desired outcomes. 2. EOA will attempt to have as productive a Litter Roundtable event as possible with discrete action items.
Susan Kennedy	South San Francisco Scavenger Company	<p>I think the overall work plan looks like it has reasonable goals and objectives. As I reviewed the document I did have a few thoughts I wanted to share. Please let me know if you have any questions.</p> <ol style="list-style-type: none"> 1. Adopt-A-Storm Drain program - The City of South San Francisco recently launched this program and I believe the City of San Mateo already has one in place. The City of SSF had an extremely strong response; somewhere around 60-70 people signed up. Hopefully it will produce some positive results. 2. Multi-Family Tool Kit - This has the potential to really be of help to everyone, and I strongly encourage you to reach out broadly to address this issue in San Mateo County. There are so many groups that could help identify some of the challenges this present. I'm happy to help out if you want/need any leads. 3. The uncovered load issue is one that I think creates issues for everyone. I realize that it's certainly not at the top of the list for law enforcement, but it is an offense where someone could be cited. I know there are multiple occasions where I/we see people stopping on East Jamie Court to cover their loads before they go through the scale house so they are not charged for an uncovered load. By that time, the damage is done. 	<ol style="list-style-type: none"> 1. EOA will coordinate with SSF and SM to share information from their Adopt-A-Storm Drain programs with other members of the Litter Work Group. 2. EOA will coordinate with as many other agencies as possible within the approved budget constraints. Our goal is to develop a product that is helpful to as many agencies as possible. 3. Uncovered loads can be addressed as one topic for the Code Enforcement Roundtable Event which would occur in FY 17-18.

Appendix 11

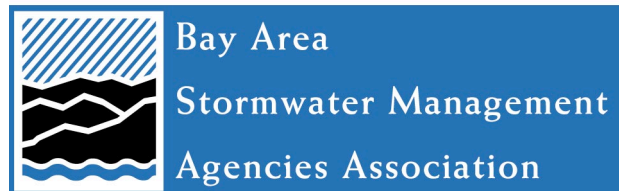
- Annual Reporting for FY 2016-2017, Regional Supplement for Training and Outreach, BASMAA, September 2017
- Pesticides Subcommittee Annual Report and Effectiveness Assessment, 2016-2017, CASQA, Final Report, August 2017
- Annual Reporting for FY 2016-2017, Regional Supplement for New Development and Redevelopment, BASMAA, September 2017

Annual Reporting for FY 2016-2017

Regional Supplement for Training and Outreach

San Francisco Bay Area Municipal Regional Stormwater Permit

B A S M A A



September 2017



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 County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

Bay Area

Stormwater Management

Agencies Association

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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

Adele Ho, 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 Sanitation and Flood Control District

**MRP Regional Supplement for Training and Outreach
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LIST OF ATTACHMENTS:

C.5.e. Control of Mobile Sources

Emergency Drought / Water Conservation Regulation Notice

C.9.e.ii.(1) Point of Purchase Outreach

Alternative *Our Water, Our World* Shelf Tag
Home Depot Letters of Support
Our Water, Our World Feature from Home Depot Annual Responsibility Report
Drought and Water Conservation Flyers
Citrus Leaf Minor Flyer
Photos of Trade Show Booths
Store Partnership Flyer

C.9.e.ii.(2) Pest Control Contracting Outreach

C.9.e.ii.(3) Outreach to Pest Control Professionals

Final Report: IPM Focus on Multi-Unit Housing

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2016-2017

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,
- Provision C.9.e.ii.(1), Point of Purchase Outreach, and
- Provision C.9.e.ii.(3), Outreach to Pest Control Professionals

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 2016-2017 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.*

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BASMAA's long-standing Surface Cleaner Training and Recognition Program addresses these 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.

Previously, BASMAA, the Regional Water Board, and mobile businesses jointly developed best management practices. The BMPs were packaged and delivered in training materials (e.g., *Pollution from Surface Cleaning* folder), and via workshops and training videos. The folder and the training video have since been translated into Spanish. Cleaners that take the 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. Previously, BASMAA converted the delivery mechanism to being online so that mobile businesses would have on-demand access to the materials and the training. BASMAA continues to maintain the [Surface Cleaner Training and Recognition](#) program. 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

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alerting them to the emergency regulations (see attachment). Regarding part 1), in May 2015, the State Water Board amended and readopted the emergency regulation extending its effectiveness to February 2016. In February 2016, the State Water Board extended the emergency regulation through October 2016 (into FY 16-17). In May 2016, the State Water Board replaced the emergency regulation adopted in February 2016 and extended the regulation through February 2017. In February 2017, the State Water Board extended the emergency regulation for 270 days (approximately November 2017) unless the State Water Board determines that it is no longer necessary due to changed conditions. In discussions with BASMAA in late March 2017, State Water Board staff indicated that they plan to propose the regulations be made permanent in November 2017, 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 (<http://baywise.org/about-us>).

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.*

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....,

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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 2016-2017.

- Continued the makeover of the look and content of the *Our Water, Our World* materials from the previous fiscal year with relatively minor content changes to the *Pest or Pal Activity Guide for Kids* and an alternative shelf tag that uses the word “effective” rather than “less-toxic” for use on select products, particularly fertilizers (see attachment).
- Coordinated program implementation with major chains Home Depot, Orchard Supply Hardware (OSH), and Ace Hardware National. Corporate office of OSH (San Jose) and Home Depot (Atlanta) directed support of the program with their stores (see attachments).
- 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: 4 versions – generic product-by-pesticide-fertilizer, generic product-by-pest, OSH product-by-pest, and Home Depot product-by-pest
- Coordinated employee trainings and tabling events at *Our Water, Our World* stores.
- Compiled information and provided outreach specific to current issues:
 - Drought and water conservation (see flyers attached)
 - Mosquito control and the Zika virus
 - Asian Citrus Psyllid and Huanglongbing (see flyer attached)
- 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 80 questions in FY 16-17.
- Provided and staffed exhibitor booths and made presentations to attendees (see photos attached).
 - Excel Gardens Dealer Show, Las Vegas (August 2016)
 - L&L Dealer Show, Reno (October 2016)
 - NorCal trade show, San Mateo (February 2017)

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- Provided on-call assistance (e.g., display set-up, training, IPM materials review) to specific stores (e.g., OSH, Home Depot)(see attachment).
- Participated in UCIPM Continuing Education for IPM Advocates.

Although effectiveness information need only be provided in the 2019 annual reports (C.9.g), below are some outputs and outcomes for FY 16-17:

- 124 *Our Water, Our World* Store Trainings¹
- 1,017 employees trained at *Our Water, Our World* stores²
- 107 Tabling events at *Our Water, Our World* stores³
- 6,577 customers contacted by Advocates at tabling events at stores⁴
- 80 questions researched and answered by technical expert
- Increases over last year in trainings by 11%, trainees by 16% and customers reached at tablings by 30%.
- Home Depot reported that Scott's Miracle Gro increased the sales of their less toxic pesticide product line Nature's Care by 49%.

C.9.e.ii.(2) Pest Control Contracting Outreach

This provision requires:

The Permittees shall conduct outreach to residents who use or contract for structural pest control and landscape professionals by (a) explaining the links between pesticide usage and water quality; and (b) providing information about IPM in structural pest management certification programs and landscape professional trainings; and (c) disseminating tips for hiring structural pest control operators and landscape professionals, such as the tips prepared by the University of California Extension IPM Program (UC-IPM).

C.9.e.ii.(3) Outreach to Pest Control Professionals

This provision requires:

The Permittees shall conduct outreach to pest control operators, urging them to promote IPM services to customers and to become IPM-certified by Ecowise Certified or a functionally-equivalent certification program. Permittees are encouraged to work with the Pesticide Applicators Professional Association; the California Association of Pest Control Advisors; DPR; county agricultural commissioners; UC-IPM; BASMAA; EcoWise Certified Program (or functionally equivalent certification program); Bio-integral Resource Center and others to promote IPM to pest control operators.

The annual reporting requirements for both sub-provisions above are the same as for provision C.9.e.ii.(1) above. Virtually all of the requirements in the two sub-provisions were addressed by the BASMAA project *IPM Focus on Multi-Unit Housing* – a pilot

^{1,2,3,4} Funded by permittees at local level.

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2016-2017

project conducted at specific locations but that produced materials that may be regionwide.

In FY 16-17, BASMAA completed the multi-year, grant-funded project *IPM Focus on Multi-Unit Housing*. BASMAA received a \$200,000 grant award from the Department of Pesticide Regulation (DPR) to conduct the project as part of DPR's Pest Management Alliance program. The primary goal of the project was to reduce pesticide use both outside and inside multi-unit housing by targeting outreach to interest-specific communities, including building owners, managers, and tenants; pest management professionals (PMPs); and architects and developers. Secondary goals included developing continuing education curricula for pest management professionals; and facilitating the public's need to identify and hire PMPs who practice integrated pest management. The project's objectives and tasks, milestones, or deliverables are listed bellow and the final report is provided as an attachment.

Objective	Tasks, Milestones, or Deliverables
1	Task 1.1. (a) Administrative and (b) initial planning meetings
1	Task 1.2. Project update meetings
1	Task 1.3. Quarterly progress reports and invoices
1	Task 1.4. Annual reports
1	Task 1.5. Presentation to PMAC (DPR Seminar)
1	Task 1.6. Final report draft
1	Task 1.7. Final report
2	Task 2.1. Develop criteria for building selection
2	Task 2.2. Develop MOU for participating buildings
2	Task 2.3. Recruit participating buildings
2	Task 2.4. Pre-project survey of participating building managers
3	Task 3.1. Develop messages for target audiences
3	Task 3.2. Produce outreach materials
3	Task 3.3. Develop and assemble IPM toolkits
3	Task 3.4. Hold IPM workshops for participating building managers
3	Task 3.5. Conduct outreach to residents
3	Task 3.6. Conduct outreach to health clinics
3	Task 3.7. Conduct inspection of participating units
3	Task 3.8. Provide IPM services
3	Task 3.9. Provide site visits of buildings by municipal staff
3	Task 3.10. Conduct outreach to architects and developers

**MRP Regional Supplement for Training and Outreach
Annual Reporting for FY 2016-2017**

Objective	Tasks, Milestones, or Deliverables
4	Task 4.1. Develop CE learning objectives for PMPs
4	Task 4.2. Develop and get approval for CE curriculum and slide show
5	Task 5.1. Update online lists of IPM-certified PMPs
5	Task 5.2. Develop outreach: "Hire IPM" materials
5	Task 5.3. Test strategies for promoting IPM services
6	Task 6.1. Develop and conduct post-project surveys of participating building managers
6	Task 6.2. Determine IPM uses and pesticide-use reduction over project term

Attachments

Mobile Cleaner Training and Recognition Program

Emergency Drought / Water Conservation Regulation Notice

Subject: California emergency drought regulations affect surface cleaners
Date: Wednesday, August 13, 2014 at 9:05:06 AM Pacific Daylight Time
From: BASMAA
To:

Having trouble viewing this email? [Click here](#)



Hello,

As a Recognized Surface Cleaner qualified by the Bay Area Stormwater Management Agencies Association (BASMAA), you need to be aware of emergency drought regulations adopted by the State Water Resources Control Board, which went into effect on July 28, 2014.

The new regulations prohibit:

- Application of potable water to any sidewalk or driveway
- Use of potable water in any way that causes runoff onto "adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures"
- Washing vehicles without a shutoff valve on a hose

These regulations will be in effect until April 25, 2015, unless canceled or extended. Agencies may assess a \$500/per day fine for violations. Exemptions will be granted "where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency."

More information is on this page:

http://waterboards.ca.gov/waterrights/water_issues/programs/drought/emergency_regulations_waterconservation.sh

The full text of the regulations is posted in English here:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2014/rs2014_0038_regs.pdf

The full text of the regulations is posted in Spanish here:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2014/rs2014_0038_spanish.pdf

If you have questions about the regulations or their applicability to your work, call the State Water Board's drought hotline: (916) 341-5342.

Thank you for your attention! We will be updating the best management practices and recognition test to include information about the drought regulations in the near future.

Best regards,

Bay Area Stormwater Management Agencies Association

Attachments

Point of Purchase Outreach

Alternative *Our Water, Our World* shelf tag



Attachments

Point of Purchase Outreach

Home Depot Letters of Support



Interoffice MEMORANDUM

DATE: January 14, 2016

TO: California Store Managers, D28 ASMs and Department Heads

FROM: Ron Jarvis

CC: Steve Knott

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. 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 worthwhile demonstration.

A representative will contact you before the training or demonstration date to arrange details. Please contact Annie Joseph at (707) 373-9611 if you have any questions. Thank you.

Thank you
Ron

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



2455 Paces Ferry Road NW • Atlanta, GA 30339
770-433-8211

Store Support Center

July 28, 2017

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. Rainfall in the area increased gardening activity, but with that rainfall came additional pest concerns, so Annie Joseph and her team of IPM Advocates have been an important resource this selling season.

Annie and team have worked closely with our associates this year to raise awareness about the Asian Citrus Psyllid potential to spread the deadly Huanglongbing disease to citrus trees, as well as two invasive species of mosquitoes that can spread Zika Virus. The Advocates have made sure our associates are well versed in these pests, as well as services offered by local agricultural departments and local Mosquito and Vector Control Agencies. Our associates then shared this valuable information with our customers.

The team's engagement, commitment, and IPM expertise continues to make them an essential partner for our Lawn & Garden business.

On behalf of The Home Depot, thank you for your partnership and support.

A handwritten signature in black ink that reads "Ron".

Ron Jarvis
Vice President Sustainability/SER

Attachments

Point of Purchase Outreach

Our Water, Our World Feature from Home Depot Annual Responsibility Report



Our Water Our World (OWOW) – California

OWOW is a collaboration of regional and local water pollution prevention agencies in Northern California.

Since 2003, Home Depot has collaborated with OWOW to raise awareness about less toxic pest management strategies and products that can help protect local waterways. Today, OWOW is active in 59 of our San Francisco Bay area and Sacramento area stores assisting customers and training associates on IPM (Integrated Pest Management) practices.

Attachments

Point of Purchase Outreach

Drought and Water Conservation Flyers



OUR WATER – OUR WORLD

Ten Tips for Water-Wise Gardening

In most of California, we enjoy a Mediterranean climate found in only 2% of the world's land mass. This climate gives us mild, wet winters and hot, dry summers. But droughts are part of our natural weather cycle, and when winter rains are minimal our water becomes even more precious. Over half of our residential water is used on landscapes, so conserving water in the garden can have a huge impact on our water supplies. You don't need to give up a beautiful, lush landscape when you create a water-wise garden. Here are some tips for creating a healthy, inviting garden requiring minimal resources and less effort and expense.

1. **Go With the Low Flow** - Use soaker hoses for irrigation, or invest in a drip system that can cut water use by as much as 90%. Consider installing a 'smart controller' for your irrigation system that can save water by helping to calculate your water requirements and adjusting to changes in water needs. Be sure to check regularly for leaks.
2. **Irrigate Early** – Watering early in the morning when temperatures are cooler and there is less wind will minimize evaporation. This also discourages pests like snails and fungal diseases like black spot that need wet foliage at night.
3. **Go Deep** – Water less often and more deeply. This encourages deeper root systems that can better tolerate dry periods.
4. **Get in the Zone** - Group plants with similar water needs together to make watering easier and more efficient. Place pots and thirsty plants near the house where you can keep an eye on them, and use native or Mediterranean plants farther away where they may need very little water once established.
5. **Mulch Like Mad** – Create a 1" to 3" layer of organic material such as bark or shredded leaves over the top of the soil and a drip irrigation system. You will be amazed at what a huge difference this makes in reducing moisture loss from soil, in moderating soil temperatures, in controlling weeds that compete for water, and in returning nutrients to the soil. Be sure to keep mulch a few inches away from the stems or trunks of plants.
6. **Count on Compost** – Add organic matter like compost to the soil to increase the soil's ability to absorb and hold water, and to slowly release nutrients to plants keeping them less stressed and susceptible to pests. If you feed plants, use a slow-release, organic fertilizer to discourage excessive plant growth that attracts pests and increases water needs.
7. **Go Native!** – You will find a wonderful variety of water-wise plants in local nurseries. Look for plants that are native to a Mediterranean climate, or for California natives that grow in dry conditions. These plants are adapted to our hot summers and usually more resistant to pests. Once established, many of these plants can survive on rainfall alone. Consider replacing declining plants with a species better suited to our climate.

8. **Fall into Planting** – When working on a large planting project, remember that the best time to plant is in the fall when the weather starts to cool. Winter rains will help these plants establish deep, healthy root systems before they have to tolerate the summer heat.
9. **Lessen the Lawn** – Lawns need a lot of water, so consider reducing or replacing your lawn with water-wise groundcovers, low-maintenance perennials or a porous hardscape. If you plant a lawn, choose drought-resistant varieties such as buffalo grass. Mow less often and raise the height of your mower blade to 3” since longer grass will shade roots, lessen evaporation, and inhibit weed growth. Your city or local water agency may offer you a cash rebate for replacing lawns and installing efficient irrigation.
10. **Get Wise to Weeds** – Keep up with weeding since weeds will compete for water. A drip system, mulch and landscape fabric will help you prevent weeds.

Additional Tips for Water-Wise Vegetable Gardening

In addition to a drip system, mulch and compost, here are some ideas for saving water when growing vegetables:

- Choose early ripening varieties and plant close together in blocks instead of rows to create shade for roots and reduce evaporation.
- Choose plants that fit your growing conditions and try heirloom varieties adapted to hot climates.
- Harvest fruits and vegetables as soon as they are ready, and pick up fallen and over-ripe fruits that may attract pests.
- Grow fewer varieties and choose vegetables that will produce a lot of food on one plant, like tomatoes, squash and peppers.

Resources

- [Our Water Our World](http://www.ourwaterourworld.org): www.ourwaterourworld.org Fact sheets with tips on healthy gardening, caring for roses, lawn care, and managing common pests.
- [UC Statewide IPM](http://www.ipm.ucdavis.edu): www.ipm.ucdavis.edu Extensive information on managing pests and diseases that may affect drought-stressed plants.
- [Plants and Landscapes for Summer-Dry Climates](#), EBMUD, 2004. A perfect resource for choosing appropriate plants and designing your garden.
- [WaterSmart Gardening](http://www.watersmartgardening.com): www.watersmartgardening.com Plant lists, visual tours of gardens, watering guides, and resources all organized by county.
- [UC Davis Arboretum All Stars](#): Great information on 100 beautiful plants recommended for California gardens.
- [Your local water district](#): Many districts provide recommended plant lists, watering guidelines, rebates for removing lawns and saving water, and water saving tips.
- [Greywater Action](http://www.greywateraction.org): www.greywateraction.org – Ideas for using water from sinks, showers and washing machines to irrigate your garden.



OUR WATER – OUR WORLD

Protecting Landscapes During a Drought

Droughts can be part of our natural weather cycles. But when drought conditions persist for long periods of time, it can significantly impact plant health in a number of ways. Lack of water limits a plant's ability to produce food, and stressed plants can release chemicals that can attract pests. Excessive heat can accelerate the reproduction time of pests. But there are a number of strategies that can help protect plants during extensive drought conditions.

How Plants React During a Drought

When a plant is stressed from lack of moisture, it closes the pores (stomata) in its leaves to reduce water loss. As a result, the plant does not absorb the carbon dioxide it needs for photosynthesis. The lack of water also limits the plants ability to move food and essential minerals around. Both these factors limit the plants ability to grow and develop, so plants may show stunted growth, chlorotic leaves, leaf drop, a thinning crown, or poor shoot growth. It may take trees and large shrubs a couple of years to recover following a severe drought.

Pests and Diseases

During fall and winter, rain can help wash insect pests like mites and aphids from plants, and cool temperatures keep pests from reproducing. But during a drought, warm temperatures can accelerate pest reproduction rates and the pests can quickly outnumber the populations of beneficial insects that prey on them.

When plants are water-stressed they produce fewer defensive compounds, which makes them more susceptible to pests. Some plants may even begin to emit chemicals, such as ethanol and alpha-pinene, which can actually attract pests like borers and bark beetles. Some insect pests, such as spider mites and whitefly, flourish in dry, dusty conditions and their populations may increase during a drought. Nutrients may be more concentrated in water-deficient plants, providing a substantial food source for these pests.

Some plant diseases, such as canker diseases, usually affect older or drought-stressed trees and shrubs. But fungal diseases that usually live on dead wood can invade living tissues when plants are moisture stressed, causing dieback in younger plants.

Drought Stressed Trees

There are many factors that impact a tree's ability to survive a drought, such as the length of the drought, the plant species, and how well the soil holds water and nutrients. Other environmental stresses may impact the plant as well, such as competing with turf for water, heat from pavement and buildings, soil compaction, and air pollutants. Symptoms of drought stress include wilting, leaf drop, chlorosis, leaf margins that turn brown, stunted new growth, browning and loss of needles on conifers, and eventually twig and branch dieback.

Drought stressed trees can attract insect pests and diseases such as borers, bark beetles and cankers. Borers are common in drought-stressed plants. As they feed on the tree's inner bark, their tunnels inhibit the movement of water and nutrients. Bark beetles are common on conifers like pines. Their tunnels can impede the plants ability to transport water and they sometimes bring in a fungus which speeds up the plant's decline.

Strategies for Protecting Plants During a Drought

- **Drought-Resistant Plants**

Choose plants adapted to having less-water and drier conditions. You may be able to get a list of recommended plants from your local University Extension Service or water district.

- **Install Efficient Irrigation Systems**

Even water-wise plants will need water to get established. Drip irrigation systems or soaker hoses for trees and shrubs can substantially cut down on water loss and be more efficient in delivering water directly to a plant. Water early in the morning when there is less wind creating evaporation, and water less often and more deeply to encourage deeper roots. In many areas, water providers offer rebates for installing efficient irrigation systems.

- **Apply Mulch**

Covering the soil with a layer of organic material like wood chips, bark, straw and leaves, can have a huge impact in the health of plants and the landscape. The mulch reduces water loss through evaporation, feeds the soil organisms, keeps weeds from germinating, and improves the soil's ability to hold moisture. Apply 2" to 4" of mulch around plants, but keep the mulch 2" to 3" away from the stem or trunk of a plant.

- **Use Organic Fertilizers**

Applying fertilizer during a drought will not necessarily encourage plant growth, because lack of water limits the plant's ability to take up nutrients and move them around in the plant. In addition, high salt fertilizers can actually injure the plant when the salts build up in dry soils. To help minimize the stress of drought and maintain soil fertility, use organic, slow release fertilizers. These will be most effective when the rainy season begins. Many organic fertilizers contain the spores of beneficial microbes, called mycorrhizal fungi. This symbiotic fungus can aid a plant during drought by helping roots access water and nutrients.

Pruning

Remove dead limbs that may be harboring insect pests or diseases. Light pruning on shrubs to permit circulation may deter insect pests like whitefly that like dry conditions. But in general, avoid significant pruning of live plant material to reduce additional stress and create wounds that attract pests.

- **Anti-Transpirants**

An anti-transpirant is a compound sprayed on foliage to provide a barrier to water loss. These products have a short-term benefit, but can be especially useful on young plants or new plantings.

- **Pest Management**

Keeping plant stress to a minimum through efficient irrigation, mulch, and slow-release fertilizers will help deter pests. Monitor plants frequently to identify and manage any problems as soon as they occur. If pest problems persist, use soaps, oils and biological controls (such as spinosad) to manage problems. Use any pesticides sparingly to reduce the impact on the beneficial insects that can help keep pest problems in check.

For More information:

Our Water Our World, www.ourwaterourworld.org

Drought and Landscape Plants, article by B. Fraedrich, Bartlett Tree Research Labs.
www.bartlett.com/resources/Drought-and-Landscape-Plants.pdf

How Does Drought Stress Influence Plant-Insect Interactions? Article by University of Illinois Extension:
<http://hyg.ipm.illinois.edu/pastpest/200516f.html>

For permission to reproduce this handout, please contact Annie Joseph: anniejoseph@ix.netcom.com
Tidd 9/14

Attachments

Point of Purchase Outreach

Citrus Leaf Miner Flyer



OUR WATER – OUR WORLD

Citrus Leaf Miner

Citrus leaf miner has recently arrived in Northern California, but is native to Mexico. It is also in Arizona and other Citrus growing states. The small, light-colored moth lays eggs singly on the underside of the leaf. Eggs hatch and larvae start feeding immediately in shallow tunnels in the leaves, called mines. As larvae get bigger you begin to see evidence of excrement filling the mine with frass.

Citrus leaf miners are active midsummer through late fall depending on location, and can damage young trees under 4 years of age. Most mature trees tolerate leaf damage without impacting the tree growth or yield. The most damage is seen in nurseries and new plantings where leaf miners can retard new growth. Coastal lemons that have several flushes of growth can be affected throughout their life.

Monitoring for Citrus Leaf Miner:

- Watch for tunnels on leaves. The leaves may also look distorted and begin to curl.
- Pheromone traps can be set out in March through November to catch the adult males. These traps will alert you to the egg-laying activity and proper timing for pesticides if needed.
- Traps need to be placed inside the tree at shoulder height.

Cultural Controls:

- Avoid pruning live branches more than once a year to avoid cycles of flushing which attracts the pest, and don't prune during most active season.
- Do not apply fast release nitrogen fertilizers when leaf miner populations are high, as new growth will be damaged.
- Trim vigorous shoots that develop on branches above the graft union on trunks of mature trees. These produce new growth that can attract the miner.

Biological Controls:

- Green lacewing larvae, parasitic wasps and parasitoids.

Chemical Controls:

- Use oils and neem oil to suffocate eggs.
- Spinosad is also listed as a control for leaf miner, and can be somewhat effective for citrus leaf miner.

Attachments

Point of Purchase Outreach

Photos from trade shows



Presentation to attendees



Trade show booth

Attachments

Point of Purchase Outreach

Store Partnership Flyer



OUR WATER – OUR WORLD

Introducing the Home Depot and Our Water Our World Store Partnership Program

The Our Water Our World Program is a collaboration of regional and local water agencies in Northern California. This program raises awareness about the connection between pesticide use and water quality, and provides information to consumers about pest management strategies and less-toxic alternatives that can help protect water quality. These management strategies are based on IPM or integrated pest management.

Since 2003, Home Depot and Our Water Our World have partnered to reduce toxic runoff from fertilizers and pesticides into local waterways. This continued partnership is intended to reduce the amount of pesticides entering creeks and the Bay through local sewers and storm drain systems. The program will increase your store's visibility as an environmentally friendly business while maintaining or increasing sales of pest management products.

We look forward to working with you!

What is IPM?

Integrated pest management is a common-sense strategy for managing pests that uses a variety of practices while minimizing risks to people and the environment. IPM does not mean completely avoiding pesticides—but it does emphasize identifying the pest, understanding its life cycle, and starting with the least-toxic practices first.

Here are some of the practices used in IPM:

Monitoring

Using traps to pests and diseases to catch any problems early.

Biological Control

Encouraging beneficial organisms, such as lady beetles, lacewings, and nematodes, to help manage pests.

Cultural Control

Choosing the right variety of plant for the right place and using disease-resistant varieties. Fertilizing with slow-release, organic fertilizers will keep plants healthy and more resistant to pests and diseases.

Physical Control

Keeping pests out without chemicals by using barriers and traps, such as copper barriers for snails, caulk in crevices where ants enter structures, sticky barriers for whiteflies, and traps for yellowjackets.

Chemical Control

Using pesticides only when needed, choosing the least-toxic product first, and using a pesticide appropriate for the specific pest.

Tips For Working With Customers

- Less-toxic products may take longer to work than traditional pesticides.
- Timing of application is important since many less-toxic products break down faster. To be successful, you need to understand the target pest and when applying a pesticide would be most effective.
- Most less-toxic products are not broad spectrum, so beneficial insects are less at risk.
- Remember to spot treat – it is not always necessary to spray the whole plant.
- Apply soaps and oils early morning or late afternoon to avoid burning plants. Soaps are less effective in hard water because the minerals impact the fatty acids that are used to manage pests.
- If releasing beneficial insects, give them time to manage the pests, and don't use pesticides since they will damage the beneficial populations.

Elements of the OWOW Program

Shelf Talkers

Shelf talkers are placed underneath products to identify less-toxic choices and organic soils & amendments.

Fact Sheet Rack

There are 15 different fact sheets available to your customers with information on strategies for managing common pests and protecting water quality.

Staff Training

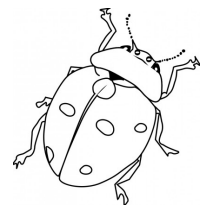
We can schedule a training for your staff with information on answering customer questions and tips for using/selling products.

Customer Outreach

We can staff a table with samples of less-toxic products and answer your customers' questions on pest management, how to keep soil healthy and water-wise plant choices.

End Caps

Working in conjunction with your vendors, we can help set up and label end caps highlighting organic and less-toxic products.



Attachments

Pest Control Contracting Outreach & Outreach to Pest Control Professionals

Final Report: IPM Focus on Multi-Unit Housing

THE HEALTHY BUILDINGS PILOT PROGRAM

IPM Focus on Multi-Unit Housing

A Pest Management Alliance Grant Project

Funded by the California Department of Pesticide Regulation

2014–2017

Final Project Report

Submitted by the Bay Area Stormwater Management Agencies Association

May 2017

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EXECUTIVE SUMMARY AND RECOMMENDATIONS FOR FUTURE PROJECTS

The Bay Area Stormwater Management Agencies Association (BASMAA), a consortium of permitted municipal stormwater protection agencies in the nine San Francisco Bay Area counties, has a long history of effective promotion of integrated pest management (IPM), including the well-established Our Water Our World point-of-sale education program in local garden centers and hardware stores. Persistent challenges for stormwater permittees include reducing perimeter spraying with pyrethroids or fipronil to kill ants, as water quality studies show pesticides in the receiving waters of storm drainage systems; effecting behavior change among managers and residents of multi-unit residential buildings; and effective message delivery to individuals and companies that hire pest management companies.

Participating cities adopted the name “Healthy Buildings Pilot Program” for the project, as it was designed to address those stormwater pollution prevention challenges by combining *water quality messages* associated with outdoor use of pesticides with *public health messages* associated with indoor use of pesticides. Combining messages and targeting building owners, managers, residents, and pest management professionals (PMPs) led us to the elements of the project, which include

- Outreach to multi-unit building managers and residents about IPM and this pilot project
- Provision of IPM services to diverse pilot sites in least three municipalities for one year, with pre-and post-project surveys intended to demonstrate program effectiveness and point out areas for future improvement
- Additional outreach to neighborhood clinics and health centers, focusing on the causal relationship between pest infestations and asthma
- Outreach to property developers and architects based on San Francisco’s *Pest Prevention By Design Guidelines* (<https://sfenvironment.org/download/pest-prevention-by-design-guidelines>)
- Development of a continuing education training module for PMPs focused on IPM in multi-unit housing, for approval by the California Structural Pest Control Board
- Efforts to improve awareness of IPM certification programs for PMPs

The ambitious scope of the pilot project was made possible by the generosity of participating cities, University of California Cooperative Extension, and the Department of Pesticide Regulation—all of whom donated many staff hours to project planning, execution, and analysis. BASMAA is deeply grateful to these agencies and their staff members for their enthusiasm and dedication to this collaborative effort. Equally important, representatives of Pestec, the project’s IPM provider, were full partners in every aspect of the project. We all benefited from Pestec’s willingness to share their expertise and experience, and their commitment to the project and its goals.

Pestec’s and municipal staff’s work with participating buildings was the heart of the program. All or portions of 11 buildings in five cities participated, bringing a total of 101 residential units into the program. See Table 1 for a breakdown of ownership, management, and resident types.

In spite of a stream of foreseeable and unforeseeable problems along the way, building managers and tenants reported that IPM approaches effectively eliminated or vastly reduced pest sightings in most units in most buildings.

While managers and residents were receptive to the training workshops and materials we provided, exit interviews with owners and managers made clear that Pestec staff's friendly persistence and familiar presence over the course of the project were major factors in convincing residents to hold up their end of the bargain—implementing good housekeeping practices and informing building management if pests were found. See the building-by-building summary in Appendix 11 for details.

Recommendations for follow-on projects

The pilot project was a learning experience for all involved. As challenges arose, our understanding of the complex set of target audiences grew. We gained insight into how we might have planned and implemented the project to be more effective in reaching buildings with more severe pest management problems than the buildings that participated in the pilot.

New project objective: Develop and implement IPM approaches that will be successful in the most challenging settings. This will require a significant commitment to the project by participating municipalities and staff.

Focus on buildings with severe pest problems

- Thoroughly brief code enforcement and building inspection departments at the outset of the program, and agree on a local strategy for dealing with code violations and tenant complaints
- Develop a local strategy, based on state laws and local ordinances, for resolving bed bug problems when found
- Funding: Consider expanding the program by incorporating a city match for DPR funding. Budget realistically for 1) potential provision of pest exclusion repairs early in the program, and 2) accommodation of more buildings, as pest complaints diminish after a few months; as well as 3) city-sponsored (free to building owners and residents) cleanup days offered to all buildings early in the program
- Project proponents may need to make clear to budget decision-makers that this program is an important element of stormwater pollution prevention

Improve program participation (building identification and recruitment)

- At the outset of the program, increase educational effort for building owners, i.e., spend more time and effort recruiting buildings.
- Include training on *Pest Prevention by Design Guidelines*, incorporating materials developed by the City and County of San Francisco (see section 3c, below)
- Educate building owners about their responsibility under California law and local ordinances (this may fall to code enforcement or housing department staff in large municipalities)
- Involve owners and managers of pilot project buildings in promoting an expanded project

Anticipate challenges that work against a collaborative relationship between residents and building owners or management

- Language issues

- Fear of deportation following “exposure” to city government
- Illegal crowding related to the high cost of housing in the Bay Area

PILOT PROJECT OBJECTIVES

1. Project administration and management

The strength and dedication of the project team was consistent throughout the project. The team deserves all credit for the program’s success. Members of the team:

- Nita Davidson, DPR Grant Manager
- Geoff Brosseau, Principal Investigator
- Janet Cox, Project Manager for BASMAA
- Amanda Booth, City of San Pablo
- Michelle Daher, City of East Palo Alto
- Maree Doden, City of Palo Alto
- Samantha Engelage, City of Palo Alto
- Sraddha Mehta, San Francisco Department of the Environment
- Chris Geiger, San Francisco Department of the Environment
- Amber Schat, City of San José
- Andrew M. Sutherland, University of California Cooperative Extension Urban IPM Advisor
- William Quarles, Bio-Integral Resource Center
- Tara Cahn, Tara Cahn Architect
- Luis Agurto, Jr., Pestec
- Mikail Price, Pestec
- Lauren Wohl-Sanchez, Lauren Wohl Designs

Results

With submission of this report, we have met all reporting deliverable requirements. The project came in on budget largely because reduced pest infestations in participating buildings freed up resources.

We’re grateful to Andrew Sutherland for allowing us to use a web portal administered by the University of California Division of Agriculture and Natural Resources. We used the portal to store meeting notes and memorialize communication among members of the project team, and to post documents and resources. Access to the portal is available through Nita Davidson at the Department of Pesticide Regulation, at her discretion. Key messages and resources, including appendices to this report, are available on the project webpage on the BASMAA site.

Lessons learned

Perhaps because of the size of the project team or because many key participants were volunteering their time, BASMAA’s Project Manager and the Principal Investigator spent more time than was initially budgeted coordinating the various tasks and finalizing deliverables. In a subsequent project we would try both to budget more accurately and to plan to reduce the need for so much coordination, so that more resources will be available for delivery of pest management services.

Appendix 1: Pest Management Alliance application

Appendix 2: Quarterly and annual project reports

Appendix 3: Presentation to Pest Management Advisory Committee, November 10, 2016

2. Pilot the project in at least three municipalities

- After consultation with BASMAA member agencies, five Bay Area cities agreed to participate. City staff identified candidate buildings and their landlords, and sent recruitment letters on city letterhead. Letters attached hard copy applications and surveys, and (alternatively) linked to an online Google form. We budgeted to provide services to a total of 150 units in up to 15 buildings.
- Recruiting buildings to participate in the program, however, was much more difficult than we expected. Project team members thought a year of free pest management services would be a tremendous draw. This alone was not sufficient to attract enough participation. We identified several factors that prevented building owners from joining, including:
 - City staff were building owners' primary points of contact for the program; invitations to apply and participate went out on city letterhead. Project team members felt this was necessary in order to convey official approval of the program, but it likely signaled to owners that the program was regulatory (as well as advisory and free). A fact sheet about the program was included in the mailing.
 - In most cases, buildings proposed by owners were not heavily infested with pests. The exception was the buildings in East Palo Alto, which were flagged by the city, and whose owners understood that successful implementation of the program might help with ongoing issues with the city.
 - It may be the case, unfortunately for residents, that some owners of buildings with severe pest problems are simply not interested in resolving—or bringing attention to—those problems.

Results

The program included 101 units in 11 buildings in 5 municipalities. See Table 1.

Lessons learned

The approach most cities took to identifying candidate buildings—using a letter from the city to solicit known building owners with a letter from the city—was adequate, considering the budget and timeframe of the pilot project. Expanded projects post-pilot, however, will benefit from more labor-intensive recruitment strategies that stress landlords' legal responsibility to tenants and possibly involve building inspector and code enforcement departments.

The project team considered, and rejected, the idea of binding participating owners with memoranda of understanding with their respective municipalities. In most cases this was the correct decision. We surmise, however, that for landlords whose hearts aren't likely to be in the program, or in future projects where code enforcement is involved, MOUs might help secure cooperation from owners (such as inducing them to cancel ongoing scheduled spray contracts with providers of conventional pest management, for the duration of the IPM project).

Table 1: Participating buildings

City	Building	Type	Year built	Ownership	Management	No. units	Language(s)
East Palo Alto	EPA-1	Rent control	n/a	Private	Off-site	2	Spanish
East Palo Alto	EPA-2	Rent control	n/a	Private	Off-site	17	Spanish
Palo Alto	PA-1	Low income/ mkt rate	1953	Private	Off-site (by owner)	13	English/ Vietnamese
San Francisco	SF-1	Low income/ affordable	1909	Non-profit	Off-site	24	Chinese
San Francisco	SF-2	Low income/ affordable	n/a	Non-profit	Off-site	14	Chinese
San José	SJ-1	Market rate rental	1963	Private	Resident manager (first half of program)	4	Spanish, Vietnamese
San José	SJ-2	Market rate rental	1964	Private	On-site mgmt. office	4	Spanish
San José	SJ-3	Low income/ affordable/ market rate rental	1964	Private	On-site mgmt. office	5	Spanish
San Pablo	SP-1	Market rate rental	1968	Private	Off-site (by owner)	6	Spanish/ English
San Pablo	SP-2	Market rate rental	1968	Private	Off-site (by owner)	6	Spanish/ English
San Pablo	SP-3	Market rate rental	1968	Private	Off-site (by owner)	6	Spanish/ English
Total units						101	

Appendix 4: Sample recruitment letter and application and pre-project survey

Appendix 5: Program fact sheet

Note that one of the deliverables for this objective, the list of participating buildings, is on the password-protected UC ANR website but not included on the public website.

3. Reduce use of pyrethroids and fipronil by promoting IPM in multi-unit buildings

3a. Outreach to managers and residents

Project team members met to develop messages for building residents (our target audience), which we referred to consistently as we developed outreach materials.

After some deliberation by the project team, we decided to offer an introductory workshop, with food provided by the municipality, at each building site. We prepared the following materials for each event:

- Scripted slide presentation introducing the program, basic IPM approaches to managing common pests, and the importance of good collaboration between residents and management. Presentations were tailored to each city’s participating buildings and prepared in English and Spanish. San Francisco used the English version with a City staff member translating and taking questions in Chinese.
- Sets of nine pest identification and prevention cards (“Pest cards”), tailored to the program, in English, Spanish, and Chinese
- “IPM Toolkits”—buckets containing cleaning materials, caulk, and other items (one kit for each building, to be borrowed by residents)
- A vacuum cleaner with HEPA filter for each building, to be borrowed by residents
- Cleaning cloths for each attending resident

Results

Events were well received and relatively well attended with the exception of San Pablo, where the owner-managers came but no residents were present. Luis Agurto, Jr. of Pestec took questions in Spanish when appropriate, and that worked well. In San Francisco, a bilingual San Francisco staff person translated into Mandarin for the many residents who joined us. The general atmosphere at these events was cordial and predictive of the good relations throughout the program term among city liaisons, Pestec, residents, and managers.

Lessons learned

Residents were mainly concerned about cockroaches. They were interested in hearing about and discussing family health issues associated with cockroaches in the home.

Serving food and having small gifts for residents in attendance may make the program seem less regulatory—which is probably helpful for residents, but perhaps not optimal for all owners and managers. In East Palo Alto, residents were eager to complain about the owners (who were present) and their unresponsiveness to complaints and willingness to let the buildings decay. City staff were paying close attention.

Appendix 6: Messages for target audiences

Appendix 7: Informational pest cards for building residents

Appendix 8: Contents of IPM toolkits distributed to building managers

Appendix 9: IPM Workshop slide presentation in English and Spanish

3b. Provision of IPM services to participating buildings for one year

Kickoff events were followed by Pestec’s initial inspection visits to each building. Subsequently Pestec technicians visited buildings on a regular, noticed schedule.

Pestec technicians produced two automated reports for each building: a photographic record of pest-conducive conditions (“Fieldwire” reports), and a detailed, automated recording of conditions, prescribed treatments, and pest management products used (“PestPac” reports). Both of these reports are formatted and generated by proprietary subscription services. The PestPac report, which includes more detailed information, is long and challenging to understand by the unfamiliar reader, so we went to some lengths to translate it for building managers.

As part of their regular service under the program, Pestec developed a detailed summary report, “Initial Findings and IPM Treatment Plan” for each building. These reports include an introduction to the Healthy Homes Program, a detailed report of pest sightings at the initial visit, a description of the prospective roles of building management, residents, municipal staff, and Pestec over the course of the pilot, a summary of Pestec’s plans to treat pests on the premises (including pest management products), and the service schedule for that building.

Pestec provided a binder (log book) for each building, which included the IPM plan, the automated reports, and additional materials including reporting forms for tenant use; program materials; and a cheat sheet designed to aid in reading the PestPac reports.

It was important to ensure that building owners and managers received and understood the reports, were aware of pest exclusion repairs that needed to be done, and were committed to maintaining communication with residents so that Pestec management could alert Pestec if pests were cited on the premises. We tried several strategies to encourage cooperation:

- Pest Cards provided to residents stressed the importance of reporting pest sightings to management (who would then call Pestec)—promptly and instead of trying to deal with pests on their own, for the duration of the program
- We worked together with cities and Pestec to design an alternative form that city staff could use to translate the PestPac reports for managers. Municipal partners translated the form into Spanish and Portuguese, the languages requested by cities that wanted to use the form.

The program rep from the City of San José worked with numerous city departments, building management, and Pestec to plan and fund a “Fall Cleanup Day” at two buildings that are part of a larger complex of multi-unit buildings. The City provided Dumpsters and bulky-item pickup, and Pestec and residents provided muscle. This was a very successful event. Residents of nearby buildings asked if they could contribute to the collection, and we were happy to accommodate them.

Results

As the pilot progressed, two facts became clear. First, pest sightings became rare in buildings where owners and managers provided the best cooperation with Pestec. In these buildings, Pestec reduced their schedule of visits to quarterly from monthly. Second, in buildings where owners and managers were slow to execute recommended pest exclusion repairs, pest sightings continued. Because fewer visits to buildings in the first category saved project money, the project team decided to pay Pestec to provide pest exclusion repair services at buildings in the

second group. As a result, by the end of the pilot, pest sightings were essentially eliminated in almost all units.

In spite of the program's general success, many problems emerged in different buildings—all of which are informative for future projects.

- In one building the manager did not have keys to units, and never obtained keys during the pilot. This meant that Pestec had to make repeated visits to notify residents of scheduled visits and provide service, or try to find times to show up when residents would be at home.
- One participating building changed hands partway through the pilot year. Residents were given 90 days to move. Thanks to efforts of municipal staff, the new owners decided to stay in the program and discussed their remodeling plans with Pestec soon after taking possession. The owners, and new tenants, speak Vietnamese—which was not one of our languages for translation at the beginning of the pilot. Subsequently, we added Vietnamese translations to our deliverables.
- In the course of the sale, termites were found. Termites and treatment for termites were not a part of the program agreement with Pestec. The City provided the owner with termite IPM treatment information and notice that using conventional pest treatments to deal with termites might mean that results from that building would be excluded from the project. This turned out not to be an issue for the program, as the new owner has to date not addressed the termite problem.
- Hoarders in two buildings forbade access to their units to management and to Pestec. In these cases, Pestec worked to seal off the hoarders' units from contiguous units. This was successful in keeping pests from migrating to neighbors' homes, but severe pest problems in the hoarders' units remained.
- In one case the building owner failed to cancel a previous contract with a conventional pest control company, and spraying was going on inside the building, with bug bombs (total release foggers) placed in units, when Pestec and the municipal rep arrived for a regular program visit. *Spraying and using foggers inside without giving tenants notice is illegal.* The owner subsequently denied that this had happened.
- In the same complex, building residents complained to management about sanitation in the Dumpster area and other pest-conducive conditions, but management did not act to remediate identified problems. Residents refused to allow the owner into units and threatened violence when the owner accompanied the Pestec technician.
- Owners of the complex offered payment to a Pestec technician in exchange for a favorable report at the end of the program.

Lessons learned

A key lesson from this project is that it is most difficult to get buildings with the worst pest problems to sign up for a voluntary program with significant “free stuff”...for obvious reasons including owners' reluctance to spend money on maintenance, possible apathy about problems afflicting tenants, and fear that a city-sponsored program will “out” them to building inspectors or code enforcement. In fact, the building with the most severe problems in the pilot was urged by local Code Enforcement to participate, as the City was already trying to deal with recognized issues. For the most bang for the project investment buck, participating cities in future programs

may want to select buildings with known, severe pest problems, and involve code enforcement in developing incentives for participation.

It may be most effective for future programs to budget for some baseline set of relatively simple pest exclusion repairs at the outset of the program. This will promote good relations among the city, building owners and managers, and the pest control company, and that in turn will reduce future costs and allow more buildings into a program.

In our efforts to provide clarity and consistency and to facilitate good collaboration and coordination between building owners and managers and Pestec, we developed a lot of documentation that was not used consistently. In fact it was the people skills of Pestec technicians (and consistent assignment of technicians to buildings for the duration of the program) that made the program work for building staff and residents.

The Fall Cleanup Day and bulk pickup day organized and facilitated by San José staff was very successful, both in demonstrating to residents the City's and Pestec's eagerness to help and in allowing Pestec to find and address pest problems (e.g., moving a refrigerator to find and eliminate a cockroach nest and caulking spots they had not seen before). It would have been helpful to have held such events in other cities, and at the beginning of the program rather than at the end.

Appendix 10: Example IPM plan prepared by Pestec

Appendix 11: Building reports and evaluation summaries

Appendix 12: Example log book

Appendix 13: Representative PestPac reports

Appendix 14: PestPac explainer

Appendix 15: Representative Fieldwire reports

Appendix 16: Alternative tenant report template

3c. Outreach to architects and developers

In 2012 the City and County of San Francisco published *Pest Prevention by Design Guidelines* (PPBD), a comprehensive reference on designing and retrofitting buildings to exclude pests. The two-year, national consultative process of developing the Guidelines was funded by the U. S. Centers for Disease Control with participation from grant manager Nita Davidson of DPR. The intended audiences for PPBD are architects, engineers, builders, and the green building community.

San Francisco, a key member of our project team, has continued to support PPBD and related outreach, with programs and presentations designed for local developers and the non-profit organizations that have assumed management responsibilities for management and maintenance of the City's public housing stock.

In addition, Tara Cahn, a local architect who was also on the PPBD development panel, presented on PPBD to the Non-Profit Housing Association of Northern California's Emerging Leaders Peer Network, a membership group, in Oakland. The diverse audience included developers and architects.

Results

As noted above, over the past few years San Francisco has transferred ownership and management of all of its public housing stock to non-profit property management companies. (See <http://www.politico.com/magazine/story/2017/07/20/how-san-francisco-turned-its-tenements-into-treasures-215391>) Because the City and County retains ownership of the land, it can put certain conditions on management, including incorporation of PPBD principles in renovation and retrofit plans, and pest management using IPM practices. San Francisco Department of the Environment staff continue to educate building owners and management on the importance of building design for pest exclusion.

Lessons learned

While San Francisco has maintained significant control over the entities that are now responsible for their low-income housing stock, all cities could surely benefit from bringing local owners and developers together for education based on PPBD. This could be incorporated into program recruitment outreach.

Appendix 17: Pest Prevention by Design Guidelines

Appendix 18: San Francisco outreach materials

Appendix 19: Tara Cahn's presentation to the Non-Profit Housing Association of Northern California's Emerging Leaders Peer Network

3d. Outreach to local health centers and their clients

Michelle Daher, project team rep from East Palo Alto, asked Luisa Buada, CEO of the Ravenswood Family Health Center, to join the project team for a discussion of health problems related to pests and pesticide use that her clients bring to the clinic. The subsequent conversation with others on the team was helpful and enlightening. The team subsequently prepared an outreach piece focused on health problems caused by cockroaches, and IPM approaches to cockroach management.

Characteristics of the audience:

- 3rd-grade reading level (40 percent of Ravenswood Family Health Center clients are functionally illiterate in their primary language)
- High asthma rate and lack of understanding about causes
- Cockroach problems are often so severe that parents spray beds where children sleep
- Patients lack insurance
- Clientele includes
 - Undocumented people and people who live in severely overcrowded homes where pest problems can proliferate
 - Homeless people
 - Landscape workers (need messages about separating work clothes from other laundry)
 - Landlords (opportunity for messages about trash area cleanliness)

Results

We printed as many cockroach fliers as the program budget would allow, in English, Spanish, Chinese, Vietnamese, and Tongan, and provided them to our municipal partners for distribution in health clinics and community centers.

Lessons learned

Health centers are good venues for key messages about indoor IPM.

Materials need to be nonthreatening with content conveyed by images rather than words to the greatest extent possible.

Cockroaches are the pest to concentrate on. (Head lice and scabies are other common pest problems with these audiences.)

In a future program, it would make sense to focus early on health centers, as people with asthma and parents of small children are eager for information from their health care providers.

It is more effective to provide educational materials to physicians and nurse practitioners to distribute, rather than making them available in waiting areas.

If budget had permitted, we would have produced simple, image-dominated posters for exam rooms and waiting areas.

Appendix 20: Outreach piece for health clinics, featuring IPM strategies for managing cockroaches

4. Develop a training module for continuing education credits for pest management professionals, focus on IPM strategies for multi-unit housing

This portion of the project was led by Andrew Sutherland, UC IPM Program, and Nita Davidson of DPR. Collaborators included Pestec staff, William Quarles of BIRC, Tara Cahn, and Geoff Brosseau and Janet Cox, principal investigator and project manager, respectively.

Results

The course has been approved by the Structural Pest Control Board, completing the deliverable specified in BASMAA's contract with DPR.

At this writing, Andrew Sutherland is completing a Powerpoint presentation and script that will be adapted for an online one-hour course to be housed on the UC IPM website (as well as other entities' sites, at their option). In the meantime, Pestec has developed a Prezi that Luis Agurto has presented successfully to the Pesticide Applicators' Professional Association.

Lessons learned

This portion of the project probably would have been completed faster if we had budgeted more for it! We were fortunate that both Andrew Sutherland and Nita Davidson justified work on this as part of their professional workplans.

Many pest control companies that offer IPM services also offer conventional (spray schedule) services—so customers need to insist on IPM. The course needs to provide a strong business case for providing IPM services, and suggest marketing approaches companies can use to help customers distinguish the long-term benefits of IPM over conventional methods.

One challenge for an online course will be that different municipalities may have local ordinances that affect both multi-unit building owners' responsibilities re: pest management, and pest management professionals' (PMPs') reporting requirements. It would be helpful to develop a course appendix that summarized these, in addition to state laws enacted in the past few years.

The team architect, Tara Cahn, raised issues about the appropriateness of pest control companies performing structural repairs for the purpose of excluding pests. We resolved the question based on Pestec's experience and consideration of licensing guidelines for PMPs, with the following:

- The course will distinguish between repair and renovation services that can be provided by licensed PMPs and those that can't; and include information to educate PMPs about additional training and licenses that may be helpful to them.
- The course will present the key laws and regulations that allow or prevent PMPs from providing these services.
- During discussion of the business aspects of IPM services, we will describe conditions that make a building, or a client, a good fit for IPM.

Appendix 21: CE module presentation

Appendix 22: Prezi developed by Pestec

5. Increase Demand for IPM services among those who hire pest management services

This portion of our project included two activities: (1) clarifying web listings of IPM-certified PMPs, and (2) preparing outreach materials for people hiring pest management services.

Results

The Bio-Integral Resource Center (BIRC), which maintains and supports the California-based EcoWise Certified Program, reorganized and updated its list of certified companies and PMPs. The revised list is posted on the BIRC web site (www.birc.org) and EcoWise Certified site (www.ecowisecertified.org). Certified companies are now listed on the front page, and certified practitioners, with names and contact information for the companies they work for, are on a secondary page. We believe this gives people looking for IPM services excellent tools to find them.

EcoWise Certified is one of three IPM-certification programs. Green Shield Certified, based in Madison, Wisconsin, certifies only three companies in California. In contrast, GreenPro, a program established by the National Pest Management Association of Fairfax, Virginia, certifies more companies in California than EcoWise, but has less stringent requirements.

The Our Water Our World program has recently updated and redesigned its set of IPM fact sheets, which are available in hardware stores and nurseries in many California cities. The project team decided that an updated "Buy IPM" fact sheet was needed, so the project provided one.

Appendix 23: OWOW Buy IPM fact sheet



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 County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

Bay Area

Stormwater Management

Agencies Association

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September 28, 2017

Bruce Wolfe, Executive Officer
California Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: FY 2016-17 Annual Report: MRP Provision C.9.f - Track and Participate
in Relevant Regulatory Processes

Dear Mr. Wolfe:

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 2016-17 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 2016-17 was another productive year for the Subcommittee. The CASQA Pesticides Subcommittee's annual report for FY 2016-17 (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.

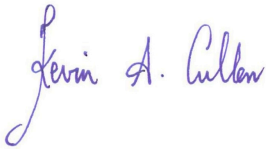
FY 2016-17 Annual Report: MRP Provision C.9.f - Track and Participate in Relevant Regulatory Processes



James Scanlin, Alameda Countywide Clean Water Program



Adele Ho, 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 Sanitation and Flood Control District

Attachments

MRP Provision C.9.f

Pesticides Subcommittee Annual Report and Effectiveness Assessment 2016-2017; California Stormwater Quality Association; August 2017

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 2016 - 2017

California Stormwater Quality Association



Final Report
August 2017

Pesticides Subcommittee Annual Report and Effectiveness Assessment
2016-2017

California Stormwater Quality Association

August 3, 2017

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-Chairs Dave Tamayo and Katie Keefe. The Co-Chairs, along with Dr. Kelly Moran of TDC Environmental, provided documents, guidance, and review.

Disclaimer

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Abbreviations Used in this Report

ACS – American Chemical Society

CASQA – California Stormwater Quality Association

CWA – Clean Water Act

DPR – California Department of Pesticide Regulation

EMB – Environmental Monitoring Branch (DPR)

EPA – United States Environmental Protection Agency

ESA – Endangered Species Act

FY – Fiscal Year (July 1 through June 30)

IPM – Integrated pest management

MS4 – Municipal Separate Storm Sewer System

OPP – U.S. EPA Office of Pesticide Programs

OW – U.S. EPA Office of Water

PAH – Polycyclic aromatic hydrocarbon

PPDC – Pesticide Program Dialogue Committee

PSC – CASQA Pesticides Subcommittee

SPCB – Structural Pest Control Board

SETAC – Society of Environmental Toxicology and Chemistry

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

SWPP – DPR’s Surface Water Protection Program

TMDL – Total Maximum Daily Load (regulatory plan for solving a water pollution problem)

UP3 Partnership – Urban Pesticides Pollution Prevention Partnership

USGS – U. S. Geological Survey

Water Boards – California State Water Resources Control Board together with the California Regional Water Quality Control Boards

**Pesticides Subcommittee Annual Report and Effectiveness Assessment
2016-2017**

California Stormwater Quality Association

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Executive Summary

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 a decade of collaboration with UP3 Partners, as well as EPA and DPR staff, has resulted in significant changes in pesticide regulation in the last five years. CASQA's 2016-17 activities and outcomes are described in Section 2. This year's highlights include the State Water Board's Urban Pesticides Amendments project (see right) 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 **fipronil** water pollution in urban areas DPR and registrants are in the process of implementing changes in allowable fipronil use anticipated to reduce fipronil concentrations in California urban runoff by more than 90 percent. This mitigation precedes dozens of future 303(d) listings anticipated by the Water Boards and, if successful, could avoid numerous fipronil TMDLs. *(See page 13 and Table 3.)*
- 💧 In direct response to continued communication from CASQA and UP3 regarding continued **pyrethroid** water pollution in urban areas, DPR completed a special project to evaluate the effectiveness of its 2012 Surface Water Protection Regulations and, based on the outcomes of that study, is exploring additional mitigation measures to provide more effective control of pyrethroids. *(See Section 2.4 and Table 3.)*





Urban Pesticide Reduction is a Top Priority of State Water Board

In response to CASQA's efforts, the State Water Board established urban pesticide reduction 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. In 2016-17, the State Water Board continued to make progress in three areas: (1) a coordination framework for working with U.S. EPA and DPR, (2) minimum source control requirements for urban permittees, and (3) a statewide pesticide/toxicity monitoring framework. The project is expected to culminate with a 2018 adoption of statewide Water Quality Control Plan amendments for urban pesticides reduction. *(See Section 2.4.)*




- 💧 Responding to the growing body of monitoring data suggesting that **imidacloprid** concentrations present in California’s urban watersheds have potential to threaten aquatic ecosystems, CASQA completed substantial scientific groundwork (e.g., monitoring data review, urban usage investigation) to prepare for formally requesting that EPA and DPR pursue imidacloprid risk management. Based on this research, CASQA anticipates future 303(d) listings in multiple urban watersheds. CASQA initiated this effort toward avoiding future TMDLs.
- 💧 Based on urban use data provided by CASQA, EPA agreed to incorporate urban uses (rights-of-way and outdoor building paints, caulks, and sealants) in the registration review process for diuron. *(See Table 3.)*
- 💧 In direct response to communication from CASQA and its UP3 Partners, EPA developed model language to control discharges of pesticide-containing swimming pool water, in the context of its review of lithium hypochlorite, the first among many antimicrobial pesticides used in pools and spas. *(See Table 3.)*
- 💧 In direct response to communication from CASQA and its UP3 Partners, EPA 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 EPA at CASQA’s suggestion. *(See Table 3.)*
- 💧 CASQA prepared comment letters to EPA for 3 pesticide reviews, provided the Water Boards with information that triggered 6 additional letters, responded to EPA’s request for input on pesticide regulatory reform, and participated in numerous meetings and conference calls focused on priority pesticides and long-term regulatory structure improvements. *(See Tables 3, 4 and 5.)*
- 💧 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?

- 💧 A series of UP3-organized teleconference meetings in early 2017 clarified that EPA goals and authority differ between initial pesticide registration and subsequent registration reviews. During the initial registration, EPA has stronger and more flexible authority to impose restrictions and data requirements for chemicals than it does during the subsequent registration reviews. Knowledge of the limitations of registration review allows CASQA to more effectively focus scientific insights and mitigation recommendations that we provide in our registration review comment letters.
- 💧 DPR’s robust follow up actions after adopting the 2012 Surface Water Protection Regulations addressing pyrethroids in urban runoff (see above) demonstrate DPR’s commitment to evaluating the effectiveness of its water quality protection measures and exploring modifications when warranted.

-  CASQA, working with its UP3 partners, used EPA registration reviews for pyrethroids and imidacloprid as an opportunity to educate senior EPA managers about the urban water quality gaps in their review processes and the cost and regulatory implications of their regulatory decisions. EPA’s risk assessments for the registration review of pyrethroids and imidacloprid both identified significant risks to aquatic ecosystems, opening the door to EPA action to protect water quality. Unfortunately, the imidacloprid document also revealed key deficiencies in the assessment process in that EPA failed to recognize and evaluate critical uses that have the potential to impact urban runoff. EPA staff has recognized the need to consider mitigation for both classes of pesticides, and encouraged California water quality stakeholders to provide input on potential mitigation strategies, which will be submitted in July 2017. EPA’s willingness to adopt effective mitigation on pyrethroids and imidacloprid will be a key indicator of the effectiveness of its capacity and commitment to prevent impacts on urban water quality.
-  Because scientific information sharing and education are a key part of integrating urban runoff protection into pesticide regulatory systems, CASQA/UP3 provided presentations to DPR, scientific meetings, and professional associations; served on DPR and Water Board policy and science advisory committees; and prepared and delivered public testimony. *(See Table 5.)*

In FY 2017-2018, 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. Key topics include:

-  Responding to the immediate need to participate in EPA pyrethroids, fipronil, and imidacloprid reviews (the only such opportunity for the next 15 years) and to support and encourage DPR steps toward expanded pyrethroids and new fipronil mitigation measures.
-  Seeking EPA risk mitigation for malathion and carbaryl in urban runoff and the continuation of traditional water quality risk assessments in tandem with Endangered Species Act evaluations. *(See highlight at right.)*
-  Continue to leverage our successes at the state level as a key stakeholder in the development of statewide Water Quality Control Plan amendments for urban pesticides reduction.



EPA’s Endangered Species Evaluation Approach May Prevent Urban Mitigation

In its 2016 malathion review, EPA modified its water quality risk assessment methods to integrate Endangered Species Act (ESA) compliance. The result was an ESA “Biological Evaluation” that did not address traditional (non-endangered species) water quality risks and overlooked most urban malathion uses. Consequently, while EPA found adverse effects to most aquatic endangered species, it concluded that urban malathion uses (other than rare mosquito abatement applications) do not cause water pollution – a result that directly conflicts with recent urban monitoring data and 303(d) listings in process for about two dozen California urban watersheds. Unless EPA’s conclusion is corrected, it will not propose any risk mitigation for malathion in urban runoff. Most urban malathion use appears to be by non-professionals who use products purchased at retail stores that cannot easily be regulated by DPR and which state law bars municipalities from regulating.

Section 1: Introduction

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 2016 through June 2017. On behalf of CASQA, the PSC works in collaboration with the California State and Regional Water Boards (Water Boards), Partners,¹ and other stakeholders to bring about change in how pesticides are regulated by the United States Environmental Protection Agency (EPA) and the California Department of Pesticide Regulation (DPR), with the goal of ensuring that currently registered pesticides do not impair urban receiving waters. This collaborative effort is referred to as the UP3 Partnership.²

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. 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 municipalities³ have incurred substantial costs to comply with Total Maximum Daily Loads (TMDLs) and additional permit requirements. In the future, more municipalities throughout the state could be subject to similar requirements, as additional TMDL and Basin Plan amendments are adopted (Table 1). Meanwhile local agencies have no authority to restrict or regulate when or how pesticides are used⁴ in order to proactively prevent pesticide pollution and avoid these costs.

¹ Partners: National Association of Clean Water Agencies (NACWA); various California POTW organizations and individual POTWs; individual urban runoff programs; USGS; other state and local government; university and other research organizations; other NGOs.

² The UP3 Partnership collaborations are generally through information sharing, coordinating communications with pesticide regulators, and contributing staff time and other resources in support of the shared goal. The UP3 Partnership is an outgrowth of the UP3 *Project*, a broader effort with activities that are no longer supported.

³ 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.

⁴ 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.

Table 1. California TMDLs and Basin Plan Amendments Addressing Current-Use Pesticides in Urban Watersheds⁵

Water Board Region	Water Body	Pesticide	Status
Statewide	Statewide Water Quality Control Plan amendment for urban pesticides reduction (all MS4s/ all urban waterways)	All	In preparation
San Francisco Bay (2)	All Bay Area Urban Creeks	All Pesticide-Related Toxicity	Adopted
Central Coast (3)	Santa Maria River Watershed	Pyrethroids, Toxicity	Adopted
Central Coast (3)	Lower Salinas River Watershed	Pyrethroids, Toxicity	Approved by region; awaiting State Water Board review
Los Angeles (4)	Marina del Rey Harbor	Copper (Marine antifouling paint)	Adopted
Los Angeles (4)	Oxnard Drain 3 (Ventura County)	Bifenthrin, Toxicity	EPA-Adopted Technical TMDL
Central Valley (5)	Nine urban creeks in Sacramento, Placer, and Sutter Counties (TMDL) Sacramento River and San Joaquin River Basins (Basin Plan Amendment)	Pyrethroids	Approved by region; awaiting State Water Board review
Central Valley (5)	Sacramento River and San Joaquin River Basins	Diuron	In preparation
Santa Ana (8)	Newport Bay	Copper (Marine antifouling paint)	In preparation
San Diego (9)	Shelter Island Yacht Basin (San Diego Bay)	Copper (Marine antifouling paint)	Adopted

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, in 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.

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).*

⁵ Excludes pesticides that are not currently used in meaningful quantities in California urban areas, such as organochlorine pesticides and diazinon and chlorpyrifos.

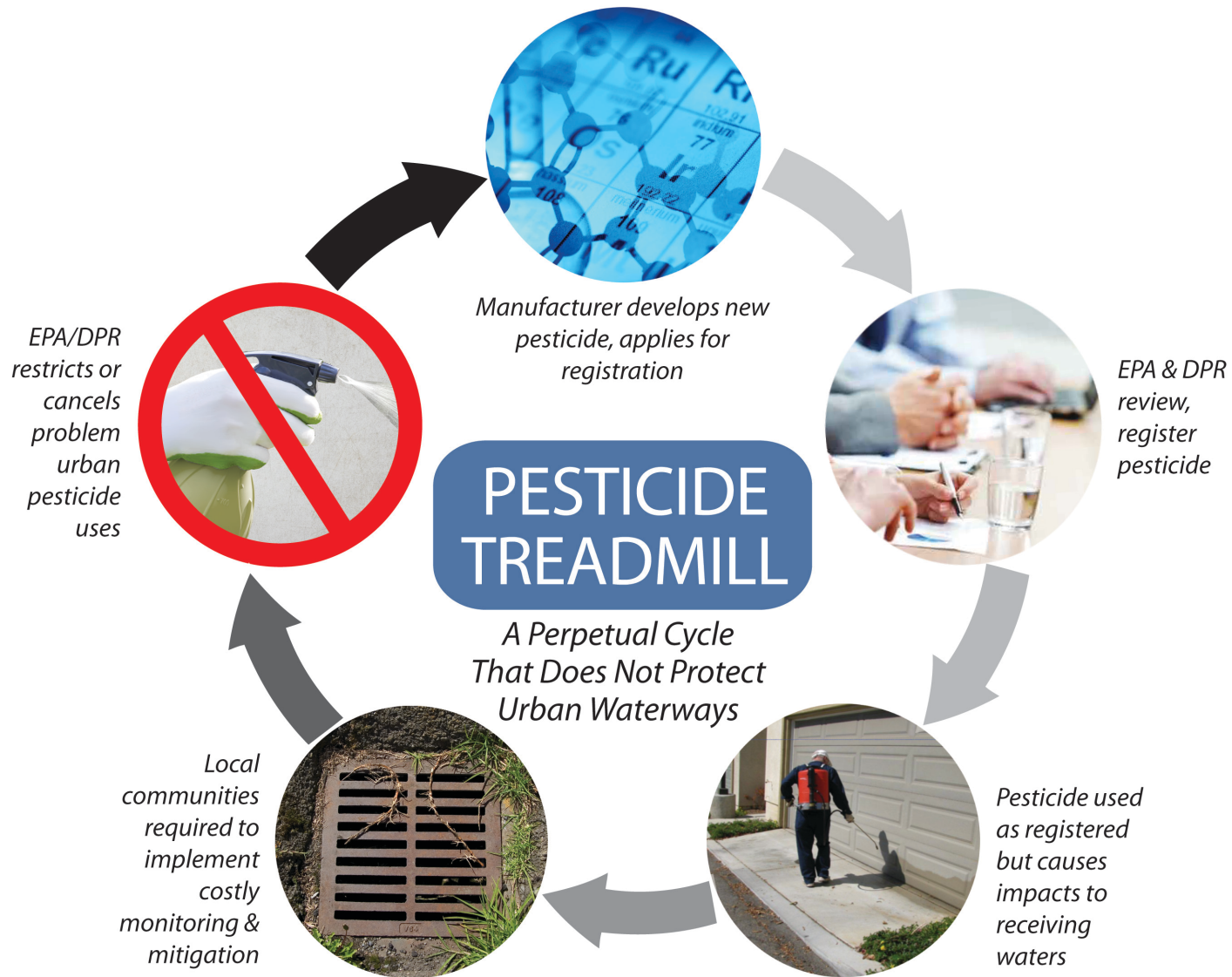


Figure 1. Current Pesticide Regulatory System.⁶

⁶ Photo 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.

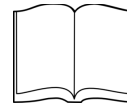
Largely in response to CASQA’s focus on this issue, in recent years DPR has made very substantial progress in improving its effectiveness in protecting urban water bodies and can now be viewed as playing a strong role in urban water quality protection. Although EPA has made some progress in the area of urban water quality protection significant problems remain, and CASQA needs to continue to advocate strongly for EPA to increase its commitment and ability to mitigate current water quality impacts and prevent future ones.

1.2 CASQA’s Goals and Application to Program Effectiveness Assessment

CASQA’s ultimate goal in engaging in pesticide-related regulatory activities is to protect water quality by eliminating problems stemming from urban pesticide use. The CASQA PSC envisions a future when the following goals have been attained:



Goal 1: EPA and DPR will conduct effective, proactive evaluations of pesticide risks. EPA and DPR registration and registration reviews will include effective evaluations for the potential of all pesticide active ingredients and formulated products to impact urban waterways. Staff will understand all urban use patterns, and models will accurately reflect urban use patterns, the impervious nature of the urban environment, drainage systems and pathways to receiving waters. Data required of manufacturers will support proactive evaluations. Cumulative risk assessments will be conducted, especially for pesticides with similar modes of action.



Goal 3: Pesticide regulations and statutes will be used to solve pesticide-related water quality impairments resulting from the registered uses of pesticides. Rather than look to the Clean Water Act, the EPA and Water Boards will work with DPR and the EPA’s Office of Pesticide Programs to manage problem pesticides without the use of the costly, slow and burdensome TMDL process.



Goal 2: Pesticide regulators and water quality regulators will work in coordination to protect water quality. The Water Boards, DPR, EPA’s Office of Water (OW) and Office of Pesticide Programs (OPP) will have a consistent definition of what comprises a water quality problem. EPA’s OW and OPP will complete “harmonization” of methodologies and approaches to protect aquatic life.



Goal 4: Pesticide monitoring will be coordinated at the state level to support rapid response to emerging pesticide problems in urban waterways. DPR and the Water Boards will coordinate statewide monitoring to identify emerging pesticide problems in urban waterways before they become widespread and severe. 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 assessment. With respect to addressing urban pesticide impacts on water quality, the following two management questions, derived from CASQA’s goals, 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? (Parallel to CASQA Goal 3)

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? (Parallel to CASQA Goal 1, as well as Goals 2 and 4)

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 2016-2017 Efforts

To prevent urban water quality impacts from registered pesticide uses, CASQA employs a two-pronged approach:

- 💧 Address near-term regulatory concerns (Goal 3)
- 💧 Seek long-term changes in the pesticide regulatory structure (Goals 1, 2, and 4)

At any given time there are dozens of pesticides with current or pending actions from the EPA or DPR; therefore CASQA prioritizes regulatory efforts using the pesticide “Watch List” created by the PSC and the UP3 Partnership (Section 2.1). The Watch List aids CASQA and the UP3 Partnership in their prioritization of near-term efforts (Section 2.2). Meanwhile, CASQA and the UP3 Partnership are also working on a parallel effort to effect long-term change in the regulatory process. 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 (Sections 2.3 and 2.4).

2.1 Updated Pesticide Watch List

CASQA, working through the UP3 Partnership, reviews scientific literature and monitoring studies as they are published. This information is used to prioritize pesticides based on urban uses and the latest understanding of surface water quality toxicity (for pesticides and their degradates). The PSC uses these insights to update a Pesticide “Watch List” (Table 2) which serves as a management tool to prioritize and track pesticides used outdoors in urban areas.⁷ Three changes have been made since the Watch List was published in the 2015-16 PSC Annual Report. Based on 23 new 303(d) listings across California in urban watersheds and an analysis of urban runoff data (which shows continued benchmark exceedances since 2010), malathion was moved up to Priority 1. Dichlobenil was added as Priority 4 because this root control chemical, which is highly toxic to aquatic organisms, is approved by EPA for use in storm drains without any measures to prevent subsequent discharge of the chemical to surface waters. DIDAC was removed from the list because manufacturers have terminated all of their pesticide product registrations.

⁷ The first Watch List was published by the UP3 in 2010.

Table 2. Current Pesticide Watch List (July 2017) ⁸

Priority	Basis for Priority Assignment	Pesticides		
1	Monitoring data exceeding benchmarks; linked to toxicity in surface waters; urban 303(d) listings	Pyrethroids (20 chemicals ⁹)	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	Carbaryl Chlorantraniliprole Chlorothalonil (dioxins)	Copper pesticides Creosote (PAHs) Dacthal (dioxins) Indoxacarb	Pentachlorophenol (dioxins) 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 Chlorpyrifos Chromium pesticides	Diazinon Diuron Naphthenates	Simazine Silver pesticides Trifluralin
4	High toxicity (parent or degradate) and urban use pattern associated with water pollution; synergist for higher tier pesticide; on DPR or Central Valley Water Board priority list	Abamectin Acetamiprid (neonic) Chlorinated isocyanurates Dichlobenil Dithiopyr Halohydantoin	Hydramethylnon Mancozeb MGK-264 Oxadiazon Oxyfluorfen Pendimethalin Phenoxy herbicides ¹⁰	Piperonyl butoxide Pyrethrins Spinosad/ Spinetoram Thiamethoxam (neonic) ¹¹ Thiophanate-methyl Triclopyr Triclosan
New	New pesticides that may threaten water quality depending on the urban use patterns that are approved	Chlorfenapyr Clothianidin (neonic) Cyantraniliprole	Cyclaniliprole Dinotefuran (neonic) Flupyradifurone	Novaluron Thiacloprid (neonic)
None	Based on review of available data, no approved urban use or no tracking trigger as yet identified.	Greater than 300 existing pesticides		
Unknown	Lack of information. No systematic screening has been completed by UP3 for the complete suite of urban pesticides.	Unknown		

⁸ The UP3 Partnership also watches two non-priorities pesticides (Glyphosate and Metaldehyde) due to frequent member questions about them.

⁹ Allethrin, Bifenthrin, Cyfluthrin, Cyhalothrin, Cypermethrin, Cyphenothrin, Deltamethrin, Esfenvalerate, Etofenprox, Flumethrin, Imiprothrin, Metofluthrin, Momfluothrin, Permethrin, Prallethrin, Resmethrin, Sumethrin [d-Phenothrin], Tau-Fluvalinate, Tetramethrin, Tralomethrin.

¹⁰ MCPA and salts, 2,4-D, 2,4-DP, MCPP, dicamba

¹¹ Degrades into Clothianidin

2.2. Results of Efforts Addressing 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’s Goal 3.

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 New Pesticide Registration Process

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 5 to 8 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.¹²



Figure 4. EPA’s Registration Review – Process to Review Registered Pesticides at a Minimum of Every 15 Years.

¹² See <https://www.epa.gov/pesticide-reevaluation/registration-review-schedules> for schedule information.

While EPA must consider water quality in all of its pesticide registration decisions, at DPR this step is not yet established as standard, so not all outdoor urban pesticide registration applications are routinely routed by DPR for surface water 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. In 2016-17, CASQA identified three product registration applications containing fipronil (a top priority pesticide). CASQA and/or its UP3 Partners successfully requested these products be routed by DPR for surface water review. 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 have occurred in response to CASQA and Water Board requests. These evaluations have involved ongoing communication with CASQA and the UP3 Partnership.

Table 3 presents a summary of recent UP3 activities to address near-term regulatory concerns and their 2016-2017 results. Of particular note is that DPR developed label language for fipronil intended to greatly reduce the concentration of fipronil and degradates in urban outdoor runoff. *(See highlight at right.)*

Success! DPR Enhances Fipronil Label Restrictions

In California, only professional applicators can spray fipronil outdoors and there are only two registered outdoor spray products. Based on the results of numeric modeling and experimental studies, DPR and registrants are in the process of implementing changes in allowable use of these two fipronil products that are anticipated to reduce fipronil concentrations in California urban runoff by more than 90 percent. The mitigation approach involves:

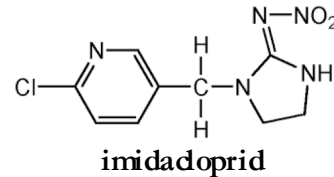
- reduced area treated
- lower application concentration
- lower application frequency
- no use during the rainiest time of year
- no applications on directly connected impervious surfaces that aren't necessary for pest control (garage door/driveway treatments)

Enforceable product label revisions implementing these changes are expected to be in place by the end of 2017. DPR has already started to educate professional applicators about the new restrictions.

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.

Top tier pesticides were the current push for this year, and CASQA concentrated efforts on educating EPA and collaborating with the State Water Board and DPR on the big picture (next section). Fewer letters were written than in past years, in part because the EPA review schedule was delayed by almost six months following the change in the federal administration. The most significant comment letters were those regarding pyrethroids and imidacloprid, which were in preparation during June 2017, for July submittal to EPA. CASQA's imidacloprid comments drew heavily from the scientific groundwork completed in 2016-17 (*see right and the following page*).

While CASQA has had considerable success in working with DPR and the Water Board, our mixed results with EPA indicate that there are opportunities for further communications and discussions. *A major challenge and opportunity in the upcoming fiscal year will be to continue to work to influence EPA OPP to ensure positive outcomes from its registration reviews of the pyrethroids, fipronil, and imidacloprid, as well as determining the impact of EPA's omission of urban uses of malathion in registration review.*



CASQA Laying the Groundwork to Engage with EPA and DPR Regarding Imidacloprid

Responding to the growing body of monitoring data suggesting that imidacloprid concentrations present in California's urban watersheds have potential to threaten aquatic ecosystems, CASQA prepared the groundwork for engagement with EPA and DPR in the coming year. CASQA – in coordination with multiple UP3 partners:

- reviewed monitoring data
- assembled scientific information including new aquatic toxicity data
- completed a detailed examination of urban imidacloprid uses
- developed a conceptual model of urban runoff imidacloprid sources (*next page*)
- initiated informal discussions with DPR and EPA around this scientific work.

This groundwork sets the stage for upcoming scientific input to EPA on its imidacloprid risk management and for discussions with DPR about California-specific mitigation options. CASQA initiated this effort anticipating multiple future 303(d) listings in an effort toward avoiding future TMDLs

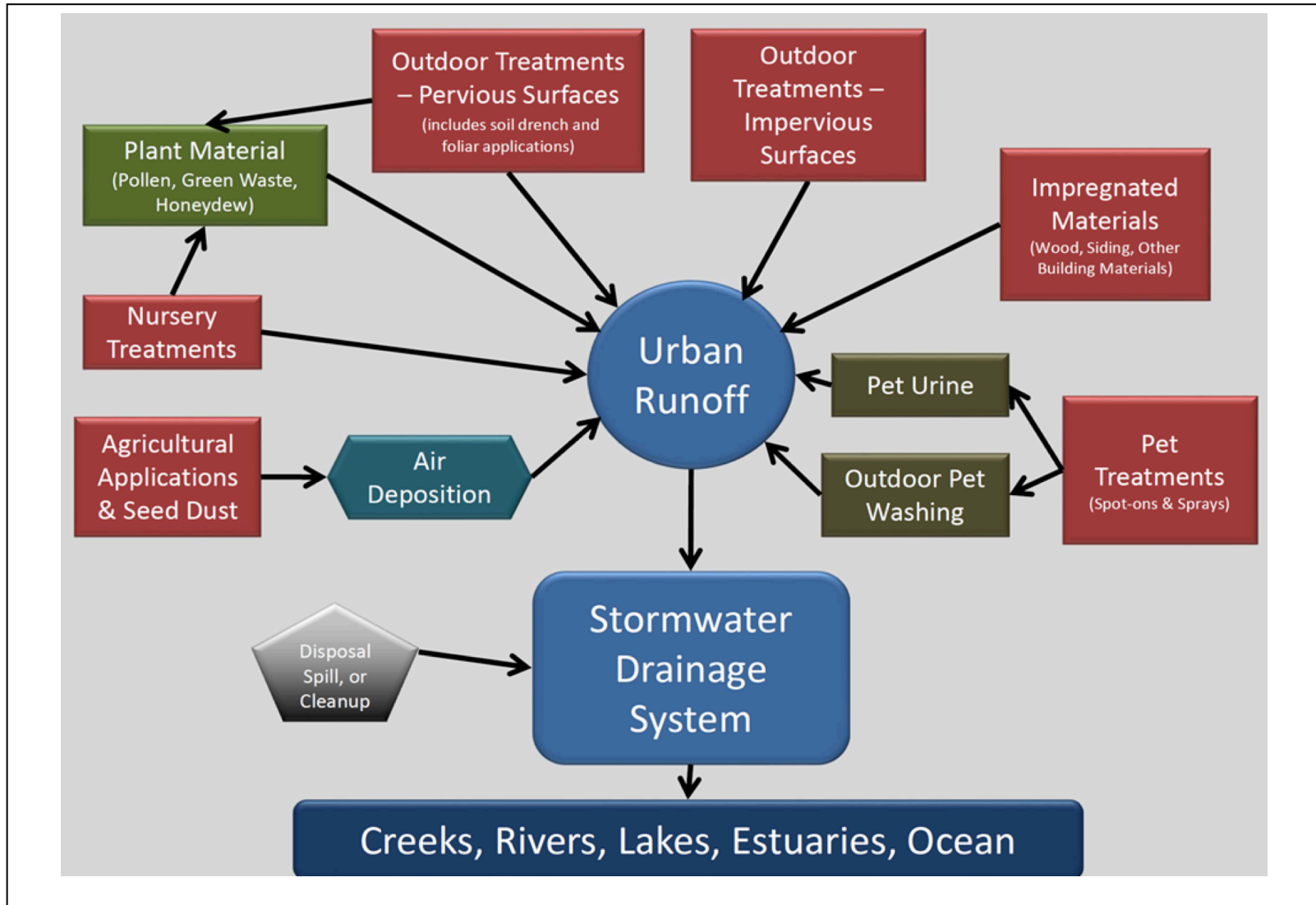


Figure 5. Urban Runoff Imidacloprid Sources Conceptual Model.

Table 3. Latest Results of Efforts Communicating Near-Term Regulatory Concerns (3 pages)¹³

Regulatory Action or Concern	CASQA Efforts			Partner Support	Outcomes and notes
	Letter(s)	Call(s)	Mtg(s)		
DPR					
Fipronil		✓	✓	SWRCB SFBRWQCB CVRWQCB BACWA	Success! Mitigation measures are being implemented via enhanced label language, which are anticipated to reduce the concentration of fipronil and degradates in urban runoff by more than 90 percent. (See highlight on page 13.)
Fipronil Foam Product		✓		SWRCB	Positive. In response to a UP3 partner request, a fipronil foam product was routed review by the DPR Surface Water Protection Program (SWPP). Following initial rejection of the registration application due to water quality concerns related to specific uses, the manufacturer modified the proposed label addressing all SWPP concerns and the newly labeled product was approved.
Other fipronil products (6 products)	✓	✓		SWRCB SFBRWQCB	Partial Success! DPR has routed all fipronil registration applications – including some that might not have met its usually routing criteria – to its surface water program for review. Due to the prevalence of fipronil water pollution, CASQA is carefully screening all fipronil product registration applications and partnering with the Water Board to ensure they have robust DPR surface water program review.
Pyrethroids			✓	BACWA	Promising. CASQA and BACWA representatives met with DPR to discuss possible additional mitigation strategies for urban uses of pyrethroids. DPR continues to expand its pyrethroid monitoring and enforcement programs, partnering with the City of Roseville and the Placer County Agricultural Commissioner on a special study to examine non-professional pyrethroid use and to evaluate the effectiveness and level of compliance with State regulations on professional use (the largest pyrethroid source in urban runoff).

¹³ Color coding in this table is meant to reflect the “Watch List” prioritization color coding in Table 2.

Regulatory Action or Concern	CASQA Efforts			Partner Support	Results and notes
	Letter(s)	Call(s)	Mtg(s)		
Storm drain insert antimicrobial filter media registration application	✓				Success! DPR has proposed to deny the application due to insufficient data to rule out potentially significant water quality risks. The product manufacturer originally applied in 2011 but was denied due to insufficient data. The manufacturer reapplied in 2015. DPR has since reviewed the additional information and denied the application, again due to insufficient data. While the precedent of DPR's strong commitment to water quality protection exemplified by this decision is a success, this case illustrates the challenges in identifying in-storm drain products to provide bacteria control, which some CASQA members desire.
Storm drain insert antimicrobial fabric registration application				SFBRWQCB	Partial Success! DPR routed this registration application to its surface water program for review. The results of the review are pending.
Registration applications – all storm drain products	✓				Pending. Requested automatic routing for surface water review.
EPA					
Pyrethroids Registration Review	✓	✓	✓	SWRCB SFBRWQCB CVRWQCB CCRWQCB BACWA NACWA Sacramento County	Pending. UP3 organized a series of conference calls between EPA and CASQA and other UP3 partners to (1) brief EPA on the CWA regulatory context and associated costs of pyrethroid water pollution to state and local governments, (2) explore mitigation options, and (3) to learn more about EPA's authorities and decision-making methodologies in pesticide registration review. CASQA's comment letter (due in July 2017) recommends further mitigation through product label enhancement and terminating urban uses of bifenthrin due to its usually high persistence.
Imidacloprid Registration Review	✓	✓			Pending. With the assistance of multiple UP3 partners, CASQA reviewed monitoring data, toxicity reference values, and imidacloprid uses in detail. CASQA developed an imidacloprid urban runoff conceptual model to support efforts to identify mitigation options. CASQA's comment letter (due in July 2017) recommends that EPA refine its risk assessment to include urban uses to inform identification of mitigation measures, including product label improvements and potential urban use restrictions.

Regulatory Action or Concern	CASQA Efforts			Partner Support	Results and notes
	Letter(s)	Call(s)	Mtg(s)		
Fipronil Registration Review		✓		UP3	Pending. CASQA is continuing to provide information and insight via teleconference meetings and emails. The preliminary risk assessment anticipated in December 2016 has been delayed until 2018.
Copper Registration Review Risk Assessment	✓			SFBRWQCB BACWA NACWA	Pending. CASQA is seeking risk mitigation for the use of copper-based root control products in storm drains; copper-containing roofing materials; and copper-containing swimming pool, spa, and fountain treatments.
Malathion Biological Evaluation (Registration Review risk assessment substitute document)	✓	✓		BACWA SFBRWQCB NACWA	Response unsatisfactory. Last year, CASQA cited numerous concerns with the EPA's use of a complex Biological Evaluation (part of an ESA consultation) as a replacement for the ecological risk assessment in Registration Review. EPA denied CASQA's request to conduct a risk assessment to address traditional water pollution, such as that reflected by 303(d) listings. EPA concluded that urban malathion uses – other than mosquito abatement agency applications – did not cause water pollution. Follow-up CASQA analysis of recent DPR urban monitoring data and existing and proposed California 303(d) listings shows that the probable source is ordinary urban malathion products – not mosquito abatement. Unless EPA's error is corrected, EPA will not propose risk mitigation for malathion in urban runoff in its upcoming draft decision. CASQA is following up informally.
Diuron Registration Review Preliminary Workplan	✓				Success! EPA revised a draft workplan that had virtually ignored diuron's urban uses. Based on DPR data, it appears that diuron's two major urban uses are rights-of-way applications (e.g., along roadsides) and incorporation into outdoor paint; both uses will be evaluated in EPA's upcoming risk assessment.
Lithium hypochlorite	✓	✓		BACWA SFBRWQCB NACWA	Success! As this was the first of several anticipated pesticides used in pools and spas, CASQA and its UP3 partners worked closely with EPA on proposed model language for pool discharges with the hope that such language could become uniform for all such uses. EPA's decision includes the new language
Chlorfenapyr Proposed Interim Reregistration Review Decision	✓			SFBRWQCB	Success! To prevent high-concentration discharges of chlorfenapyr from construction sites, CASQA requested that the label language developed for pyrethroid pre-construction termiticide products be added to chlorfenapyr product labels. EPA agreed to include this requirement in its decision.

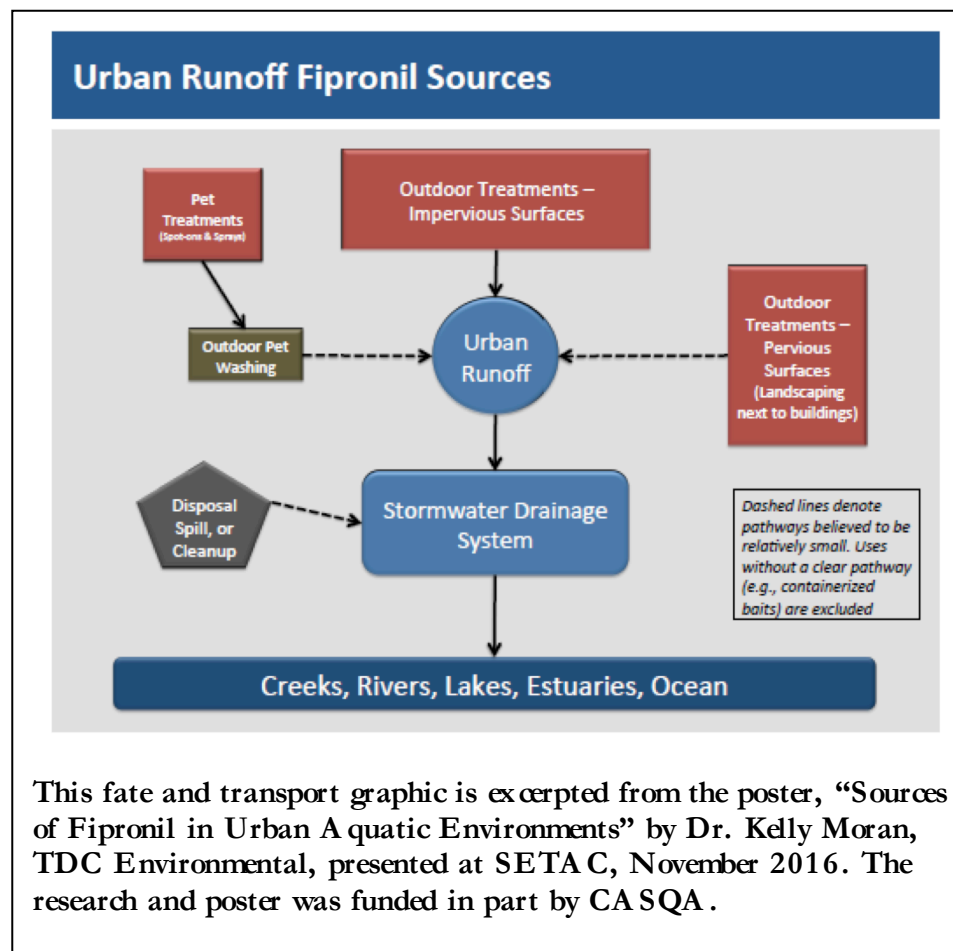
2.3 Long-Term Change in the Pesticides Regulatory Structure

CASQA continues to work towards a future in which the regulatory structure proactively restricts pesticide uses that have the potential to cause urban water quality problems.

There are several processes currently under way at both EPA and DPR that will move us closer to that future. Many of these processes were prompted by the persistent work of CASQA and the UP3 Partnership to educate regulators on the problems with current approaches. Table 4 presents a summary of 2016-17 outcomes achieved and identifies issues that need to be addressed to achieve CASQA's goals.

As part of restructuring efforts by the incoming federal administration, the OPP provided CASQA with a unique opportunity to engage in a regulatory reform dialogue, by asking stakeholders to identify specific opportunities to reduce regulatory burdens and to identify pesticide regulations that may be appropriate to repeal, replace, or modify. A summary of CASQA's recommendations is provided on the following page.

Table 5 presents 2016-17 communication, educational outreach, and advisory efforts, including participation at national conferences (see graphic at right). In the next year, CASQA will continue to educate diverse audiences on the nexus of urban pesticide regulation and water quality and the key scientific issues involved in identifying, addressing, and preventing pesticides water pollution.



CASQA's Response to EPA's Regulatory Reform Request

In early 2017, the OPP requested that stakeholders provide input on pesticide regulations that may be appropriate for repeal, replacement, or modification. CASQA provided detailed recommendations, a summary of which is below:

Regulations that Should Be Repealed or Modified

- **The Treated Article Exemption** (40 CFR Part 152, §152.25 (a)) is overly broad and burdensome for state and local governments. Due to this exemption, OPP does not assess the ecological risks of end-use treated articles, such as treated wood or building materials, when it registers pesticides. Further, the exemption blocks states' rights to control the sale and use of such pesticide treated articles. However, many treated articles, including treated wood, paint, and roofing materials leach pesticides into urban runoff through outdoor exposure. Leaching of pentachlorophenol, creosote, and arsenic wood treatments has been linked to urban pollution. Because treated articles can leach their pesticide content during use or at end of life, they definitely are of a character requiring FIFRA regulation.
- **Product performance data requirements** should be revised to require registrants to provide product performance testing data for all urban uses (40 CFR §158.400). As it stands, this regulation provides an overly broad exemption from data requirements pertaining to efficacy for individual pesticide registration applications, which is not required by the authorizing legislation (FIFRA 7 U.S.C. Part 136a [c] [5]), and undermines the ability of EPA and the states to obtain data necessary to mitigate unnecessary environmental impacts. Efficacy data are critical for establishing application rates and mitigation measures that can reduce environmental impacts while still preserving the efficacy of the products. For example, labels for pyrethroid insecticides typically instructed users to spray a 7-10 foot band around a structure to control nuisance insects like ants while scientific studies have determined that using the same pesticide application concentration and treating a band of only 2 inches around a building would be sufficient to provide nuisance insect control, and reduce >95% in the amount pesticide used.

Make Pesticides Regulation Less Burdensome for State and Local Governments While Maintaining Environmental Protection

- **Scientific review procedures** need to be modified to completely analyze all urban pesticide uses, correctly identify exposure pathways, and improve models such that they accurately estimate pesticide releases into urban runoff.
- **Toxicity testing data requirements** (40 CFR Part 158: Subparts G and W) should be modified to ensure that minimum data requirements are harmonized with U.S. EPA OW testing requirements for NPDES permittees (i.e., same species, same time frames). Minimum required data sets should be sufficient to provide accurate species sensitivity distributions that are required for ESA consultations. This would lower the overall cost of the pesticides registration process by making the process more predictable and more scientifically reliable. This change would eliminate the regulatory gaps between the nation's pesticides, water, and endangered species regulatory programs that are costly and cumbersome for OPP, state and local governments, and registrants.
- **Benefits Assessments** should be modified to consider economic impacts on state and local governments such as costs arising from Clean Water Act compliance issues, and to include the costs of actual impacts on beneficial uses (e.g., drinking water and fisheries).

Regulations Causing Data to Not Be Publicly Available / Insufficient Transparency

One of OPP's regulations in 40 CFR Part 152, Subpart F (§152.199) keeps data in support of pesticide registration hidden until after the decision is finalized. CASQA's scientific reviewers have been unable to provide meaningful input to OPP on proposed new pesticide registration decisions because this information is unavailable.

Table 4. Latest Outcomes and Next Steps Regarding Long-Term Regulatory Change (5 pages)

Goal	Agency	Topics Influenced	Latest (2016/17) Outcomes	Remaining Issues to Address to Achieve CASQA Goals
1 – Effective, Proactive Evaluations of Pesticide Risks	DPR	Pesticide registration application routing for surface water evaluations	Most outdoor urban pesticide registration applications are automatically routed for surface water review, but storm drain products are not yet part of the automatic routing. DPR continued to route registration applications for surface water review in response to product-specific, written requests by CASQA/UP3.	Surface water evaluation automatically conducted for all outdoor, uncontained pesticides. More transparent DPR registration notices. Regulatory authority for outdoor pesticide-impregnated materials.
		Pesticide Registration Surface Water Evaluation	DPR announced that it will assess water quality impacts of pesticide degradation products when it reviews registration applications for new outdoor pesticides. DPR’s Surface Water Protection Program (SWPP) will request acute aquatic toxicity tests and other data to characterize degradates. <i>(See Section 2.4)</i>	Aquatic toxicity and environmental fate data requirements that are sufficient to support quantitative evaluation of all antimicrobial pesticides and to address chronic toxicity as defined in CWA programs for all pesticides. Improved registration evaluation methods capable of addressing the full range of outdoor urban pesticide applications (see below).
		Urban Runoff Modeling	DPR understands that models that better estimate surface water pesticide concentrations from urban pesticide use are needed. Since OPP is not moving toward urban models, DPR continues to develop detailed runoff modeling.	Continued improvement to achieve even more accurate urban runoff modeling of all outdoor urban pesticide applications through the full life cycle of the pesticide and its environmentally relevant degradates. Consideration of product formulation.
		Chemical analysis methods	DPR updated its procedures for required chemical analysis methods for some new pesticides and continued work with state laboratories on new methods to support monitoring priorities.	Chemical analysis methods suitable for commercial laboratories measuring environmental samples for all currently registered UP3 priority pesticides and their stable degradates for which commercial lab methods are not available.

Goal	Agency	Topics Influenced	Latest (2016/17) Outcomes	Remaining Issues to Address to Achieve CASQA Goals
1 – Effective, Proactive Evaluations of Pesticide Risks	EPA	Pesticide environmental fate & aquatic toxicity data requirements	OPP updated toxicity testing guidelines for aquatic organisms and harmonized them with international standards, but did not harmonize the test species selection with OW.	Establish systems to require all data necessary to establish water quality criteria and protective levels for sediments, potentially through new water quality criteria development methodologies based on limited data sets or computational methods.
		Urban Runoff Modeling	No changes.	In the short-term, use the DPR California scenario when modeling urban runoff, and integrate all of the pathways by which a pesticide can reach MS4s into pesticide reviews for pesticides other than antimicrobials. In the long term, more accurately model all outdoor urban pesticide applications through the full life cycle of the pesticide and its environmentally relevant degradates.
		Effects Assessment	EPA has begun the process of revising the existing <i>Guidelines for Deriving Water Quality Criteria for the Protection of Aquatic Life and Their Uses</i> used to derive National Ambient Water Quality Criteria for the protection of aquatic life. The existing guidelines have not been updated since 1985.	
		Effects Assessment	OPP expanded use of monitoring data – particularly California data in DPR’s database – in its risk assessments.	Use the same methods that EPA OW uses for identifying surface water impairment as significance standards in pesticide environmental risk assessments.
		Risk Management Decisions	No changes.	Make Clean Water Act compliance a fundamental goal of OPP risk management decisions. Include water quality compliance costs in OPP’s cost-benefit analyses.

Goal	Agency	Topics Influenced	Latest (2016/17) Outcomes	Remaining Issues to Address to Achieve CASQA Goals
2 – Coordination Between Pesticide Regulators and Water Quality Regulators	DPR & Water Boards	Effects assessment	DPR has continued to state that exceedances of OPP benchmarks warrant mitigation responses.	Since some benchmarks are higher than water quality criteria, agreement is needed among DPR, Water Boards, and EPA OW on criteria for identifying surface water impairment requiring mitigation by pesticides regulators.
		Pesticide Management requirements in Permits	The State Water Board continues the Urban Pesticide Amendments project. By 2018, Board staff is poised to develop language for a Water Quality Control Plan amendment targeting urban pesticides. <i>(See Section 2.4.)</i>	CASQA needs to ensure that the Board continues to include “minimum source control efforts” for MS4s and recognizes the need for DPR and EPA to take the lead in addressing pesticides in urban water bodies.
		Pesticide TMDLs	TMDLs approved by Regional Water Boards (San Francisco Bay Diazinon/Pesticide Toxicity TMDL; Santa Maria River Pyrethroids TMDL; Central Valley pyrethroids TMDL, and Salinas River pyrethroids TMDL (awaiting State Water Board review) all recognize that DPR and EPA should be lead in addressing pesticides. Central Valley’s regulatory approach includes MS4 monitoring and numeric triggers that would require implementation of management plans, including education and outreach and coordination with DPR.	Ensure through the STORMS Urban Pesticides Amendments project that statewide water quality control plan requires that all future water board actions to address urban pesticide impacts (including TMDLs and permits) continue to recognize the need for DPR and EPA to take the lead in addressing pesticide water pollution and provide reasonable responsibilities for MS4s.
	EPA	Effects Assessment	The nearly completed OW-OPP Common Effects Assessment project remained stalled. Although OW kicked off a process to review its 1985 Guidelines for developing water quality criteria and invited OPP’s participation in 2015, OPP has not yet committed to engaging in that process, which OW proposed to serve as an alternative way to harmonize effects assessment methodologies among EPA offices. The latter process seems to be stalled due to the transition in presidential administrations.	Complete and implement common effects assessment methodology, which could be integrated into the OW water quality criteria methodology update process. Modify OPP and OW procedures to provide for consistent time frames for water quality assessments.

Goal	Agency	Topics Influenced	Latest (2016/17) Outcomes	Remaining Issues to Address to Achieve CASQA Goals
3 – Use of Regulations and Statutes to Solve Pesticide-Related Impairments	DPR	Pyrethroids	DPR continued monitoring and other work to evaluate the effectiveness and level of compliance with the regulations. This includes the Placer County bifenthrin study (highlighted in the 2015-16 Annual Report, Section 2.4) and the multi-year study evaluating the effectiveness of pyrethroid regulations (<i>See Section 2.4</i>)	Increased enforcement and follow up actions, including additional product mitigation requirements, as necessary to achieve water quality improvements and eventually end pyrethroids-caused toxicity in California urban watersheds
		Fipronil	DPR continues to move forward to reduce fipronil in urban runoff based on numeric modeling (DPR staff) and experimental studies (UC Riverside) that validated potential mitigation strategies. DPR announced label language for fipronil intended to reduce fipronil use on impervious surfaces directly flowing to gutters/storm drains. (<i>See details in Section 2.2</i>)	Complete implementation of mitigation actions to reduce concentrations of fipronil and degradates below benchmarks / toxic concentrations in California urban watersheds. Monitor water quality outcomes and, if necessary, make adjustments in the mitigation program.
	EPA	Pyrethroids, Imidacloprid, and Fipronil Registration Reviews	EPA's pyrethroids and imidacloprid risk assessments identify significant water quality risks in urban watersheds. EPA's fipronil assessment is delayed.	EPA implementation of actions to mitigate risks associated with products not readily regulated by DPR (consumer products, impregnated materials) and special measures for bifenthrin – potentially including termination of its urban use - due to its special persistence.








Goal	Agency	Topics Influenced	Latest (2016/17) Outcomes	Remaining Issues to Address to Achieve CASQA Goals
4 – Coordinated State Monitoring to Support Response to Emerging Problems	DPR & Water Boards	Coordinated Pesticides Monitoring in Urban Watersheds.	The State Water Board and DPR continued coordinated urban monitoring for pyrethroids and fipronil and are working on increasing imidacloprid monitoring. The scope for the State Water Board’s Urban Pesticides Amendments project includes developing a coordinated pesticide/toxicity monitoring framework among DPR, the State Water Board and MS4s.	Full coordination of California’s pesticides/toxicity monitoring programs at DPR and the Water Boards and direct linkage of these programs with reasonable MS4 pesticides monitoring requirements.

Table 5. Communication, Education, and Advisory Efforts to Support CASQA’s Goals

Agency or Conference	Latest Outcomes
DPR’s Pest Management Advisory Committee (PMAC)	Success! Participation on the PMAC has resulted in continued focus by DPR on urban pest management and water quality issues and generated funding for urban integrated pest management programs. DPR has begun 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 includes urban pests as a key focus. A PSC member serves on the PPI steering committee as well as the Structural Pest working group.
State Water Board’s Urban Pesticides Amendments Project	Promising. This project would integrate a water quality regulatory framework for urban pesticides reduction (the “Urban Pesticides Amendments”) into statewide Water Quality Plans. In 2016-17, members of the PSC, along with DPR and Water Board staff, continued active involvement in the project. This included extensive PSC member participation in the “core group” of the project, in all of the project work groups tasked with developing the goals and conceptual framework for the Urban Pesticides Amendments, and in testimony to the State Water Board at the March 2017 CEQA scoping meetings. PSC members have also been invited to participate in the Technical Advisory Committee that the State Water Board established to provide input on the development of its statewide Water Plan amendment language. PSC has begun outreach to key stakeholder, including CASQA members, to educate them on the goals and benefits of the project. Anticipate the final outcome of amendments to the Water Quality Control Plan by 2018.
US EPA’s advisory committee, Pesticide Program Dialogue Committee (PPDC)	Pending. PSC members presented testimony consistent with CASQA’s written comments (see page 20) at a public hearing on pesticides regulatory reform hosted by this OPP external stakeholder advisory committee.
California Structural Pest Control Board (SPCB)	Success! 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 approved adoption of regulations to increase continuing education hours required for IPM. The effect newly adopted (2016) US EPA training requirements for applicators of restricted materials will be considered during the rulemaking process. The SPCB reconvened its Research Advisory Panel to solicit and evaluate proposals for research projects on urban pest management, to be supported by the SPCB research fund. Funded projects historically support advancements in urban integrated pest management.
University of California Statewide IPM (UCIPM)	Success! A PSC member continues to serve on UCIPM’s Strategic Planning Committee, which met in 2017 to review progress in implementing the program’s strategic plan. Consistent with the plan, UCIPM continues to provide resources, develop materials, and implement programs that support urban IPM. .
American Chemical Society	ACS Philadelphia Aug 21-25, 2016 – Attended, presented “Sources of Imidacloprid in Urban Aquatic Environments” ACS San Francisco April 2-6, 2017 – Attended, met informally with pesticide manufacturers, regulators, and research scientists.
SETAC	SETAC Orlando Nov. 6-10, 2016 – Attended, presented “Sources of Fipronil in Urban Aquatic Environments.”

As presented in Tables 4 and 5, CASQA has been actively involved in efforts to improve pesticide regulations in order to protect urban water quality. While we have indeed witnessed some progress towards our four management goals, there are numerous gaps and barriers that remain. Figure 5 seeks to present CASQA's perception of the regulatory situation at the state and federal level, relative to each of CASQA's long-term goals. The PSC has witnessed great improvements in a collaborative approach to protect urban water quality, particularly at the state level. It appears that the primary challenges and opportunities for success lie at the federal level, facilitating communication between OPP and OW to dovetail each of their efforts into the coordinated efforts within the state.

Figure 6. CASQA’s Assessment of Recent Progress and Remaining Gaps Relative to Long-Term Goals¹⁴

CASQA’s Long-Term Goals	Progress Assessment	Assessment Basis
DPR and State Programs		
	Maximum possible: 5 drops	
1. Effective proactive evaluations		DPR is utilizing effective WQ modeling and screening mechanisms as part of its registration process. The overall process has a high likelihood of identifying problem chemicals in advance of registration.
2. Coordinated regulatory bodies		Via STORMS, State Water Board is developing an Urban Pesticide Reduction Plan to incorporate reliance on DPR and OPP as the primary mechanisms for addressing pesticide impacts. The Board’s goals include minimum source control efforts for MS4s.
3. Effective use of regulations and statutes to solve and prevent pesticide impairment		In response to pyrethroids, DPR has established surface water protection regulations and is actively evaluating compliance and effectiveness. DPR is responding in a timely manner to identified fipronil issues.
4. Coordinated state monitoring		DPR established statewide surface water surveillance monitoring for timely detection of water quality problems, has begun coordination with State Water Board. The State Water Board’s Urban Pesticide Reduction Plan is expected to further elucidate a coordinated monitoring approach.
EPA OPP and OW Programs		
1. Effective proactive evaluations		OPP has improved some of its registration processes (risk assessments, data requirements) for individual chemicals, but needs to make these improvements more consistent for all urban use chemicals, and for all divisions. OPP should adopt better modeling, similar to what DPR has developed. In making final registration decisions, OPP does not consistently give adequate weight to identified urban water quality impacts. OPP registration processes need to address the use phase of pesticide-impregnated materials (e.g., paint and other outdoor building materials).
2. Coordinated regulatory bodies		OPP has made significant progress with OW on common effects methodology (evaluation of toxic effects), but work on this has stalled for the last several years.
3. Effective use of regulations and statutes to solve and prevent pesticide impairment		OPP has accelerated and coordinated registration review for pyrethroids, although it has not yet committed to utilizing the best evaluation methods for this entire class, as recommended by CASQA.

LEGEND



The number of drops, out of 5 possible, is intended as a qualitative representation of our overall perception of progress in the regulation of pesticides, relative to CASQA’s long-term goals.

¹⁴ 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.

2.4 Highlights in California

The most significant changes in pesticide regulation have been with DPR and its coordination with the Water Boards, CASQA, and the UP3 Partnership. As examples of state resources now being devoted to both the management and scientific evaluation of pesticide impacts to urban waterways, the following projects are highlighted: (1) the state's Urban Pesticides Amendments Project, (2) DPR's review of the efficacy of pyrethroids regulations, and (3) DPR's inclusion of pesticide degradates in surface water protection reviews of pesticide registration applications.

Urban Pesticides Amendments Project

The State Water Board 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.¹⁵ In 2016-17, the State Water Board continued progress towards developing urban pesticides amendments for the Inland Surface Waters, the Enclosed Bays, and Estuaries Water Quality Control Plan, and the Water Quality Control Plan for Ocean Waters of California, anticipated for adoption in 2018, which are poised to incorporate CASQA's vision for pesticide control. During the past year, three work teams were created to develop the framework documents to inform the drafting of the Urban Pesticides Amendments:



- Element 1: Coordination framework for working with U.S. EPA and DPR on urban pesticide reduction
- Element 2: Minimum pesticides source control requirements for urban storm water permittees
- Element 3: Statewide urban pesticides/toxicity monitoring coordination framework

In spring of 2017, the State Water Board held two California Environmental Quality Act (CEQA) Scoping Meetings to seek input on the proposed Urban Pesticides Amendments.¹⁶ CASQA's feedback focused on opportunities to reduce impacts of pesticide toxicity on MS4 permit holders. CASQA supports the State Water Board's stated goal of implementing the Urban Pesticides Amendments "*as an alternative*

¹⁵ 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/)

¹⁶ http://www.waterboards.ca.gov/water_issues/programs/stormwater/storms/docs/ceqa_scoping_document_urban_pesticides.pdf

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.

CASQA supports the intent of the Urban Pesticides Amendments to establish a consistent set of “*minimum pesticides source control measures for MS4 dischargers.*” At this time, the list of potential minimum measures includes use of integrated pest management (IPM), education of and outreach to residents and professional pesticide applicators, encouraging participation in the pesticide regulatory process, limitations to dry weather runoff, and pesticide and toxicity monitoring. The State Water Board has indicated that “*permittees fully implementing these minimum pesticide control measures should be deemed in compliance during the term of the permit with receiving water limitations.*”

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.*” 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 pesticide issues.

CASQA, on invitation of State Water Board staff, has been an active participant in this effort. Water Board Regions 2 and 5, DPR, U.S. EPA Region 9, and CASQA all met regularly and frequently with the State Water Board to move the project along expeditiously. Because most participants have been working together effectively for years on this subject (prior to STORMS) the program is moving ahead rapidly and effectively. We are now at a critical point, at which continued effective engagement by CASQA PSC will help ensure that key elements of CASQA’s vision for pesticides are fully supported and institutionalized in state policy and procedures.

DPR Review of Pyrethroid Monitoring Data Triggers Exploration of Additional Mitigation Measures

Since 2009, the EPA and DPR have both implemented actions to reduce pyrethroids in urban runoff. EPA’s actions – product label changes – have yet to be fully implemented on all products. To obtain quicker action, in 2012 DPR adopted surface water protection regulations to reduce use of pyrethroids and obtained a voluntary agreement for special restrictions on the use of the most persistent pyrethroid – bifenthrin – that was implemented through legally enforceable product label changes for professional products. To track the outcome of the regulations, DPR expanded surface water pyrethroids monitoring in partnership with the State Water Board, and has annually evaluated monitoring data. Because the first few years of monitoring data did not reflect the anticipated decline in pyrethroids concentrations, in 2016, CASQA and its UP3 partners requested DPR evaluate the reasons for the lack of decline. In response, DPR initiated a special project to evaluate the regulations’ implementation by professional applicators, to examine other urban runoff pyrethroids sources, and to do preliminary investigations of potential additional mitigation measures. DPR presented results at the

American Chemical Society meeting¹⁷ that indicate that the regulations are having little, if any, effect on lowering pyrethroid concentrations in California surface waters:

DPR Northern California Findings

- Receiving waters did not show any significant decrease in bifenthrin concentrations during that six-year monitoring period.
- Samples collected at storm drains show a slight decrease in observed bifenthrin concentrations. Such decreases at storm drains *may* indicate improved adherence to the regulations by pest control operators in this region. However, the monitoring data were obtained during drought conditions when irrigation restrictions were implemented so it is not possible to attribute the decrease exclusively to label restrictions.

DPR Southern California Findings

- No observed decrease in bifenthrin concentrations in either storm drains or urban receiving waters.
- Increased detection frequency of cyfluthrin, cypermethrin, esfenvalerate, and lambda-cyhalothrin at all monitoring stations

In response to these findings and using detailed information from its special project, DPR continued its scientific exploration of potential additional mitigation options. CASQA and its UP3 partners are tracking and encouraging these efforts.

DPR Expands Water Quality Reviews to Include Degradates

Some newer pesticides (e.g., fipronil, indoxacarb, cyantraniliprole, and chlorantraniliprole) have multiple toxic degradates, some of which are more toxic and/or more stable than the parent chemical. Some older chemicals—such as the mosquito control chemical Naled and the turf treatment thiophanate methyl—degrade quickly into other chemicals that are equally or more toxic. These degradates sometimes contribute to the chemical's pest control function. Historically, pesticide registration has not considered the water quality implications of pesticide degradates.

Recognizing that a few pesticide degradates have significant environmental implications, in 2017, DPR expanded its surface water protection evaluation of new pesticide registration applications to address pesticide degradates.¹⁸ This improvement will help DPR avoid registering pesticides where degradates could cause or contribute to water pollution. Degradates have growing importance as manufacturers respond to pressures to ensure that pesticides are not persistent. The reduction in persistence of parent chemicals means that degradates

¹⁷ Budd, R., D. Wang, M. Ensminger, and K.S. Goh. 2017. An Evaluation of the Department of Pesticide Regulation's Surface Water Regulations for Pyrethroids: Are They Working? Poster presentation. Available at: http://www.cdpr.ca.gov/docs/emon/surfwtr/swposters/34_budd.pdf

¹⁸ http://www.cdpr.ca.gov/docs/emon/surfwtr/review/degrade_regEval_11_final.pdf

are increasingly part of the environmental picture for pesticides. This DPR procedure provides a practical scientific approach to identify degradates that may potentially be important for water quality and to evaluate those degradates.

The updated DPR procedure integrates new data requirements for some degradates, complementing U.S. EPA's recent expansion of data requirements for similar degradates of existing pesticide chemicals in the Registration Review process.

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 address near-term concerns that may arise out of these ongoing pesticide regulatory processes, CASQA and the UP3 Partnership continuously track and engage in EPA and DPR activities. Typically, these efforts press for changes in an individual product's registration or request that regulators obtain 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 numerous activities to both address near-term pesticide concerns and seek long-term regulatory change.¹⁹ Meeting our end goals at the federal level continues to be critical to the achievement of our end goals for addressing pesticides. In FY 2017-2018, we propose to continue engagement on 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

¹⁹ Activities in 2018 are subject to available funding.

- Ensure the state continues to conduct surveillance monitoring to evaluate pyrethroids (and fipronil) mitigation effectiveness
- If resources permit, initiate discussions with DPR on imidacloprid water pollution, using conceptual model of imidacloprid sources in urban runoff and information assembled by UP3 partners from scientific publications with relevant toxicity and monitoring data.
- 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
 - Seek to engage 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, seek restructuring of California’s urban surface water pesticides monitoring to increase its effectiveness and improve coordination.
- Seek procedure changes such that EPA avoids approving new pesticides that cause urban water pollution and DPR continues to refine its registration procedures to address remaining gaps in water quality protection.
- Encourage EPA to develop robust urban surface water risk assessment procedures for pesticide reviews
 - Continue to advocate, as opportunities arise, for improving OPP urban runoff modeling procedures and for consistency with OW regarding effects assessment levels and risk assessment timeframes
 - Discourage OPP’s apparent approach of substituting ESA consultation “Biological Evaluations” for water quality risk assessments addressing traditional water quality endpoints, but use the ESA Consultation process as an opportunity to improve OPP surface water risk assessment procedures

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 details regarding the types of activities that CASQA and the UP3 Partnership engage on an ongoing basis in are presented Table 7. Table 8 presents upcoming regulatory action items that are likely to proceed in the coming year.

CASQA looks forward to working with our Partners to continue towards proactive management to protect water quality.

Table 6. Types of Activities Necessary to Address Immediate Pesticide Concerns and Long-term Regulatory Change (3 pages)

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 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 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 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 (due to budget limitations, these are always 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 addresses potential water quality concerns, and take advantage of opportunities to formally suggest solutions to shift regulatory process in the future. Request and maintain communication on mitigation actions addressing highest priority pesticides.	Typically engage 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.	Two to six 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 problems with existing pesticide regulatory process, encourage change, 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. Budget limits participation to just 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.	Two to three 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.	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.	About 6 peer reviews 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.	1-2 modeling publications per month. Develop one conceptual model annually (20-40 hours).

Activity		Purpose	Level of Effort
	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 .
Reporting	Prepare Monthly Action Plans	Coordinate CASQA's regulatory actions with Partners	3 hours/month
	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 future effectiveness assessment annual reporting.	Preparation and coordination takes about 50 to 60 hours.

Table 7. Anticipated Opportunities for CASQA and the UP3 Partnership Pesticides Regulatory Engagement in 2017-2018

EPA Pesticide Registration Review (15-year cycle)
<p><i>Environmental Risk Assessments</i></p> <ul style="list-style-type: none"> • Priority 1 pesticides: Pyrethroids, and Imidacloprid (Fipronil delayed until late 2018) • Priority 2-4 pesticides: 2,4-D, Abamectin, Carbaryl (Endangered Species Act pilot), Dichlobenil, Hydramethylnon, Indoxacarb, Pendimethalin, Phenoxy herbicides (2,4-DP; MCPA), Piperonyl butoxide (PBO) (pyrethroids synergist), Thiamethoxam, Thiophanate methyl/Carbendazim • Other opportunities: Clothianidin, Dinotefuran, Dithiopyr, Glyphosate (Endangered Species Act pilot)
<p><i>Endangered Species Act Biological Evaluation</i></p> <ul style="list-style-type: none"> • Malathion
<p><i>Proposed Decisions</i></p> <ul style="list-style-type: none"> • Copper, Spinosad, 7 pyrethroids (Imiprothrin, Momfluothrin, Prallethrin, Sumethrin, Tau-fluvalinate, Tefluthrin, Tetramethrin); swimming pool products; others (schedule unknown)
DPR New Pesticide Registration Decisions
<ul style="list-style-type: none"> • Momfluorothrin (new pyrethroid, 5 products) • Storm drain antimicrobial and root control products (2 products, including first dichlobenil product) • New urban indoxacarb product (proposed new outdoor uses) • Four new fipronil products (proposed expanded fipronil use) • Fipronil professional product label changes to implement urban runoff protections (2 products)
Other DPR-related Items
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • STORMS urban pesticides reduction draft language for a Basin Plan Amendment • Current-use urban pesticides TMDLs and Basin Plan Amendments: <ul style="list-style-type: none"> ○ Central Valley Water Board pyrethroids (approved by region; awaiting State Water Board approval), and diuron ○ Central Coast Lower Salinas River Watershed pyrethroids / toxicity TMDL • Pesticide TMDL implementation requirements for permittees

Appendix –Summary of STORMS Urban Pesticides Amendments Project²⁰

For more information about the Urban Pesticides Amendments Project, the latest web page and Factsheet are provided below.

Strategy

Phase I

- [1a. Promote Storm Water Capture and Use](#)
- [1b. Identify and Eliminate Barriers to Storm Water Capture and Use](#)
- [3a. Develop Guidance for Alternative Compliance and Management Guidelines and Tools](#)
- [3b. Develop Watershed-Based Compliance and Management Guidelines and Tools](#)
- [4a. Implement Senate Bill 985 - Incorporate Principles of Storm Water Resource Plan Guidelines into Storm Water Programs](#)
- [4b. Eliminate Barriers to Funding Storm Water Programs and Identify Funding for Storm Water Capture and Use Projects](#)
- [5a. Create Storm Water Program Data and Information "Open Data"](#)
- [6a. Establish Statewide Framework for Urban Pesticide Reduction](#)
- [6b. Identify Opportunities for Source Control and Pollution Prevention](#)

Phase II

Phase III

FEEDBACK

You may provide feedback on the Storm Water Strategy by submitting the [STORMS Feedback Form](#).

WHAT'S NEW

Update: 04/27/2017

- > [Public Comments for the Urban Pesticides Amendments CEQA Scoping](#)

Update: 03/21/2017

- > Public comments for the Urban Pesticides Amendments CEQA Scoping are due by **Friday, March 31st**
 - > [Comment submission instructions](#)
 - > [View the recorded CEQA Scoping Meeting from March 14th](#)
 - > [CEQA Scoping PowerPoint presentation](#)

Update: 02/06/2017 – Public Scoping Meetings for Proposed Urban Pesticides Amendments

- > The State Water Board will hold two California Environmental Quality Act (CEQA) Scoping Meetings to seek input on the proposed Urban Pesticides Amendments. More information can be found in the following Public Notice and Scoping Document:
 - > [Notice](#)
 - > [Scoping Document](#)
 - > Meeting Dates and Locations:
 - March 14th, 2017 in Sacramento
 - [Webcast Information](#)
 - March 17th, 2017 in Alhambra

Update: 09/23/16

- > Three work teams have been created and are in the process of developing the following draft products:
 - > Coordination framework for working with U.S. EPA and DPR on urban pesticide reduction
 - > Statewide urban pesticides/toxicity monitoring coordination framework
 - > Minimum pesticides source control requirements for urban storm water permittees

Update: 08/24/16

- > Statewide Urban Pesticides Reduction [Fact Sheet](#)

STORMS OBJECTIVE 6

Increase Source Control and Pollution Prevention

STORMS GOAL 4

Collaborate in Order to Solve Water Quality and Pollutant Problems with an Array of Regulatory and Non-Regulatory Approaches

PROJECT INFORMATION	
Start	2016
Completion	2018
Prerequisite	None
Executive Sponsors	Tom Mumley
Lead Staff	Noelle Patterson (916) 341-5280
Support Staff	Matthew Freese (916) 341-5485
Performance Metrics	Attachment

←

Factsheet provided on the following two pages

²⁰ http://www.swrcb.ca.gov/water_issues/programs/stormwater/storms/obj6_proj6a.shtml



Fact Sheet

Statewide Urban Pesticides Reduction

What are the Urban Pesticides Amendments?

The [Strategy to Optimize Resource Management of Storm Water](#) (STORMS), adopted by the State Water Board in January 2016, aims 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, and integrating regulatory and non-regulatory interests. Under Objective 6 of STORMS (increase source control and pollution prevention), the State Water Board is developing a statewide framework for urban pesticides reduction (Urban Pesticides Amendments) that will employ a multi-agency approach calling on participation from the Water Boards, municipalities, and state and federal pesticide regulators.

A primary goal of the statewide Urban Pesticides Amendments is to improve collaboration among regulators, leading to better management of pesticides in urban runoff. The statewide Urban Pesticides Amendments will also organize coordinated pesticides and toxicity monitoring and data sharing, and establish consistent minimum pesticides control efforts for MS4 storm water permittees.

Why are the Urban Pesticides Amendments needed?

Pesticides applied on outdoor surfaces in urban areas have the potential to wash off during storm events or as a result of over-irrigation, and may end up in rivers, lakes, streams, and the ocean. Pesticides in urban runoff can be harmful to aquatic organisms, and could potentially contribute to human health risks if discharged in or near drinking water sources. The Water Boards have identified over 100 waterbodies on the 303(d) list of impaired waterbodies as exceeding pesticide water quality standards with urban runoff attributed as the potential source. As monitoring increases and monitoring methods improve, more waterbodies are expected to be listed as impaired for pesticides. These 303(d) listings generally require the development of Total Maximum Daily Loads or TMDLs, which are then incorporated in MS4 permits as an effort to attain water quality standards.

Control of pesticide discharges in urban runoff falls under the responsibility of the operators of municipal separate storm sewer systems (MS4s), whose discharges are regulated by the State and Regional Water Boards under Clean Water Act MS4 permits. However, State law does not allow local authorities to limit pesticides sale and use. Municipalities therefore must focus on source control and urban runoff reduction efforts to control pesticides in their discharges. While these efforts by MS4s may be able to reduce pesticides in runoff, they may not be able to reduce pesticide concentrations far enough to consistently meet water quality standards.

The most effective way to reduce urban pesticide-related impairments now and into the future is source control through coordination with state and federal pesticide regulators. It is important to note that these regulators have different legal mandates than the Water Boards in regulating pesticide use. While coordination with these agencies will require a commitment of time and resources, it will likely be the most effective pollution prevention measure. Successful coordination in the past between water quality regulators, pesticide regulators, municipalities, and others through partnerships such as the Urban Pesticides Pollution Prevention Partnership has led to significant improvements in pesticide use regulation for the protection of



water quality. A statewide framework for working with pesticide regulators would ensure these efforts can continue to grow and provide a more efficient, effective, and consistent approach to addressing and preventing pesticides-related water quality pollution.

How are the Amendments being developed?

The Urban Pesticides Amendments team is a collaboration of representatives from the State Water Board, the San Francisco Bay and Central Valley Regional Water Quality Control Boards, U.S. EPA Region 9, the California Department of Pesticide Regulation, and municipality representatives from the California Stormwater Quality Association (CASQA). The project is additionally guided by the STORMS Implementation Committee, which includes representatives from the business community and environmental advocacy groups.

A statewide plan for urban pesticides reduction would be established through an Amendment to the Inland Surface Waters, Enclosed Bays, and Estuaries Water Quality Control Plan, and to the Water Quality Control Plan for Ocean Waters of California. The plan would include the following elements:

1. Coordination framework for working with U.S. EPA Office of Pesticide Programs and the Department of Pesticide Regulation to reduce and prevent pesticide impairments in urban water bodies;
2. Minimum pesticides control measures for municipal storm water permittees and model permit language; and,
3. Statewide monitoring coordination framework for pesticides and toxicity between the Water Boards, Department of Pesticide Regulation, and municipal storm water permittees, including improved data management that facilitates improved data flow.

Stakeholder Outreach

Stakeholder outreach will occur initially through the STORMS Implementation Committee of stakeholders, which includes primary participation by representatives from the California Stormwater Quality Association, the California Coast Keepers Alliance, the Association of California Water Agencies, and the California Council for Environmental and Economic Balance. Additional public stakeholder meetings and outreach will be held as needed. Public review and comments on the proposed Amendment will be solicited during CEQA Scoping and the public review period in spring of 2017. Following responses to comment the proposed Amendment will be brought to the Board in winter 2018 for potential adoption by the State Water Board at a public meeting.

Proposed Timeline

Spring 2016: Project work teams established
Fall 2016: CEQA Scoping
Spring 2017: Release documents for public review and comment
Winter 2018: Consideration for adoption by State Water Board

How Can Interested Persons Stay Updated and Be Involved

For more information about the project visit the State Water Board's [STORMS webpage](#) or contact Noelle Patterson, Noelle.Patterson@waterboards.ca.gov.

To receive update email notifications of project development and public notices and/or workshops, please sign up to the STORMS email [subscription list](#), select "Water Quality," and check the box for "Storm Water Planning."

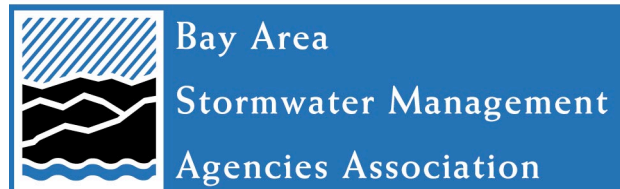
This fact sheet was last updated on October 25, 2016.

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Regional Supplement for New Development and Redevelopment

San Francisco Bay Area Municipal Regional Stormwater Permit

B A S M A A



September 2017



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 County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

Bay Area

Stormwater Management

Agencies Association

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Menlo Park, CA 94026

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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

Adele Ho, 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 Sanitation and Flood Control District

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LIST OF ATTACHMENTS:

C.3.j.i.(2)(g) Green Infrastructure Facility Sizing Analysis

Scope of Work

C.3.j.iii. Participate in Processes to Promote Green Infrastructure

Scope of Work – *Urban Greening Bay Area*

BASMAA comments to California Natural Resources Agency on *Vibrant Communities and Landscapes, A Vision for California in 2050*
(October 28, 2016)

BASMAA comments to Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) on *Plan Bay Area 2040*
(June 1, 2017)

BASMAA comments to California Natural Resources Agency on *Safeguarding California Plan: 2017 Update – California's Climate Adaptation Strategy*
(June 23, 2017)

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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.c.i.(2)(c)(ii) Model Biotreatment Soil Media Specifications,
- 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 2017 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.

Low Impact Development

C.3.c.i.(2)(c)(ii) Model Biotreatment Soil Media Specifications

This provision requires:

Biotreatment (or 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, infiltrate runoff through biotreatment soil media at a minimum of 5 inches per hour, and maximize infiltration to the native soil during the life of the Regulated Project. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention and pollutant removal.

Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the minimum specifications set forth in Attachment L of the previous permit (Order No. R2-2009-0074), dated November 28, 2011. Permittees may collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the soil media minimum specifications, subject to the Executive Officer's approval.

In 2015, the biotreatment soil media (BSM) specification had been in use Bay Area-wide for 5 years and in that time Permittees had identified several components of the soil

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specification for which review was warranted. In August 2015, the BASMAA Development Committee formed a Work Group on behalf of the Permittees to re-evaluate the soil specification. The Work Group took a two-step approach: first, immediately propose minor modifications to the current soil specification to ensure suppliers can deliver material that complies with the specification, and second, convene a soil specification “roundtable” (similar to the 2010 roundtable used to reach consensus on the MRP 1.0 Attachment L specification). The newly convened soil specification roundtable would investigate the need for alternative specifications that might enhance the performance of bioretention facilities under varying microclimates and drought conditions and with diverse planting palettes, including trees.

The BASMAA Soil Specifications Work Group met several times, reviewed the specification, researched and made proposed changes, and vetted the proposed changes with the Development Committee and Permittees. In its January 2016 meeting, the BASMAA Board of Directors approved the transmittal of Revised Model Biotreatment Soil Media Specifications to the Regional Water Board. The revised specifications were transmitted to the Regional Water Board on February 5, 2016 and the Regional Water Board Executive Officer approved the revised specifications on April 18, 2016.

The BASMAA Soil Specifications Work Group also initiated a Roundtable project to start to address remaining issues. BASMAA engaged consultant assistance in February 2016 to prepare research and design considerations for updating the BASMAA Biotreatment Soil Media Specifications to incorporate considerations regarding trees in bioretention areas. The major project tasks included a literature review and the Roundtable, which was conducted in June 2016. The project also resulted in three products:

- *Biotreatment Soil Media and Specification: Current Research on Trees and Water Quality Treatment; Literature Review* – This report: 1) examines potential changes to the BSM and to the design of bioretention systems for the benefit of trees, 2) examines concerns with the performance of the current Biotreatment Soil Media specification, 3) addresses changes to the mix and the design of bioretention that could reduce pollutant leaching and flushing and correct identified problems, 4) provides a review of the available literature and municipal specifications for BSM, and 5) incorporates numerous interviews of experts and stakeholders involved in BSM.
- *Biotreatment Soil and Tree Roundtable Summary; Improvements for the Health of Trees* – This report provides a summary of the discussion, identifies action items from the Roundtable and a summary of the Roundtable evaluation survey responses.
- *Bioretention Design for Tree Health: Literature Review* – This report focuses on how to enhance the soil volume for trees in bioretention – one of the most important factors effecting urban tree health and is relatively limited in bioretention systems as they are currently designed.

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The last product is a direct result of a recommended action item from the June 2016 Roundtable.

Biotreatment Soil Media – Tree Design Work Group

In FY 16-17, the Development Committee started to follow-up the previous work above. The Committee considered developing new designs for bioretention areas with trees, changes to the BSM specification to better promote healthy trees, and convening a work group to discuss potential additional changes to the BSM specification. The Committee was most interested in looking at new designs for bioretention areas with trees and formed the BSM Tree Design Work Group to follow up this aspect of the previous work. The Work Group convened and met three times in FY 16-17, focusing its attention on reviewing information and examples of new designs for bioretention areas with trees. In FY 17-18, the Work Group will review additional examples of tree-specific treatment measure designs, discuss soil and maintenance issues, and develop recommendations for design and maintenance of stormwater tree systems.

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 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 uses continuous simulation modeling to evaluate

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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 includes the following technical tasks (scope of work attached):

- 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. The project is expected to be completed by the end of 2017. During FY 17-18, the Development Committee will develop regional guidance on how to use the modeling results to size GI measures under specific design scenarios and constraints.

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.

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 is July 1, 2015 to June 30, 2018.

BASMAA is one of the subrecipients of the grant and is taking the lead on two of the grant project tasks (see attached scope of work) – a Regional Green Infrastructure

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Roundtable process and a Design Charrette, both of which are scheduled to be implemented between May 2016 and May 2018.

The Regional Roundtable is a two-year process, with work groups as needed, to identify and develop a list of recommendations for integrating green infrastructure and stormwater management funding and investments with future climate change and transportation investments within the region. The Roundtable includes convening meetings with local, regional, and state stakeholders, agencies, elected officials, and staff to produce draft and final task reports that identify and recommend possible legislative fixes, agency agreements, consolidated funding mechanisms, and other means and actions as appropriate. The Roundtable uses innovative participatory processes that include key experts, regulators, decision-makers, and other stakeholders to share information, solicit and discuss ideas and solutions, and to identify next steps (i.e., a roadmap), which will be summarized in the draft and final task reports.

The Design Charrette task involves coordinating with the cities of Sunnyvale and San Mateo to conduct a Bay Area design charrette to develop cost-effective and innovative "typical" designs for integrating green infrastructure with bicycle and pedestrian improvements at roadway intersections. The overall goal of developing standardized, transferable designs is to make progress in addressing the high cost of design, implementation, operations, and maintenance that inhibits the widespread use of green infrastructure and LID features.

During FY 16-17, BASMAA's accomplishments on the *Urban Greening Bay Area* project included:

1. Establishing Advisory Committees of high-level stakeholders for both the Regional Roundtable and Design Charrette tasks.
2. Planning, organizing, and convening two Regional Roundtable meetings on March 28 and May 23, 2017 with key agency stakeholders, interested environmental / policy organizations, and technical experts.
3. Coordinating with San Mateo and Sunnyvale staffs to identify, tour, and select intersections in those cities for construction of the demonstration projects.
4. Soliciting contractors and engineering/landscape architecture design firms to identify individuals interested in participating in the Design Charrette with the goal to have representation from individuals throughout the design, construction, and operations and maintenance phases of projects.
5. Planning, organizing, and hosting the Design Charrette event on November 1, 2016, at which participants were educated on the overall goals and desired outcomes of the process, and developed, discussed, and evaluated various design alternatives to identify the most cost-effective integrated solution. The charrette utilized actual intersection locations in San Mateo and Sunnyvale that are as representative as possible of the common features of road segments that make up intersections found throughout Bay Area cities. Charrette participants were solicited by BASMAA and included multiple representatives, including contractors, engineers, landscape architects, plant specialists, and city

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transportation engineers and planners, and design, construction management, and operations and maintenance staff. Final designs will be constructed at the San Mateo and Sunnyvale locations to verify costs and serve as demonstration projects for other agencies throughout the Bay Area.

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.

Participation and Comments

Participation

In addition to the *Urban Greening Bay Area* grant efforts described above, Matt Fabry (SMCWPPP Manager, BASMAA Board member and current Board Chair) participated in events and made presentations and comments "...to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects..." Participation in events like the two listed below helps to build on the foundation for the *Urban Greening Bay Area* grant project by raising awareness of regional issues and securing commitments from various agencies to support and participate in the project, thus benefitting all Permittees.

- a. Coastal Conservancy's Green Infrastructure: Leadership Conversation; "Integration: Greening, Housing and Transportation" panelist (December 2016)
- b. Stanford's Water in the West Program; "Innovative Water Financing Roundtable" participant (June 2017)

Comments

BASMAA submitted comments to the following agencies regarding the listed documents (attached).

BASMAA comments to California Natural Resources Agency on *Vibrant Communities and Landscapes, A Vision for California in 2050* (October 28, 2016)

BASMAA comments to Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) on *Plan Bay Area 2040* (June 1, 2017)

BASMAA comments to California Natural Resources Agency on *Safeguarding California Plan: 2017 Update – California's Climate Adaptation Strategy* (June 23, 2017)

ATTACHMENT

C.3.j.i.(2)(g) Green Infrastructure Facility Sizing Analysis

Scope of Work

Section 2: Proposed Scope of Work

The following scope of work converts the approach section above into detailed scoping language. The level of detail included here should streamline the development of contract documents. Please note: Dubin Environmental does not plan to include a separate project management task, because our streamlined approach minimizes administrative costs.

Task 1. Setup Green Stormwater Model

During the scoping phase of the project, the BASMAA project team and Dubin Environmental will determine whether to a) adapt the existing SWMM model or b) develop an HSPF model for this analysis.

The model will be setup calculate runoff from a uniform one-acre impervious area and a representative pervious pre-project area (e.g., scrub land). The model will include a bioretention facility with the following initial configuration:

- Sizing factor = 0.04
- Surface reservoir depth = 6 inches
- Bioretention media depth = 18 inches
- Underdrain located at the top of the gravel layer

Dubin Environmental will adapt our existing VBA-based Excel model setup spreadsheet to generate model input files across a range of sizing factors, surface reservoir depths, infiltration rates, etc., in an automated manner.

Task 2. Compile Long-Term Rainfall Records

Dubin Environmental will identify long-term rain gauges within the BASMAA area that have 20+ years of hourly rainfall data. The primary source of long-term rainfall data will be the National Centers for Environmental Information (NCEI; formerly the National Climate Data Center). Next, the available stations will be organized into a table that lists a) 1-year, 1-hour depth, b) 1-year, 24-hour depth, c) annual rainfall depth and d) data quality/percentage of missing data.

The gauge locations, storm depths and data quality will be plotted in GIS and provided to the BASMAA project team along with a recommendation on the gauges to use in this analysis. We will ensure the recommended gauges span the range of storm depths experienced in the BASMAA service area.

After finalizing the list of gauges, the data will be downloaded from NCEI and reviewed (e.g., identify missing data, suspiciously large depths) and formatted for the selected hydrology model. If any of the recommended gauges have problematic data, we can use the table/GIS map to select a replacement station for the analysis.

Task 3. Perform Model Simulations and Evaluate Results

Long-term model simulations will be run to calculate the treatment percentage for bioretention in different configurations. The model simulations will be conducted using six different rain gauges that represent the variation in climate across the BASMAA area. The model results will be post-processed and evaluated using Matlab scripts and similar tools to determine the bioretention performance. For select simulations, the bioretention inputs, outputs and water moisture content will be plotted for large storm events as a QA/QC step to ensure water is moving into and through the bioretention as intended.

The following table (also shown lists the simulations and how the results will be used.

No.	Question	What Varies?	Number of Simulations
1	What is the minimum sizing factor to treat 80% of annual runoff? How does it vary by rain gauge?	Sizing factor Rain gauge	N/A – answered in No. 2
2	How does treatment percentage vary with sizing factor?	Sizing factor Rain gauge	~ 120 (6 rain gauges; SF = 0.02 to 0.06)
3	How do the bioretention configuration, infiltration rate and incoming pollutant loading affect the overall performance?	Sizing factor Rain gauge Reservoir depth Infiltration rate Pollutant load	~480 (6 rain gauges; 2 reservoir depths; 4 infiltration rates; 2 pollutant loads; 5 sizing factors)

Task 4. Present Results for BASMAA Development Committee

The modeling results will be characterized using a combination of tables, graphics and equations, based on BASMAA and Dubin Environmental discussions at the start of the project. The purpose of the presentation materials will be to identify relationships among the items that were varied during the modeling analysis. Examples include:

- Relationship between rainfall and sizing factor that will be expressed either graphically or with a regression equation
- Sensitivity analysis results, such as a) how infiltration rate affects the annual treatment percentage, b) whether using a 12-inch deep surface reservoir instead of a 6-inch deep surface reservoir can significantly reduce the sizing factor needed to

Task 5. Prepare Summary Report

The modeling approach, key assumptions and results will be summarized in a draft technical report for BASMAA review. BASMAA project team comments will be incorporated and then the final technical report will be issued. The report will be prepared for a broad audience. Beyond the technical findings, the report will use tables and graphics to demonstrate how the results can be used to design and implement bioretention systems that meet the Provision C.3.d water quality treatment standard.

The report will summarize key findings and will contain graphics, tables, equations and nomographs needed for the green stormwater sizing criteria. If appropriate, the report will contain sections that can be copied directly to BASMAA members' stormwater manuals.

Deliverables

- Table and map with candidate and recommended long-term rain gauges for the modeling analysis
- Modeling results showing a) bioretention sizing factors for treating 80 percent of annual runoff, b) sensitivity analysis relating sizing factor, rain gauge, reservoir depth, infiltration rate and influent pollutant characteristics to annual treatment percentages.
- Summary tables and graphics that can be used to describe the bioretention sizing criteria and sensitivity analysis results; the results will be incorporated into a PowerPoint presentation and presented to the BASMAA project team.
- Draft and final technical report that summarizes the modeling approach, key assumptions and results.

Assumptions

- The BASMAA project team will collaboratively develop examples and mockups showing how the modeling results can be presented
- The BASMAA project team will advise on how to format the results presentation to streamline its incorporation in BASMAA members' manuals and policies.

ATTACHMENT

C.3.j.iii. Participate in Processes to Promote Green Infrastructure

Scope of Work – Urban Greening Bay Area



B A S M A A

Urban Greening Bay Area Scope of Work

Introduction: The Bay Area Stormwater Management Agencies Association (BASMAA) is contracting with the Association of Bay Area Governments (ABAG)/San Francisco Estuary Partnership (SFEP) to manage and execute the Green Infrastructure Roundtable and Design Charrette elements of the Urban Greening Bay Area project funded by the US EPA's San Francisco Bay Water Quality Improvement Fund 2015 grant program.

Task 1 – Task Management

Subcontract with qualified consultants to assist with the performance of the listed tasks. Coordinate with SFEP, consultants, and partner cities (San Mateo and Sunnyvale) to ensure the tasks are completed on time and on budget. Submit quarterly reports and invoices, information for administrative and financial reports prepared by SFEP (e.g., FFR, MBE/WBE utilization, progress reports, final report), and deliverables as completed.

Task 1. Deliverables

- A. Quarterly Reports and Invoices
- B. Information for administrative and financial reports

Task 2 – Regional Roundtable

Organize and staff a two year Green Infrastructure Roundtable process, with work groups as needed, to identify and develop a list of recommendations for integrating green infrastructure and stormwater management funding and investments with future climate change and transportation investments within the region. The Roundtable will include convening up to 12 meetings with local, regional, and state stakeholders, agencies, elected officials, and staff to produce draft and final task reports that will identify and recommend possible legislative fixes, agency agreements, consolidated funding mechanisms, and other means and actions as appropriate. The Roundtable is envisioned as a two year effort using innovative participatory processes that will include key experts, regulators, decision-makers, and other stakeholders to share information, solicit and discuss ideas and solutions, and to identify next steps (i.e., a roadmap), which will be summarized in the draft and final task reports.

Task 2a: Planning. Build a task team of BASMAA, SFEP, US EPA, the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), and municipal representatives, as appropriate, to further identify goals, desired outcomes, meeting formats, schedule, and Roundtable participants. Prepare a project briefing sheet, including statement of purpose and summary of tasks and schedule, fact sheets, or other outreach information to help introduce the task to key stakeholders and encourage participation. Conduct informational interviews as an initial step to assist in designing the Roundtable process, and prepare interview summaries. Prepare a Draft and Final Roundtable Strategy that describes the approach and plan for conducting Task 2.

In addition to the task team, an advisory team may be established of high-level stakeholders that may be key to achieving task goals (see Task 2c). Schedule meeting locations and dates. Identify and subcontract with partners and technical experts, as appropriate. Develop a list of key experts, regulators, decision-makers, and other stakeholders to invite to the various Roundtable meetings and send out invitations.

Task 2b: Roundtable Meetings. Convene up to 12 meetings with key agency stakeholders, interested environmental/policy organizations, and technical experts. The meeting presentations and discussions will be summarized in the draft and final task reports that will serve as a roadmap for needed next steps to integrate green infrastructure and stormwater management funding and programs with future climate change and transportation investments in the Bay Area. The goals of the meetings are to:

- Educate participants on the drivers for a long-term distributed green infrastructure approach for meeting stormwater regulatory requirements;
- Illustrate the challenges in funding such an approach strictly from a stormwater perspective; with a particular emphasis to:
 - Quantify the numerous green infrastructure benefits beyond water quality improvement;
 - Demonstrate the ways green infrastructure can be effectively integrated with active transportation investments intended to achieve greenhouse gas emission reductions and climate change adaptation;
 - Highlight the current barriers and challenges to such an integrated approach from the perspective of planning, design and implementation; and,
 - Develop recommendations on how to effectively integrate green infrastructure with these future transportation and stormwater management infrastructure investments.

Task 2c: Expert Input. Identify key experts knowledgeable about green infrastructure, stormwater management, and climate change and transportation funding and investments. Work with experts on quantification of benefits and innovative finance, including identification of tools. Solicit experts to participate in appropriate Roundtable meetings/forums to apply their expertise and help problem solve particular issues key to achieving task goals.

Task 2d: Roundtable Report. Draft a comprehensive report on Task 2, including a roadmap for integrating green infrastructure and stormwater management funding and programs with future climate change and transportation investments in the Bay Area. The roadmap will identify key policies, documents, legislation, agencies, and specific actions needed to effectively integrate and fund green infrastructure and stormwater management with transportation programs and funding mechanisms. The intended audience includes entities that play a role in implementing solutions, and is expected to include the State legislature, the Metropolitan Transportation Commission, ABAG, the Strategic Growth Council, the Department of Water Resources, the State Water Resources Control Board and SFBRWQCB, county congestion management agencies, and municipal stormwater management agencies and associations.

Task 2. Deliverables

- A. Outreach Information
- B. Interview Summaries
- C. Draft and Final Roundtable Strategy
 - Outline
 - Draft Strategy
 - Final Strategy
- D. Meeting Agendas, Meeting Summaries, and Lists of Meeting Attendees
- E. Draft and Final Roundtable Report (i.e., roadmap)
 - Outline
 - 1st Draft Report
 - 2nd Draft Report
 - Final Report

Task 3 – Design Charrette

Coordinate with the cities of Sunnyvale and San Mateo to conduct a Bay Area design charrette to develop cost-effective and innovative “standard” designs for integrating green infrastructure with bicycle and pedestrian improvements at roadway intersections. The overall goal of developing standardized, transferable designs is to make progress in addressing the high cost of design, implementation, operations, and maintenance that inhibits the widespread use of green infrastructure and LID features. The charrette will utilize actual intersection locations in San Mateo and Sunnyvale that are as representative as possible of the common features of road segments that make up intersections found throughout Bay Area cities. Charrette participants will be solicited by BASMAA and will include multiple representatives, including contractors, engineers, landscape architects, plant specialists, and city transportation engineers and planners, and design, construction management, and operations and maintenance staff. Final designs will be constructed at the San Mateo and Sunnyvale locations to verify costs and serve as demonstration projects for other agencies throughout the Bay Area.

Task 3a: Charrette Pre-Coordination. Convene advisory committee of SFEP, BASMAA, US EPA, and San Mateo/Sunnyvale representatives. Purpose of the committee will be to provide advice on design of the charrette. The grant Project Team may serve as the advisory committee on this task.

Task 3b: Site Identification. Coordinate with San Mateo and Sunnyvale staffs to identify intersections in those cities with common features of road segments with a focus on characterizing typical stormwater management and active transportation scenarios, such as parallel vs. angled parking, pedestrian bulbouts, storm drain inlet locations, presence or absence of bike lanes, etc. Estimate the relative frequency of occurrence of the road segment features in Bay Area cities. Summarize the results of this task in a technical memorandum.

Task 3c: Call for Charrette Participants. Issue a Request for Qualifications (RFQ) from contractors and engineering/landscape architecture design firms identifying individuals interested in participating in the design charrette and providing statements of qualifications (SOQs).

Task 3d: Select Charrette Panel. Grantee representatives will perform an SOQ review process that may include interviews to select a diverse design panel that will participate in the design charrette, with the goal to have representation from individuals throughout the design, construction, and operations and maintenance phases of projects.

Task 3e: Site Visits/Information Compilation. Convene charrette participants to tour the San Mateo and Sunnyvale site locations and identify necessary design information to be provided by cities to enable the charrette to proceed. Cities will then compile the necessary information.

Task 3f: Design Charrette. Host a design charrette event, at which participants will be educated on the overall goals and desired outcomes of the process, the group will develop, discuss, and evaluate various design alternatives to identify the most cost-effective integrated solution. Outputs will be transferable design details that can be used by all agencies.

Task 3g: Final Designs Support. Provide outputs and relevant related information from Task 3f to San Mateo and Sunnyvale. Cities will work with the design charrette team to finalize the designs to 100% designs with necessary plans, specifications, and cost estimates in preparation for bidding.

Task 3h: Bidding and Construction. San Mateo and Sunnyvale will initiate and manage bid processes for the final designs, award contracts to winning bidders, issue notices-to-proceed, and manage construction.

Task 3i: Charrette Summary. BASMAA and SFEP will develop an electronic summary for web posting of the charrette results, final designs, photos of constructed projects, and lessons learned. Package and distribute designs and standard details to Bay Area municipal and regional governments to support future planning and implementation efforts.

Task 3j: Outreach. BASMAA and SFEP will perform outreach to generate interest and participation in the charrette, generate press coverage of the process, final designs, and constructed projects, as well as post-charrette debriefs, potentially through conference or other meeting presentations.

Task 3. Deliverables

- A. Site Identification Technical Memorandum
- B. Information Compilations
- C. Design Details
- D. Charrette Summary
 - Draft Summary
 - Final Summary
- E. Outreach Presentation

ATTACHMENT

C.3.j.iii. Participate in Processes to Promote Green Infrastructure

BASMAA comments to California Natural Resources Agency on
Vibrant Communities and Landscapes, A Vision for California in 2050



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 County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

Bay Area

Stormwater Management

Agencies Association

P.O. Box 2385

Menlo Park, CA 94026

510.622.2326

info@basmaa.org

October 28, 2016

California Natural Resources Agency
ca.50m@opr.ca.gov

Subject: Comments on draft "Vibrant Communities and Landscapes: A Vision for California in 2050"

Dear California Natural Resources Agency:

On behalf of the Bay Area Stormwater Management Agencies Association (BASMAA)¹ thank you for the opportunity to provide comments on the draft "Vibrant Communities and Landscapes: A Vision for California in 2050". Our general comments below are followed by specific comments and recommended changes to the draft document.

General Comments

The current document focuses on two main issues: achieving greenhouse gas emission reductions and supporting future population growth. BASMAA recommends broadening the document's focus beyond these two issues to equally address the State's focus on achieving its water quality goals, building resilience to climate change, and building resilience to drought. To truly create vibrant communities and landscapes, a vision cannot be singularly driven by greenhouse gas emission reduction goals. BASMAA believes integration of multiple State priorities is key to cost-effectively achieving overall objectives. This requires breaking down silos, such as those between climate change mitigation and adaptation and transportation and water.

BASMAA is primarily focused on urban runoff pollution reduction issues as mandated by the State and Regional Water Boards in municipal stormwater permits. While this may seem far removed from climate change goals, BASMAA believes there are significant connections between these issues, including the magnitude of the challenge, pollutant/emission sources, and solutions to the problems.

¹ BASMAA is a 501(c)(3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area representing 100 agencies, including 85 cities and towns, 8 counties, and 7 special districts. BASMAA focuses on regional challenges and opportunities to improve the quality of stormwater flowing to our local creeks, the Delta, San Francisco Bay, and the Pacific Ocean. The members of BASMAA are responsible for complying with the requirements of municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) permits issued by the San Francisco Bay Regional Water Quality Control Board (Regional Water Board).

BASMAA Comments on draft “Vibrant Communities and Landscapes: A Vision for California in 2050”

Firstly, there is a connection between the primary source of greenhouse gas emissions and water quality problems, namely transportation. Outside of the Water Boards, the State appears singularly focused on one negative environmental impact of transportation – pollutant discharges to the air – while ignoring the other pollutant discharges to water. Transportation is a major contributor to water quality impairments. In addition to vehicle-generated pollutants such as copper from brake pads, zinc from tires, and hydrocarbons from tail-pipe emissions, roadways carry a host of other pollutants that flow directly to gutters from adjacent land uses, including trash and litter, pesticides and fertilizers, and bacteria from animal waste. These pollutants are carried by roadways into underground drainage systems that discharge directly to creeks, rivers, bays, and the ocean without any form of treatment. The Water Boards have imposed, via municipal stormwater permits, multi-billion dollar mandates on local agencies to reduce these pollutants in urban runoff to prevent ongoing impairment of state waterways.

Secondly, the primary solution to our urban runoff problems – treatment via green infrastructure – will also build resiliency to climate change and drought. Green infrastructure – currently categorized by the State as a “working land” – utilizes natural systems to capture, infiltrate, and treat stormwater runoff. Green infrastructure solutions include green streets and roofs, rain gardens and bioretention areas, as well as larger stormwater retention systems. These approaches simultaneously build climate change resiliency by managing flood risk through runoff reduction, build resiliency to drought via groundwater recharge, reduce urban heat island effects, lower building energy demands, improve coastal resiliency, and reduce energy needed to manage water.²

Specific Comments and Recommended Changes

Given the direct connections between air and water quality problems and solutions, BASMAA recommends the following revisions to the draft document:

1. Correct spelling of “Foreword”
2. Page 1, second paragraph: modify as follows:

California has long been a leader in protecting the environment. California is committed to:

- ~~Reducing~~ its greenhouse gas (GHG) emissions (40 and 80 percent below 1990 levels by 2030 and 2050, respectively); ~~and~~
- ~~Reducing~~ pollution impacting waterbodies
- Increasing resiliency to climate change
- Increasing resiliency to drought

At the same time, the State’s population is projected to grow to 50 million residents by 2050. As the State acts to achieve these emission, ~~and pollutant~~ reductions, build resiliency, ~~and~~ support future growth, California has the opportunity to realize critical

² US EPA, Green Infrastructure and Climate Change: Collaborating to Improve Community Resiliency, August 2016 (EPA 832-R-16-004)

BASMAA Comments on draft “Vibrant Communities and Landscapes: A Vision for California in 2050”

benefits in public health, [water quality](#), natural resource, economic, equity, and resiliency outcomes through thoughtful and comprehensive policy implementation. Realizing this potential requires an integrated vision for how the State develops communities, preserves and protects its landscapes, and ensures that all Californians have equitable access to housing, health care, jobs, [nature](#), and opportunity. This document provides a vision for this future that forms a common foundation for actions related to land use across State agencies and programs.

Under Vision:

- Development and conservation investments and decisions focus on building social equity and supporting thriving and healthy communities with improved access to and supply of affordable housing, [clean waterways and reliable, safe drinking water supplies](#), transportation alternatives, open space and outdoor recreational opportunities, affordable healthy foods, living-wage jobs, social support, and economic and educational opportunities;
- The land base, including natural, working, and developed areas, is a foundational element of the State’s strategy to meet GHG emission [and water quality pollutant](#) reduction targets. This importance is further recognized in other land, energy, [water](#), and climate change policy documents and decisions, including State, local, and regional planning and investments;
- Land is protected, managed, and developed in a manner that maximizes resilient carbon storage, food security, [water quality improvement](#), and other ecological, economic, and health objectives. Natural and working lands are used to build resilience in natural, built, and social systems, [protect waterways](#), and provide buffers against changing climate conditions that will allow for flexible adaptation pathways;
- New development and infrastructure are built primarily in locations with existing infrastructure, services, and amenities (i.e., previously-developed locations), rather than greenfield locations; and
- The value of ecosystem services conferred by natural systems ([including green infrastructure](#)) are accounted for and included in State, local, and regional planning and investment decisions, resulting in protection of these services and California’s globally significant biodiversity.

Under Actions:

State, local, and regional governments need to work together to achieve this shared vision and to encourage land use, [water quality](#), and transportation decisions that minimize GHG emissions, [protect the environment, and build resiliency to climate change and drought](#). While recognizing its focus on urban development and transportation, the State will build on framework and governance structure established by Senate Bill (SB) 375 to achieve deeper GHG emission reductions, [maximize the investments required for water quality protection to also provide for climate change and drought resiliency](#), and will integrate the protection, conservation, and management of natural and working lands.

BASMAA Comments on draft “Vibrant Communities and Landscapes: A Vision for California in 2050”

A number of current and emerging State planning, ~~and~~ policy, and regulatory efforts provide the opportunity to articulate and implement this vision, and provide State leadership through work with local and regional partners. These include the Climate Change Scoping Plan, the Regional Transportation Plan Guidelines, Stormwater Resource Plan Guidelines, municipal stormwater permits, the Sustainable Freight Action Plan, updated General Plan Guidelines, implementation of AB 2087 for regional conservation planning, the State Wildlife Action Plan, the Water Action Plan, and implementation of SB 743 guidelines and other updates to the California Environmental Quality Act.

The State will prioritize the following actions to support regional and local governments and to maximize GHG emission reductions and achieve water quality pollutant reduction through the conservation and protection of natural and working lands, integration of green infrastructure with climate change and transportation investments, reductions in vehicle miles traveled, and direct emission reductions associated with compact development patterns:

- **Develop performance metrics for environmental, health, and equity outcomes associated with stronger land use policies:** Working with local and regional governments, the State will develop systems to measure the environmental, health, and equity impacts of land use, infrastructure, and development policies and programs and will allow all levels of governments to maximize benefits, avoid harm, and measure and track the results. Furthermore, the State will continue to direct resources, infrastructure, services, jobs, training, and technical assistance to communities facing historical disadvantage to improve resource availability, access to services, and quality of life.
- **Establish land conservation targets:** The State will develop quantitative and achievable goals to protect and limit the conversion of the State’s most productive farmland, rangeland, and forests, as well as the natural and working lands most critical to preserving California’s biodiversity and the ability for Californians to adapt to climate impacts, alongside complementary policies to focus new development in currently developed areas, reduce conflicts among adjacent land uses, and minimize risks to existing land uses and public health and safety. The State will also prioritize increasing working lands in the form of green infrastructure by integrating planned water quality, climate change, and transportation investments.
- **Update regional greenhouse gas reduction targets to achieve 2030 and 2050 greenhouse gas emission reduction targets:** The State will work with local and regional governments to develop stronger GHG emission reduction targets for regional sustainable community strategies under SB 375 and identify opportunities to strengthen implementation success.
- **Develop policies and processes for infrastructure siting that are consistent with the State’s conservation, development, and population health goals:** The State will develop supportive policies and tools to help private and public sector partners, including local and regional agencies, to identify sites for infrastructure projects, including renewable energy projects and stormwater capture, retention, and

treatment, that are consistent with and support the State’s conservation, development, water quality, and climate change goals. The State will continue and strengthen policies that facilitate substantial increases in the proportion of investments in transit, active transportation, stormwater treatment, fix-it-first maintenance of existing infrastructure, and shared mobility infrastructure, as well as increasing and integrating natural and green infrastructure in developed areas, including tree planting, parklets, stormwater capture, retention, infiltration, and treatment via green infrastructure and other means, and other strategies.

- **Explore and develop financing, regulatory, and other tools to support more efficient and more equitable development:** The State will evaluate and develop financing mechanisms, incentives, guidelines, and other tools to substantially accelerate more efficient and equitable development outcomes. This includes: reducing barriers to housing development in infill areas; promoting infill development and necessary infrastructure in existing communities; reducing barriers to funding stormwater capture and treatment projects; and implementing strategies to ensure that long-time residents can stay in place as neighborhoods improve.
- **Explore and develop financing, regulatory, and other tools to promote land protection and carbon-oriented land management practices:** The State will examine, evaluate, and develop financial or regulatory compliance incentives to private landowners to promote both permanent and temporary conservation and management for carbon sequestration.
- **Explore and develop financing, regulatory, and other tools to support integrated implementation of green infrastructure with climate change and transportation investments to achieve water quality and resilience goals:** The State will examine, evaluate, and develop financial or regulatory compliance incentives to support local agencies meet state and federal mandates to achieve water quality goals that simultaneously build resilience to climate change impacts and drought.
- **Support transportation policies such as priced express lanes, reduced parking requirements for development, and transit commuter incentives that promote infill development and reduce vehicle miles traveled:** The State will implement road user and parking pricing policies and coordinate these policies with programs to avoid adverse impacts on low-income drivers and with infrastructure investments as described above. Further, the State will invest in technology to improve transportation system efficiency that provide choices that enable people and goods to reach destinations quickly and cleanly.

Benefits of the California 2050 Vision

Research, analysis, and implementation demonstrate the myriad benefits to the State’s residents, local and regional governments, and the economy that can result from an integrated approach to land use. These include, among others:

- **Tangible, short- and long-term benefits for disadvantaged communities:** Focusing on infill and compact development patterns and coordinated investments to

expand low-cost and low-carbon transportation options, and reduce air and water quality pollutants – encourages investment in existing and underserved communities, reduces household costs, helps alleviate pollution burdens in the highest-impacted communities, and increases access to economic opportunities.

- **Improved public health:** More compact development patterns, access to parks and green space, and abundant recreational options provide opportunities for active transportation and exercise. Increases in these activities help provide respiratory and cardiovascular health benefits and reduce the burden of chronic diseases such as diabetes, certain types of cancers, and dementia, while improving mental health. Integrating green infrastructure with active transportation investments will increase green space, manage stormwater runoff, and create safer and more appealing built environments. Furthermore, an integrated conservation and development strategy will contribute to significant air quality benefits, which improve respiratory and cardiovascular health.
- **Resilience to the impacts of climate change:** Protection of natural systems, expansion of transportation options, implementation of stormwater management via green infrastructure, and compact development patterns can reduce exposure to the risks of a changing climate, especially in disadvantaged communities. Protected and managed natural and working systems can mitigate impacts of floods, protect water quality and supply, enhance food security, and protect against other climate impacts. Compact development patterns and integrated transportation and green infrastructure reduce pressures on natural systems, reduce pollution to waterways, and also result in lower water and energy use, both of which contribute to greater resilience.
- **Maintenance of California’s global economic leadership:** California’s natural resources alongside its urban environments form the very fabric of what attracts businesses and residents to the State and fosters California’s leadership in the global economy. Taking an integrated approach to creating attractive living, working, and recreational environments will help the State to remain competitive.
- **Monetary savings for residents, businesses, and governments resulting from lower transportation and energy costs:** More compact development patterns save local municipalities – as well as the State - money by reducing the long-term costs of providing services and infrastructure to low density development. Multi-modal transportation choices enable the efficient movement of people and goods.
- **Promotion of urban-rural connectivity in all regions:** Recognizing the climate change benefits of functioning natural systems and sustainable working lands is necessary for making fully informed land use and resource management decisions, and can serve to drive investment and jobs to rural communities, support urban-rural cohesion, and bolster the economic value of rural lands.
- **Promotion of a sustainable balance between conservation and development across each ecoregion:** Full consideration of conservation and development goals across regions provides an opportunity to integrate economic and community

BASMAA Comments on draft “Vibrant Communities and Landscapes: A Vision for California in 2050”

development goals alongside the ecosystem service co-benefits of protecting and managing our natural and working lands and waters.

Thank you again for the opportunity to comment on the draft Vibrant Communities and Landscapes: A Vision for California in 2050”. If you have any questions, please contact Matt Fabry, BASMAA Director at 650-599-1419 / mfabry@smcgov.org or Geoff Brosseau, BASMAA Executive Director at 650-365-8620 / geoff@brosseau.us

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Dalziel". The signature is fluid and cursive, with the first name "Tom" being more prominent than the last name "Dalziel".

Tom Dalziel, Chair
Bay Area Stormwater Management Agencies Association

cc: BASMAA Board of Directors and BASMAA Development Committee

ATTACHMENT

C.3.j.iii. Participate in Processes to Promote Green Infrastructure

BASMAA comments to Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) on *Plan Bay Area 2040*



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 County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

June 1, 2017

Metropolitan Transportation Commission (MTC)
Association of Bay Area Governments (ABAG)

Subject: Comments on Draft Plan Bay Area 2040

MTC-ABAG:

On behalf of the Bay Area Stormwater Management Agencies Association (BASMAA), thank you for the opportunity to provide comments on Draft Plan Bay Area 2040. BASMAA is a 501(c)(3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area representing 100 agencies, including 85 cities and towns, 8 counties, and 7 special districts. BASMAA focuses on regional challenges and opportunities to improve the quality of stormwater flowing to our local creeks, the Delta, San Francisco Bay, and the Pacific Ocean.

We are focusing our comments on the Resilience portion of the Action Plan.

New Resilience Action

First and foremost we recommend that Plan Bay Area 2040 include a wholly new Resilience Action:

Shift the focus on Complete Streets to Sustainable Streets: Move communities from the current focus on Complete Streets that address active transportation issues to Sustainable Streets that also incorporate green infrastructure for stormwater management – thereby reducing runoff from urbanized areas, mitigating flooding, improving water quality, recharging groundwater, reducing urban heat island impacts, improving aesthetics, reducing greenhouse gas emissions, and mitigating the effects of climate change.

Partners: BARC, MTC/ABAG, RWQCB, Caltrans, local jurisdictions
Timeline: 1- 4 Years

The new Resilience Action would take advantage of the many natural linkages between stormwater quality management, transportation planning, greenhouse gas reductions, and climate change mitigation strategies. It would also build on the ABAG / San Francisco Estuary Partnership *Urban Greening Bay Area* project (<http://www.sfestuary.org/our-projects/water-quality-improvement/greenplanning/>). *Urban Greening Bay Area* includes a Regional Roundtable series of working meetings where local, regional, state, and federal agencies, elected / appointed officials, and private sector and non-profit partners are developing policy solutions to integrate transportation, climate, and water quality investments.

Other Comments

Significant green infrastructure implementation is required by the Regional Water Quality Control Board throughout much of the Bay Area to achieve long-term water quality improvement in San Francisco Bay, and these projects will directly benefit climate change adaptation efforts. The Resilience Action Plan should build on and coordinate with those efforts.

Bay Area

Stormwater Management

Agencies Association

P.O. Box 2385

Menlo Park, CA 94026

510.622.2326

info@basmaa.org

BASMAA recommends the Resilience Action Plan define resilience to include management of stormwater runoff to address flooding and water quality concerns. The Action Plan should specifically reference stormwater management and green infrastructure implementation. Municipalities are doing significant work on stormwater planning and management, including developing countywide stormwater resource plans and local green infrastructure plans that will help with flood control, groundwater recharge, and water quality improvement.

The Resilience Action Plan should consider inclusion of the Regional Water Quality Control Board as a partner along with local agencies and stormwater and flood control agencies and associations.

The Resilience Action Plan should also recognize, coordinate with, and build on the Comprehensive Conservation and Management Plan for San Francisco Bay (the Estuary Blueprint) and include the San Francisco Estuary Partnership as a partner. In addition:

1) Under "Develop a regional governance strategy for climate adaptation projects," change language to not be specific to sea level rise, but keep more broad as climate change adaptation. Climate change impacts may be experienced sooner in the context of more intense precipitation events, so regional governance is also applicable to addressing managing climate change-induced flooding that may not be directly related to sea level rise. Heat island issues are another example. Adaptation overall in the Bay Area requires a regional governance strategy.

2) Under "Expand the region's network of natural infrastructure," revise to include language specific to improving water quality, recharging groundwater, and reducing urban heat islands. Leverage existing initiatives should also include countywide stormwater resource and green infrastructure planning.

3) Under "Establish the Regional Advance Mitigation Program," this should include improving water quality in addition to regional biological conservation priorities. Infrastructure projects will require stormwater management actions, and advance mitigation programs should work with local agencies to identify locations for green infrastructure implementation to mitigate water quality impacts of infrastructure projects.

Thank you again for the opportunity to comment. If you have any questions, please contact me at 650-599-1419 or our Executive Director, Geoff Brosseau at 650-365-8620.

Sincerely,



Matt Fabry, Chair
Bay Area Stormwater Management Agencies Association

cc: Bruce Wolfe, Executive Officer, San Francisco Bay Regional Water Board
Tom Mumley, Assistant Executive Officer, San Francisco Bay Regional Water Board
Keith Lichten, Watershed Management, San Francisco Bay Regional Water Board
BASMAA Board of Directors

ATTACHMENT

C.3.j.iii. Participate in Processes to Promote Green Infrastructure

BASMAA comments to California Natural Resources Agency on
Safeguarding California Plan: 2017 Update – California's Climate Adaptation Strategy



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 County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

Bay Area

Stormwater Management

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June 23, 2017

California Natural Resources Agency

Subject: Comments on Draft *Safeguarding California Plan: 2017 Update – California’s Climate Adaptation Strategy*

California Natural Resources Agency:

On behalf of the Bay Area Stormwater Management Agencies Association (BASMAA), thank you for the opportunity to provide comments on the Draft *Safeguarding California Plan: 2017 Update* (Update). BASMAA is a 501(c)(3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area representing 100 agencies, including 85 cities and towns, 8 counties, and 7 special districts. BASMAA focuses on regional challenges and opportunities to improve the quality of stormwater flowing to our local creeks, the Delta, San Francisco Bay, and the Pacific Ocean.

Stormwater agencies throughout California are increasingly mandated by the State and Regional Water Boards to develop and implement stormwater management plans to achieve long-term water quality goals. This will require significant investment in green infrastructure and other approaches to capture, treat, and infiltrate stormwater runoff. We believe this work will play a significant role in supporting climate change resilience and should be appropriately addressed in the Update. As such, we appreciate the inclusion of Recommendation W-8, “Utilize low-impact development and other methods in state and regional storm water permits to restore the natural hydrograph.” However, **we have some specific suggestions on how Recommendation W-8 could be improved.**

First of all, stormwater management and efforts to support implementation of green infrastructure solutions are being supported by more state agencies than just the State and Regional Water Boards. For example, the Department of Water Resources administers the Integrated Regional Water Management program and associated bond funds. Similarly, the Strategic Growth Council and State Coastal Conservancy have been on the forefront of efforts to integrate green infrastructure with other state priorities. **We recommend this section be revised to address programs and efforts that are already or will be implemented by all relevant state agencies,** not just the State and Regional Water Boards.

Secondly, we **recommend the Update make a strong connection between the Transportation and Water sectors in regard to stormwater management.**

Currently, the Transportation recommendations seem focused on impacts to transportation infrastructure as a result of climate change and not on the role transportation infrastructure plays in both causing and adapting to climate change impacts related to stormwater runoff, flooding, and increased temperature.

Transportation infrastructure makes up a significant amount of the impervious surfaces in urbanized areas, with streets and parking lots often constituting 25-50% of urbanized land areas. As such, transportation infrastructure is a major contributor

to stormwater runoff and associated pollutants, as well as to urban heat islands. This will become a bigger issue with climate change as runoff may increase under more intense storms and heat islands get worse with increasing temperatures.

Transportation systems serve as the primary surface conveyance system for stormwater runoff and therefore represent a key opportunity to capture and manage stormwater before it enters underground drainage systems or receiving water bodies. Incorporating green stormwater infrastructure in roadways – such as through stormwater curb extensions, sidewalk infiltration planters, street trees, and rain gardens that capture, infiltrate, and treat runoff – creates “Green Streets” that improve water quality, reduce urban flooding, recharge groundwater, mitigate urban heat islands, and enhance the bicycle and pedestrian environment.

There is an existing statewide priority to implement “Complete Streets” to better accommodate bicycles, pedestrians, and transit and reduce greenhouse gas emissions by reducing vehicle miles traveled. Combining Green Streets and Complete Streets creates “Sustainable Streets” that are truly multi-benefit and essential to climate change resiliency in urbanized areas. As such, **BASMAA recommends revising Transportation Recommendation T-4 to include a new “Next Step” that specifically supports implementation of Sustainable Streets** as part of the State’s Active Transportation Program and other relevant programs, such as the Natural Resources Agency’s recent Urban Greening program. **We also recommend a partner recommendation in the Water section under Recommendation W-8**, with appropriate connections between the two to highlight the inter-related nature of these two sectors.

Similarly, **BASMAA recommends that the Plan recognize as an Ongoing Action in both the Water and Transportation sections** the Association of Bay Area Governments (ABAG) / San Francisco Estuary Partnership *Urban Greening Bay Area* project (<http://www.sfestuary.org/our-projects/water-quality-improvement/greenplanning/>). *Urban Greening Bay Area* includes a Regional Roundtable series of working meetings where local, regional, state, and federal agencies, elected / appointed officials, and private sector and non-profit partners are developing policy solutions to integrate transportation, climate, and water quality investments.

BASMAA also recommends the following changes to the Changing Climate Conditions Metrics section of Appendix B:

- Include metrics regarding increased urban flooding incidences caused by increased stormwater runoff volume and/or intensity
- Include a metric related to disaster funds distributed to local agencies for flood-related impacts due to increased stormwater runoff volume and/or intensity

BASMAA recommends the following changes to the Resilience Outcomes Metrics Appendix:

- Add a metric related to acreage of impervious area managed by downstream green infrastructure or volume of stormwater managed by green infrastructure – over time, municipalities will be managing more and more runoff to achieve water quality goals that should also be tracked in regard to climate resilience
- Incorporate Green Infrastructure Plans, Stormwater Resource Plans, and Watershed Management Plans in metrics related to planning documents addressing climate resiliency issues
- Change metric related to “Complete Streets features” built into transportation infrastructure projects to “Sustainable Streets features,” recognizing the importance and need to incorporate green infrastructure in these improvements to provide enhanced climate change resilience.

Thank you again for the opportunity to comment. If you have any questions, please contact me at 650-599-1419 or our Executive Director, Geoff Brosseau at 650-365-8620.

Sincerely,

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

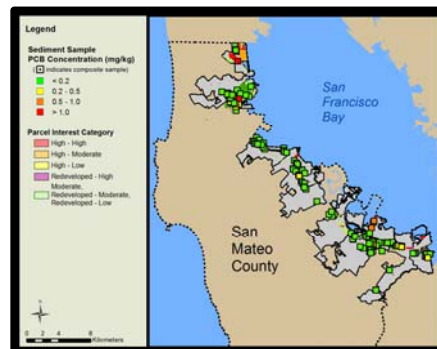
Matt Fabry, Chair
Bay Area Stormwater Management Agencies Association

cc: Bruce Wolfe, Executive Officer, San Francisco Bay Regional Water Board
Tom Mumley, Assistant Executive Officer, San Francisco Bay Regional Water Board
Keith Lichten, Watershed Management, San Francisco Bay Regional Water Board
Julie Alvis, Deputy Assistant Secretary, California Natural Resources Agency representative to
Urban Greening Bay Area, Sustainable Streets Roundtable
BASMAA Board of Directors

Appendix 12

- Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff, SMCWPPP, September 30, 2017

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff



September 30, 2017

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Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

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

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 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 region-wide for PCBs). 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);
- 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.

In compliance with Provisions C.11 and C.12, the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) is assisting San Mateo County local agencies to identify control measures for PCBs and mercury that reduce discharges from their MS4s. The following sections provide further details about the permit requirements and how SMCWPPP is providing this assistance to San Mateo County municipalities.

1.1. 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. Permittees were also required to provide the monitoring data and other

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

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.

Per MRP requirements, SMCWPPP submitted an initial report dated April 1, 2016 detailing progress made towards meeting the above reporting requirements (SMCWPPP 2016a). SMCWPPP then submitted further information with its FY 2015/16 Annual Report (SMCWPPP 2016b). In subsequent Annual Reports, Permittees are required to provide updates to the initial information presented with the FY 2015/16 Annual Report.

Permittees are also required to demonstrate achievement of PCBs load reductions during the term of the Permit. Beginning with the FY 2016/17 Annual Report (which this report is part of), Permittees are required to quantify PCBs load reductions and ancillary load reduction benefits for mercury. 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 that updates the load reduction accounting system outlined in the MRP 2.0 factsheet. Permittees are required to use the assessment methodology to quantify in a technically sound manner PCBs and mercury loads reduced through implementation of pollution prevention, source control, and treatment control measures, including source control, stormwater treatment, GI, and other measures. Beginning with their FY 2016/17 Annual Report, Permittees must report on the use of the methodology to demonstrate progress toward achieving the PCBs and mercury load reductions required this permit term. SMCWPPP participated in a Bay Area Stormwater Management Agencies Association (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 development later in this permit term of a Reasonable Assurance Analysis (RAA).

1.2. Overall Approach in FY 2016/17

This plan documents SMCWPPP's approach and progress to-date in assisting San Mateo County local agencies to reduce discharges of PCBs and mercury from their MS4s to the Bay, in compliance with Provisions C.11 and C.12. In this plan, SMCWPPP is tracking all existing and already planned control measures that should result in pollutant load reduction credits towards meeting the San Mateo County

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portion of the PCBs and mercury TMDL wasteload allocations. 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 date was selected because load reductions due to controls fully implemented prior to 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 or the period immediately preceding the permit term. In addition to credit towards TMDL goals, such controls should result in credit towards the MRP 2.0 requirement that a 370 grams/year PCBs load reduction is achieved in San Mateo County by the end of the MRP 2.0 permit term (of this, a 60 grams/year reduction must be achieved by June 2018). Based on language in the permit 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. In addition, MRP 2.0 requires that at least 15 grams/year of the 370 grams/year PCBs load reduction is achieved via GI by the end of the permit term. The permit also requires a 6 grams/year mercury load reduction via GI by the end of the permit term.

This plan provides an update to the information that was submitted with the FY 2015/16 Annual Report in September 2016 (SMCWPPP 2016b). It also reports on preliminary PCBs and mercury load reductions achieved this permit term that have been quantified to-date. The information contained within this plan will continue to be updated periodically during MRP 2.0 as new information becomes available about control measures and associated pollutant load reductions.

SMCWPPP's major FY 2016/17 efforts related to PCBs and mercury load reduction include the following:

- Continued updating and prioritizing the list of WMAs previously developed (SMCWPPP 2016b) using desktop and field investigative methods generally consistent with other Bay Area stormwater management program efforts, as coordinated through BASMAA.
- Continued working with San Mateo County MRP Permittees to update the database of existing and planned public and private GI and stormwater treatment projects in San Mateo County, including Low Impact Development (LID) measures at redevelopment sites. The database includes existing GI and treatment facilities constructed in 2005 or later and all known planned facilities.
- Summarized the preliminary PCBs and mercury load reductions achieved this permit term that have been quantified to-date.
- As part of the WMA updating and prioritizing process, 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 such as old industrial, electrical and recycling. 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 (2017b, DRAFT) provides further details. The full results of this WY2017 Pollutants of Concern (POC) monitoring program will be reported with the Urban Creeks Monitoring Report which is due in March 2018.

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- Collected 68 sediment samples as part of the program to attempt to identify source properties within WMAs, potentially for referral to the Regional Water Board for further investigation and abatement. These samples were collected in the public right-of-way (ROW), including locations adjacent to high interest parcels with land uses associated with PCBs such as old industrial, electrical and recycling and/or other characteristics potentially associated with pollutant discharge (e.g., poor housekeeping, unpaved areas, on-site tanks or drums). 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 (2017b, DRAFT) provides further details. The full results of this WY2017 POC monitoring program will be reported with the Urban Creeks Monitoring Report which is due in March 2018.
- Continued evaluating opportunities to take credit for PCBs and/or mercury loads avoided due to contaminated site cleanups 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.
- Continued working with San Mateo County Permittees to evaluate new or enhanced municipal operation and maintenance (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 following sections provide pertinent background information, a summary of the types of control measures currently used to control PCBs and mercury discharges in San Mateo County stormwater runoff, documentation of existing and planned control measures for each Permittee, and preliminary estimates of the PCBs and mercury loads reduced during the MRP 2.0 term that have been quantified to-date, calculated using the interim accounting methodology described above.

2.0 BACKGROUND

In 2015, SMCWPPP and San Mateo County MRP Permittees developed a general process for identifying areas of interest and opportunity for PCBs and mercury controls. The process is generally consistent with a framework developed by BASMAA agencies in consultation with Regional Water Board staff. As a first step, SMCWPPP conducted a screening process that covered all land areas in San Mateo County that drain to the Bay. 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, railroad, 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, 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 result of the prioritization was a list of 1,579 “high interest parcels” (SMCWPPP 2016a and b).

SMCWPPP then implemented a process to identify Watershed Management Areas (WMAs) and prioritize them based on the potential cost-effectiveness of implementing controls within each WMA. WMAs are all catchments with high interest parcels and/or existing or planned pollutant controls (e.g., GI implemented per Provision C.3 requirements or retrofitted into the public ROW). Additional pollutant controls may be implemented in WMAs during the MRP 2.0 permit term, to the extent that feasible and cost-effective controls can be identified. The process identified 110 catchments with high densities of high interest parcels (and generally with existing pollutant controls), and an additional 26 catchments with pollutant controls only, for a total of 136 WMAs.

Stormwater runoff hydrologic catchments were generally chosen as the initial geographical scale at which WMAs were identified. This scale is consistent with the intention of MRP 2.0 Provision C.11/12.a.ii and allows Permittees to more easily track control measure implementation. WMAs are generally urban catchments that drain to 24-inch or larger diameter outfalls, which were originally delineated as part of SMCWPPP’s program to help local agencies develop trash controls in San Mateo County (SMCWPPP 2014).¹

Identifying areas of interest and opportunity for PCBs and mercury controls and the selection and classification of WMAs is a multi-year process designed to identify the land areas in San Mateo County that contribute relatively higher loads of PCBs and mercury to MS4s that should be the focus for control measure implementation. Consistent with the permit requirements, the selection of WMAs and controls has primarily focused on PCBs, with assumed ancillary/secondary benefits for controlling mercury.

¹ The WMA numbering system retains the simple numerical designations (ranging from 0 to 408) used for hydrologic catchments during the 2014 delineation. For this project, 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 are not necessarily hydrologic catchments, but are instead a combination of areas that drain to outfalls less than 24-inches or directly to natural waterways or the Bay, or private drainages. Finally, to facilitate pollutant reduction planning and accounting, additional WMAs were delineated that encompass remaining areas that lack parcels of interest but include pollutant controls (mainly GI/redevelopment in old urban areas). These WMAs are not hydrologic catchments and were delineated for each San Mateo County 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).

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Beginning in the year 2000, SMCWPPP has also conducted an ongoing POC monitoring program to prioritize WMAs and to attempt to identify properties that are sources of pollutants. The POC monitoring helps to prioritize WMAs by identifying which WMAs have source areas and potentially provide the greatest opportunities for implementing controls to reduce loads of POCs in urban stormwater runoff. In recent years, WMAs have been identified and prioritized for sampling by evaluating several types of data, including: PCBs and mercury concentrations from earlier sediment and water sampling efforts, land use data, municipal storm drain data showing pipelines and access points (e.g., manholes, outfalls, pump stations), catchment areas delineated from municipal storm drain data, and logistical/safety consideration. SMCWPPP (2016a and b and 2017b, DRAFT) discuss the results of SMCWPPP's POC monitoring program in more detail. The results of SMCWPPP's most recent POC monitoring (WY2017²), which included collecting stormwater runoff and sediment samples and analyzing for PCBs and mercury, will be reported with the Urban Creeks Monitoring Report which is due in March 2018.

² Monitoring is conducted on a Water Year (WY) basis, with each WY beginning on October 1 and concluding on September 30 of the named year. For example, WY2017 began October 1, 2016 and concluded September 30, 2017.

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 are those that disproportionately contribute pollutants to MS4s. Identification and subsequent abatement of these properties and/or focused control measure implementation in the public ROW around source properties to reduce pollutant release can provide an

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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.

SMCWPPP Permittees have and continue to implement a program to attempt to identify source properties in priority WMAs (as described in Sections 1.0 and 2.0). 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.

SMCWPPP Permittees have been conducting source property investigations for a number of years and may continue with these efforts in the future. SMCWPPP and San Mateo County Permittees anticipate referring a minimum of three properties to the Regional Water Board during FY 2017/18 and documenting the associated load reductions. These efforts are described in more detail in Section 4.0.

Review of Contaminated Site Cleanups

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 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 has reviewed the latest versions of the Regional Water Board

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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;
- Documentation of any follow-up needed at the site;

3.2. Green Infrastructure (GI) and Treatment Control Measures

Green Infrastructure

In addition to source property abatement, the installations of GI facilities on private property or public lands has and will continue to provide significant benefits to stormwater quality and PCBs and mercury loads over time in San Mateo County. 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 LID measures at redevelopment sites (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.

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The types of information in the database of existing and planned public and private GI and stormwater treatment projects in San Mateo County includes 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 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 FY 2016/17, 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 fulfills the requirement in MRP Provision C.3.j.iv to report on progress on development and implementation of methods to track and report implementation of GI.

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, large public trash full capture systems have not been installed in urban areas of San Mateo County that drain to the Bay. If these systems are installed in the future, the project information and subsequent loads reduced will be reported in future reports.

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

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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 SMCWPPP 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. 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 SMCWPPP 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 SMCWPPP 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 SMCWPPP 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 SMCWPPP 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

SMCWPPP 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 SMCWPPP 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 between 1950 and 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 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 ppm or greater in applicable structures at the time such structures undergo demolition so that PCBs do not enter municipal storm drain systems. Applicable structures include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt.

SMCWPPP Permittees are currently participating in a BASMAA regional project that is developing guidance materials, tools, protocols and training materials and conducting outreach. The goal is to assist Permittees to develop local programs to prevent PCBs from being discharged to municipal storm drains due to demolition of applicable buildings. Local agencies will need to tailor the BASMAA products for local use and train local staff to implement the new programs by July 1, 2019. The MRP stipulates a collective PCBs load reduction credit of 246.67 grams/year for San Mateo County Permittees, if all Permittees implement a program consistent with the permit requirements.

3.5. Managing PCBs in Storm Drain or Roadway Infrastructure

Recent 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 is currently conducting a regional project to address this permit requirement on behalf of all Permittees. The need for future enhanced controls to manage PCBs in storm drain and roadway infrastructure will be evaluated based on the results of the BASMAA project.

3.6. Diversions of Urban Runoff to Wastewater Treatment Facilities

The diversion of urban runoff (i.e., dry weather or stormwater) to wastewater treatment facilities can reduce PCBs and mercury loads in stormwater to the Bay. A temporary diversion of urban runoff to wastewater treatment facilities was conducted in the City of San Carlos as part of a pilot project during MRP 1.0. Although additional diversions are not currently planned, should any diversions be implemented the associated pollutant load reductions will be documented.

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

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MS4s. If enhancements are made by SMCWPPP 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 member agencies promote the availability of the HHW Program and VSQG Program on their agency websites. The estimated mass of mercury collected in FY 2016/17 via these programs is presented in Section 5.0.

4.0 EXISTING AND PLANNED CONTROL MEASURES

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 are preliminary and may not include all existing or planned control measures. The inventory will continue to be updated and refined as additional information is identified and compiled and as new or enhanced actions are implemented.

4.1. Town of Atherton

Watershed Management Areas

Table 4.1 lists the one WMA 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
ATH	--	2,315	0%	95%	5%	0%	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			
ATH		E		P		E	E			E

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Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Atherton to-date.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.3). 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 moving forward with designing a new GI facility in Holbrook-Palmer Park to help reduce existing flooding issues in the lower reaches of Atherton Creek and reduce pollutant loads. The project concept consists of an offline subsurface infiltration chamber that treats a large (estimated at 2,875 acres) multi-jurisdictional area including old urban land uses and encompassing parts of the Towns of Atherton and Woodside, the City of Menlo Park, and Unincorporated San Mateo County. The California Department of Transportation (Caltrans) has offered Atherton a \$13.6 million grant to design and build this stormwater runoff capture facility. Once the design is done, Atherton has the option of not moving forward with construction if it appears that the costs of maintaining the facility – which Atherton would be responsible for – are too high. If the design of the project is approved, construction is estimated to start late in 2018 and be completed in 2020.

Table 4.3 Land area in the Atherton WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Atherton or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

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4.2. City of Belmont

Watershed Management Areas

Table 4.4 lists the four 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
60	City of San Mateo	298	2%	85%	1%	13%	0%
77	San Mateo County	86	5%	89%	0%	6%	0%
1011	Redwood City & San Carlos	507	12%	50%	10%	20%	8%
BEL		2,511	0%	74%	24%	2%	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			
1011	E	E		P		E	E			E
60	E	P		P		E	E			E
77				P		E	E			E
BEL		E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Belmont to-date in WMAs 1011 and 60. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 **12.5 acres** of land, of which **7 acres** is comprised of old urban land use. Of this total, **0.32 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.6). An additional **8.48 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Belmont is also planning to construct regional 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, 2017.^{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	BEL	0.32	0	0.32	0	0	0
	Total	0.32	0	0.32	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 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 three WMAs identified to-date in the City of Brisbane, and their total land areas and associated land uses.

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Table 4.7. Brisbane WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
17		1,639	3%	29%	68%	0%	0%
1004		804	70%	11%	19%	0%	0%
BRI		245	0%	17%	57%	25%	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			
17	E	E		P		E	E			E
1004	E			P		E	E			E
BRI				P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Brisbane to-date in WMAs 17 and 1004. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 **9.01 acres** of land which is comprised of old industrial land use. All of this GI was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.6). 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.

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Table 4.9 Land area in the Brisbane WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	17	9.01	9.01	0	0	0	0
	Total	9.01	9.01	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

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) 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 10 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
16		24	31%	0%	69%	0%	0%
85		121	10%	89%	0%	0%	0%
138		15	30%	50%	20%	0%	0%
139		63	3%	97%	0%	0%	0%
141		62	7%	93%	0%	0%	0%
142		20	44%	56%	0%	0%	0%
149	City of San Mateo	480	1%	98%	1%	0%	0%
164		241	33%	67%	0%	0%	0%
1006		313	16%	68%	5%	11%	0%
BUR		1,827	0%	95%	4%	1%	0%

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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			
16	E	P		P		E	E			E
85	E			P		E	E			E
138				P		E	E			E
139		P		P		E	E			E
141	E	E		P		E	E			E
142	E	E		P		E	E			E
149	E	P		P		E	E			E
164	E	E		P		E	E			E
1006	E	E/P		P		E	E			E
BUR	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Burlingame to-date in the eight WMAs shown in Table 4.11. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Burlingame treat **15.19 acres** of land which is comprised of **6.8 acres** of old industrial and **8.39 acres** of old urban land uses. Of this, **8.25 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.12). An additional **39 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Burlingame has one existing green street project on public lands and ROWs that was constructed in 2011 and treats **1.32 acres** of old urban land use. This “Sustainable Streets and Parking Lot Demonstration” project on Donnelly Avenue includes a curb extension and a rain garden. The City is also currently planning three additional green street projects that will also treat old urban land uses. These projects will include curb

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extensions and bioretention areas. Additional information will be documented when it becomes available. 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, 2017.^{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	164	3.62	3.62	0	0	0	0
	1006	2.79	0	2.79	0	0	0
	BUR	1.84	0	1.84	0	0	0
	Total	8.25	3.62	4.63	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 two 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
329	Daly City	806	1%	91%	8%	0%	0%
COL		1,139	0%	15%	84%	0%	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.

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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			
329		E		P		E	E			E
COL	E	E/P		P		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). Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Colma treat **19.19 acres** of land which includes **13.33 acres** of old urban land uses. Of this, **5.17 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.15). An additional **16.18 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Colma also has one existing regional green street project on public lands or ROWs that was constructed in 2015 and treats **0.93 acres** of old urban land use. 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.

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Table 4.15 Land area in Colma WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	COL	5.17	0	0	0	5.17	0
	Total	5.17	0	0	0	5.17	0
Green Streets or Regional Retrofit	COL	0.93	0	0	0	0.93	0
	Total	0.93	0	0	0	0.93	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 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 four 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
181	Unincorporated SM County	75	16%	64%	20%	0%	0%
329	Colma	806	1%	91%	8%	0%	0%
350		317	5%	60%	35%	0%	0%
DCY		1,096	1%	85%	14%	0%	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.

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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			
181		E/P		P		E	E			E
329		E/P		P		E	E			E
350		P		P		E	E			E
DCY		E/P		P		E	E			E

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the City of Daly City to-date.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 **102.17** acres of land, all of which is comprised of old urban land use. All of this GI was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.18). An additional **120 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.

Table 4.18 Land area in the Daly City WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	329	100.57	0	100.57	0	0	0
	DCY	2.17	0	2.17	0	0	0
	Total	102.17	0	102.17	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.

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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 six 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
67		95	12%	75%	13%	0%	0%
68		317	0%	96%	4%	0%	0%
70		490	3%	94%	3%	0%	0%
72		26	44%	47%	9%	0%	0%
1015		52	93%	7%	1%	0%	0%
EPA		274	1%	79%	19%	0%	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.

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		P		E	E			E
67	E	E/P		P		E	E			E
68		E		P		E	E			E
70	E	E/P		P		E	E			E
72	E	P		P		E	E			E
EPA	E	E		P		E	E			E

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Source Property Investigation

Source property investigative work has been conducted in the City of East Palo Alto to-date in the five WMAs shown in Table 4.11. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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, **17.2 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (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. The City also has six green street projects on public lands and/or in public ROW that are either under construction or in the planning stages. Additional information will be documented when it becomes available. 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 4.21 Land area in East Palo Alto WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	67	1.20	1.20	0	0	0	0
	68	1.77	0	1.77	0	0	0
	70	8.91	4.98	0.98	0	2.95	0
	1015	2.70	2.70	0	0	0	0
	EPA	2.62	0	0.62	0	2.00	0
	Total	17.20	8.88	3.37	0	4.95	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 East Palo Alto or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

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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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
1010		273	3%	36%	11%	50%	0%
FCY		2,065	0%	60%	8%	31%	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		P		E	E			E
FCY		E/P		P		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

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 **32.85 acres** of land, of which **16 acres** is comprised of old urban land use. Of

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this total, **23.61 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.24). An additional **45.63 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.

Table 4.24 Land area in Foster City WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	1010	14.29	0	0	14.29	0	0
	FCY	9.32	0	7.11	1.69	0.52	0
	Total	23.61	0	7.11	15.98	0.52	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 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
HIL		3,974	0%	84%	15%	0%	0%

Existing and Planned Control Measures

PCBs and mercury control measures currently in place or planned for future implementation are described in this section. A preliminary list of control measures for Hillsborough are listed in Table 4.26.

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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		P		E	E			E

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Hillsborough to-date.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 **0.16 acres** of land, all of which is comprised of old urban land use. All of this GI was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.27). An additional **0.02 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.

Table 4.27 Land area in Hillsborough WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	HIL	0.16	0	0.16	0	0	0
	Total	0.16	0	0.16	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.

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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 11 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
66		64	30%	36%	1%	34%	0%
71	East Palo Alto/ Unincorporated SM County	1,394	2%	92%	2%	4%	0%
238		345	24%	74%	1%	0%	0%
239	Redwood City	36	29%	71%	0%	0%	0%
247	Unincorporated SM County	239	9%	91%	1%	0%	0%
252		108	5%	94%	1%	0%	0%
332	Redwood City	17	5%	95%	0%	0%	0%
378		138	3%	97%	0%	0%	0%
1012		54	84%	16%	0%	0%	0%
1014	Redwood City	176	11%	89%	0%	0%	0%
MPK		2,487	1%	84%	14%	1%	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.

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

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	P		P		E	E			E
1014	E	E/P		P		E	E			E
238	E	E/P		P		E	E			E
239	E	P		P		E	E			E
247		E/P		P		E	E			E
252		E/P		P		E	E			E
66	E	E/P		P		E	E			E
71	E	E/P		P		E	E			E
332	E			P		E	E			E
378				P		E	E			E
MPK	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Menlo Park to-date in the eight WMAs shown in Table 4.29. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 **145 acres** of land, of which **33 acres** is comprised of old industrial and **55 acres** is comprised of old urban land use. Of this total, **32.84 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.30). An additional **70 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.

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Table 4.30 Land area in Menlo Park WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	66	3.76	3.76	0	0	0	0
	71	1.60	0	1.60	0	0	0
	238	13.20	13.20	0	0	0	0
	247	5.87	0	5.87	0	0	0
	252	1.55	1.55	0	0	0	0
	1014	2.83	0	2.83	0	0	0
	MPK	4.03	0	4.03	0	0	0
	Total	32.84	18.51	14.33	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 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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
395		480	2%	94%	5%	0%	0%
401		52	13%	85%	2%	0%	0%
1005	San Bruno	791	7%	65%	27%	0%	1%
MIL		1,309	0%	85%	13%	0%	2%

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

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			
395				P		E	E			E
401				P		E	E			E
1005	E	E		P		E	E			E
MIL		E		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Millbrae to-date in WMA 1005 (Table 4.11). Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17). Additional new or redevelopment projects are not currently under construction or planned. 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.

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	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
PVY		5,790	0%	51%	36%	14%	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				P		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

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 Portola Valley, 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.

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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 4.35 lists the 24 WMAs identified to-date in the City of Redwood City, and their total land areas and associated land uses.

Table 4.35. Redwood City WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
253	Unincorporated SM County	280	6%	93%	1%	0%	0%
254		39	11%	83%	6%	1%	0%
261	Atherton	1,679	0%	99%	1%	0%	0%
266	Unincorporated San Mateo County	91	4%	92%	0%	4%	0%
267		75	21%	54%	2%	23%	0%
269		45	9%	0%	16%	74%	0%
323		185	1%	99%	0%	0%	0%
324		44	2%	98%	0%	0%	0%
325		21	5%	95%	0%	0%	0%
327		126	5%	94%	1%	0%	0%
333		15	29%	18%	0%	53%	0%
334		19	18%	33%	10%	39%	0%
335		24	0%	96%	4%	0%	0%
336		66	7%	93%	1%	0%	0%
337		138	11%	89%	0%	0%	0%
379	Unincorporated SM County	802	14%	85%	1%	0%	0%
388		42	1%	99%	0%	0%	0%
405		22	100%	0%	0%	0%	0%
407		18	53%	20%	9%	19%	0%
1000		148	75%	4%	9%	12%	0%
1011	Belmont/San Carlos	507	12%	50%	10%	20%	8%
1013		40	9%	76%	14%	0%	0%
1014	Menlo Park	176	11%	89%	0%	0%	0%
RCY		6,030	0%	64%	15%	21%	0%

Existing and Planned Control Measures Summary

Table 4.36 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Redwood City.

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Table 4.36. 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			
253	E	E		P		E	E			E
254	E	E		P		E	E			E
261		E/P		P		E	E			E
266		E		P		E	E			E
267	E			P		E	E			E
269				P		E	E			E
323	E			P		E	E			E
324	E	E/P		P		E	E			E
325		P		P		E	E			E
327	E	E/P		P		E	E			E
333	E			P		E	E			E
334				P		E	E			E
335				P		E	E			E
336		E/P		P		E	E			E
337	E	E/P		P		E	E			E
379	E	E/P		P		E	E			E
388	E	E		P		E	E			E
405				P		E	E			E
407	E			P		E	E			E
1000	E	E		P		E	E			E
1011	E	E		P		E	E			E
1013				P		E	E			E
1014	E	E		P		E	E			E
RCY	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Redwood City to-date in the 15 WMAs shown in Table 4.36. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline

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year) in Redwood City treat **164 acres** of land, of which **16 acres** is comprised of old industrial and **79 acres** is comprised of old urban land use. Of this total, **58 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17)(Table 4.37). An additional **49 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 three existing regional green street project on public lands and ROWs, one that was constructed in 2008 and treats **3.55 acres**, and two that were constructed in 2014 and treat **2.4 acres** of old industrial and old urban land use (Table 4.37). These projects include bioretention facilities and vegetated swales. The City is also planning to construct seven additional regional green streets on public lands or ROWs that will treat 10.4 acres of land. These include two green street projects recently awarded funding via a Proposition 1 stormwater implementation grant 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 that SMCWPPP recently developed 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.

Table 4.37 Land area in Redwood City WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	253	0.45	0	0	0	0	0
	254	3.91	3.91	0	0	0	0
	261	4.19	0	4.19	0	0	0
	266	10.77	4.65	6.12	0	0	0
	324	2.24	0	2.24	0	0	0
	327	4.46	0	4.46	0	0	0
	336	5.88	0	5.88	0	0	0
	379	5.10	5.10	0	0	0	0
	388	1.19	1.19	0	0	0	0
	1014	1.09	0	1.09	0	0	0
	RCY	18.75	0	3.01	15.74	0	0
Total	58.03	14.85	27.44	15.74	0	0	
Green Streets or Regional Retrofit	1000	1.66	1.66	0	0	0	0
	RCY	0.74	0	0	0.74	0	0
	Total	2.40	1.66	0	0.74	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.

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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 Redwood City or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.14. City of San Bruno

Watershed Management Areas

Table 4.38 lists the five WMAs identified to-date in the City of San Bruno, and their total land areas and associated land uses.

Table 4.38. San Bruno WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
290	Unincorporated San Mateo County	2,017	0%	76%	24%	0%	0%
291	South San Francisco	194	33%	65%	2%	0%	0%
292	South San Francisco	220	17%	83%	1%	0%	0%
296	South San Francisco	1,272	1%	77%	23%	0%	0%
SBO		542	0%	74%	26%	0%	0%

Existing and Planned Control Measures Summary

Table 4.39 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Bruno.

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Table 4.39. 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			
290		E/P		P		E	E			E
291	E			P		E	E			E
292	E			P		E	E			E
296	E			P		E	E			E
SBO				P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of San Bruno to-date in the three WMAs shown in Table 4.39. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17)(Table 4.40). An additional **3.4 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.

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Table 4.40 Land area in San Bruno WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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 Subtotal	290	11.50	7.00	4.50	0	0	0
	Total	11.50	7.00	4.50	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 4.41 lists the 11 WMAs identified to-date in the City of San Carlos, and their total land areas and associated land uses.

Table 4.41. San Carlos WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
31		99	27%	72%	0%	0%	0%
32	Belmont	67	3%	96%	0%	0%	0%
57		63	6%	92%	2%	0%	0%
59		28	32%	68%	0%	0%	0%
75		66	58%	42%	0%	0%	0%
80		21	5%	95%	0%	0%	0%
207		82	8%	90%	2%	0%	0%
210		141	23%	77%	0%	0%	0%
1011	Redwood City	507	12%	50%	10%	20%	8%
1016		142	19%	44%	3%	0%	34%
SCS		2,517	0%	85%	15%	0%	0%

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Existing and Planned Control Measures Summary

Table 4.42 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Carlos.

Table 4.42. 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			
31	E	E/P		P		E	E			E
32	E			P		E	E			E
57		P		P		E	E			E
59	E	E		P		E	E			E
75	E			P		E	E			E
80				P		E	E			E
207		P		P		E	E			E
210	E			P		E	E			E
1011	E	E/P		P		E	E			E
1016	E	E/P		P		E	E			E
SCS	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of San Carlos to-date in the 8 WMAs shown in 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 source properties (discussed below) have been identified in these WMAs to-date: (1) 977 and 1007/1011 Bransten Road in WMA 31 and (2) 1411 Industrial Road in WMA 210. However, based on the spatial distribution of PCBs in MS4 and street dirt sediments collected in these WMAs, it appeared that other source(s) remain unidentified in WMA 210. Additional sediment samples were collected in WMA 210 during spring 2017 and analyzed for PCBs in an attempt to identify additional source properties. The results are currently under evaluation. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

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SMCWPPP anticipates submitting a minimum of three source property referrals (all in San Carlos) to the Regional Water Board over the next fiscal year. The total combined acreage of these properties is about 13 acres, resulting in an estimated projected 26 g/year load reduction credit (see Sections 5.1 and 5.2) when these properties are formally referred and the associated enhanced municipal O&M is implemented adjacent to the properties, per MRP requirements. The three source properties are described below.

1411 Industrial Road, San Carlos

A sediment sample with a very elevated PCBs concentration (193 mg/kg) was collected from a storm drain inlet located in the parking lot of 1411 Industrial Road in San Carlos (CW4CB 2017a). This about 1.3 acre property in WMA 210 drains to the MS4 at a sidewalk manhole where other elevated sediment samples have been collected. Since 2012 the occupant of this property has been a Habitat for Humanity Re-Store. Before that the property was occupied by an auto body shop and an automotive paint company. Between 1958 and 1994, Adhesive Engineering / Master Builders, Inc. was the occupant and conducted manufacturing, research and development of construction grade epoxy resin and products. Adhesive Engineering / Master Builders, Inc. had a history of violations for leaky wastewater drums and improper storage of hazardous wastes in the late 1980s and early 1990s, and PCBs were reportedly used on the site in the past. An environmental assessment report conducted as part of a business closure in 1994 revealed that 93 mg/kg PCBs was found in a soil sample collected in 1987. The soil sample was collected beneath an aboveground tank that was heated by oil-containing PCBs circulating in coils around the tank. The report also described the removal in 1987 of 44 cubic yards of contaminated soil from the area where the tank was located. As part of the 1994 environmental assessment, a soil sample was collected from the same area and PCBs were not detected at that time, but soil samples from other areas on the property were not collected and tested for PCBs. The above information suggests that the 1411 Industrial Road property is a source of PCBs to the MS4.

977 and 1007/1011 Bransten Road, San Carlos

Street dirt and sediment samples with elevated PCBs have been collected in front of and in the vicinity of 977 Bransten Road in San Carlos (CW4CB 2017a). The current occupant of this about two acre property in WMA 31 is GC Lubricants. 977 Bransten Road is a DTSC cleanup site due to soil and groundwater contamination with PCBs and other pollutants associated with activities at GC Lubricants and California Oil Recyclers, Inc., a previous tenant at the site. 1007/1011 Bransten Road is an about one acre property located adjacent to and immediately north of 977 Bransten Road and designated the "Estate of Robert E. Frank." A DTSC "Site Screening Form" describes PCBs in subsurface on both sides of border between the two properties and states there may have been a historic source on both sides of the property line. Abatement measures have been implemented to reduce movement of contaminated soils from the properties, including a concrete cap over contaminated areas. However, the available information suggest that soils/sediments with PCBs are migrating from these properties into the public ROW, including the street and the MS4.

270 Industrial Road and 495 Bragato Road, San Carlos

270 Industrial Road is located in WMA 1011 in San Carlos. This property is occupied by the Delta Star facility where transformers are manufactured, including transformers with PCBs historically (from 1961 to 1974). This is a Regional Water Board cleanup site with elevated PCBs found in on-site soil and groundwater samples, in a storm drain sediment sample collected from a location adjacent to the property, and in a urban runoff sample collected downstream of the facility. A "Removal Action" under

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

DTSC oversight was implemented between June 1989 and January 1991 to remove soil impacted with PCBs exceeding 25 ppm. 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. The above information suggests that the 270 Industrial Road and 495 Bragato Road properties are a source of PCBs to the MS4.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 Carlos treat **39 acres** of land, of which **30 acres** is comprised of old industrial and **9 acres** is comprised of old urban land use. Of this total, **36 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17)(Table 4.43). An additional **21 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 regional 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.

Table 4.43 Land area in San Carlos WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	59	18.50	18.50	0	0	0	0
	1011	9.74	9.74	0	0	0	0
	SCS	7.95	0	7.95	0	0	0
	Total	36.19	28.24	7.95	0	0	0
Green Streets or Regional Retrofit	31	0.54	0.54	0	0	0	0
	Total	0.54	0.54	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

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.

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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.

4.16. City of San Mateo

Watershed Management Areas

Table 4.44 lists the 18 WMAs identified to-date in the City of San Mateo, and their total land areas and associated land uses.

Table 4.44. City of San Mateo WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
25		219	3%	97%	0%	0%	0%
89		98	10%	88%	1%	0%	0%
90		21	1%	99%	0%	0%	0%
92		136	3%	97%	0%	0%	0%
101		221	4%	96%	0%	0%	0%
111		95	5%	93%	2%	0%	0%
114		85	9%	91%	0%	0%	0%
120		10	5%	95%	0%	0%	0%
149	Burlingame	480	1%	98%	1%	0%	0%
156		40	17%	82%	1%	0%	0%
399		32	5%	95%	0%	0%	0%
403		48	1%	99%	0%	0%	0%
408		43	16%	82%	2%	0%	0%
1007		87	8%	90%	2%	0%	0%
1008		111	0%	98%	1%	0%	0%
1009		175	24%	75%	0%	0%	0%
1017		19	21%	78%	1%	0%	0%
SMO		5,800	1%	85%	9%	4%	0%

Existing and Planned Control Measures Summary

Table 4.45 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Mateo.

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Table 4.45. 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			
25	E			P		E	E			E
89	E	E		P		E	E			E
90		E		P		E	E			E
92		E/P		P		E	E			E
101	E			P		E	E			E
111	E	E/P		P		E	E			E
114	E			P		E	E			E
120		E		P		E	E			E
149	E	E		P		E	E			E
156	E	E		P		E	E			E
399				P		E	E			E
403	E			P		E	E			E
408	E			P		E	E			E
1007	E	E		P		E	E			E
1008		E		P		E	E			E
1009	E	E/P		P		E	E			E
1017				P		E	E			E
SMO	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of San Mateo to-date in the 12 WMAs shown in Table 4.45. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in the City of San Mateo treat **46 acres** of land which is comprised of **14 acres** of old industrial and **32 acres** of old urban land uses. Of this, **31 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.46). An additional **99 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.

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The City of San Mateo also plans to build two green street projects (East Poplar Avenue and San Mateo Drive) and one green parking lot (Beresford Park) in public lands or ROW. These projects were recently awarded funding via a Proposition 1 stormwater implementation grant administered by the State Water Resources Control Board. They were originally included as a project concept in the Stormwater Resource Plan that SMCWPPP recently developed 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 of San Mateo. The City also plans to build a green street project at 4th Avenue and Fremont (with curb extension and bioretention) outside of the Stormwater Resource Plan and Proposition 1 grant process.

Table 4.46 Land area in City of San Mateo WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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 Subtotal	90	1.12	1.12	0	0	0	0
	149	3.08	3.08	0	0	0	0
	156	3.31	0	3.31	0	0	0
	1007	0.29	0	0	0	0	0
	1008	3.53	3.53	0	0	0	0
	1009	4.48	4.48	0	0	0	0
	SMO	15.29	0	14.29	1.00	0	0
	Total	31.10	12.50	17.60	1.00	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 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 4.47 lists the ten WMAs identified to-date in unincorporated County of San Mateo, and their total land areas and associated land uses.

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Table 4.47. Unincorporated County of San Mateo WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
71	Menlo Park	1394	2%	92%	2%	4%	
77	Belmont	86	5%	89%	0%	6%	0%
181	Daly City	75	16%	64%	20%	0%	0%
247	Menlo Park	239	9%	91%	1%	0%	0%
253	Redwood City	280	6%	93%	1%	0%	0%
266	Redwood City	91	4%	92%		4%	
290	San Bruno	2,017		76%	24%		
379	Redwood City	802	14%	85%	1%	0%	0%
1001	South San Francisco	439	27%	67%	6%		
SMC		18,203	4%	33%	43%	0%	20%

Existing and Planned Control Measures Summary

Table 4.48 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in unincorporated County of San Mateo.

Table 4.48. 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			
71	E	E/P		P		E	E			E
77		E		P		E	E			E
181		E		P		E	E			E
247				P		E	E			E
253	E			P		E	E			E
266		E		P		E	E			E
290		P		P		E	E			E
379	E	E/P		P		E	E			E
1001	E	P		P		E	E			E
SMC	E	E		P		E	E			E

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Source Property Investigation

Source property investigative work has been conducted in unincorporated County of San Mateo to-date in the five WMAs shown in Table 4.48. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in unincorporated County of San Mateo treat **247 acres** of land which includes **4 acres** of old industrial and **63 acres** of old urban land uses. Of this, **230 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.49). An additional **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.

Unincorporated County of San Mateo also has four existing regional green street projects on public lands and ROWs that treat **4.04 acres** of old urban land use.

Table 4.49 Land area in Unincorporated County of San Mateo WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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 Subtotal	71	7.93	0	7.93	0	0	0
	77	2.19	2.19	0	0	0	0
	181	0.99	0	0.99	0	0	0
	266	5.41	0	0	5.41	0	0
	379	1.87	1.44	0	0	0	0
	SMC	212.02	0	26.38	0	185.64	0
	Total	230.41	3.63	35.73	5.41	185.64	0
Green Streets or Regional Retrofit Subtotal	SMC	4.04	0	4.04	0	0	0
	Total	4.04	0	4.04	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.

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

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 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 4.50 lists the 27 WMAs identified to-date in the City of South San Francisco, and their total land areas and associated land uses.

Table 4.50. City of South San Francisco WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
291	San Bruno	194	33%	65%	2%	0%	0%
292	San Bruno	220	17%	83%	1%	0%	0%
293		654	9%	77%	14%	0%	0%
294		67	31%	69%	0%	0%	0%
295		25	12%	70%	4%	0%	14%
297		30	7%	93%	0%	0%	0%
298		122	3%	87%	10%	0%	0%
306		37	18%	82%	0%	0%	0%
307	Daly City	1,277	0%	84%	15%	1%	0%
311		111	3%	96%	1%	0%	0%
313		77	14%	82%	4%	0%	0%
314		66	5%	89%	6%	0%	0%
315		108	32%	68%	0%	0%	0%
316		117	22%	78%	0%	0%	0%
317		32	27%	73%	0%	0%	0%
318		70	45%	54%	1%	0%	0%
319		99	31%	69%	0%	0%	0%
352		40	17%	83%	0%	0%	0%
354		10	45%	55%	0%	0%	0%
356		10	18%	81%	1%	0%	0%
357		17	18%	78%	3%	0%	0%
358		32	22%	78%	0%	0%	0%
359		23	51%	49%	0%	0%	0%
362		18	52%	45%	1%	0%	2%
1001	Unincorporated SM County	439	27%	67%	6%	0%	0%
1002		316	23%	70%	5%	2%	0%
SSF		1,554	0%	75%	12%	1%	12%

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Existing and Planned Control Measures Summary

Table 4.51 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 4.51. 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			
291	E	E		P		E	E			E
292	E	E		P		E	E			E
293	E	E/P		P		E	E			E
294	E			P		E	E			E
295	E			P		E	E			E
297		E/P		P		E	E			E
298				P		E	E			E
306	E	E		P		E	E			E
307		E		P		E	E			E
311				P		E	E			E
313	E	P		P		E	E			E
314	E			P		E	E			E
315	E	E		P		E	E			E
316	E	E/P		P		E	E			E
317	E			P		E	E			E
318	E	E/P		P		E	E			E
319	E	E		P		E	E			E
352				P		E	E			E
354	E			P		E	E			E
356	E			P		E	E			E
357	E	P		P		E	E			E
358	E	E		P		E	E			E
359	E	P		P		E	E			E
362	E	E		P		E	E			E
1001	E	E/P		P		E	E			E
1002	E	E/P		P		E	E			E
SSF	E	E/P		P		E	E			E

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Source Property Investigation

Source property investigative work has been conducted in the City of South San Francisco to-date in the 22 WMAs shown in Table 4.51. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in the City of South San Francisco treat **277 acres** of land which includes **207 acres** of old industrial and **64 acres** of old urban land uses. Of this, **66 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.52). An additional **67 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 is also evaluating building a GI facility at Orange Memorial Park with \$9.5 million in funding from Caltrans. This regional stormwater capture project would treat a large multi-jurisdictional area that would be primarily comprised of old urban land uses.

Table 4.52 Land area in City of South San Francisco WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{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	291	10.62	10.62	0	0	0	0
	292	26.10	26.10	0	0	0	0
	307	10.19	0	10.19	0	0	0
	316	3.13	3.13	0	0	0	0
	319	8.30	8.30	0	0	0	0
	1001	6.66	6.66	0	0	0	0
	1002	0.78	0.78	0	0	0	0
	Total	65.78	55.59	10.19	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.

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

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 4.53 lists the one WMA identified to-date in the Town of Woodside, and its total land area and associated land uses.

Table 4.53. Woodside WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
WDE		7,286	0%	55%	5%	40%	0%

Existing and Planned Control Measures Summary

Table 4.54 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Woodside.

Table 4.54. 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			
WDE	E	E		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the Town of Woodside to-date in WMA WDE. Results of SMCWPPP’s POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. 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 between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17). In addition, PCBs load reductions were projected for the remainder of the permit term, to the extent that relevant data are available at this time. The projected load reductions are based on GI projects that are currently designated under construction or planned and source property referrals anticipated to occur in FY 2017/18. The projections reflect a portion of the full load reduction that will be achieved once a complete inventory of controls implemented over the remainder of the permit term becomes available.

In general, the load reductions reported or projected 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 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. The Countywide Program 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 v.1.1 (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

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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 New Development, Redevelopment and Retrofit

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	=	New development/redevelopment/parcel-based retrofit 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 by green infrastructure/retrofit treatment measure (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 between July 1, 2013 and June 30, 2017

The preliminary estimated PCBs loads reduced by Permittees between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) are shown in Table 5.1. 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 Permittees. Over the permit term to-date, more than 640 acres have undergone new or redevelopment, including more than 164 acres of old industrial and 241 acres of old urban land uses. These projects currently account for 99% of the PCBs load reduction reported to-date. Green street and regional retrofit projects account for the remaining 1% (Table 5.2). It is important to emphasize that the PCBs loads reduced that are reported here are preliminary, and do 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.

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Table 5.1. Preliminary estimates of PCBs loads reduced by San Mateo County Permittees between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Permittee	PCBs Loads Reduced (g/year)				
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced
Atherton	0.03				0.03
Belmont				0.01	0.01
Brisbane	0.75				0.75
Burlingame		0.15	0.01	0.27	0.43
Colma	0.005	0.001			0.01
Daly City	2.17	0.18		0.41	2.76
East Palo Alto	0.12	0.24	0.01	0.46	0.83
Foster City	0.07		0.12	0.0005	0.19
Hillsborough			0.004		0.004
Menlo Park	0.23	0.21	1.49		1.92
Millbrae					
Portola Valley					
Redwood City	0.20	1.21	0.66	0.04	2.11
San Bruno	0.12		0.58		0.70
San Carlos	1.80		0.81		2.61
San Mateo City	0.56	0.50	0.27	0.19	1.51
San Mateo County	0.55	0.37	0.62		1.54
South San Francisco	3.84	0.77	0.25	0.04	4.89
Woodside					
TOTAL	10.44	3.63	4.82	1.41	20.30

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Table 5.2. Preliminary estimates of PCBs loads reduced in San Mateo County by control measure category between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Control Measure Category		PCBs Loads Reduced (g/year)					Required Load Reductions (g/year)	
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced	2018	2020
Source Property Identification and Abatement¹								
Green Infrastructure and Treatment Controls	Parcel-Based New or Redevelopment²	10.26	3.54	4.80	1.41	20.01		
	Green Streets or Regional Retrofit²	0.18	0.09	0.02	0	0.29		
	Trash Full Capture^{3, 4}							
Enhanced O&M Measures⁴								
Manage PCBs in Building Materials⁴								
Manage PCBs in Infrastructure⁴								
Diversion to POTW⁴								
Source Controls/Other⁴								
TOTAL		10.44	3.63	4.82	1.41	20.30	60	370

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 appropriate.

Preliminary Projected PCBs Loads Reduced over Remainder of the Permit Term

Table 5.3 includes preliminary PCBs load reductions projected for the remainder of the permit term, to the extent that relevant data are currently available. The projections reflect a portion of the full load reduction that will be achieved once a complete inventory of controls implemented over the remainder of the permit term becomes available.

The projected load reductions are based on GI projects that are currently designated under construction or planned and source property referrals anticipated to occur in FY 2017/18. In addition to the completed projects that have been reported in Section 4.0, there are a number of new/redevelopment projects that are currently under construction in San Mateo County. Upon completion, these projects are estimated to reduce PCBs loads by an additional 8.90 g/year. Table 5.3 assumes that all of this credit will be realized in FY 2017/18. Additional projects are also in the planning stages, and based on current estimates of the area that is expected to be redeveloped, these projects would reduce PCBs loads by an additional 9.96 g/year. Table 5.3 assumes that this load reduction credit will be divided evenly over three fiscal years: FY 2017/18 through FY 2019/20.

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Table 5.3. Preliminary estimates of PCBs loads reduced in San Mateo County by control measure category between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17) and preliminary load reductions projected over remainder of the permit term.^{1, 2, 3}

Control Measure Category		PCBs Loads Reduced (g/year)											
		Reported To-date				Projected			Cumulative Load Reduced through June 2018	Required Load Reduction by June 2018 (g/year)	Cumulative Load Reduced through June 2020	Required Load Reduction by June 2020 (g/year)	
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20					
Source Property Identification and Abatement						26			26	60	26	370	
Green Infrastructure and Treatment Controls	Parcel-Based New or Redevelopment	10.26	3.54	4.8	1.41	12.22	3.32	3.32	32.23		38.87		15
	Green Streets or Regional Retrofit	0.18	0.09	0.02	0				0.29		0.29		
	Trash Full-Capture								0		0		
Enhanced O&M Measures									0		0		
Manage PCBs in Building Materials		0	0	0	0	0	0	246.67	0		247		
Manage PCBs in Infrastructure									0		0		
Diversion to POTW									0		0		
Source Controls/Other									0		0		
TOTAL - ALL CONTROLS		10.44	3.63	4.82	1.41	38.22	3.32	249.99	58.52				311.83

¹ Credit for all parcel-based GI projects designated as “under construction” (8.90 g/year) is applied to FY 2017/18.

² Credit for all parcel-based GI projects designated as “planned” (9.96 g/year) is divided evenly over three fiscal years: FY 2017/18 through FY 2019/20.

³ Assumes the collective PCBs load reduction credit of 246.67 grams/year for San Mateo County Permittees stipulated by the MRP, if all the Permittees implement by July 1, 2019 a program to manage PCBs in building materials during demolition, consistent with the permit requirements (see Section 3.4).

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In addition, as described in Section 4.15, SMCWPPP anticipates submitting a minimum of three source property referrals (all in San Carlos) to the Regional Water Board over the next fiscal year. The total combined acreage of these properties is about 13 acres, resulting in an estimated projected 26 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 adjacent to the properties, per MRP requirements.

Table 5.3 also shows the collective PCBs load reduction credit of 246.67 grams/year for San Mateo County Permittees stipulated by the MRP, if all the Permittees implement by July 1, 2019 a program to manage PCBs in building materials during demolition, consistent with the permit requirements (see Section 3.4).

Table 5.3 allows for comparison of the current reported and projected PCBs load reductions to MRP requirements. The MRP requires that, if regional targets are not met, a 60 g/year reduction must be achieved countywide by June 2018 and a 370 g/year PCBs load reduction must be achieved countywide by the end of the MRP 2.0 permit term. In addition, the MRP requires that at least 15 grams/year of the 370 grams/year is achieved via GI, a requirement that has already been met, as mentioned previously.

5.3. Mercury Loads Reduced

Preliminary Estimated Mercury Loads Reduced between July 1, 2013 and June 30, 2017

The preliminary estimated mercury loads reduced by Permittee between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) are shown in Table 5.4. Table 5.5 shows the mercury loads reduced by control measure category. Similar to PCBs, new and re-development projects currently account for 99% of the mercury load reduction reported to-date. Green street and regional retrofit projects account for the remaining 1% (Table 5.5). Table 5.5 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.

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 2016/17 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.

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Table 5.4. Preliminary estimates of mercury loads reduced by San Mateo County Permittees between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Permittee	Mercury Loads Reduced (g/year)				
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced
Atherton	0.21				0.21
Belmont				0.06	0.06
Brisbane	11.42				11.42
Burlingame		1.30	0.09	4.04	5.43
Colma					
Daly City	14.67	1.24		2.79	18.70
East Palo Alto	1.63	3.53	0.07	6.63	11.86
Foster City	0.47		0.82	0.00	1.29
Hillsborough			0.03		0.03
Menlo Park	2.63	2.48	20.95		26.06
Millbrae					
Portola Valley					
Redwood City	2.52	15.41	7.72	0.27	25.91
San Bruno	0.82		8.87		9.69
San Carlos	25.57		12.34		37.91
San Mateo City	8.55	7.41	1.82	1.25	19.04
San Mateo County	5.24	2.41	4.19		11.84
South San Francisco	56.57	11.67	3.80	0.24	72.29
Woodside					0.00
TOTAL	130.30	45.45	60.69	15.29	251.74

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Table 5.5. Preliminary estimates of mercury loads reduced in San Mateo County by control measure category between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Control Measure Category		Mercury Loads Reduced (g/year)					Required Load Reductions (g/year)	
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced	2018	2020
Source Property Identification and Abatement¹								
Green Infrastructure and Treatment Controls	Parcel-Based New or Redevelopment²	127.52	44.87	60.54	15.29	248.21		
	Green Streets or Regional Retrofit²	2.79	0.58	0.15	0.00	3.52		
	Trash Full Capture^{3,4}							
Enhanced O&M Measures⁴								
Diversion to POTW⁴								
Source Controls/Other⁴								
TOTAL		130.30	45.45	60.69	15.29	251.74	370	

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.

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Table 5.6. Estimated mercury mass collected via the San Mateo County Health Department's Household Hazardous Waste (HHW) Program and Very Small Quantity Generator Business Collection (VSQG) Program

Mercury Containing Device/Equipment	FY 14/15		FY 15/16		FY 16/17	
	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 feet) ^{1,2}	25,532	0.05	89,662	0.19	93,896	0.19
CFLs (each) ³	1,881	0.01	17,211	0.08	17,354	0.08
Thermostats (each) ⁴	26	0.10	12	0.05	10	0.04
Thermometers (each) ⁵	313	0.19	13	0.01	19	0.01
Switches (each)	18	0.05	0	0	0	0
Total Mass of Mercury Collected (Kg)		0.40		0.32		0.32

^[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>.

^[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

The selection of WMAs and feasible and cost-effective control measures will be an ongoing and evolving process during the MRP 2.0 permit term as new data become available. 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 2.0 requirements for PCBs and mercury. The general categories of activities are summarized as follows:

- SMCWPPP will continue identifying areas that will be the focus of PCBs and mercury control measure implementation over the course of MRP 2.0, including refining and prioritizing the current list of WMAs, identifying new priority WMAs, and identifying source areas within WMAs. As part of these efforts, SMCWPPP is currently evaluating the results of its WY2017 POC monitoring program (stormwater runoff and sediment sampling conducted during spring 2017) that targeted selected catchments and parcels of interest. SMCWPPP is also evaluating the cost-effectiveness of conducting additional WY2018 POC monitoring efforts (sediment and stormwater runoff sampling) that would further inform implementation of controls in priority WMAs.
- 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 most elevated concentrations of PCBs in sediment and stormwater runoff samples to-date. The planning will be informed by the results of various pilot work conducted in these drainages and other locations in the Bay Area through CW4CB.
- SMCWPPP anticipates submitting a minimum of three source property referrals (all in San Carlos) to the Regional Water Board over the next fiscal year. SMCWPPP and San Mateo County Permittees will also evaluate submitting other referrals as appropriate, based on the ongoing evaluation of the results of its WY2017 POC monitoring program and other appropriate data.
- 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 evaluate opportunities to take credit for PCBs and mercury loads avoided due to existing PCBs contamination site cleanups in San Mateo County.
- SMCWPPP will continue to work with San Mateo County Permittees to develop a tracking mechanism for GI and stormwater treatment in San Mateo County and update the associated database. The preliminary database described in this report will be updated and load reductions will be calculated as appropriate. The effort to fill data gaps will focus especially on information needed to calculate pollutant load reductions (e.g., treatment areas). This tracking will continue to be integrated with the MRP Provision C.3.j.iv requirement for development and implementation of methods to track and report implementation of GI.
- SMCWPPP will continue participating in the BASMAA regional project to design and implement a study to evaluate the magnitude and extent of PCBs in caulks/sealants used in storm drain and roadway infrastructure in the Bay Area, per MRP Provision C.12.e.

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- SMCWPPP will continue participating in the ongoing BASMAA regional project to develop guidance materials, tools, protocols and training materials and conduct outreach to assist Permittees to develop local programs to prevent PCBs from being discharged to municipal storm drains due to demolition of applicable buildings, per MRP Provision C.12.f. SMCWPPP will also evaluate the need to tailor these materials for use in San Mateo County.
- SMCWPPP will continue to work with the San Mateo County Environmental Health Department on education and outreach efforts to San Mateo County residents likely to consume locally-caught fish from the Bay (e.g., maintenance of strategically placed signs, training of healthcare workers to disseminate information, and targeted social media posts).
- SMCWPPP will continue conducting a Reasonable Assurance Analysis (RAA) to support GI plan development and demonstration of mercury and PCBs load reductions to meet goals set by the MRP and TMDLs. 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 the development of GI plans.
- With assistance and guidance from SMCWPPP, San Mateo County Permittees will develop GI Plans that integrate with the planning for the use of GI to reduce loads of PCBs and mercury. The MRP requires that the GI plans are submitted by September 2019 along with documentation of legal mechanisms to ensure implementation of the Plans.

7.0 REFERENCES

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Appendix A

Maps for each San Mateo County Permittee showing WMAs
and GI/LID facilities

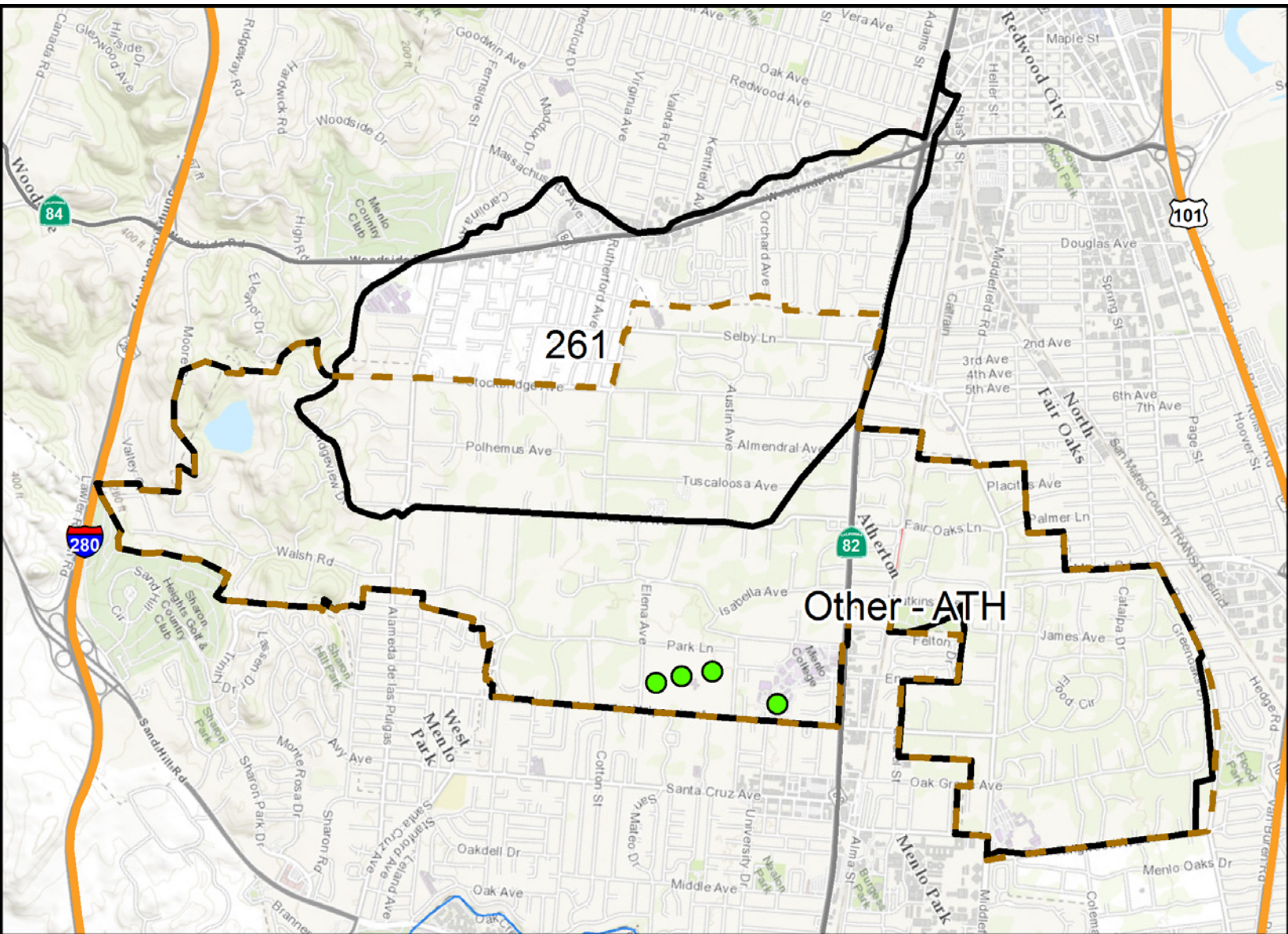
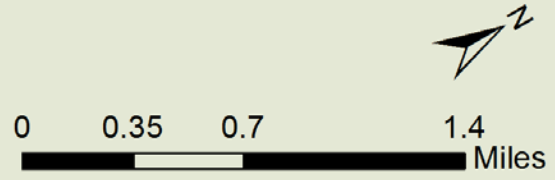


Figure A-1. WMAs and GI/LID in Atherton
Atherton Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



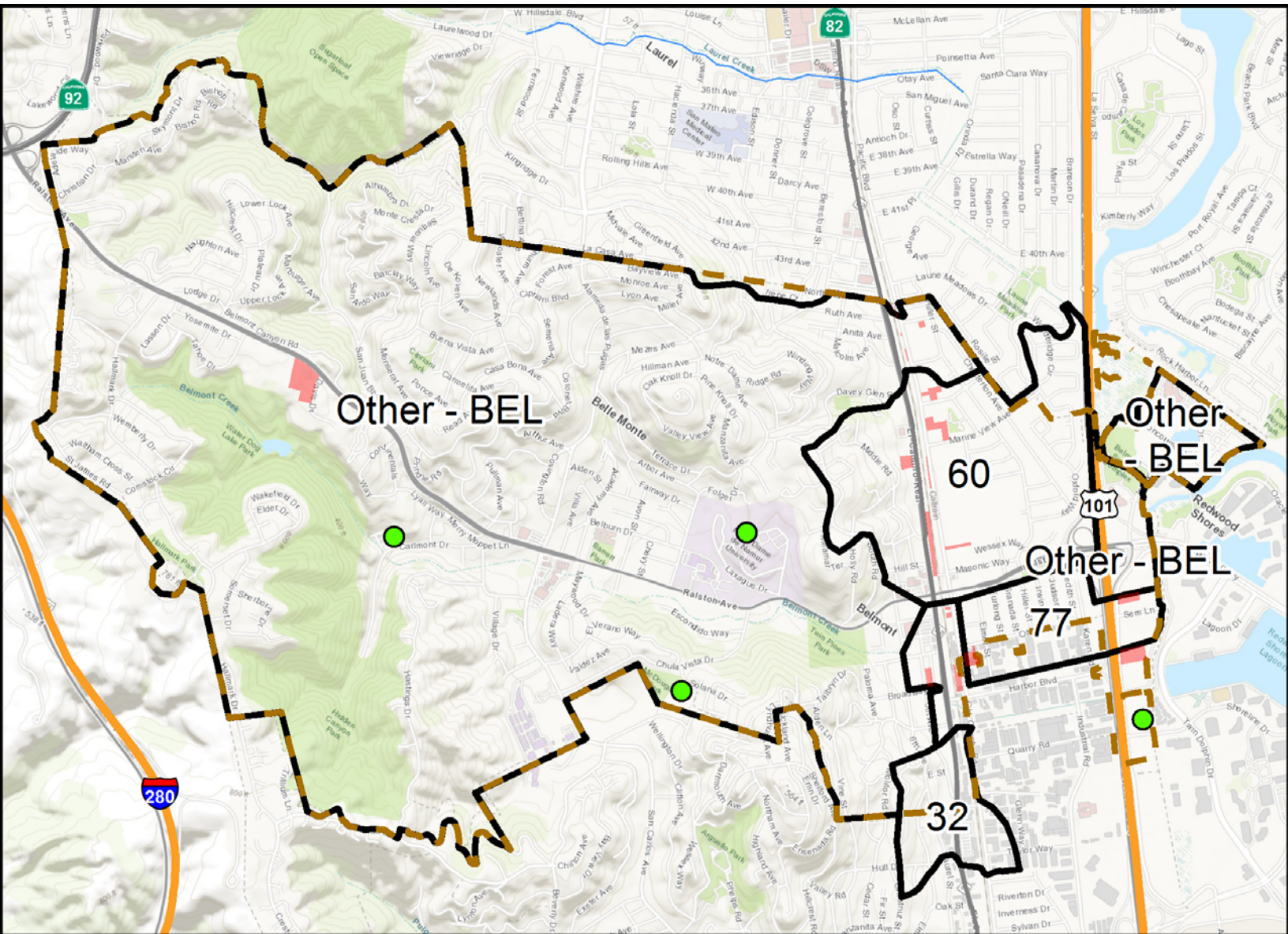
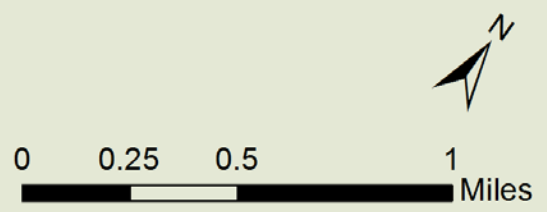


Figure A-2. WMAs and GI/LID in Belmont
Belmont Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



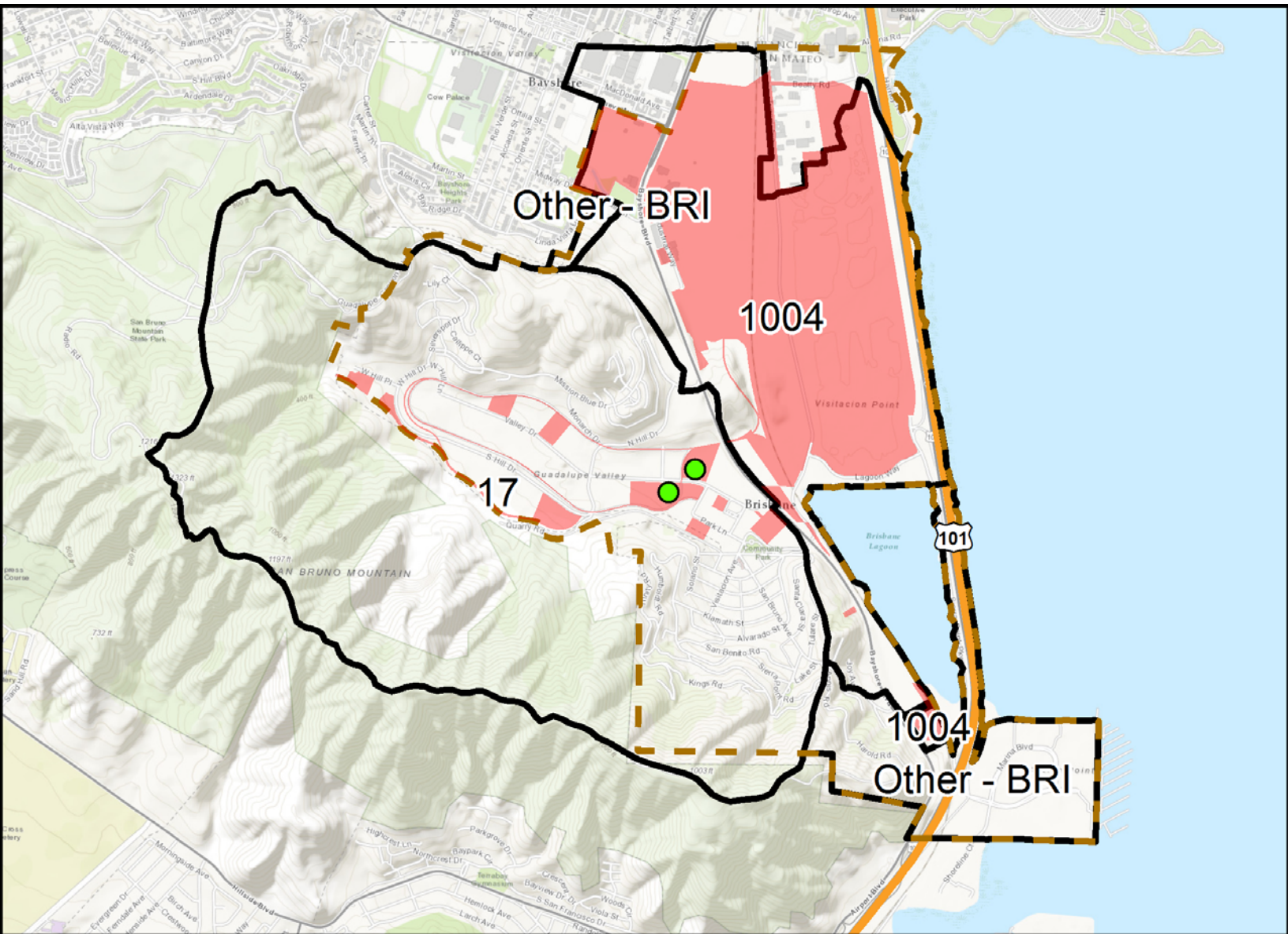
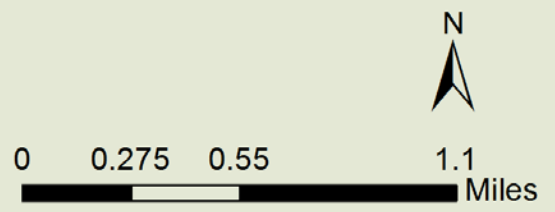


Figure A-3. WMAs and GI/LID in Brisbane
Brisbane Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



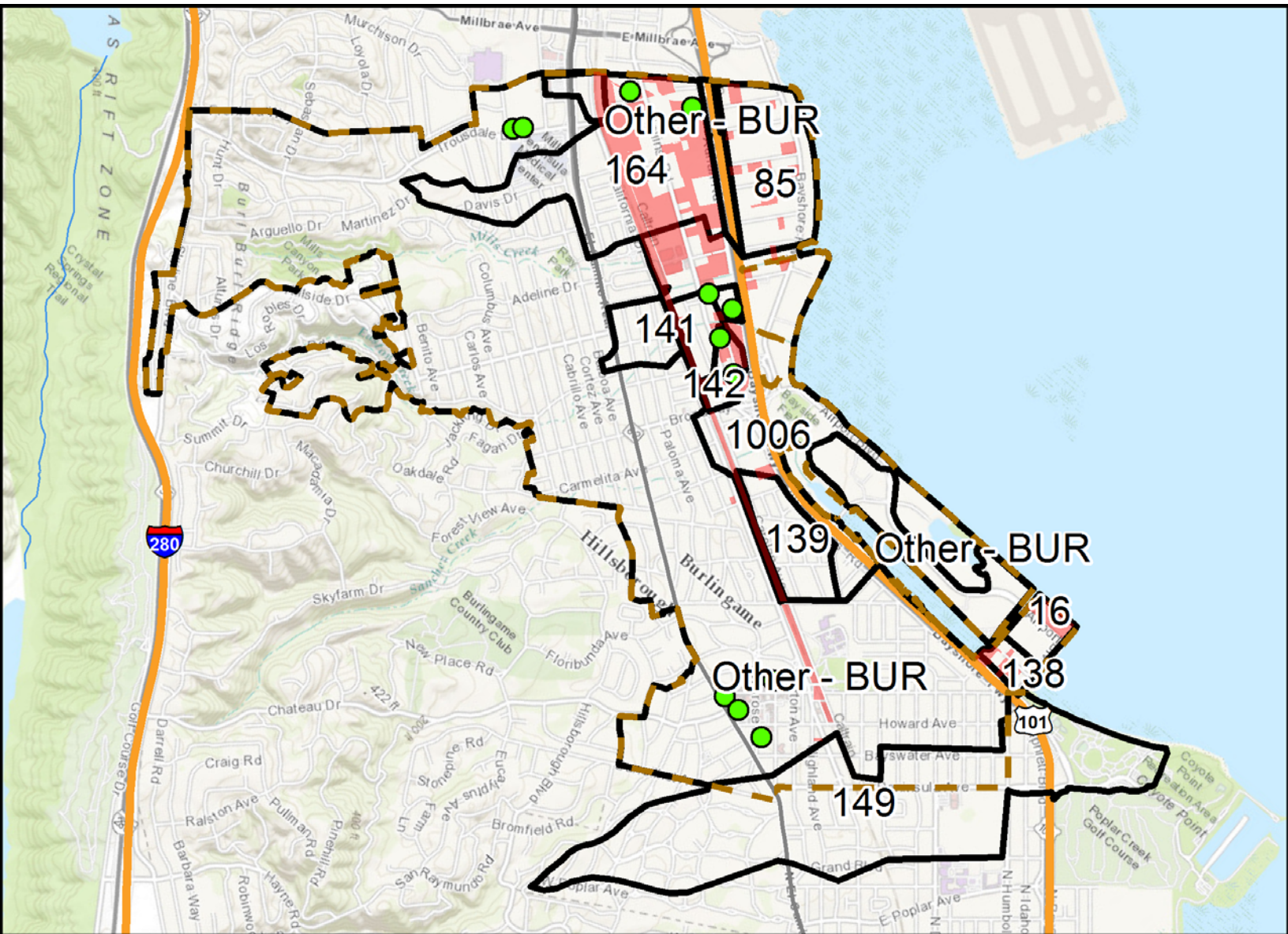
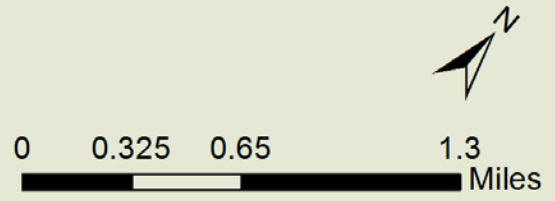


Figure A-4. WMAs and GI/LID in Burlingame
Burlingame Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



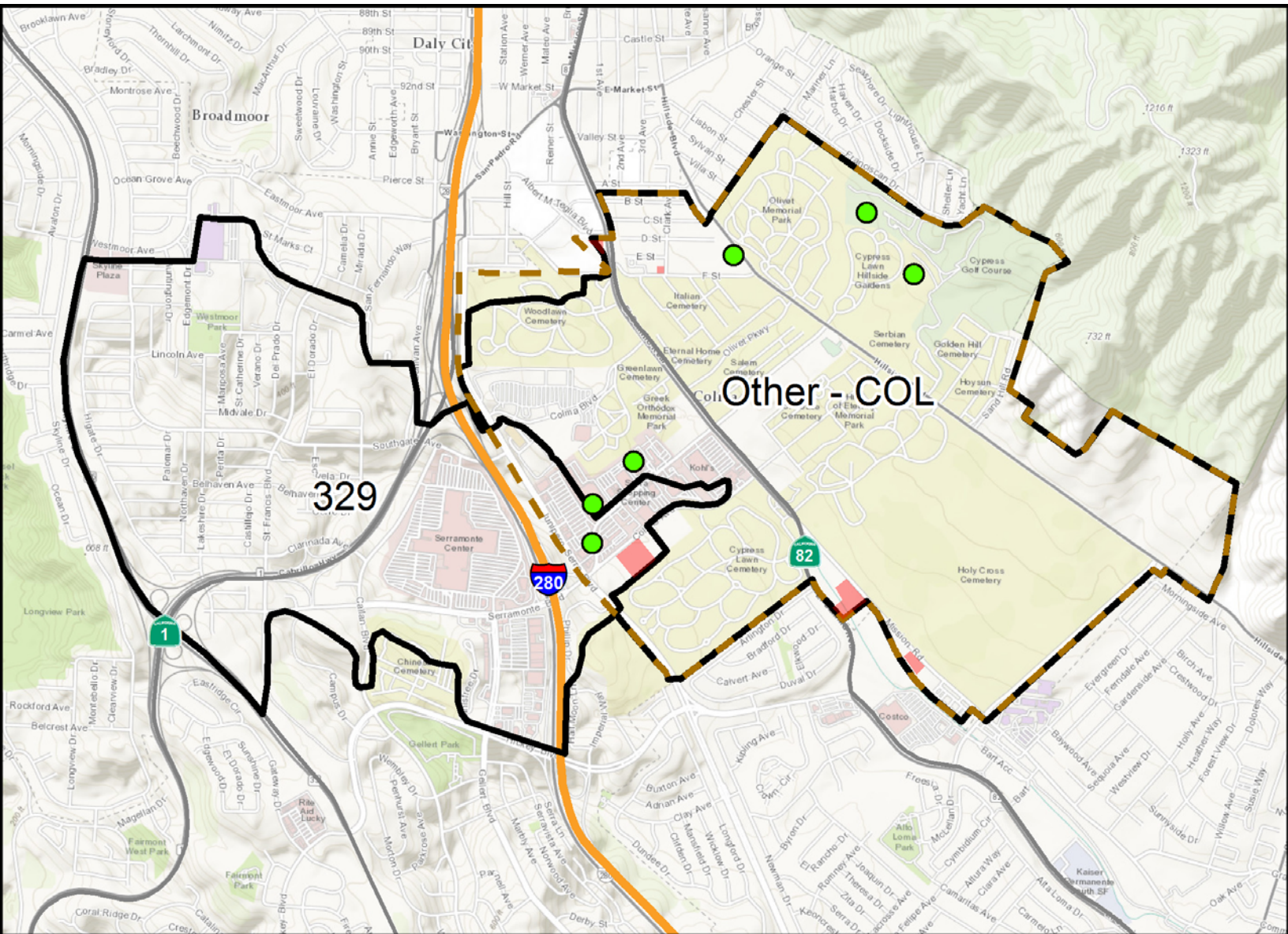
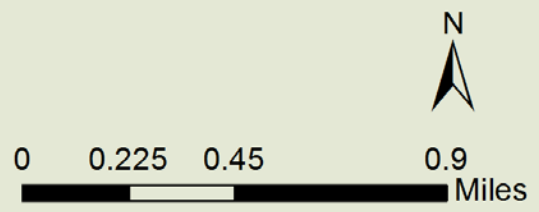


Figure A-5. WMAs and GI/LID in Colma
Colma Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



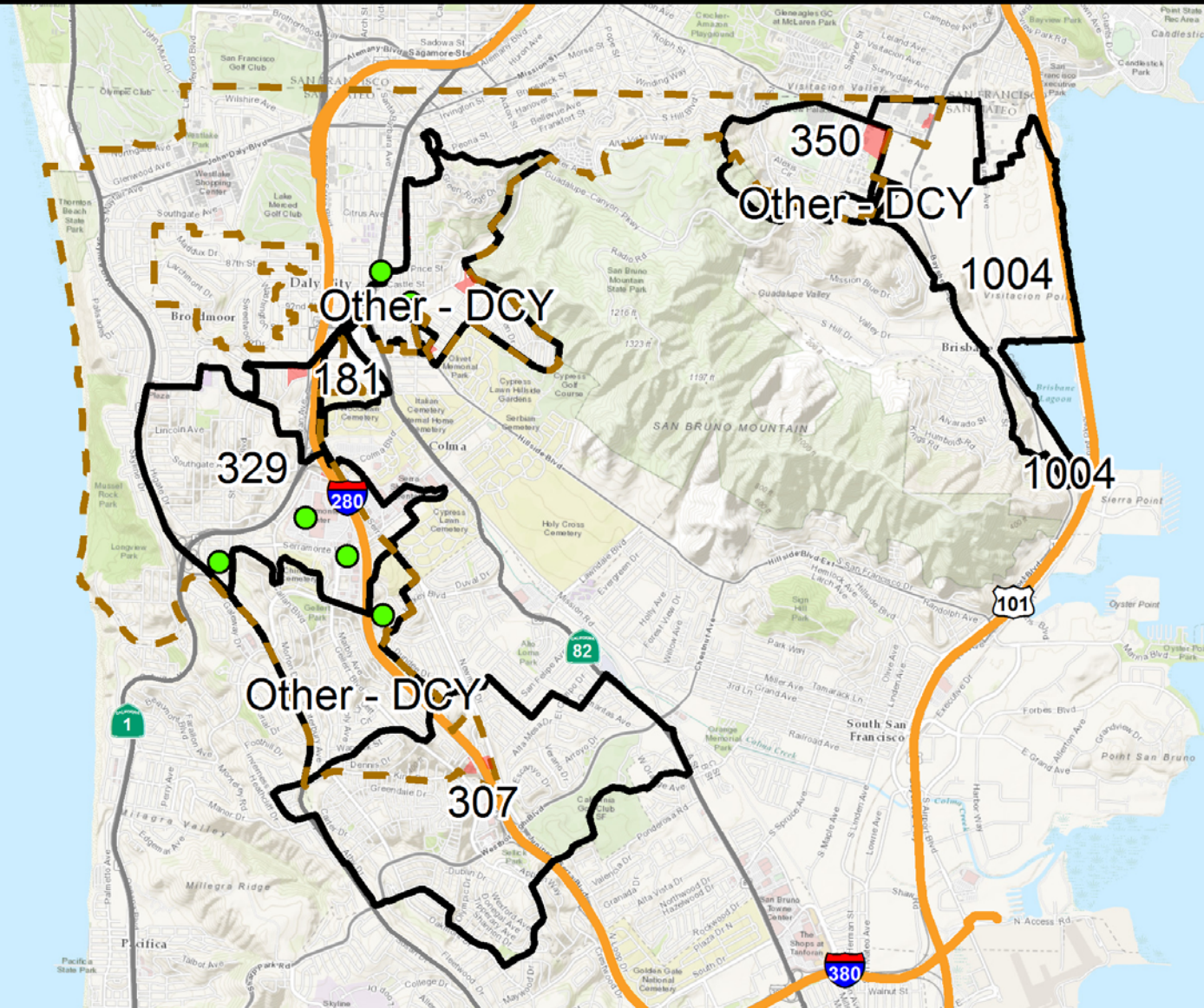


Figure A-6. WMAs and GI/LID in Daly City
Daly City Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



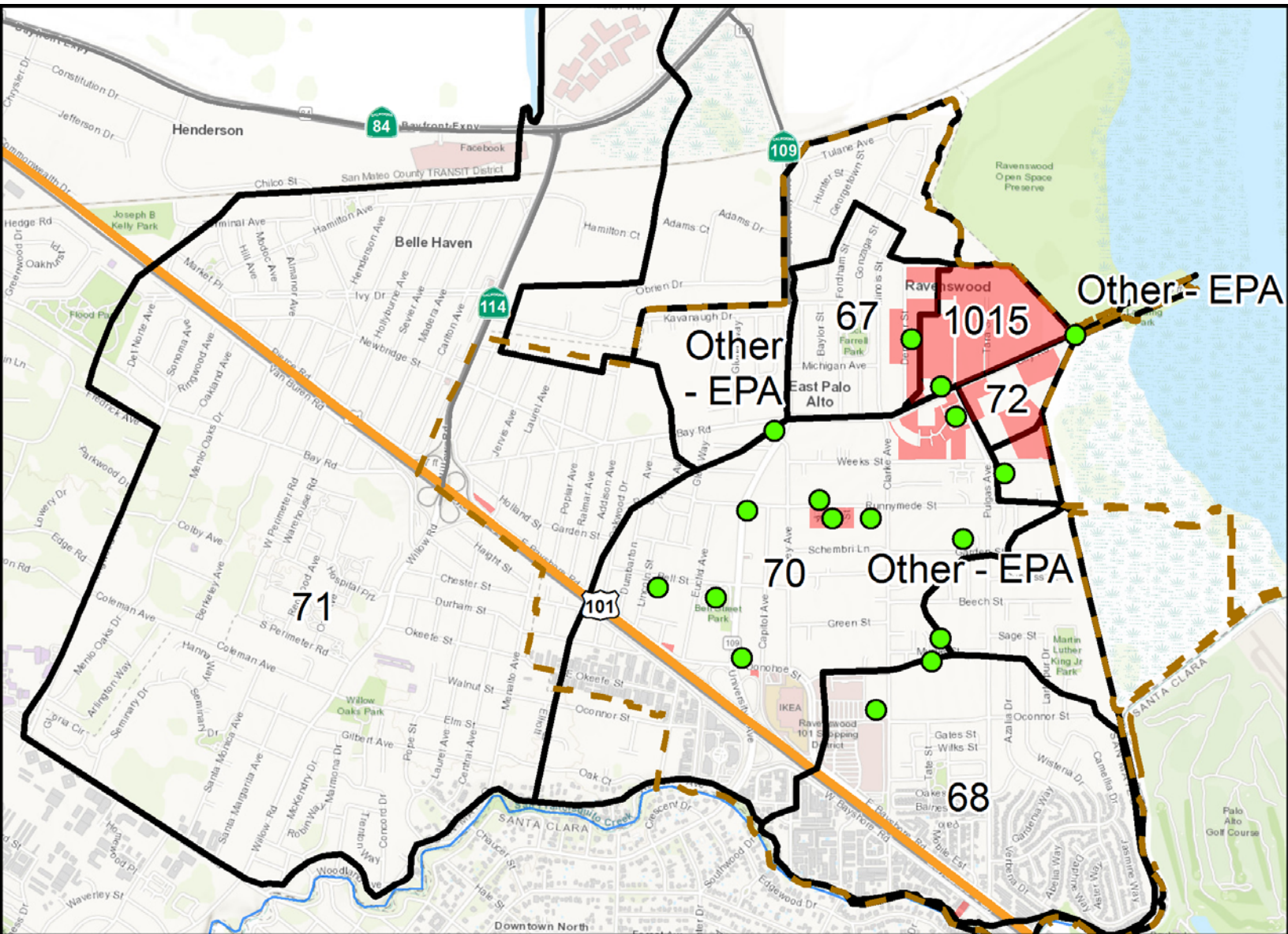
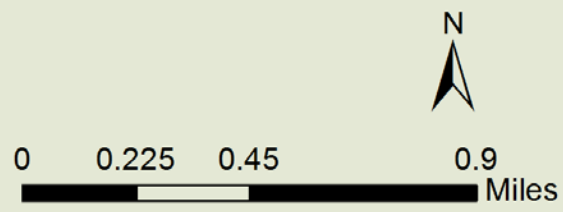


Figure A-7. WMAs and GI/LID in East Palo Alto
East Palo Alto Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



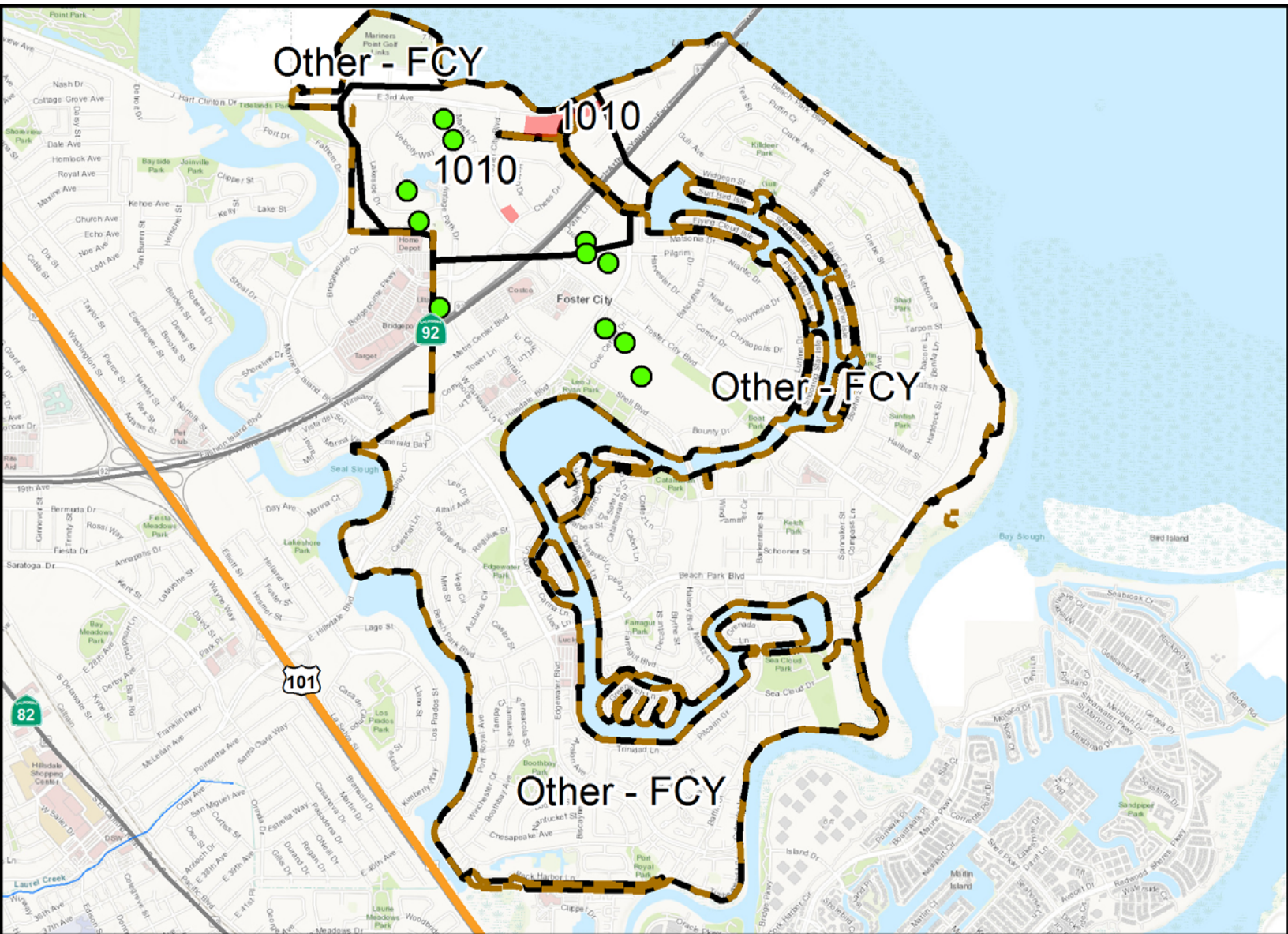
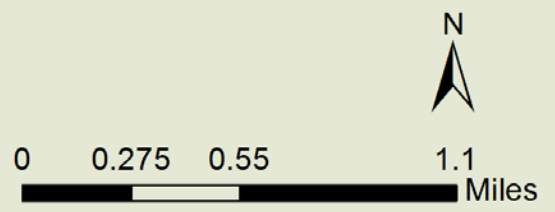


Figure A-8. WMAs and GI/LID in Foster City
Foster City Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



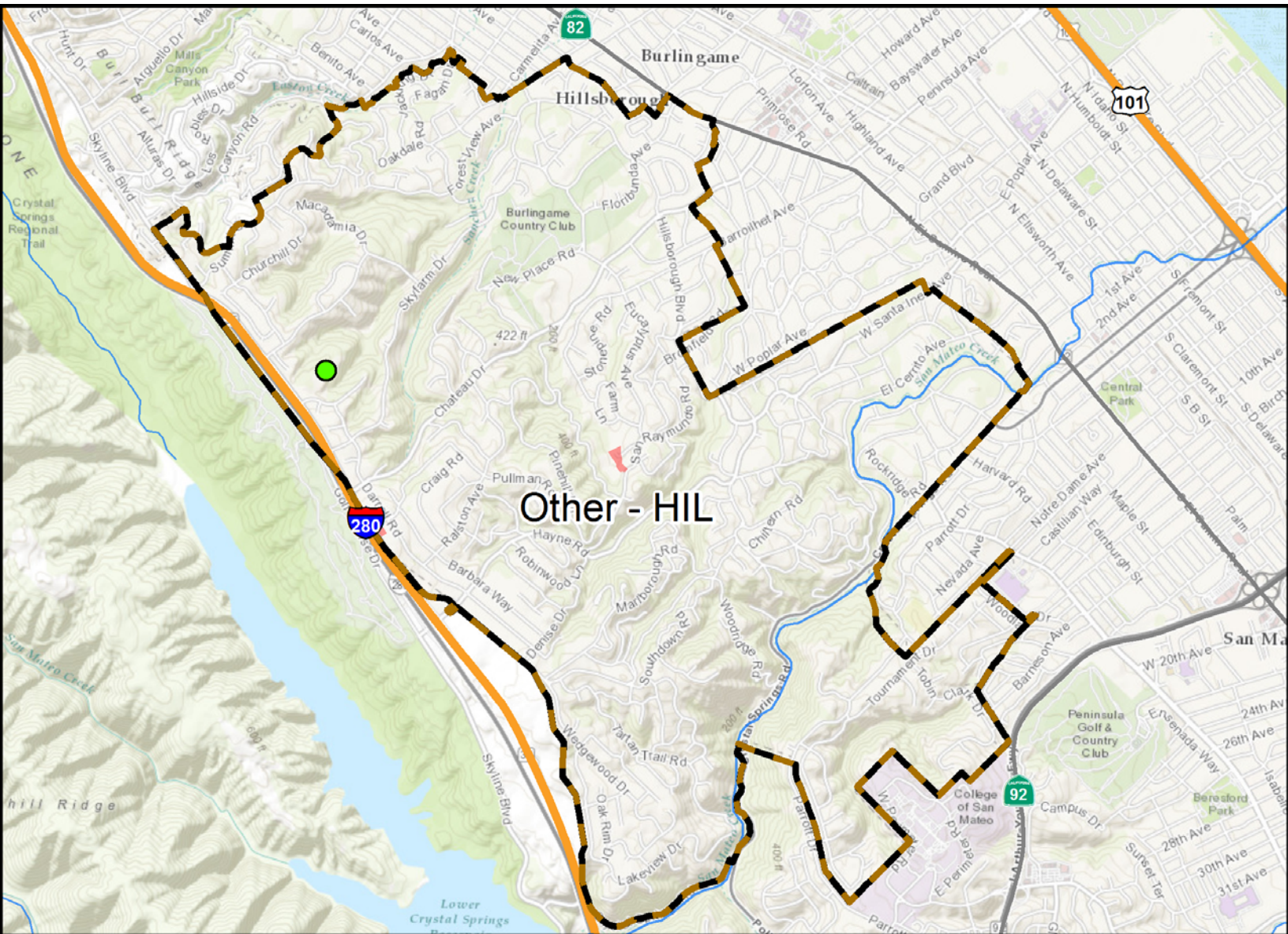
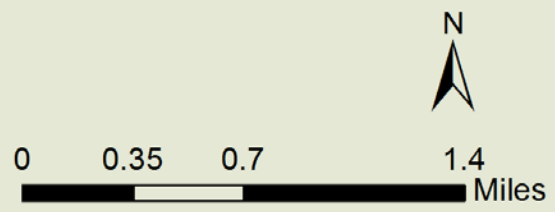


Figure A-9. WMAs and GI/LID in Hillsborough
Hillsborough Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



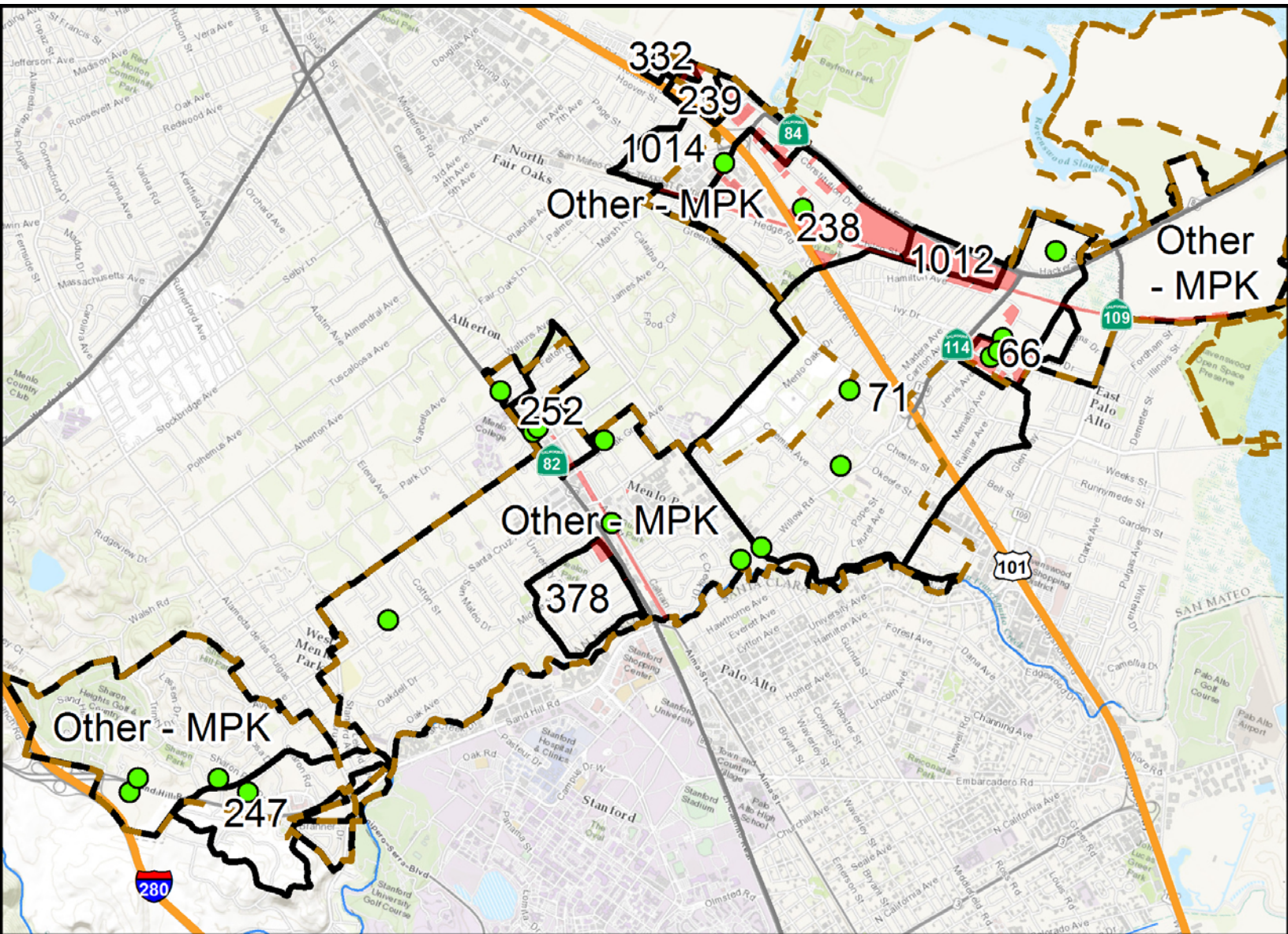
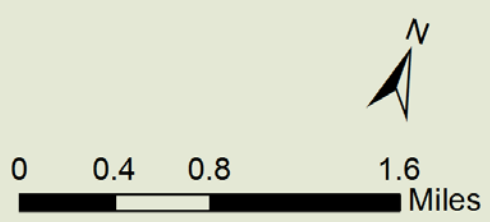


Figure A-10. WMAs and GI/LID in Menlo Park
Menlo Park Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



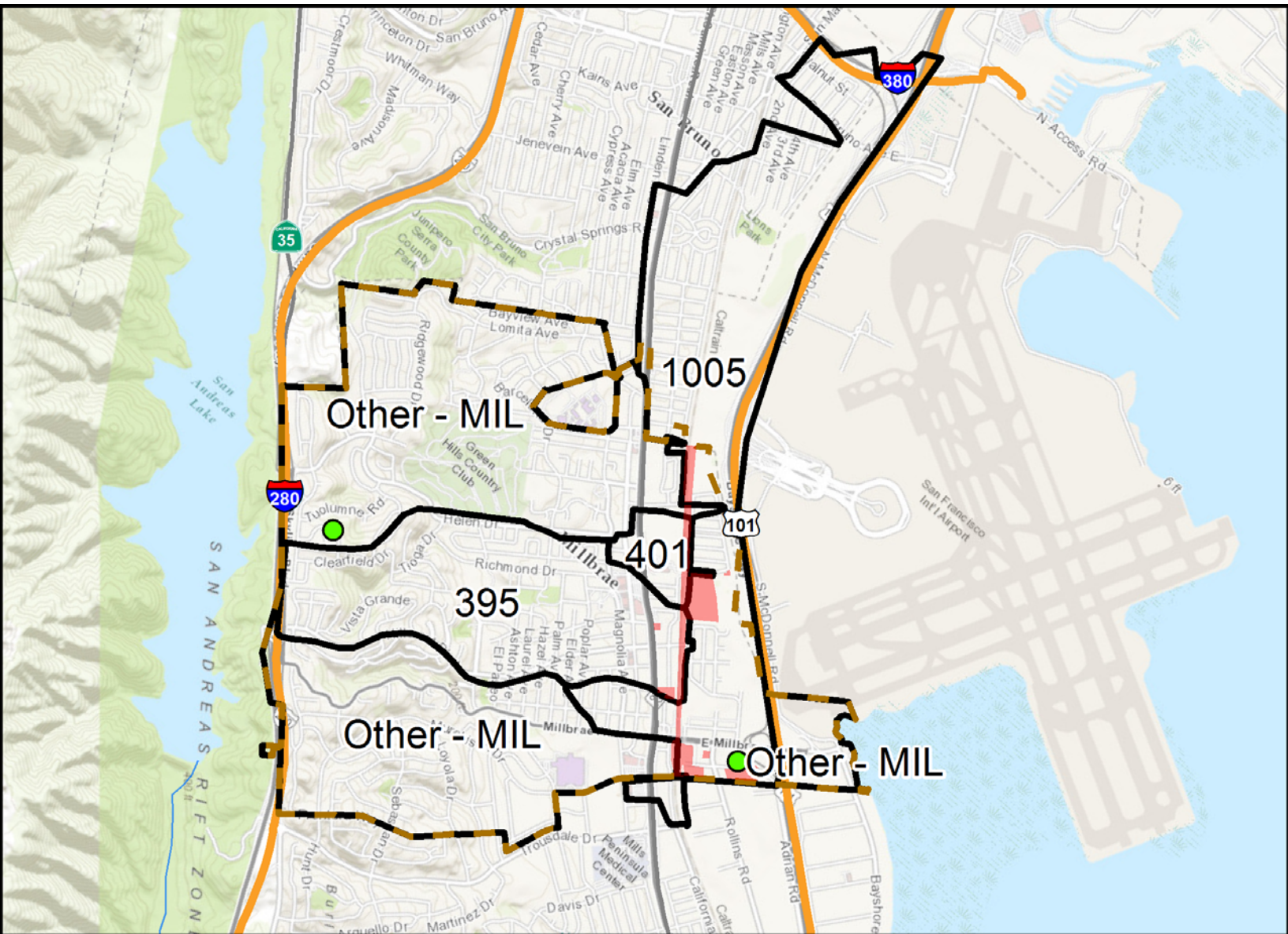
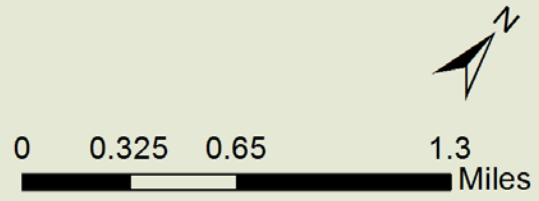
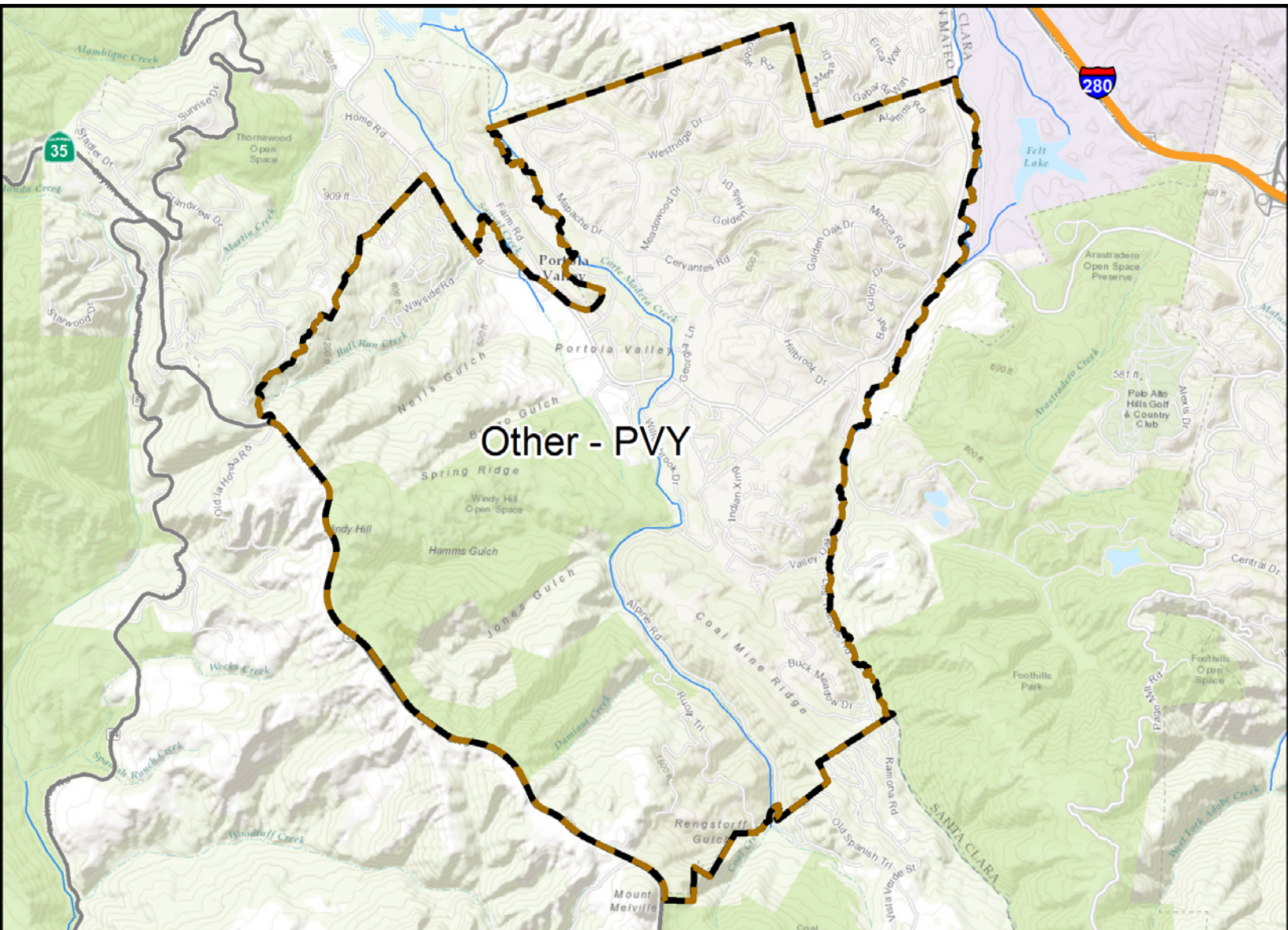


Figure A-11. WMAs and GI/LID in Millbrae
Millbrae Watershed Management Area Map

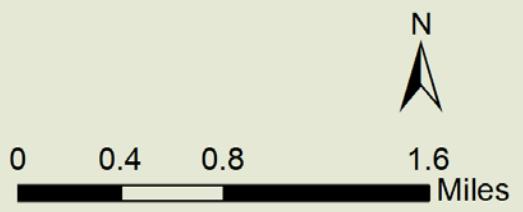
- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary





**Figure A-12. WMAs and GI/LID in Portola Valley
Millbrae Watershed Management Area Map**

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



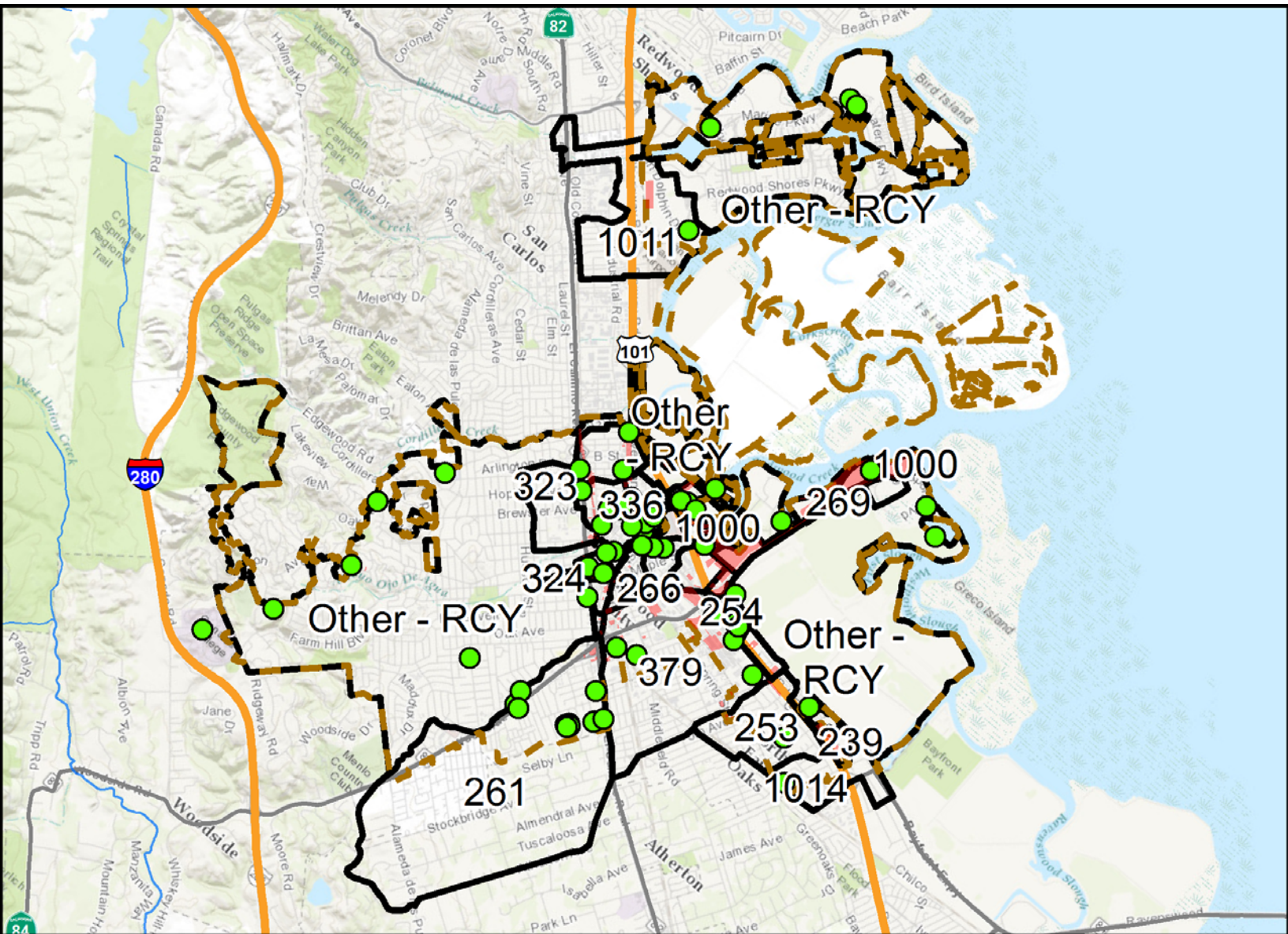
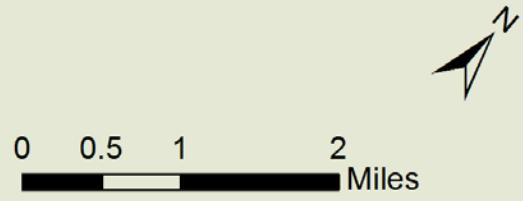


Figure A-13. WMAs and GI/LID in Redwood City
Redwood City Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



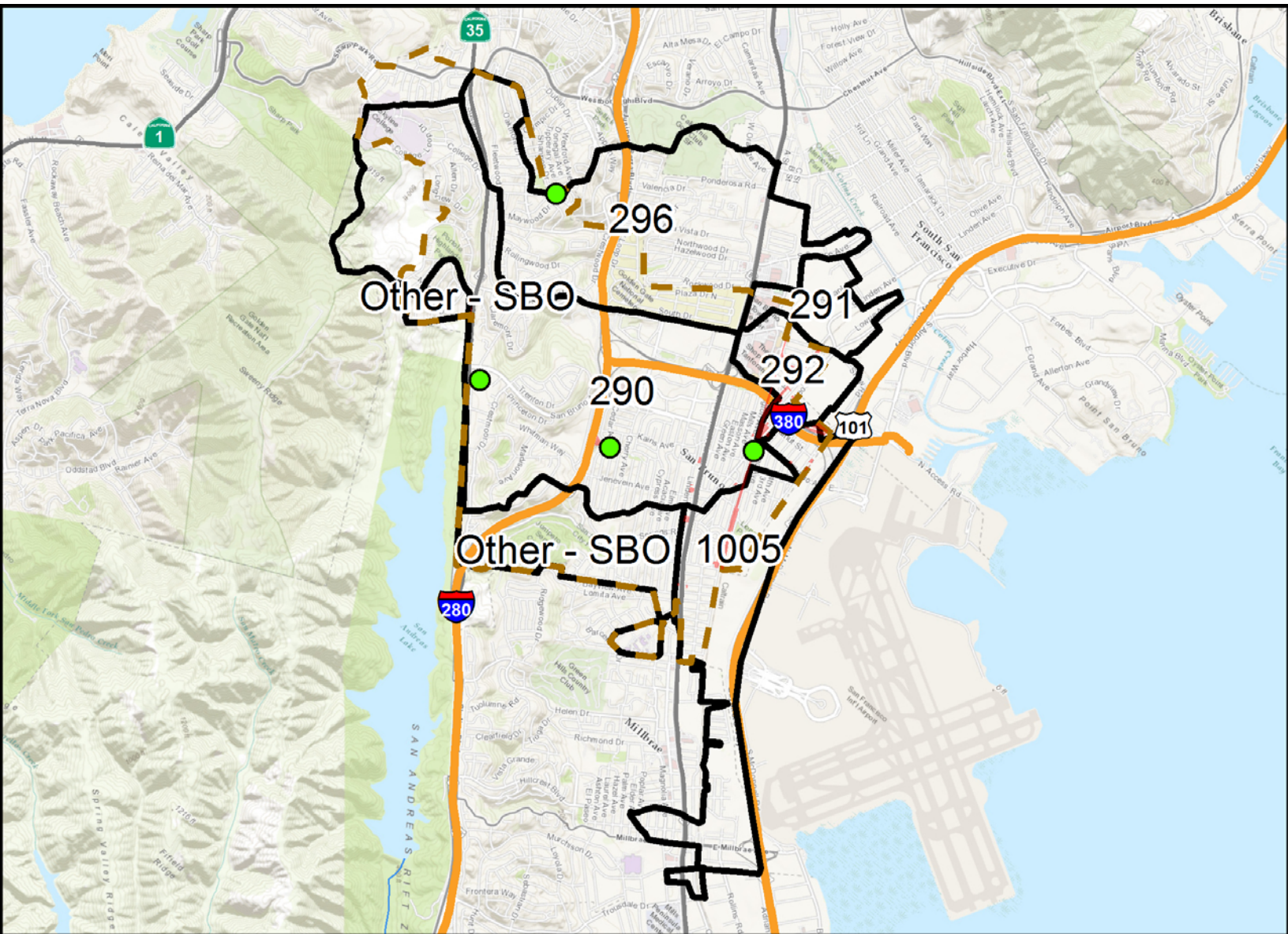
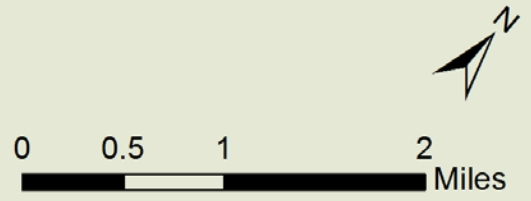


Figure A-14. WMAs and GI/LID in San Bruno
San Bruno Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



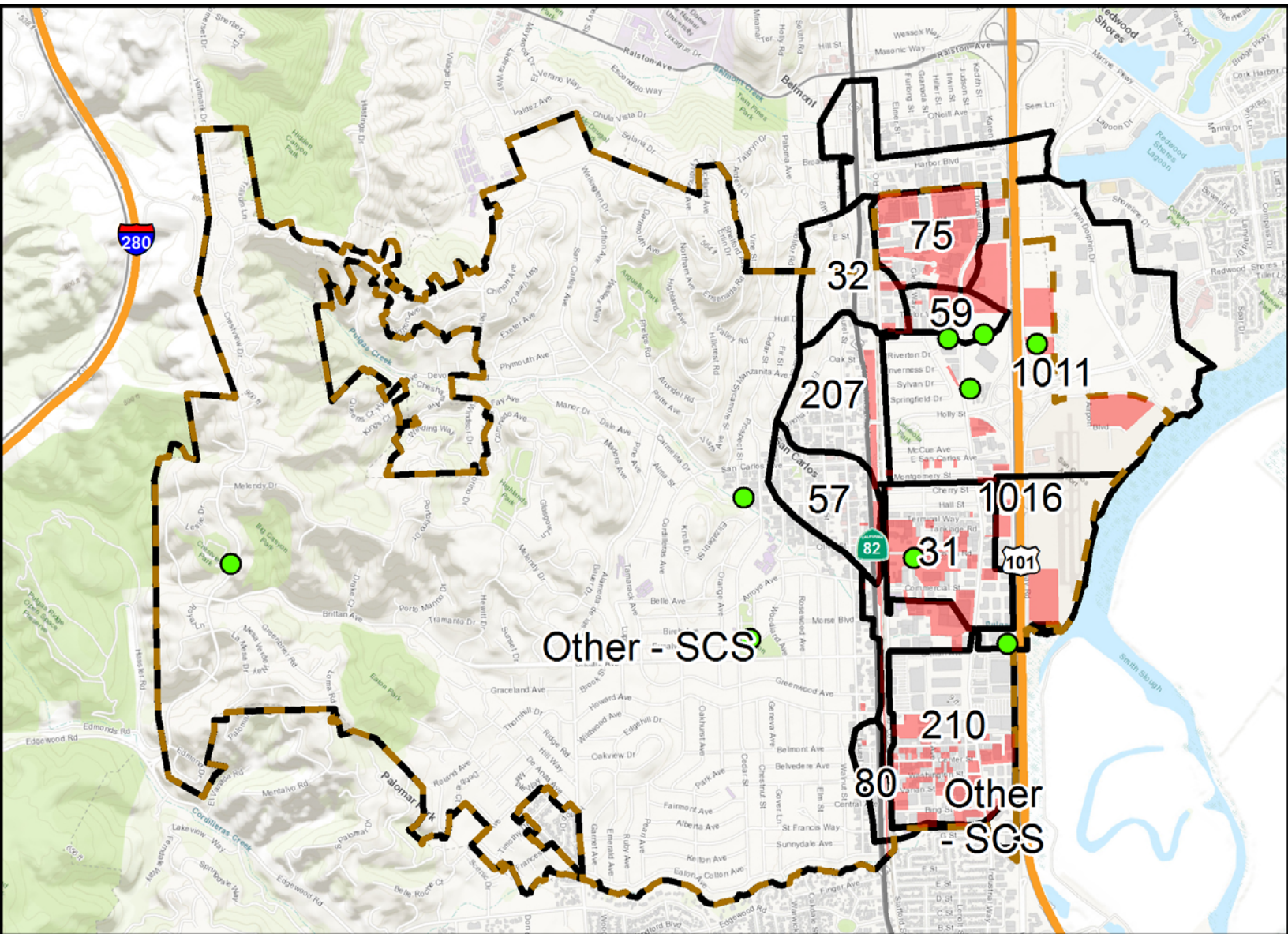
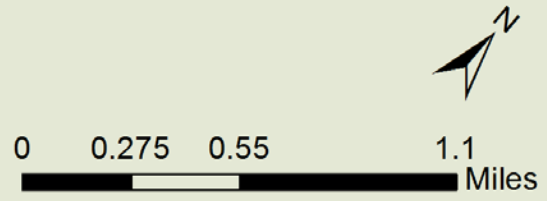


Figure A-15. WMAs and GI/LID in San Carlos
San Carlos Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



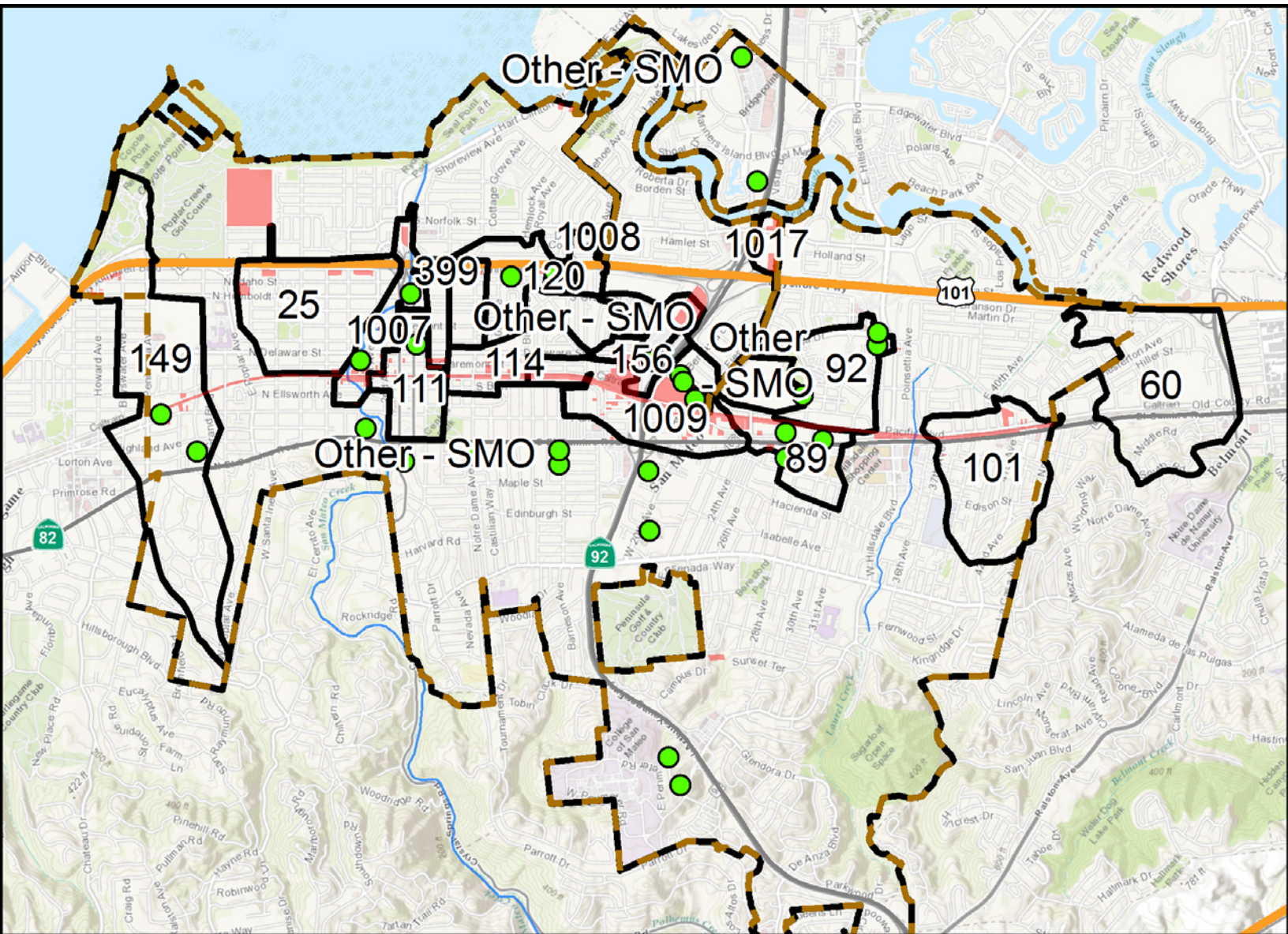
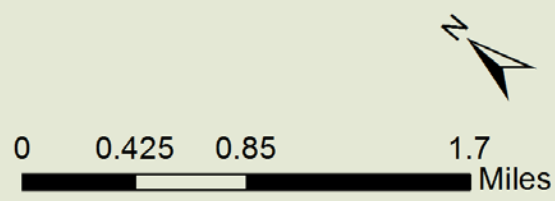


Figure A-16. WMAs and GI/LID in San Mateo
San Mateo Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



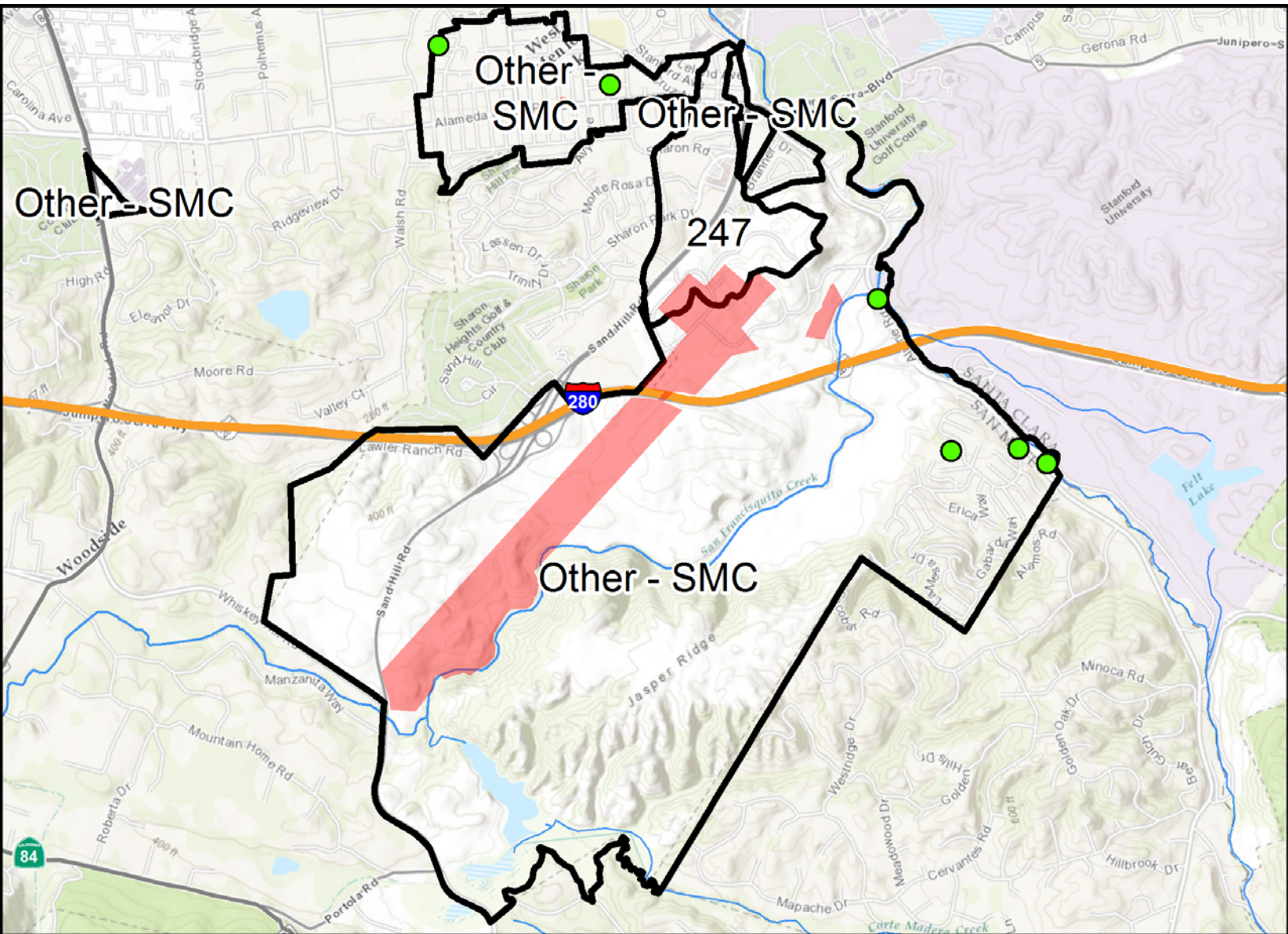
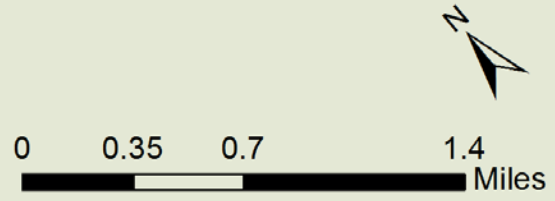


Figure A-17a. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



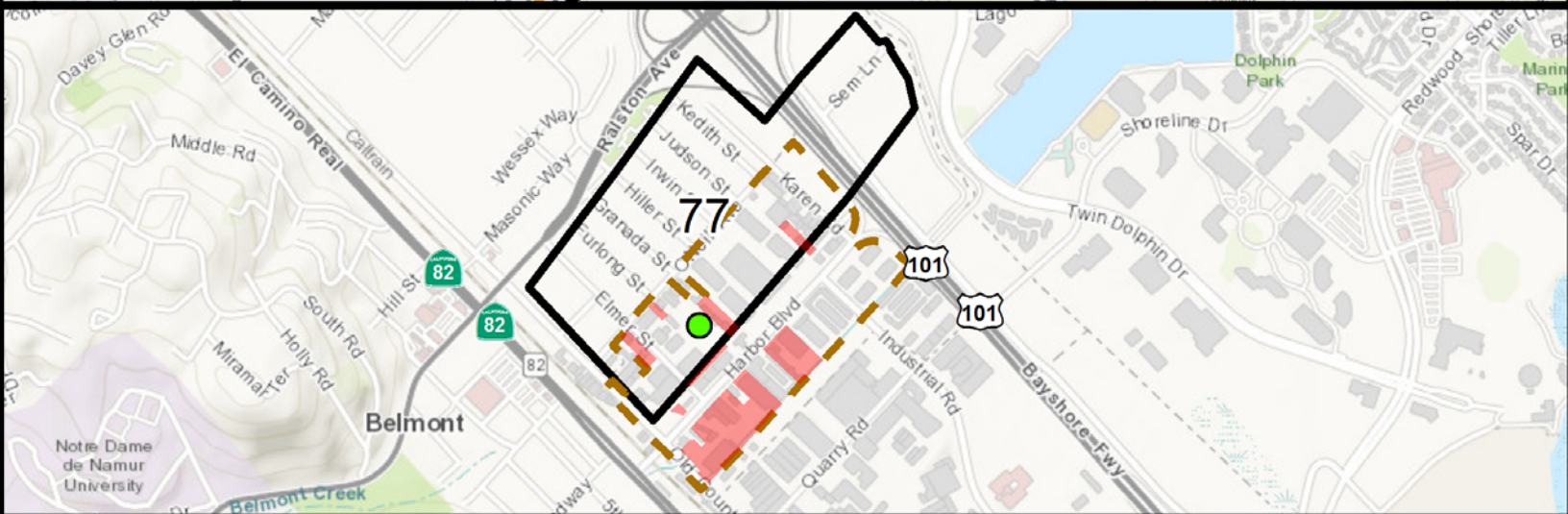
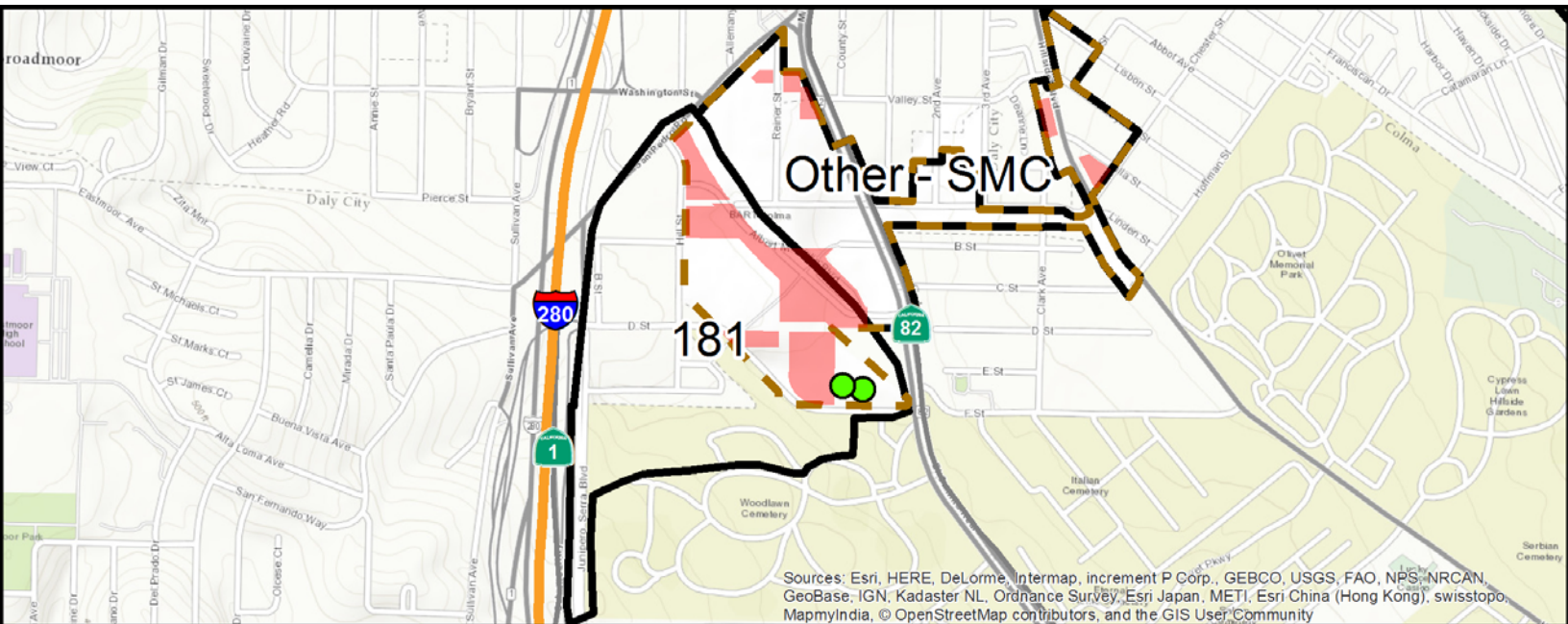
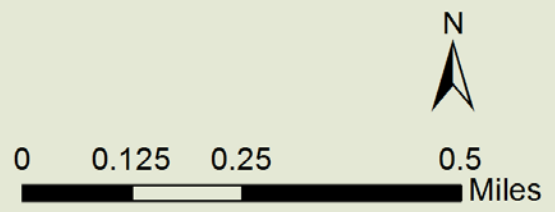


Figure A-17b. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



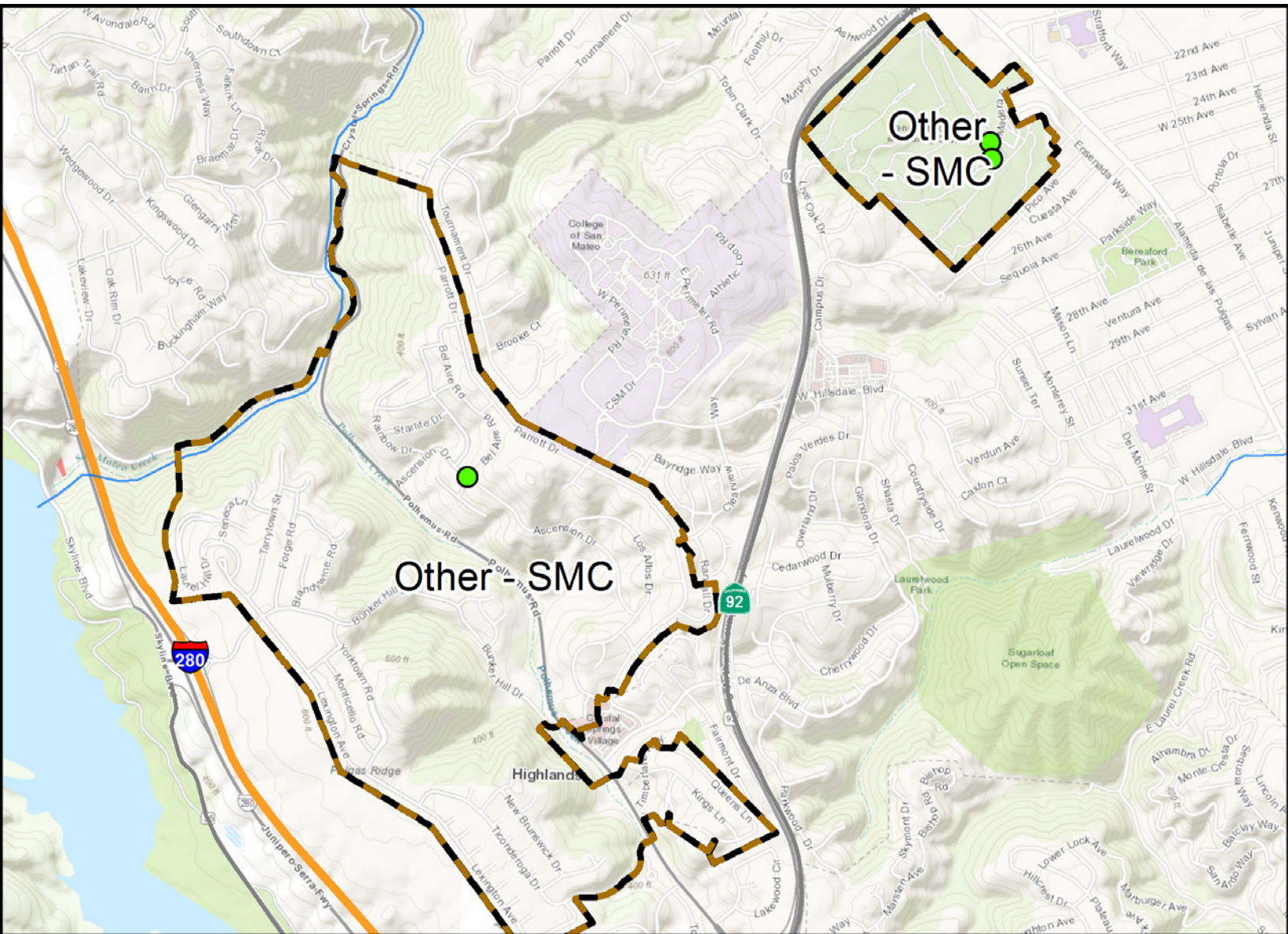
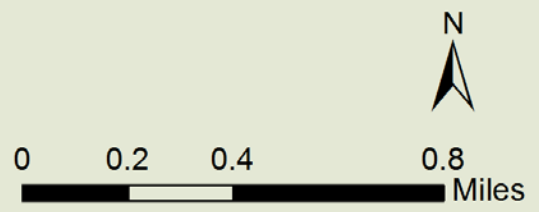


Figure A-17c. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



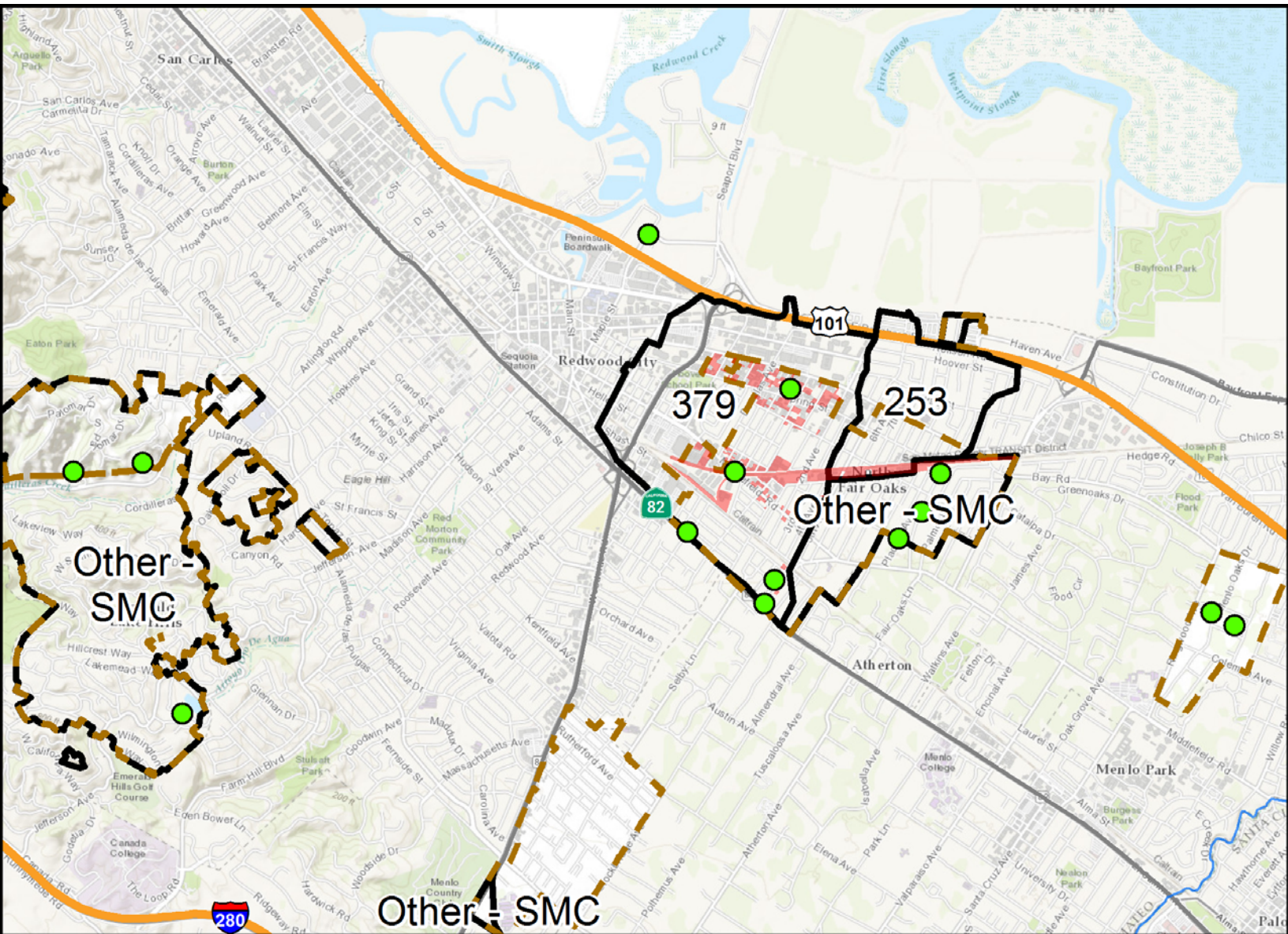
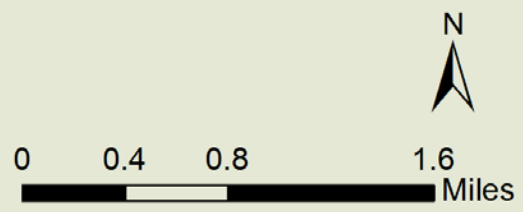


Figure A-17d. WMAs and GI/LID in San Mateo County
San Mateo County Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



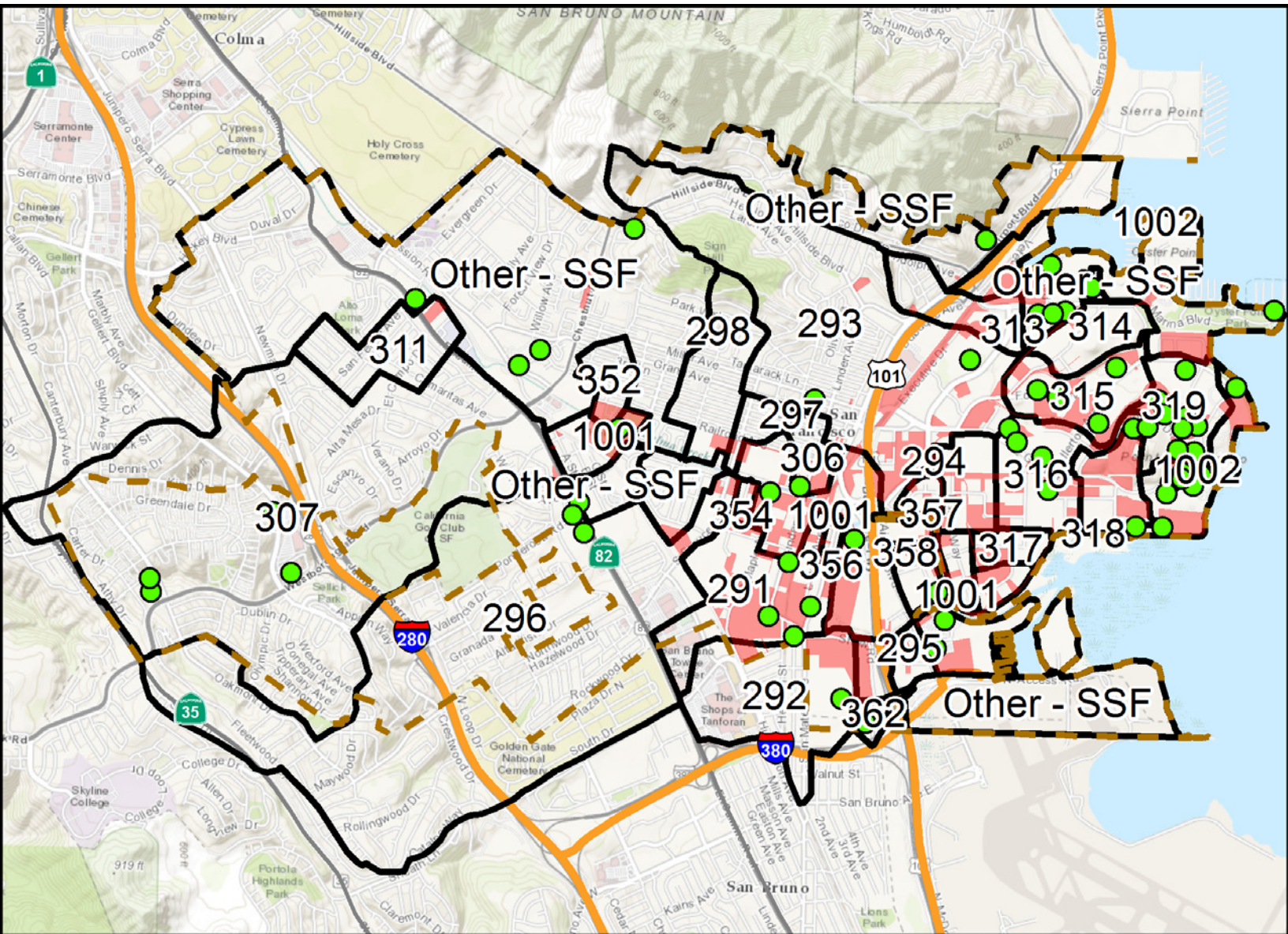
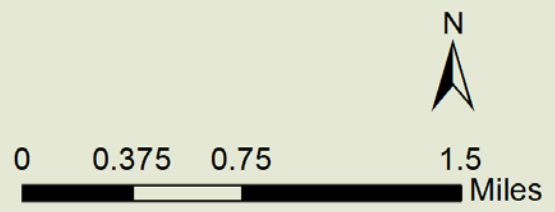


Figure A-18. WMAs and GI/LID in South San Francisco
South San Francisco Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary



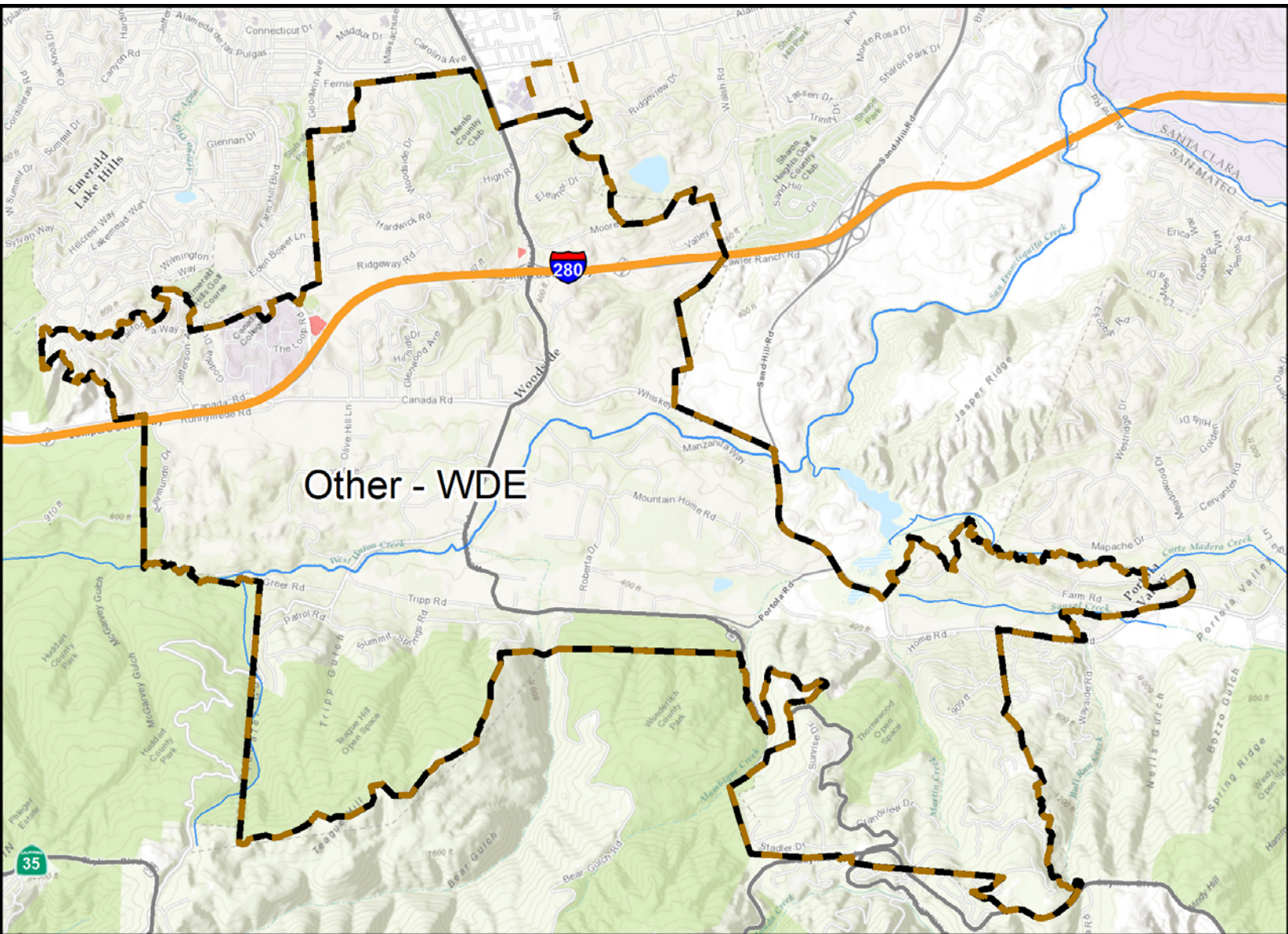


Figure A-19. WMAs and GI/LID in Woodside
Woodside Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

