



Countywide Program Annual Report
FY 2014-15

September 15, 2015

A Program of the City/County Association of Governments

Credits

This report is being submitted by the participating agencies in the



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City of Belmont	Town of Hillsborough	City of San Mateo
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City of Daly City	Town of Portola Valley	City of South San
City of East Palo Alto	City of Redwood City	Francisco
City of Foster City	City of San Bruno	Town of Woodside

Implementation of the Program Coordinated by:
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)

Report Prepared by:
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EOA, Inc.

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LIST OF ACRONYMS

ABAG:	Association of Bay Area Governments
BASMAA:	Bay Area Stormwater Management Agencies Association
BASMAA MPC:	Bay Area Stormwater Management Agencies Association - Monitoring and Pollutants of Concern Committee
BASMAA RMC:	Bay Area Stormwater Management Agencies Association - Regional Monitoring Coalition
BAWSCA:	Bay Area Water Supply and Conservation Agency
BMPs:	Best Management Practices
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
CII:	Commercial/Industrial/Illicit (Subcommittee)
CRM:	Constituent Relationship Management System
CW4CB:	Clean Watersheds for a Clean Bay
CWEA:	California Water Environment Association
DO:	Dissolved Oxygen
EPA:	Environmental Protection Agency
FY:	Fiscal Year
HHW:	Household Hazardous Waste
IPM:	Integrated Pest Management
IMR:	Information Monitoring Report
IMS:	Information Management System
LID:	Low Impact Development
MRP:	Stormwater NPDES Municipal Regional Permit

MS4:	Municipal Separate Storm Sewer System
MSI:	Marine Science Institute
NDS:	New Development Subcommittee
NPDES:	National Pollutant Discharge Elimination System
OSH:	Orchard Supply Hardware
OWOW:	Our Water Our World
PAPA:	Pesticide Applicators Professional Association
PBDEs:	Polybrominated Diphenyl Ethers
PCBs:	Polychlorinated Biphenyls
PIP:	Public Information and Participation
POTW:	Publicly-Owned Treatment Works (sewage treatment plants)
QAPP:	Quality Assurance Project Plan
RMP:	San Francisco Estuary Regional Monitoring Program for Trace Substances
RMP STLS:	Regional Monitoring Program - Small Tributaries Loading Strategy Work Group
RWQCB:	Regional Water Quality Control Board
SCVURPPP:	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFEP:	San Francisco Estuary Partnership
SMC:	San Mateo County
SMCWPPP:	San Mateo Countywide Water Pollution Prevention Program
SOP:	Standard Operating Procedure
SWMP:	Stormwater Management Plan
SWPPP:	Stormwater Pollution Prevention Plan
TAC:	Technical Advisory Committee
TAPE:	Technology Assessment Protocol - Ecology
TMDL:	Total Maximum Daily Load

VSQG: Very Small Quantity Generator
UCIPM: University of California Statewide Integrated Pest Management
WAM: Watershed Assessment and Monitoring
WATF: Water Agency Task Force
WY: Water Year

EXECUTIVE SUMMARY

INTRODUCTION

The FY 2014/15 Countywide Program Annual Report was developed in compliance with the National Pollutant Discharge Elimination System (NPDES) stormwater Municipal Regional Permit (MRP) adopted in October 2009. It summarizes stormwater management activities implemented by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) in FY 2014/15. 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 2014/15.



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 2014/15, the C/CAG Board of Directors received presentations, updates, and took actions on various stormwater-related issues, as summarized below:

- August 2014: Acceptance of final opinion research report for potential countywide stormwater funding initiative. Appointment of new Stormwater Committee members for Redwood City, Millbrae, and Menlo Park.
- September 2014: Approval of a \$25,000 pilot rain barrel rebate program in partnership with the Bay Area Water Supply and Conservation Agency. Appointment of a new Stormwater Committee member for San Bruno.
- October 2014: Presentation on California Stormwater Quality Association (CASQA) Award for "Be the Street" litter campaign. Amendment of San Mateo County Division of Environmental Health (referred to as County Environmental Health, or CEH) contract for public education and outreach to extend the term through June 2015.
- December 2014: Amendment of EOA, Inc. contract to extend the term through June 2015.

- January 2015: Appointment of new Stormwater Committee member for Foster City.
- May 2015: Extension of the rain barrel rebate program through June 2016 for an additional \$25,000. Developed draft C/CAG budget.
- June 2015: Presentation by Regional Water Board Assistant Executive Officer Mumley on the draft MRP. Extension of contract with SCI Consulting Group through June 2016 for a potential countywide stormwater funding initiative. Extension of EOA, Inc. contract through September 2015. Extension of CEH contract through October 2015. Final C/CAG budget was approved.

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), 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. 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 participated in the following activities during the FY 2014/15 reporting year:

- BASMAA: Served as Chair of the Board of Directors, participated in regular Board meetings, the Municipal Regional Permit 2.0 Steering Committee, the regional Green Infrastructure and Pollutants of Concern Workgroups, and BASMAA Development Committee;
- CASQA: 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: Appointed to the committee in 2015 to represent municipal stormwater issues, participated in quarterly meetings in March and May;
- The Program Manager provided a large number of presentations to diverse groups (e.g., community organizations, city councils, regulatory agencies) on topics such as stormwater regulation and green infrastructure; and
- The Program Manager participated in a large number of stakeholder meetings, hearings, and workshops, most of which were held by regional, state or federal regulatory agencies.

Stormwater Committee

C/CAG's stormwater management-related decisions are assisted by 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 of the MRP. The Stormwater Committee met a total of five times during FY 2014/15 to assist with planning and organizing SMCWPPP's stormwater management activities including MRP compliance actions.

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 jurisdiction should be focused on in the coming quarter and what should have been accomplished and documented in the preceding quarter. The TAC met three times during FY 2014/15. SMCWPP has also established various subcommittees and work groups to the TAC that continued to meet periodically throughout FY 2014/15 to help implement the different aspects of the MRP, as summarized below.

Potential Countywide Stormwater Funding Initiative

Since January 2013, C/CAG has been exploring a potential countywide stormwater funding initiative to generate additional revenue to help its member agencies pay for the costs of compliance with the MRP. C/CAG retained SCI Consulting Group to lead the effort. To date, the consultant team has 1) developed a draft Funding Needs Analysis that indicates an estimated \$37 million per year countywide shortfall, 2) prepared a draft Funding Options Report that details the various opportunities for funding stormwater-related efforts, including Proposition 218-compliant special taxes and property-related fees, and 3) completed public opinion research that indicates there is insufficient support for a special tax (requires 2/3 approval by voters) but potentially sufficient support for a property-related fee (requires majority approval of property owners) at rates that would generate \$8-12 million per year countywide. Efforts related to the initiative have generally been put on hold awaiting a revised MRP to validate funding needs assumptions and boost political support for the need to pursue an initiative.

Rain Barrel Rebate Program

As a result of the California drought and in an attempt to pursue alternative approaches to public engagement, C/CAG partnered with the Bay Area Water Supply and Conservation Agency (BAWSCA) to implement a pilot countywide Rain Barrel Rebate Program. Prior to this, the only agency in San Mateo County offering rain barrel rebates was the City of Millbrae. C/CAG provided BAWSCA with \$25,000 in FY 2014/15 to start the program, 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. The program officially started in October 2014 and 328 barrels have been installed in San Mateo County as of June 30, 2015. C/CAG and BAWSCA continued the program into FY 2015/16, with C/CAG putting an additional \$25,000 into the program.

Sustainable Stormwater and Safe Routes to School Demonstration Project

In an effort to further integrate stormwater management with transportation issues, and in partnership with the City of San Mateo and the San Mateo/Foster City School District, C/CAG

jointly funded a Sustainable Stormwater and Safe Routes to School demonstration project at Laurel Elementary School in the City of San Mateo. The project was funded jointly with stormwater and transportation funds from C/CAG's \$10 vehicle registration fee in San Mateo County as well as City and school district funds. The project resolved mobility issues identified in a walk audit and provided stormwater capture and treatment capabilities using multiple green infrastructure systems. Stormwater management was integrated into a redesigned parking lot that incorporated multiple rain gardens, an infiltration planter, and a one-way drive-through drop-off and pick-up lane to reduce on-street parking and congestion. A new pedestrian bulb-out at a crosswalk location was lengthened and vegetated for stormwater capture, and a new mid-block crosswalk was flanked by stormwater curb extensions. The jointly funded effort is an example of a multi-benefit project that shares implementation costs among multiple complementary priorities.

SUMMARY OF ACCOMPLISHMENTS

The FY 2014/15 Annual Report is structured around the following major provisions of the MRP:

- C.2. Municipal Operations
- C.3. New Development and Redevelopment
- C.4. Industrial and Commercial Site Controls
- C.5. Illicit Discharge Detection and Elimination
- C.6. Construction Site Control
- C.7. Public Information and Outreach
- C.8. Water Quality Monitoring
- C.9. Pesticides Toxicity Control
- C.10. Trash Load Reduction
- C.11. Mercury Controls
- C.12. PCBs Controls
- C.13. Copper Controls
- C.14. Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides and Selenium
- C.15. Exempted and Conditionally Exempted Discharges

The following sections briefly summarize how SMCWPPP provided assistance in FY 2014/15 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 2014/15, 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;
- Engaged the Subcommittee in the review of the administrative draft and Tentative Order of the soon to be reissued MRP;
- Facilitated participation of a stormwater BMPs product vendor and County Mosquito and Vector Control District staff in Subcommittee meetings; and
- Held a series of three Corporation Yard BMP Trainings in April 2015. The cities of South San Francisco, Redwood City and San Mateo volunteered their corporation yards as the sites of the training. The three training days were attended by 29 people total. At each corporation yard the attendees walked through the yard and discussed BMPs that are appropriate at different corporation yard activity areas.

C.3 New Development and Redevelopment

In the reporting year FY 2014/15 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 2014/15, 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 and enjoyed good participation.

SMCWPPP's accomplishments during FY 2014/15 include the following major tasks to assist member agencies with implementation of Provision C.3:

- Updated the Subcommittee on the progress and content of the draft reissued MRP, solicited feedback, and summarized comments provided by SMCWPPP and BASMAA to the Regional Water Board;
- Prepared and updated various implementation and outreach products, checklists, and SMCWPPP's C.3 Technical Guidance Manual, to assist member agencies in complying with Provision C.3;
- Performed outreach to local architectural copper material vendors and installers;
- Held the 2015 Inspection Workshop with an afternoon session on "C.3.h Inspection / Operation & Maintenance (O&M) Stormwater Compliance," with 58 attendees;
- Held the 2015 New Development Workshop, entitled "Low Impact Development and Green Infrastructure: What Will the Future Bring?", on June 17, 2015 with 67 attendees;
- Participated in development of the LID White Paper, a regional project through the BASMAA Development Committee; and

- Compiled and submitted local agency Special Projects reports to the Regional Water Board.

C.4 Industrial and Commercial Site Controls

One important goal of SMCWPPP's Commercial, Industrial and Illicit Discharge (CII) component is to assist member agencies to control 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 2014/15, 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 four CII Subcommittee meetings to share information about commercial/industrial inspection related MRP requirements and methods for achieving compliance. The meetings provided a forum to share experiences with implementing MRP Provisions related to the CII component, including Provision C.4. In addition, the meetings allow a forum for the San Mateo County Division of Environmental Health (referred to as County Environmental Health, or CEH) representative to discuss the status of CEH inspections and hear member agency feedback on the process, since many of the member agencies have an agreement with CEH to conduct stormwater inspections of businesses.
- Revised the SMCWPPP Facility Stormwater Inspection Form Template;
- Reviewed and updated the guidance document *How to Conduct Stormwater Inspections*. The document is available to members on the SMCWPPP website for use in internal training activities; and
- Assisted CEH develop a new stormwater business inspection data tracking table.

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 2014/15, 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:

- Updated the table of mobile businesses with stormwater enforcement actions to share regionally with stormwater inspectors;

- Worked with SMCWPPP's PIP Subcommittee on outreach to Mobile Cleaner businesses through a Facebook post in April 2015. The post included a link to the SMCWPPP mobile business BMP brochure; and
- Provided comments to the BASMAA Municipal Operations Committee on the most recent draft of mobile business BMPs.

C.6 Construction Site Control

During FY 2014/15, 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 2014/15 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 October 8, 2014. SMCWPPP staff gave presentations on current stormwater requirements for construction sites, proper installation of construction BMPs, and tips for keeping construction inspection programs in compliance. Approximately 19 people attended the training, including agency inspectors, local stormwater program staff, and contractors; and
- Planned and conducted the May 5, 2015 Construction Site Inspector Workshop. The half-day workshop was attended by 58 people and covered the following topics: requirements of MRP Provision C.6; differences between Provision C.6 and the Construction General Permit; BMPs and inspections; a group exercise focusing on actual examples of inspection situations; and common issues in inspections of newly installed systems.

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 the water quality in local creeks, lagoons, shorelines, and neighborhoods;
- To encourage residents to adopt less polluting and more environmentally beneficial practices; and
- To increase residents' hands-on involvement in SMCWPPP activities.

PIP is essential for controlling pollution at the source because many pollutants originate from preventable, everyday residential activities. Pollutants in stormwater may be reduced by motivating and educating residents about the benefits of preventing stormwater pollution. This approach is recognized as being both cost-effective and efficient in meeting the goal of reducing pollutants in stormwater to the maximum extent practicable.

The SMCWPPP PIP Subcommittee met four times in FY 2014/15 to oversee the development of educational materials and to guide the implementation of the PIP component of the program. SMCWPPP accomplished the following major public information and participation tasks during FY 2014/15:

- Redesigned the entire www.flowstobay.org homepage interface and password protected section of the website. Created one mega menu and added mobile responsive functionality to allow for easier access to all website resources by residents, businesses and municipalities from desktop computers, tablets, and mobile phones. Accumulated over 32,000 sessions, 64,000 page views, and over 21,000 new users during the 2014/15 fiscal year;
- Doubled public participation on multiple platforms of social media through consistent posts, prompts, and engagement giveaways purposed to increase public awareness on stormwater pollution prevention and encourage public participation in activities that promote environmental stewardship. Accumulated over 1,140,000 impressions over the 2014/15 fiscal year using Facebook and Twitter alone;
- Launched a new “Car Wash Pollution Prevention Reward Program “in partnership with 10 car wash locations throughout the County that expanded redemption choices to include text message and email paperless options. Coordinated with cities to promote the car wash reward program through social media and the website, recruiting over 2,000 participants within one month of the program’s launch. Expanded at-home car wash recommendations to include waterless car wash products that conserve water while eliminating urban runoff pollution caused by driveway car washing. Continued to educate residents to use minimal soap and divert runoff to landscaped areas if water is still used while washing cars at home;
- Coordinated Coastal Cleanup Day for San Mateo County at 72 sites, diverting an estimated 15,662 pounds of trash and 3,608 pounds of recyclables from waterways. Raised awareness of the event and litter issues throughout the County through various media coverage and the use of social media, and recruited an estimated 4,265 volunteers in 2014;
- Hosted an educational outreach booth at the 9-day San Mateo County Fair promoting a variety of stormwater pollution prevention messages to approximately 1,500 attendees;
- Sponsored an educational assembly program for elementary-age students entitled, “We All Live Downstream,” performed by the Banana Slug String Band. The program emphasizes the importance of not littering or dumping substances into the storm drain to protect the marine environment. A total of 51 performances were conducted at 25 schools Countywide, with a total student reach of over 9,300 this fiscal year;
- Continued conducting the middle school presentation entitled, “Linking Litter to Critters.” The presentation emphasizes educating students on the impact of litter on the environment, and encourages the students to become involved by educating others. A total of 36 presentations were conducted at 16 schools, with 985 students reached this fiscal year;
- Continued conducting the high school presentation entitled, “Water Pollution Prevention: Problems and Solutions.” The presentation emphasizes educating students on basic problems and solutions of stormwater pollution, and encourages students to become involved by educating others. A total of 5 presentations were conducted at 3 schools, with 201 students reached this fiscal year;
- Partnered with the Bay Area Water Conservation Supply Agency (BAWSCA) to promote a Rain Barrel Rebate program as a strategy to conserve water during the drought while

reducing urban runoff pollution. Specific outreach efforts included posts on social media, content on the website, disseminating applications at multiple outreach events, and co-hosting workshops. As a result of this partnership, over 500 rain barrel rebate applications were submitted within the County;

- Launched a “Cigarette Butt Litter Pilot Program” in partnership with four cities, two harbors, and four non-profit organizations with a goal of determining which behavior change tool or behavior change tools, such as signs and/or receptacle prove most effective at shifting the cigarette butt littering social norm to that of a proper disposal social norm. Preliminary data was gathered at the close of the fiscal year. During the coming year, synthesis of data collection results at a total of 48 sites prior to, and after the introduction of behavior change tools will determine what strategies are to be recommended for broad scale implementation in an effort to reduce cigarette butt litter; and
- Conducted tabling at a variety of community events and reached a total of approximately 2,660 people in person this fiscal year.

C.8 Watershed Quality Monitoring

On behalf of its member agencies, SMCWPPP performs water quality monitoring activities in compliance with MRP Provision C.8. Much of this work is accomplished through participation in BASMAA regional projects. Per Provision C.8, water quality monitoring activities conducted from the beginning of the permit term through September 30, 2013 were documented, summarized, and evaluated in the comprehensive Integrated Monitoring Report (IMR), which was submitted to the Regional Water Board on March 17, 2014. Per Provision C.8, a complete documentation of all water quality monitoring data collected from October 1, 2014 through September 30, 2015 (i.e., Water Year or WY 2015) will be presented in SMCWPPP’s Urban Creeks Monitoring Report, which will be submitted to the Water Board by March 15, 2016.

Based on the lessons learned through the implementation of the Small Tributaries Loading Strategy (STLS) Multi-Year Plan in Water Years 2012, 2013, and 2014, and the reprioritization of near-term information needs, SMCWPPP and its Regional Monitoring Coalition partners implemented a revised approach to Pollutants of Concern loads monitoring in FY 2014/15 that consisted of the following two elements:

- PCB and Mercury Opportunity Area Analysis - SMCWPPP is conducting a *PCBs and Mercury Opportunity Area Analysis* as part of its revised POC loads monitoring approach in WY 2015 to assist Permittees in identifying source areas in San Mateo County. The outcome of this activity will be a refined understanding of PCB/mercury source area locations, which is anticipated to lead to further load reduction opportunities during future NPDES permit terms. The field and laboratory work have been completed and a draft report documenting the methods and results is under development.
- POC Monitoring (RMP/STLS) - Through the STLS workgroup, SMCWPPP has also worked with RMP staff on the implementation of a stormwater characterization field study that is intended to complement the opportunity area analysis described above. The goal of the project is to assist Permittees in identifying watershed sources of PCBs and mercury through sampling of stormwater and sediment transported from the watershed to

stormwater conveyances during storm events. This monitoring was funded through the RMP and conducted during WY 2015.

The results of the above alternative monitoring approach will be presented in SMCWPPP's Urban Creeks Monitoring Report, which will be submitted to the Water Board by March 15, 2016.

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 2014/15, 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.
- Conducted SMCWPPP's Annual Landscape IPM Training Workshop in March 2015.
- Finalized an "Orientation Piece" for the Parks Maintenance and IPM Work Group that can be used by Permittee staff to provide information about SMCWPPP and C.9 requirements to new and existing staff.
- Continued developing periodic updates on pesticide regulatory activities for the Parks Maintenance and IPM Work Group.
- Participated in meetings to discuss implementation of the California Department of Pesticide Regulations (DPR) funded "IPM Focus on Multi-Unit Housing" project. Participated in relevant BASMAA and CASQA activities.
- Participated in a region-wide IPM "Our Water Our World" campaign by working with 22 local retail stores to maintain point of purchase information on less toxic pest control.
- Promoted IPM courses to 81 structural and landscape pest control operators registered with the County Agricultural Commissioner. Piloted a constituent relationship management system (CRM) to notify operators electronically of upcoming courses in addition to US postal mailings that provide analytics on open rates and link click totals. A total of 17 operators were emailed and insights showed that 6 opened the email. Maintained a web page identifying operators that are IPM trained as a resource for the public.

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:

- Submit a Short-Term Trash Reduction Plan to the Water Board by February 1, 2012 that is designed to attain a 40% reduction from its MS4 by July 1, 2014.
- Determine its baseline load of trash from its stormwater system and document the method used to demonstrate progress towards load reduction levels (e.g., 40% reduction).
- Identify and select a required number of trash hot spots in creeks or shorelines that will be the focus of required annual trash assessments and cleanups.
- Install and maintain full trash capture devices to treat runoff from a specified amount of land area.
- Submit a Long-Term Trash Reduction Plan to the Regional Water Board by February 1, 2014 that specifies actions designed to attain a 70% reduction from its MS4 by July 1, 2017, and a 100% reduction (i.e., “No Visual Impact”) by July 1, 2022.

During FY 2014/15, SMCWPPP completed the following tasks in support of member agency trash management activities conducted in compliance with the above requirements:

- SMCWPPP staff coordinated four Trash Committee meetings. Committee members discussed and provided input on a range of topics/projects including Developing the FY 2014/15 Annual Report format for Provision C.10, revising Long-Term Trash Load Reduction Plans and creating associated maps, identifying and conducting on-land trash assessments, participation in and tracking the BASMAA awarded State Water Board Proposition 84 Stormwater Monitoring and Planning grant project “Tracking California’s Trash”, providing comments on the State Water Board Proposed Trash Amendments released on June 10, 2014, coordinating with the California Department of Transportation, and coordinating the SMCWPPP Litter Work Group.
- Program staff assisted SMCWPPP member agencies in revising trash generation and management area maps to provide a more accurate depiction of trash generation in San Mateo County. All revisions were made via GIS and the Program continued to store all trash-related data in its GIS data management system.
- SMCWPPP began implementing the Pilot Trash Assessment Strategy in FY 2014/15. The Strategy was submitted to the Water Board on February 3, 2014 as part of Long-Term Plan submittals. The Strategy is intended to provide information on magnitude and extent of trash reductions associated with stormwater in San Mateo County, and has two main (primary) indicators: 1) full capture device operation and maintenance; and 2) on-land visual trash assessments. In FY 2014/15, SMCWPPP continued to make significant strides in developing a model full capture system operation and maintenance verification program for member agencies to utilize. Additionally, SMCWPPP and member agency staff conducted 535 on-land visual trash assessments at 159 sites. Data generated through these assessments are incorporated into each member agency’s trash reduction estimate included in Section 10 of their Annual Reports.

- SMCWPPP staff began developing a web-accessible database to allow assessment data to be entered via a tablet or smartphone by field crews, and to house on-land trash visual assessment results. SMCWPPP member agencies will have the ability to view and download assessment data via the Program’s website.
- SMCWPPP staff began planning a half-day workshop entitled “SMCWPPP On-Land Visual Trash Assessment Training” in FY 2014/15. The workshop was held in July 2015 and over 25 participants attended. The training workshop focused on how to conduct on-land visual trash assessments using the standardized assessment protocol.
- Permittees are required to clean up trash hot spots to a level of “no visual impact” at least one time per year for the term of the permit. 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 Permittee Annual Reports. During FY 2014/15, Permittees continued conducting annual cleanups and assessments required by the MRP. Results from this year’s annual cleanups indicated that cleanups and assessments were conducted at 30 different sites within SMCWPPP member agency jurisdictions. In total, approximately 40 cubic yards of trash was removed from these sites during FY 2014/15.
- SMCWPPP’s Litter Work Group that formed in March of 2014 continued to meet in FY 2014/15 to coordinate litter reduction efforts between the SMCWPPP program, 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. The goals of the group are to develop a litter reduction program related to waste issues for San Mateo County specific to its needs; develop best management practices 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. Five Work Group meetings were held during FY 2014/15. Additionally, the Work Group organized the County’s 2nd Annual Litter Reduction Roundtable event for municipal staff and waste hauling company staff on June 24, 2015. The focus of the event was on commercial waste container management. The attendees broke out into two groups of municipalities with their respective waste haulers and focused on commercial waste container management issues.

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. On behalf of its member agencies, SMCWPPP performs a variety of activities to address mercury in stormwater runoff in compliance with MRP Provision C.11. Much of this work is accomplished through participation in BASMAA regional projects that also address PCBs.

All mercury and PCB-related activities conducted through approximately the end of calendar year 2013 by SMCWPPP and BASMAA were documented, summarized, and evaluated in SMCWPPP’s comprehensive IMR, which was submitted to the Regional Water Board on March 17, 2014.

During FY 2014/15, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.11 (many of these tasks are also applicable to Provision C.12):

- Provision C.11.a requires that Permittees report an estimate of the mass of mercury collected via mercury collection and recycling efforts. Using a spreadsheet calculator developed in collaboration with BASMAA, SMCWPPP staff calculated the mass of mercury collected during FY 2014/15 by the San Mateo County Household Hazardous Waste Program. The estimated mass of mercury collected is calculated based on the total amount of mercury-containing devices and equipment collected and the best available information from manufacturers and trade organizations regarding the amount of mercury contained in the devices and equipment.
- MRP Provision C.11.b requires Permittees to monitor methylmercury in runoff discharges by analyzing samples already being collected for total mercury analysis, consistent with provision C.8.e. In FY 2014/15, samples for methylmercury continued to be collected and analyzed consistent with the Small Tributaries Load Strategy (STLS) and the STLS multiyear monitoring plan. Data collected in compliance with this provision during FY 2014/15 will be discussed in SMCWPPP's Urban Creeks Monitoring Report, which will be submitted to the Regional Water Board by March 15, 2016.
- MRP Provisions C.11.c and C.12.c require Permittees to conduct investigations to attempt to identify PCB and mercury source properties discharging to their storm drain systems at five pilot watershed locations (region-wide). The pilot watershed in San Mateo County is the Pulgas Creek Pump Station watershed in the City of San Carlos. During FY 2014/15, SMCWPPP staff reviewed the combined results of property records reviews, reconnaissance surveys, and inspections and soil/sediment monitoring data. PCBs concentrations in soil/sediment samples from the watershed ranged from 0.02mg/kg to 193 mg/kg. Mercury concentrations in the watershed ranged from 0.04 mg/kg to 1.1 mg/kg. SMCWPPP staff anticipates completing a source property investigation report and submitting source property referrals to the Regional Water Board during FY 2015/16.
- MRP Provisions C.11.d and C.12.d require developing and pilot-testing methods to enhance removal of sediment with PCBs and mercury during municipal street and storm drain system operation and maintenance (O&M) activities. A pilot street flush and capture project was conducted in the Pulgas Creek Pump Station watershed in September 2013. Four flush and capture events were implemented by City of San Carlos staff, which entailed flushing approximately 500-1,000 feet of street (curb-to-curb) with water from a vacuum truck. Street dirt samples were collected before and after each flush and capture event to help estimate the mass of pollutants removed. During FY2014/15, SMCWPPP staff began review and interpretation of the results. It is anticipated that a final project report will be completed in FY 2015/16.
- Per MRP Provisions C.11.e and C.12.e, BASMAA is evaluating the effectiveness to remove PCBs and mercury of ten urban runoff treatment facilities retrofitted into existing storm drainage infrastructure in the Bay Area. One retrofit project is located in San Mateo County in the Pulgas Creek Pump Station watershed. This project is called the Bransten Road bioretention curb extensions and its construction was completed in November 2013. Effectiveness monitoring was conducted at the site during three storms of the 2013/14 rainy season and one storm of the 2014/15 rainy season. All laboratory analysis has been completed and a data quality review of the analytical results and field methods

began in late spring 2015. SMCWPPP staff anticipates conducting the data analysis and interpretation and preparing a final project report in FY2015/16.

- MRP Provisions C.11.f and C.12.f require pilot studies to evaluate the effectiveness at mercury and PCBs removal of diversion of dry weather urban runoff and first flush events into publicly owned treatment works (POTWs). One of the pilot diversion projects is located in San Mateo County at the Pulgas Creek Pump Station. Fieldwork for the project commenced during the 2012/13 rainy season but was very limited due to initial equipment problems and a general lack of rainfall. Stormwater diversion to the sanitary sewer and associated monitoring was conducted during three storm events in FY 2013/14. Data review and preliminary interpretation of the monitoring results were completed during FY 2014/15. The project is also evaluating the projected costs and benefits of larger scale and more permanent dry and/or wet weather diversion scenarios at this pump station in order to scope potential implementation of building such a diversion structure during future permit terms. During FY 2014/15, SMCWPPP staff worked with City of San Carlos and Silicon Valley Clean Water staff to gather relevant information on sanitary sewer capacity and other logistical considerations to develop urban runoff diversion scenarios and began development of planning level designs and cost estimates for construction of a diversion structure. SMCWPPP staff anticipates completing the monitoring data interpretation and cost-benefit analysis for diversion scale-up scenarios and final project reporting during early FY 2015/16.
- MRP provisions C.11.g and C.12.g require Permittees to develop and implement a monitoring program to quantify mercury and PCB loads reduced through the implementation of control measures and to compare these loads against the Waste Load Allocations (WLAs) described in the Bay mercury and PCBs TMDLs. During the term of the MRP, Permittees have conducted and continue to conduct studies to demonstrate loads reduced and progress towards WLAs. The results of initial quantification of loads reduced or avoided through pollution prevention, source controls, and treatment controls were provided in SMCWPPP's IMR (Part B). SMCWPPP staff continued to participate in the RMP in FY 2014/15 to promote implementation of studies to address priority information needs for mercury and PCBs.
- MRP provisions C.11.h and C.12.h require Permittees to “conduct or cause to be conducted studies aimed at better understanding the fate, transport, and biological uptake of mercury and PCBs discharged in urban runoff to San Francisco Bay and tidal areas.” Working through BASMAA, in FY 2014/15 SMCWPPP Permittees continued to comply with these provisions through their participation in the RMP. For further information, see SMCWPPP's IMR.
- MRP Provisions C.11.i and C.12.i require development of a risk reduction program implemented throughout the region. This has been accomplished through the San Francisco Bay Fish Project, a two-year regional project to improve communication to the public about how to reduce their exposure to PCBs and mercury from consuming San Francisco Bay fish. The San Mateo County Environmental Health Department (SMCEHD) has distributed education materials created by the San Francisco Bay Fish Project, including posting signs along the Bay's shore in most cities in San Mateo County, and via website and social media posts. SMCEHD also has a program to provide educational materials (e.g., a Fish Project brochure entitled “Guide to Eating Fish and Shellfish from San Francisco Bay”) to at-risk populations (e.g., subsistence fisherman) by working with

private marinas, public parks, and nurses with the San Mateo County Health System who serve appropriate communities.

- MRP Provision C.11.j requires Permittees to develop an equitable mercury allocation sharing scheme, in consultation with Caltrans, to address runoff from the Caltrans facilities in the MRP footprint. To address this MRP provision, Permittee representatives and Caltrans met several times to review provision C.11.j and to discuss the manner by which the allocation would be shared. Those discussions led to a February 2014 Caltrans letter. In the letter Caltrans agrees (per MRP Provision C.11.j) to develop an equitable TMDL allocation sharing scheme with MRP Permittees and to implement mercury load reduction actions on a watershed or region-wide basis, consistent with TMDL implementation requirements in Caltrans' MS4 Permit. Permittees intend to work with Caltrans to identify load reduction actions that can be implemented on a watershed or region-wide basis. For further information, see SMCWPPP's IMR.

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. On behalf of its member agencies, SMCWPPP performs a variety of activities to address PCBs in stormwater runoff in compliance with MRP Provision C.12. Many of these projects address mercury in addition to PCBs and are described in the previous section (C.11 Mercury Controls).

All mercury and PCB-related activities conducted through approximately the end of calendar year 2013 by SMCWPPP and BASMAA were documented, summarized, and evaluated in SMCWPPP's comprehensive Integrated Monitoring Report (IMR), which was submitted to the Regional Water Board on March 17, 2014.

SMCWPPP has performed a number of tasks to assist member agencies with implementation of Provision C.12:

- MRP Provision C.12.a, incorporating PCBs and PCB-containing equipment identification into existing industrial inspections, is implemented through SMCWPPP's CII component. The BASMAA Pollutants of Concern (POC) Commercial/Industrial Inspector Training Materials (June 2010) are available on the CII Subcommittee web page and identified in SMCWPPP guidance to stormwater inspectors on meeting MRP's annual training requirements.
- Projects and actions conducted to fulfill MRP requirements in Provision C.12.b (Pilot Project to Evaluate PCBs in Building Materials) were completed in previous fiscal years. A description of the results of the projects conducted in fulfillment of this provision were included in SMCWPPP's IMR.
- MRP Provisions C.12.c through C.12.i address both mercury and PCBs and were discussed in the previous section (C.11 Mercury Controls).

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 2014/15 include the following tasks to assist member agencies with implementation of Provision C.13:

- Provision C.13.a requires Permittees to manage waste from cleaning and treating copper architectural features, including copper roofs, during construction and post-construction. SMCWPPP's main focus in FY 2014/15 was education and outreach to suppliers and installers of architectural copper materials. The Factsheet entitled "*Requirements for Architectural Copper: Protect water quality during installation, cleaning, treating, and washing!*" was emailed and mailed in March of 2015 to 42 companies operating in San Mateo County.
- Municipal inspectors were also trained on the MRP requirements and BMPs for architectural copper installation, cleaning, and treating. The training utilized the same fact sheet described above for suppliers and installers of copper materials. Construction site inspectors received the information during the May 5, 2015 SMCWPPP Construction Site Inspection Workshop and building inspectors received the information from a SMCWPPP staff presentation at the California Building Inspectors Group (CALBIG) meeting on October 8, 2014.
- Provision C.13.b requires Permittees to manage discharges from pools, spas and fountains that contain copper-based chemicals by adopting local ordinances. 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.
- Provision C.13.c (Copper Controls - Vehicle Brake Pads) requires Permittees to engage in efforts to reduce the copper discharged from automobile brake pads to surface waters via urban runoff. Permittee compliance is achieved through continued participation in a process originally initiated by the Brake Pad Partnership (BPP) that achieved the 2010 passage of Senate Bill 346, which will phase out copper and other heavy metals in brake pads over the next 15-20 years. In FY 2014/15, Permittees continued to track and support implementation of SB 346 through participation in CASQA.
- Provision C.13.d 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 program staff develops MRP compliance support materials as necessary. Pollutants of concern commercial/industrial inspector training materials and a guidance manual that address industrial sources of copper are available on SMCWPPP's website (www.flowstobay.org).
- Provision C.13.e (Copper Controls - Studies to Reduce Uncertainties) requires Permittees to conduct or cause to be conducted technical studies to investigate possible copper sediment toxicity and technical studies to investigate sub-lethal effects on salmonids. MRP Permittee compliance with this provision has been achieved through continued participation in the RMP, whose multi-year planning process addresses these gaps through studies overseen by the Exposure and Effects Workgroup.

C.14 PBDEs, Legacy Pesticides and Selenium

MRP Provision C.14 requires San Mateo County and other MRP Permittees to work collaboratively to begin identifying, assessing, and managing controllable sources of the following

lower priority pollutants that have been found in stormwater runoff: polybrominated diphenyl ethers (PBDEs), legacy pesticides, and selenium. During FY 2012/13, SMCWPPP staff worked with BASMAA on regional projects that addressed this provision. SMCWPPP's FY 2012/13 Annual Report, Appendix 16 (*Regional Pollutants of Concern Report for FY 2012-2013*) documented the results of these projects. MRP Provision C.14 does not include any further tasks or reporting requirements.

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 unpolluted non-stormwater discharges that are potential sources of pollutants. SMCWPPP assists municipal staff to understand the C.15 requirements and makes 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.

The most extensive tracking, monitoring, and reporting requirements in Provision C.15 are for planned and unplanned potable water discharges by water purveyors. These requirements include documenting, monitoring, notifying, and reporting on various types of planned (e.g., fire hydrant flushing) and unplanned (e.g., water line breaks) potable water discharges. There are eleven SMCWPPP agencies that have identified themselves as water utilities in their Annual Reports. In April 2012 a Water Utility Work Group was temporarily formed to specifically address the Provision C.15.b.iii requirements related to conditionally exempt planned and unplanned potable water discharges.

During FY 2014/15, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.15, with input and assistance provided by the CII Subcommittee and Water Utility Work Group. Accomplishments included the following:

- Participated in Bay Area Water Agency Task Force meetings where eight water agencies meet with Regional Water Board and State Water Board staff to facilitate development of a regional and eventually a statewide general permit for water utility potable water discharges.
- Participated in a Bay Area Implementation Workshop on the State Drinking Water System General Permit held March 6, 2015.
- Held a Water Utility Work Group meeting in June 2015 on the Statewide General Permit for drinking water system discharges.

SECTION 1

INTRODUCTION

BACKGROUND

This FY 2014/15 Countywide Program Annual Report was developed in compliance with the National Pollutant Discharge Elimination System (NPDES) stormwater Municipal Regional Permit (MRP) adopted in October 2009.¹ It summarizes stormwater management activities implemented by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP or Countywide Program) in FY 2014/15. 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 2014/15.



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 2014/15, the C/CAG Board of Directors received presentations, updates, and took actions on various stormwater-related issues, as summarized below:

- August 2014: Acceptance of final opinion research report for potential countywide stormwater funding initiative. Appointment of new Stormwater Committee members for Redwood City, Millbrae, and Menlo Park.

¹The MRP has a five-year term and expired November 30, 2014, but has been administratively extended pending its reissuance. It is anticipated that the reissued permit's effective date will be approximately December 1, 2015.

- September 2014: Approval of a \$25,000 pilot rain barrel rebate program in partnership with the Bay Area Water Supply and Conservation Agency. Appointment of a new Stormwater Committee member for San Bruno.
- October 2014: Presentation on California Stormwater Quality Association Award for “Be the Street” litter campaign. Amendment of San Mateo County Division of Environmental Health (referred to as County Environmental Health, or CEH) contract for public education and outreach to extend the term through June 2015.
- December 2014: Amendment of EOA, Inc. contract to extend the term through June 2015.
- January 2015: Appointment of new Stormwater Committee member for Foster City.
- May 2015: Extension of the rain barrel rebate program through June 2016 for an additional \$25,000. Draft C/CAG budget.
- June 2015: Presentation by Regional Water Board Assistant Executive Officer Mumley on the draft MRP. Extension of contract with SCI Consulting Group through June 2016 for a potential countywide stormwater funding initiative. Extension of EOA, Inc. contract through September 2015. Extension of CEH contract through October 2015. Final C/CAG budget approval.

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. 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 participated in the following activities during the FY 2014/15 reporting year:

- BASMAA: Served as Chair of the Board of Directors, participated in regular Board meetings, the Municipal Regional Permit 2.0 Steering Committee, the regional Green Infrastructure and Pollutants of Concern Workgroups, and BASMAA Development Committee;
- CASQA: 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: Appointed to the committee in 2015 to represent municipal stormwater issues, participated in quarterly meetings in March and May;
- Presentations by Program Manager: San Bruno and Belmont Rotary Clubs (general stormwater issues, July and October), CASQA annual conference (“Stormwater, Climate Change, and Complete Streets – The Transportation Connection,” September), San Carlos City Council (“Stormwater, San Carlos, and the Municipal Regional Permit – What We’ve Learned and Where We’re Headed,” September), San Francisco Bay Regional Monitoring

Program Annual Meeting (“Green Infrastructure – Planning for the Future,” October), American Public Works Association, Silicon Valley Chapter (“Stormwater, Climate Change, and Complete Streets – The Transportation Connection,” October), State Coastal Conservancy staff (“Green Infrastructure – Planning for the Future,” October), U.S. Environmental Protection Agency, Region 9 staff (“Green Infrastructure – Planning for the Future,” January), Stanford’s Water in the West Program, Dr. Newsha Ajami (“Green Infrastructure – Planning for the Future,” February), Alameda Countywide Pedestrian Bicycle Working Group (“Green Infrastructure – Planning for the Future,” February), C/CAG “Lobby Day” in Sacramento (presentations to local legislative delegation on stormwater, transportation, and green infrastructure issues, April), C/CAG Resource Management and Climate Protection Committee (“Green Infrastructure – Planning for the Future,” April); and

- Stakeholder Meetings/Hearings/Workshops: State Water Board Stormwater Strategic Vision (stakeholder meeting, July), State Water Board Trash hearing (testified on behalf of BASMAA, August), San Francisco Bay Nutrient Strategy Steering Committee (participated as an alternate for BASMAA, October), Regional Water Board trash workshop (December), U.S. Environmental Protection Agency, Region 9 (meeting with staff on municipal stormwater issues, January), U.S. Environmental Protection Agency, Region 9, stormwater financing meeting (February), State Water Board staff (stakeholder meeting on Stormwater Resource Plans, June).

Stormwater Committee

C/CAG’s stormwater management-related decisions are assisted by 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 five times during FY 2014/15 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 2014/15.

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 Water Resources Control Board and Regional Water Board.

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 and 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 the Bay Area Stormwater Management Agencies Association (BASMAA).
- Convey relevant program and compliance information and direction to appropriate staff and departments within their jurisdictions.
- 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 met three times during FY 2014/15. Appendix 1 includes a table summarizing attendance at the TAC meetings held during FY 2014/15.

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

Potential Countywide Stormwater Funding Initiative

Since January 2013, C/CAG has been exploring a potential countywide stormwater funding initiative to generate additional revenue to help its member agencies pay for the costs of compliance with the MRP. C/CAG retained SCI Consulting Group to lead the effort. To date, the consultant team has 1) developed a draft Funding Needs Analysis that indicates an estimated \$37 million per year countywide shortfall, 2) prepared a draft Funding Options Report that details the various opportunities for funding stormwater-related efforts, including Proposition 218-compliant special taxes and property-related fees, and 3) completed public opinion research that indicates there is insufficient support for a special tax (requires 2/3 approval by voters) but potentially sufficient support for a property-related fee (requires majority approval of property owners) at rates that would generate \$8-12 million per year countywide. Efforts related to the initiative have generally been put on hold awaiting a revised MRP to validate funding needs assumptions and boost political support for the need to pursue an initiative.

Rain Barrel Rebate Program

As a result of the California drought and in an attempt to pursue alternative approaches to public engagement, C/CAG partnered with the Bay Area Water Supply and Conservation Agency (BAWSCA) to implement a pilot countywide Rain Barrel Rebate Program. Prior to this, the only agency in San Mateo County offering rain barrel rebates was the City of Millbrae. C/CAG provided BAWSCA with \$25,000 in FY 2014/15 to start the program, 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. The program officially started in October 2014, with 328 barrels installed in San Mateo County by June 30, 2015, as detailed in Table 1-1. C/CAG and BAWSCA continued the program into FY 2015/16, with C/CAG putting an additional \$25,000 into the program.

Table 1-1. Rain Barrels installed in San Mateo County as of June 30, 2015

Participating Agency/Area	Rain Barrels
C/CAG - Countywide	109
City of Brisbane	2
Mid-Peninsula Water District (Belmont, portions of San Carlos, some unincorporated County)	40
City of Millbrae	6
North Coast County Water District (City of Pacifica)	137
City of Redwood City	34
Total	328

Sustainable Stormwater and Safe Routes to School Demonstration Project

In an effort to further integrate stormwater management with transportation issues, and in partnership with the City of San Mateo and the San Mateo/Foster City School District, C/CAG jointly funded a Sustainable Stormwater and Safe Routes to School demonstration project at Laurel Elementary School in the City of San Mateo. The project was funded jointly with stormwater and transportation funds from C/CAG's \$10 vehicle registration fee in San Mateo County as well as City and school district funds. The project resolved mobility issues identified in a walk audit and provided stormwater capture and treatment capabilities using multiple green infrastructure systems. Stormwater management was integrated into a redesigned parking lot that incorporated multiple rain gardens, an infiltration planter, and a one-way drive-through drop-off and pick-up lane to reduce on-street parking and congestion; a new pedestrian bulbout at a crosswalk location was lengthened and vegetated for stormwater capture, and a new mid-block crosswalk was flanked by stormwater curb extensions (see below photographs). The jointly funded effort is an example of a multi-benefit project that shares implementation costs among multiple complementary priorities.

Figure 1-1. Sustainable Stormwater and Safe Routes to School Demonstration Project at Laurel Elementary School in the City of San Mateo.



ORGANIZATION OF REPORT

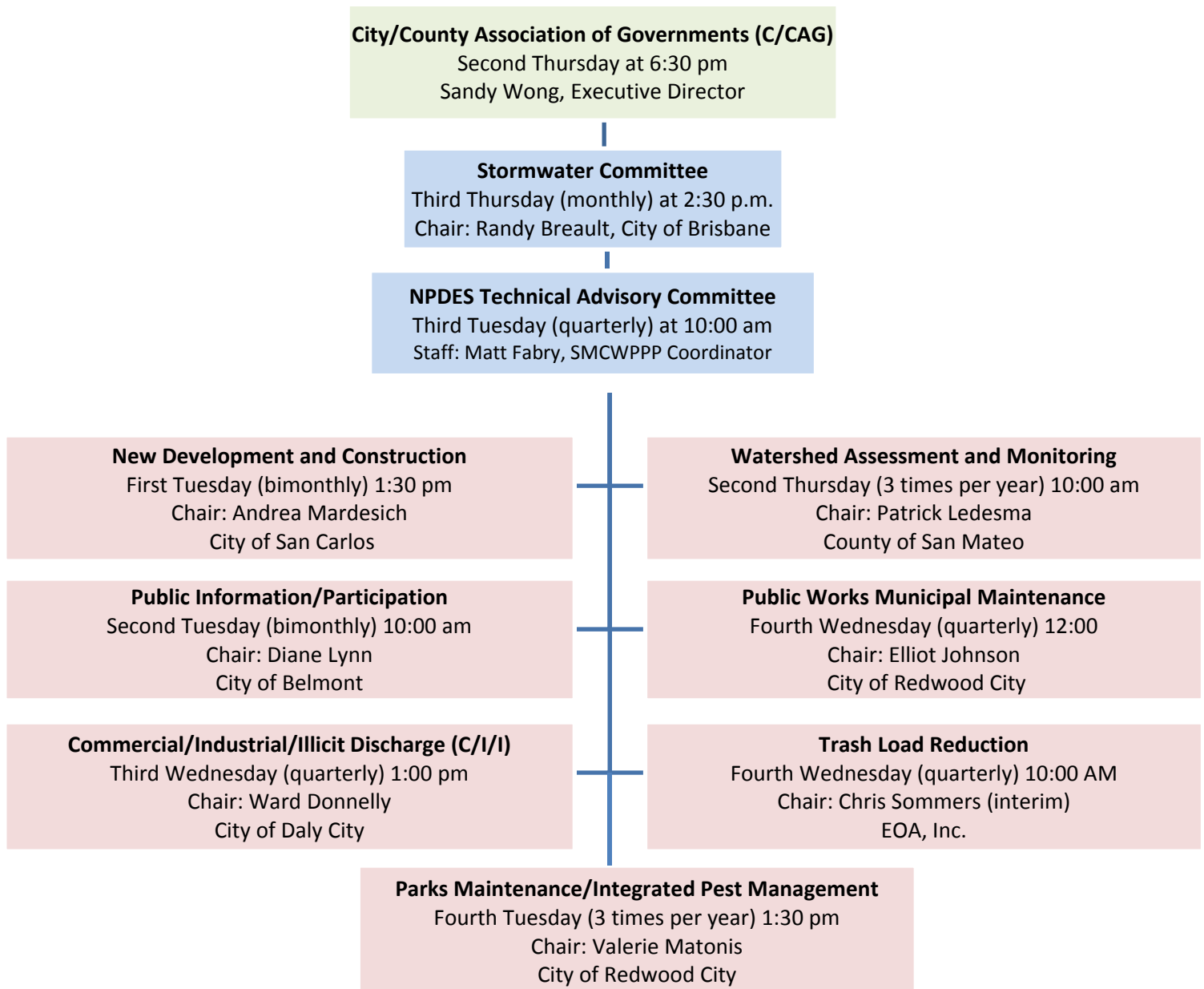
This FY 2014/15 Annual Report is structured around the following major provisions of the MRP:

- C.2. Municipal Operations
- C.3. New Development and Redevelopment
- C.4. Industrial and Commercial Site Controls
- C.5. Illicit Discharge Detection and Elimination
- C.6. Construction Site Control
- C.7. Public Information and Outreach
- C.8. Water Quality Monitoring
- C.9. Pesticides Toxicity Control
- C.10. Trash Load Reduction

- C.11. Mercury Controls
- C.12. PCBs Controls
- C.13. Copper Controls
- C.14. Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides and Selenium
- C.15. Exempted and Conditionally Exempted Discharges

The following sections of this report summarize how SMCWPPP provided assistance in FY 2014/15 in implementing the MRP for each of the above provisions. Most of the sections include three sub-sections: 1) Introduction, 2) Implementation of MRP Actions, and 3) Future Actions.

Figure 1-2. 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, 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.

IMPLEMENTATION OF MRP PROVISIONS

During FY 2014/15, 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;
- Engaged the Subcommittee in the review of the administrative draft and Tentative Order of the soon to be reissued MRP;
- Facilitated presentations by stormwater BMP product vendor at Subcommittee meetings; and
- Held three Corporation Yard BMP Trainings in the field in April 2015.

More information on each of these accomplishments is provided below.

Public Works Municipal Maintenance Subcommittee

The Public Works Municipal Maintenance Subcommittee met four times during FY 2014/15 to share 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.
- Stormwater pump station monitoring and inspections.

Michael Killigrew from the City of Millbrae chaired the Subcommittee up until December 2014. Elliot Johnson from the City of Redwood City has chaired the Subcommittee since January 2015. A FY 2014/15 subcommittee attendance summary table is included in Appendix 2. A majority of the Subcommittee's four meetings were attended by staff from the Cities of Belmont, Burlingame, Colma, Daly City, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, and San Carlos and San Mateo County.

During FY 2014/15 the Program invited a stormwater BMP vendor to speak at the Subcommittee meetings. Program staff facilitated discussions at meetings regarding storm drain cleaning activities, different storm drain inlet markers, self-contained pressure washers, corporation yard BMPs, performance of trash full capture devices from different vendors and drain inlet protection devices. The Municipal Maintenance Subcommittee was also engaged in the review of the administrative draft and Tentative Order of the soon to be reissued MRP.

Municipal Operations Trainings

The Municipal Maintenance Subcommittee sponsored three Corporation Yard Stormwater BMPs Trainings which were held at three different corporation yards. The cities of South San Francisco, Redwood City and San Mateo volunteered the use of their corporation yards for the training. The three training days were attended by 29 people total. At each corporation yard the attendees walked through the yard and discussed BMPs that are appropriate for different corporation yard activity areas. The workshop flyer, final attendance list and evaluations summary are included in Appendix 2.

Based on the evaluation forms submitted following the workshop, attendees generally found that the trainings were valuable. All of the attendees who completed the workshop evaluation form indicated that the workshop met their expectations.

Program Materials

Since the MRP was adopted, SMCWPPP staff has developed a number 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 are CASQA’s Stormwater BMP Handbook Maintenance and Caltrans’ Storm Water Quality Handbook Maintenance Staff Guidance.

The following twelve agencies in San Mateo County operate storm drain 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.

FUTURE ACTIONS

FY 2015/16 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.
- Provide standard operating procedures and training materials for trash full capture device cleaning and inspections.

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 MRP Provision C.6 Construction Site Controls – see Section 6) through the New Development Subcommittee, which was chaired by Andrea Mardesich, representing the Town of Atherton for the first half of the year and then the City of San Carlos for the second half of the year. SMCWPPP staff also obtained input and direction from agency representatives through the Subcommittee. The Subcommittee met quarterly and enjoyed good participation, as shown by the FY 2014/15 attendance list, included in Appendix 3.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP's accomplishments during FY 2014/15 include the following major tasks to assist member agencies with implementation of Provision C.3:

- Updated the Subcommittee on the progress and content of the draft reissued MRP, solicited feedback, and summarized comments provided by SMCWPPP and BASMAA to the Regional Water Board;
- Prepared and updated various implementation and outreach products, checklists, and SMCWPPP's C.3 Technical Guidance Manual, to assist member agencies in complying with Provision C.3;
- Performed outreach to local architectural copper material vendors and installers;
- Held the 2015 Inspection Workshop with an afternoon session on "C.3.h Inspection / Operation & Maintenance (O&M) Stormwater Compliance," with 58 attendees;
- Held the 2015 New Development Workshop, entitled "Low Impact Development and Green Infrastructure: What Will the Future Bring?", on June 17, 2015 with 67 attendees;
- Participated in development of the LID White Paper, a regional project through the BASMAA Development Committee; and
- Compiled and submitted local agency Special Projects reports to the Regional Water Board.

More information on each of these accomplishments is provided below.

MRP Reissuance

SMCWPPP staff updated the Subcommittee during its quarterly meetings on the progress and content of the draft reissued MRP, solicited feedback, and summarized comments provided by SMCWPPP and BASMAA to the Regional Water Board. As noted below, the 2015 New Development Workshop provided an overview of stormwater post-construction controls and the proposed new requirements that are in the Tentative Order of the reissued MRP. Also, in preparation for the reissuance of the MRP, SMCWPPP staff provided assistance to BASMAA with the development of an LID White Paper which laid out the vision for LID treatment requirements and thresholds appropriate to conditions in the San Francisco Bay Area. The White Paper was instrumental in providing justification for a change in the draft MRP, as further described below.

Implementation and Outreach Products

With the assistance of the New Development Subcommittee, SMCWPPP staff developed and/or updated the following technical and outreach products:

- C.3/C.6 Regulated Projects Checklist – The New Development Subcommittee approved a new checklist at its August 12, 2014 meeting. The checklist was posted on the SMCWPPP website. The Subcommittee then requested that SMCWPPP convert the Word format checklist to an Excel format. The draft Excel document was completed and comments were provided by the Subcommittee. The final version was completed in July 2015 and posted on the SMCWPPP website. Appendix 3 includes summary pages from the checklist.
- Biotreatment Soil Mix (BSM) – SMCWPPP staff continued to research issues with the current BSM specification and updated the vendor list for Subcommittee approval (Appendix 3).
- Updates to the C.3 Technical Guidance Manual – Version 4.1 of the C.3 Technical Guidance Manual was approved by the Subcommittee in August 2014 and was finalized and posted on the SMCWPPP website. Twenty-five printed copies were distributed to staff at the Subcommittee.
- Architectural Copper BMP Flyer – SMCWPPP staff distributed the flyer to 41 local copper material vendors through mail and email. Several vendors provided feedback and SMCWPPP staff discussed pertinent issues with them. The list of vendors and the flyer are provided in Appendix 3.

The above described information and outreach products are available on SMCWPPP's website at <http://www.flowstobay.org/newdevelopment>.

SMCWPPP staff also compiled local agency Special Projects reports and submitted to the Regional Water Board on March 16, 2015.

2015 Stormwater Treatment Facility O&M Inspection Workshop

An afternoon workshop on “C.3.h Inspection/O&M Stormwater Compliance” was held on May 5, 2015 at the City of San Mateo Public Library and was attended by 58 people. The workshop started with an overview of the MRP inspection requirements for stormwater treatment systems and then went into detail on what to look for during the operation and maintenance phase. Copies of the workshop flyer, agenda, sign-in sheet, and evaluation forms summary are provided in Appendix 3. Based on the evaluation forms submitted, attendees generally found that the workshop was valuable and that it met their expectations.

2015 New Development Workshop

The 2015 New Development Workshop, entitled “Low Impact Development and Green Infrastructure: What Will the Future Bring?” was held on June 17, 2015 at the City of San Mateo Public Library and was attended by 68 people. The full-day workshop started with “basic training” providing an overview of stormwater post-construction controls and the proposed new requirements that are in the Tentative Order of the reissued MRP. The keynote speaker, Peter MacDonagh, presented information on integrating urban forestry and stormwater treatment. A panel with local arborists discussed Bay Area specific challenges with trees and stormwater. SMCWPPP staff gave a presentation on Green Infrastructure planning and the day wrapped up with a group exercise quizzing attendees on Green Street retrofits. 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 that it met their expectations.

Regional Collaboration

SMCWPPP staff participated in BASMAA’s Development Committee throughout FY 2014/15, as in past years. Through the Development Committee SMCWPPP staff participated in regional projects that assist SMCWPPP and its member agencies in meeting specific requirements of Provision C.3, as described below.

LID White Paper

In preparation for the reissuance of the MRP, SMCWPPP staff provided assistance to BASMAA with the development of an LID White Paper which laid out the vision for LID treatment requirements and thresholds appropriate to conditions in the San Francisco Bay Area. The White Paper was completed in January of 2015 and was instrumental in providing justification for a change in the draft MRP giving equal weight to biotreatment, infiltration and rainwater harvesting and removing the need for unnecessary reporting on the feasibility of these practices. Appendix 3 includes the Executive Summary from the LID White Paper.

LID Plant List Update

SMCWPPP and the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) combined resources to contract with a consultant, Sarah Sutton of Placeworks, to update the biotreatment plant list in Appendix A of the C.3 Technical Guidance Manual. The draft plant list was completed in July of 2015 and brought to the August Subcommittee meeting for comment and approval. Appendix 3 includes the draft biotreatment plant list.

FUTURE ACTIONS

In FY 2015/16, SMCWPPP staff plans to continue working with the New Development Subcommittee to conduct the following activities to assist member agencies comply with MRP Provision C.3:

- Continue to exchange information on the MRP Tentative and Final Orders and other timely issues with member agencies through quarterly New Development Subcommittee meetings and the annual New Development 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, the Santa Clara Valley, Alameda and/or Contra Costa Countywide stormwater programs to update the biotreatment plant list, BSM specifications, and BSM suppliers list. Work with biotreatment mulch suppliers to develop better specifications for that product.
- Plan and conduct a New Development Workshop for municipal staff, to build on the training conducted in previous years and to provide municipal staff opportunities to conduct practice reviews of development project plans (Spring 2016).
- Continue working with BASMAA on issues related to the MRP reissuance and implementation, particularly the Green Infrastructure requirements and related sections.

SECTION 4

C.4 INDUSTRIAL AND COMMERCIAL SITE CONTROLS

INTRODUCTION

One important goal of SMCWPPP's Commercial, Industrial and Illicit Discharge (CII) component is to assist member agencies control 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 with compliance with other MRP provisions that are discussed in other sections of this report (Sections 5, 12, 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 2014/15, 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 four CII Subcommittee meetings;
- Revised the SMCWPPP Facility Stormwater Inspection Form Template;
- Updated the guidance document entitled *How to Conduct Stormwater Inspections*; and
- Assisted San Mateo County Division of Environmental Health (referred to as County Environmental Health, or CEH) develop a new stormwater business inspection data tracking table.

More information on each of these accomplishments is provided below.

CII Subcommittee

The CII Subcommittee met four times during FY 2014/15 to share information about MRP requirements related to commercial/industrial facility inspections and methods for achieving compliance. The meetings provided a forum to share experiences with implementing MRP

provisions related to the CII component, including Provision C.4. In addition, the meetings allow a forum for a CEH representative to discuss the status of CEH inspections and hear member agency feedback on the process, since many of the member agencies have an agreement with CEH to conduct stormwater inspections of businesses.

Ward Donnelly from the City of Daly City continued to chair the CII Subcommittee during FY 2014/15. Patrick Ledesma from CEH represented San Mateo County and some of the cities that have an agreement with CEH to conduct stormwater inspections of business facilities.

A FY 2014/15 subcommittee attendance summary table is included in Appendix 4. A majority of the subcommittee's four meetings were attended by staff from the Cities of Daly City, Menlo Park, Millbrae, Pacifica, Redwood City, and San Mateo, Silicon Valley Clean Water and San Mateo County. The Cities of Belmont, Burlingame, Colma, Half Moon Bay and South San Francisco had representatives attend one to two meetings.

SMCWPPP program staff assisted CEH staff develop a new stormwater business inspection data tracking table to facilitate more timely access by city staff to CEH inspection results for their municipalities. SMCWPPP staff worked with the CII Subcommittee to revise the SMCWPPP Facility Stormwater Inspection Form Template and update the guidance document *How to Conduct Stormwater Inspections*. These documents are available to municipal staff on the SMCWPPP website.

FUTURE ACTIONS

FY 2015/16 activities planned by SMCWPPP to assist member agencies comply with MRP requirements in Provision C.4 include the following:

- Continue holding CII Subcommittee meetings.
- Hold a stormwater business inspector training workshop.
- Assist member agencies with the implementation of commercial and industrial stormwater inspection tasks, including continuing to assist with business inspection plans and priorities, data management and enforcement response plans.

SECTION 5

C.5 ILLICIT DISCHARGE DETECTION AND ELIMINATION

INTRODUCTION

An important 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. There are additional MRP provisions that are implemented through SMCWPPP's CII component that are discussed in other sections of this report (Sections 4, 12, 13 and 15).

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

IMPLEMENTATION OF MRP PROVISIONS

During FY 2014/15, 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:

- Updated the table of mobile businesses with stormwater enforcement actions to share regionally with stormwater inspectors.
- Worked with SMCWPPP's PIP Subcommittee on outreach to Mobile Cleaner businesses.

More information on each of these accomplishments is provided below.

Control of Mobile Businesses

During the previous fiscal year the CII Subcommittee surveyed San Mateo County agencies and compiled information on mobile businesses that have been subject to stormwater enforcement actions that year. This information was compiled in a table and made available on the password-protected section of the SMCWPPP website (www.flowstobay.org). The table was updated twice during FY 2014/15 with enforcement information. CII Subcommittee representatives were informed when each update was complete and available on the SMCWPPP website.

In FY 2012/13 the CII Subcommittee adapted a Mobile Business BMP 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. During FY 2014/15 the CII Subcommittee worked with SMCWPPP's (PIP) Subcommittee to conduct outreach to the mobile cleaner businesses. An outreach message was sent out on Facebook in April 2015 aimed at mobile cleaner businesses with a link to the BMP brochure. The total reach was 2,700 and there were 89 post clicks. More information is provided in Section 7 of this report (Public Information and Outreach).

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 2014-2015 - Regional Supplement for Training and Outreach* (Appendix 16). SMCWPPP member agencies have continued to refer cleaners to BASMAA's website for surface cleaning training. BASMAA continues to plan for an expansion of its surface cleaner training and recognition program to also include fleet washers and carpet cleaners. SMCWPPP staff and Subcommittee members provided comments to the BASMAA Municipal Operations Committee on draft carpet cleaning and transportation related cleaning mobile business BMPs in September 2014.

FUTURE ACTIONS

FY 2015/16 activities planned by SMCWPPP to assist member agencies comply with MRP requirements in Provision C.5 include the following:

- Continue holding CII Subcommittee meetings.
- Provide training for commercial and industrial facility and illicit discharge inspectors.
- Assist member agencies with the implementation of illicit discharge detection and elimination tasks, including continuing to assist with data management, enforcement response plans, complaint tracking and follow-up, and collection system screening programs.
- Help member agencies comply with the proposed requirements for controlling mobile sources described in MRP Provision C.5.d. This activity will include continuing SMCWPPP's programs related to mobile business BMPs, sharing enforcement information and outreach activities and participating in BASMAA's project for training and recognition materials for carpet cleaners and fleet washers.

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 (see Section 3 for more details about the Subcommittee). 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 2014/15 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 October 8, 2014;
- Printed 1,000 copies of the Construction Site Inspection Form and distributed them to the Subcommittee members; and
- Conducted the May 5, 2015 Construction Site Inspector Workshop.

CALBIG Training Meeting

In FY 2014/15, SMCWPPP continued its partnership with CALBIG, a group in which many building inspectors from SMCWPPP member agencies participate, and conducted a construction site controls training at the group's October 8, 2014 meeting. SMCWPPP staff gave presentations on current stormwater requirements for construction sites, proper installation of construction BMPs, and tips for keeping construction inspection programs in compliance. Approximately 19 people attended the training, including agency inspectors, local stormwater program staff, and contractors. The meeting announcement, agenda and sign-in sheet are provided in Appendix 6.

Construction Site Inspection Form

SMCWPPP staff printed and distributed 1,000 copies of the Construction Site Inspection form to the permittees. There were no updates to the form this year. The form is included in Appendix 6.

2015 Construction Site Inspector Workshop

The 2015 Construction Site Inspector Workshop was held on May 5, 2015 at the City of San Mateo Public Library's Oak Room and was attended by 58 people. The morning session of the workshop was on C.6 and covered the following topics: requirements of MRP Provision C.6; differences between Provision C.6 and the Construction General Permit; the types of construction BMPs; common issues during site inspections; and a group exercise using photographs of real sites to go over violation and enforcement examples. 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 that it met their expectations.

FUTURE ACTIONS

In FY 2015/16, 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 New Development Subcommittee meetings and the annual Construction Site Inspector Workshop.
- Plan and conduct a Construction Site Inspector Workshop.
- 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 AND SUMMARY

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 the water quality in local creeks, lagoons, shorelines, and neighborhoods;
- To encourage residents to adopt less polluting and more environmentally beneficial practices; and
- To increase residents' hands-on involvement in SMCWPPP activities.

PIP is essential for controlling pollution at the source because most pollutants originate from preventable, everyday residential activities. Pollutants in stormwater may be reduced by motivating and educating residents about the benefits of preventing stormwater pollution. This approach is recognized as being both cost-effective and efficient in meeting the goal of reducing pollutants in stormwater to the maximum extent practicable.

This section describes SMCWPPP's PIP accomplishments and assesses the effectiveness of the PIP activities completed in FY 2014/15. Diane Lynn of the City of Belmont served as the chairperson this year for the SMCWPPP PIP subcommittee. A FY 2014/15 subcommittee attendance summary table is included in Appendix 7.

Summary of Accomplishments

The SMCWPPP PIP Subcommittee met four times in FY 2014/15 to oversee the development of educational materials and to guide the implementation of the PIP component of the program. SMCWPPP accomplished the following major public information and participation tasks during FY 2014/15:

- Redesigned the entire www.flowstobay.org homepage interface and password protected section of the website. Created one mega menu and added mobile responsive functionality to allow for easier access to all website resources by residents, businesses and municipalities from desktop computers, tablets, and mobile phones. Accumulated over 32,000 sessions, 64,000 page views, and over 21,000 new users during the 2014/15 fiscal year.

- Doubled public participation on multiple platforms of social media through consistent posts, prompts, and engagement giveaways purposed to increase public awareness on stormwater pollution prevention and encourage public participation in activities that promote environmental stewardship. Accumulated over 1,140,000 impressions over the 2014/15 fiscal year using Facebook and Twitter alone.
- Launched a new “Car Wash Pollution Prevention Reward Program “in partnership with 10 car wash locations throughout the County that expanded redemption choices to include text message and email paperless options. Coordinated with cities to promote the car wash reward program through social media and the website, recruiting over 2,000 participants within one month of the program’s launch. Expanded at-home car wash recommendations to include waterless car wash products that conserve water while eliminating urban runoff pollution caused by driveway car washing. Continued to educate residents to use minimal soap and divert runoff to landscaped areas if water is still used while washing cars at home.
- Coordinated Coastal Cleanup Day for San Mateo County at 72 sites, diverting an estimated 15,662 pounds of trash and 3,608 pounds of recyclables from waterways. Raised awareness of the event and litter issues throughout the County through various media coverage and the use of social media, and recruited an estimated 4,265 volunteers in 2014.
- Hosted an educational outreach booth at the 9-day San Mateo County Fair promoting a variety of stormwater pollution prevention messages to approximately 1,500 attendees.
- Sponsored an educational assembly program for elementary-age students entitled, “We All Live Downstream,” performed by the Banana Slug String Band. The program emphasizes the importance of not littering or dumping substances into the storm drain to protect the marine environment. A total of 51 performances were conducted at 25 schools Countywide, with a total student reach of over 9,300 this fiscal year.
- Continued conducting the middle school presentation entitled, “Linking Litter to Critters.” The presentation emphasizes educating students on the impact of litter on the environment, and encourages the students to become involved by educating others. A total of 36 presentations were conducted at 16 schools, with 985 students reached this fiscal year.
- Continued conducting the high school presentation entitled, “Water Pollution Prevention: Problems and Solutions.” The presentation emphasizes educating students on basic problems and solutions of stormwater pollution, and encourages students to become involved by educating others. A total of 5 presentations were conducted at 3 schools, with 201 students reached this fiscal year.
- Partnered with the Bay Area Water Conservation Supply Agency (BAWCSA) to promote a Rain Barrel Rebate program as a strategy to conserve water during the drought while reducing urban runoff pollution. Specific outreach efforts included posts on social media, content on the website, disseminating applications at multiple outreach events, and co-hosting workshops. As a result of this partnership, over 500 rain barrel rebate applications were submitted within the County.

- Launched a “Cigarette Butt Litter Pilot Program” in partnership with four cities, two harbors, and four non-profit organizations with a goal of determining which behavior change tool or behavior change tools, such as signs and/or receptacle prove most effective at shifting the cigarette butt littering social norm to that of a proper disposal social norm. Preliminary data was gathered at the close of the fiscal year. During the coming year, synthesis of data collection results at a total of 48 sites prior to, and after the introduction of behavior change tools will determine what strategies are to be recommended for broad scale implementation in an effort to reduce cigarette butt litter.
- Conducted tabling at a variety of community events and reached a total of approximately 2,660 people in person this fiscal year.

IMPLEMENTATION OF MRP PROVISION C.7

C.7.b.ii 1 Advertising Campaign

SMCWPPP, as a member of BASMAA, participates directly with the BASMAA PIP Committee by acting as chair of the committee and facilitating meetings, reviewing documents, and providing comments and feedback on campaigns and materials. During FY 2014/15, SMCWPPP continued to take BASMAA generated outreach materials pertaining to the Regional Youth Litter Campaign and developed them for local use. The BASMAA report entitled *Annual Reporting for FY 2014-2015 - Regional Supplement for Training and Outreach* (Appendix 16) summarizes regional advertising campaign activities conducted in FY 2014/15.

While the BASMAA report summarizes activities of the campaign on a regional level, SMCWPPP also implements local activities related to the campaign. In FY 2013-14 SMCWPPP took the concept of the photo booth that was supplied by BASMAA, and added a “mobile Be the Street” component, in which staff equipped themselves with costume items and signs and went to locations frequented by youth. Two events incorporating the mobile concept were conducted this fiscal year that reached approximately 40 people in 2 cities.

Cigarette Butt Litter Pilot Program

On a local level, SMCWPPP has created and is currently in the process of implementing a Cigarette Butt Litter Pilot program designed to determine what behavior change tool or combination of tools prove most effective at reducing cigarette butt litter and shifting social norms from littering to proper disposal.

SMCWPPP has established partnerships with the cities of Belmont, Pacifica, San Bruno, and Burlingame, Pillar Point Harbor in Half Moon Bay, and Oyster Point Marina in South San Francisco to implement the pilot program. A total of 48 pilot test sites were chosen in each city that are divided into a business/downtown or recreational category. Sites are subdivided site by a behavior change tool or set of tools (Appendix 7) that include a receptacle and a sign, a site with only a receptacle, a sign only, or a control site with no strategy introduction.

SMCWPPP has also partnered with community and watershed groups to assist with data collection of cigarette butts. Cigarette butts are counted by city, SMCWPPP, or community volunteers every two weeks, for two months, before and after behavior change tools are introduced to evaluate if the tools are effective at reducing cigarette butt litter. Data collection is strategically done the day before a routine street sweeping or maintenance of the site occurs. Data collected will be synthesized by various

combinations of sites and categories, and results will be published in the late fall. Results from data collection will not only determine which tool or set of tools prove to be the most effective at reducing cigarette butt litter, but will also provide insight on what the most cost-effective strategy should be recommended for broad-scale implementation.

A secondary component of the campaign is the introduction of a cigarette butt litter business pledge targeted at cities within the County currently not participating in the program, or in participating cities once the pilot has concluded. The business pledge asks businesses to commit to taking ownership of the front and back entrances of their establishment. Commitments are made public to the surrounding community via social media, community access TV stations, and various other communication outlets. Businesses are also provided with a static window cling (Appendix 7) to be displayed at their storefront. SMCWPPP has explored partnerships with San Mateo County Environmental Health's hazardous materials inspectors, local agencies, and non-profit organizations to recruit businesses to take the pledge as an additional initiative to reduce cigarette butt litter within the County. SMCWPPP will also conduct data collection to measure effectiveness of this strategy by counting butts littered before and after the pledge is introduced.

C.7.c. Media Relations

Regional Media Relations

SMCWPPP, as a member of BASMAA, participates directly with the BASMAA PIP subcommittee's media relations program by attending all meetings, reviewing articles and press releases, and providing comments and feedback. During the FY 14-15, SMCWPPP incorporated content from a BASMAA generated press release published locally:

Municipalities Battle Litter, Citizens Encouraged to do the Same

Content: Educates readers on MRP long-term trash reduction plan and provides opportunities for residents to get involved, such as litter prevention outdoor tips, and participating in Coastal Cleanup Day. **Medium:** Print and online newspapers, social media, website. **Date of Publication:** August 26, 2014

BASMAA's *Annual Reporting for FY 2014-2015 - Regional Supplement for Training and Outreach* (Appendix 16) summarizes the regional media relations efforts conducted during FY 2014/15, and includes a full description of the above mentioned press release.

SMCWPPP and the City of Belmont partnered in the implementation of a Cigarette Butt Litter Pilot Program and obtained television and online news coverage on Kron 4, a Bay Area news station:

"People Behaving Badly: Don't Drop & Drive"

Content: A news segment focusing on people littering cigarette butts and highlighting that the butts flow straight to a creek when littered. **Medium:** Television, social media, and online. **Date of Publication:** June 12, 2015 (Appendix 7)

Countywide Media Relations

SMCWPPP established a media partnership in coordination with the County of San Mateo Health System's Public Information Officer in an effort to expand reach of pollution prevention messages. Press releases disseminated through this avenue are viewed by the County Manager, the Board of Supervisors

and local media outlets. The releases were also made available to the public by posting them to the www.flowstobay.org/press website, and onto Facebook and Twitter social media platforms. As a result of this newly established partnership, multiple local news outlets have picked up the SMCWPPP generated releases in print, online, and on social media. A reporter has also come out to cover a SMCWPPP Rain Barrel Workshop held on December 6, 2014.

Rain Barrels Are a Productive Use of this Week's Rain

Content: Details about an upcoming Rain Barrel Workshop and the Rain Barrel Rebate Program. Educates readers that rain barrels are a great way to save water during the drought while also reducing urban runoff pollution. **Medium:** Print and online newspapers, social media, and SMCWPPP website. **Date of Publication:** December 3, 2014

County Gets Ready to Make Most of the Next Storm

Content: Informs readers about the one year extension of the Rain Barrel Rebate Program and provides details of the environmental benefits of installing one, such as stormwater runoff pollution reduction and water conservation. **Medium:** Print and online newspapers, social media, SMCWPPP website. **Date of Publication:** June 29, 2015

In addition, Facebook, Twitter and Instagram were used to share other relevant news stories related to local water quality including Coastal Cleanup Day, Spring Cleanup San Mateo County, plastic bag ban, marine debris, pharmaceutical disposal, and more. Media outlets and followers share SMCWPPP's content with their friends, which in turn has significantly expanded the reach and awareness of all of the above pollution prevention messages.

C.7.d Stormwater Point of Contact

The Countywide Program website (www.flowstobay.org) and phone number (650) 372-6200 is publicized on outreach materials and on social media, and is maintained by SMCWPPP. A point of contact for each San Mateo County Permittee is also publicized on the website, and is referred to when receiving phone calls from the public on the Countywide Program phone number. The website address and phone number have not changed since the last Annual Report.

During the FY 2014/15 a complete redesign of the homepage's navigation bar and the password protected sections of the website was completed. The navigation bars were reorganized into one mega menu to allow for easier access to resources sought by residents, municipalities, and businesses.

Website Statistics

The total number of people visiting www.flowstobay.org for the 2014/15 fiscal year was 23,948 with 21,482 being new visitors to the website, recruiting a total of 32,639 sessions. Google Analytics was incorporated as a new strategy to track engagement, page visitors, page referrals, and overall user behavior on the website. Details of all analytics captured and top document downloads can be found in Appendix 7. Selected web pages have Constant Contact and CRM widgets embedded that allow for a visitor to subscribe to updates, allowing for cultivation of continuous relationships with new unique users to the website. Table 7-1 provides the total number of subscribers for various web pages with this function embedded. CRMs provide analytics on how many users opened the email, and exactly what links within the email were open to help provide further insight on what subscribers are most interested

in. The website continues to be promoted at outreach and citizen involvement events, through social media posts and advertisements, promotional materials, and various other collateral pieces disseminated.

Table 7-1. Website CRM Subscriber Numbers

Web page with Constituent Relationship Management Option	Subscriber Numbers June 30, 2014	Subscriber Numbers June 30, 2015
Community Events	551	773
Resources for Teachers & Schools	391	447
Litter Reduction & Coastal Cleanup Day	585	960
Newsletter: Pollution Prevention Post	1285	2659
Less Toxic Pest Control	382	408
Press Room	442	487
Green Streets & Parking Lots	124	120
Business New Development	95	360
Used Oil Recycling	81	300
Car Wash Reward Program (NEW)	n/a	900
Household Hazardous Waste	0	45

New web pages and features added this year include:

- Redesigned homepage with inclusion of a mega menu that allows for streamlined navigation to resources searched for by users of the website.
- Established monthly to quarterly rotating panels of content on the homepage.
- Redesigned password protected homepage for SMCWPPP members.
- Real time Facebook newsfeed embedded onto the homepage.
- Created a mobile responsive interface for users accessing the website from smartphones and tablets.
- Redesigned Spring Cleaning SMC, Press Room, and Car Wash web pages.
- New pages that were created include: Pet Waste, Cigarette Butts, and the Rain Barrel Rebate Program
- CRM emails were sent out to the list of subscribers whenever updates to any of the pages were made, or on a monthly basis. Subscribers include local news media.

Social Media

In addition to the website, there are also established Facebook, Twitter, and Instagram social networks SMCWPPP. These platforms are used as a two-way communication tool that has emerged as an effective strategy to engage with residents in the absence of face-to-face interactions. All three social media platforms experienced a significant increase in followers this reporting period. Facebook followers increased from 439 to 2,394, with 1,054,699 impressions made. Twitter followers increased from 397 to 691, and Instagram followers increased from 208 to 407 followers. A total of over 22,000 people engaged with all three social network pages on a variety of pollution prevention issues posted during

this fiscal year. The platforms are primarily used to inform the public of environmental outreach events, and to promote a shift towards incorporating sustainable behaviors into daily lifestyles. The accounts are monitored on a daily basis throughout the fiscal year. Appendix 7 provides current and historical detailed insights of total reach, impressions, engagement, and total followers for each platform.

As part of the overall effort to enhance social presence and engagement with followers, several themed posts were created and aired during FY 2014/15. On Facebook, themed informational posts on various pollution prevention tips included “Fun Fact Friday,” airing a variety of interesting statistics, events and information related to pollution prevention, “Green Street Saturday,” that spotlighted various green streets & parking lots installations throughout the County, “Event of the Week” dedicated to promoting one non-profit event a week, and “Waste Less Water Wednesday,” which provided various water conservation tips to incorporate due to the drought. Additional themed posts included “Rain Barrel Spotlight” that was aired to promote the SMCWPPP sponsored Rain Barrel Rebate Program and “Car Wash Spotlight,” purposed to highlight participating car wash partners in the Car Wash Pollution Prevention Reward Program (*described in greater detail below in C.7.e*). Giveaways were also incorporated into the themed or standalone posts as a strategy to expand the reach of messages through organic sharing, and as a strategy to encourage engagement by followers or friends of followers. In addition, the tools were also purposed to initiate the desired sustainable behavior change actions promoted. Tools include, but are not limited to, reusable utensils, lunch bags, water bottles, waterless car wash voucher, and a “Do It Yourself” waterless car wash kit.

In an additional effort to create a stronger social media presence within the County, relationships with other nonprofit and local agency coordinators were established to routinely cross promote content. Relationships have been solidified with 11 local agency coordinators, including the County-managed pages, and multiple non-profit organization pages.

SMCWPPP has also coordinated with the County to gain Countywide access to a free, two-way social network called NextDoor to further promote pollution prevention messages and events such as the Rain Barrel Rebate Program and 2015 San Mateo County Fair. NextDoor is a platform for residents within a specific neighborhood or surrounding neighborhoods to communicate with one another on a central group feed to stay up to date on events, concerns, or issues going on within their immediate community. EHS has gained access to every neighborhood group within the County to disseminate pollution prevention messages and events.

Other media

SMCWPPP continues to partner with community access channels in other jurisdictions to arrange for broadcasting of informational slides related to stormwater pollution prevention. Topics include Our Water Our World, Coastal Cleanup Day, car washing, and cigarette butt waste. Ten of 21 jurisdictions in San Mateo County have agreed to air these slides. An example of a slide related to the Car Wash Reward Program is shown in Appendix 7.

C.7.e Public Outreach Events

Coordination of Coastal Cleanup Day in San Mateo County

See section C.7.g, as this event fulfills the requirement of both C.7.e and C.7.g.

San Mateo County Fair, June 6-14, 2015

SMCWPPP conducted a Countywide outreach event table (Appendix 7) at the San Mateo County Fair from June 6-14, 2015. A booth dedicated to SMCWPPP was set up as part of the Sustainable Living Exhibit, which was dedicated to presenting projects, organizations, products, and services focused on pollution prevention, energy efficiency, recycling, and creative re-use. SMCWPPP utilized NextDoor to promote its presence and topics. In addition, SMCWPPP created a promotional flyer for cities to incorporate their City logo to distribute within their own city, and multiple social media posts were aired on the San Mateo County Health System's and SMCWPPP's social media pages.

The booth was located in Redwood Hall, which was open to the public for a total of 95 hours during the 9 days. Staff from four jurisdictions and SMCWPPP worked at the booth during peak hours each day for a total of approximately 37 hours of staff time. The booth was unstaffed for the remaining of the fair, including most evening hours when most of the attendees were at the concerts. Approximately 1,500 people were reached in person during the entire event. Countless others had access to the booth during unstaffed time, and were guided by signs and posters to help themselves to outreach materials.

An Eco Gift Basket and rain barrel giveaway was facilitated at the SMCWPPP table that was used as a strategy to recruit subscribers to the Pollution Prevention Post newsletter and/or other specific pollution prevention updates. An opportunity for attendees to sign a pledge and commit to helping protect waterways by using a commercial car wash or waterless product was also hosted at the event booth.

Outreach Materials and Giveaways

The following SMCWPPP items are given out at outreach events and by request to jurisdictions, 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
- Keychain and car ashtrays
- 4 children's activity books: "Pest or Pal" (OWOW), "Watershed Protection," "Stormwater," and Don't Be a Litterbug.
- Children's promotional materials with SMCWPPP logo/messages: pencils, fish and waterdrop erasers.
- "Seafood Watch" sustainable seafood guides, in English and Spanish
- "Dirty Dozen & Clean Fifteen" pocket guide to pesticides and produce
- OWOW fact sheets and "Pests Bugging You?" booklet of fact sheets
- "Too Toxic To Trash" comprehensive toxics disposal and pollution guide, English and Spanish
- "Less Toxic Cleaning Alternatives" fact sheet, in English and Spanish
- Newsletter: "Pollution Prevention Post" (see below)
- Household Hazardous Waste brochure
- Too Toxic to Trash tri-fold brochures
- Household Hazardous Waste business cards

- Very Small Quantity Generator (VSQG) brochures
- VSQG business cards
- Fluorescent Light Recycling postcards
- At-Your-Door Pick up Program postcards, in English, Spanish, and Chinese
- Cleaning Boating Map
- Dockwalker training information
- Used Oil and Filter Recycling Options postcard
- Linked for Life list of recycling used oil and filter locations, in English and Spanish
- New outreach materials listed below

New Outreach Materials Developed This Year

SMCWPPP developed and/or purchased the following new outreach materials for use at outreach events and on social media:

- Free Eco Green Auto Clean waterless car wash voucher (Appendix 7)
- Car Wash Discount Reward Card (Appendix 7)
- Keychain ashtrays (Appendix 7)
- Rain Barrel Rebate Program postcard (Appendix 7)
- Rain Barrel Rebate Program brochure with application
- Pet waste tip card/ fact sheet

Newsletter

SMCWPPP collaborated on two issues of the P3 “Pollution Prevention Post” newsletter (Appendix 7), published in the Fall and Spring to coincide with Coastal Cleanup Day and Spring Cleaning San Mateo County. SMCWPPP participated in the content and printing of these newsletters, and distributed them to local jurisdictions and the public at outreach events. The newsletter was also posted onto the www.flowstobay.org website’s homepage. Newsletter topics included: Coastal Cleanup Day, Spring Cleanup Events, Less Toxic Cleaning, “Don’t Drop & Drive” pertaining to cigarette butt litter, Safe Medicine Disposal, Car Wash Pollution Prevention Reward Program, Recycle with PaintCare, Rain Barrel Rebate Program, and Put the Brakes on Frequent Oil Changes that also promoted used motor oil and filter recycling locations. A total of over 2,500 newsletters for each issue was distributed to libraries, city halls, community centers, organizations, and outreach events throughout the County. The newsletter was also directly mailed to residents that opted to receive the newsletter. Articles were published as posts on SMCWPPP’s Facebook and Twitter social media pages. In an effort to develop paperless communication SMCWPPP recruited approximately 1,000 new email newsletter subscribers during this fiscal year, with a total of electronic 2,654 subscribers, an increase of 1,374 from the last fiscal year.

Car Wash Outreach

As specified in section C.7.e of the MRP, SMCWPPP has developed specific outreach materials and efforts related to educating the public on car wash practices. An enhanced “Car Wash Pollution Prevention Reward Program” was launched this fiscal year to introduce paperless text message and

email discounts redeemable directly from smartphone or tablet devices. This was an effort to stay competitive with the technology from which a large segment of residents receive information on. A sign-up web form for both email and text message discounts was embedded onto the car wash web page to recruit subscribers on the website, and an html code was provided to local agencies to also embed the form onto their websites. A series of social media posts were aired to direct followers to sign up for the reward program.

The reward program is in coordination with 10 car wash locations with offer codes and barcodes piloted as a new redemption processes, mimicking what private sector companies utilize to establish a loyal subscriber following. Rewards piloted this fiscal year included ½ off, \$5 off, bring a friend and get half off, or 15% off a waterless car wash product. Traditional paper hardcopy coupons (Appendix 7) are still judiciously disseminated to segments of the population with limited access to technology and at community outreach events. Since the launch of the enhanced program in March 2015, approximately 2,800 text subscribers have been recruited with an additional 900 email subscribers.

In addition to the reward program, sustainable car care practices are promoted through educational posters at community events, community access television slides aired on multiple channels (Appendix 7), and through a series of boosted social media posts titled “Car Wash Spotlight.” Posts are cross-promoted onto other local agency pages utilizing established social media partnerships (Appendix 7). A NextDoor post was also published Countywide, generating over 2,000 signups in just 24 hours. In addition, SMCWPPP coordinated with car wash partners to print and display large banners (Appendix 7) at their place of business, to brand the program, and display the following educational message “Using a commercial car wash saves while water preventing urban runoff pollution.” Lastly, SMCWPPP recruited Eco Green Auto Clean, a participating waterless car wash partner to provide 5,000 free waterless car wash service vouchers (Appendix 7) to residents. Over 1,000 vouchers were disseminated at the 2015 San Mateo County Fair and through social media posts.

Additional Outreach Efforts: Rain Barrel Rebate Program

SMCWPPP partnered with the Bay Area Water Supply Conservation Agency (BAWSCA) to promote a Rain Barrel Rebate Program that subsidizes the cost of purchasing a rain barrel by providing rebates up of to \$100. The program is designed to encourage residents to help reduce urban runoff pollution and conserve water during the drought by installing a rain barrel at their home.

Promotional efforts for the program included the creation of a postcard and poster, and partnering with BAWSCA to print a brochure with a hard copy application enclosed. Postcards, applications, and the poster were displayed at outreach events. SMCWPPP also coordinated with four Orchard Supply Hardware stores to display a poster and postcards next to rain barrels sold in stores. In addition, multiple themed posts were created on social media highlighting a variety of rain barrels eligible for the rebate program, rain barrel workshops, and testimonials of residents within the County who were early adopters of the program. Existing partnerships were utilized with community TV stations to air Rain Barrel Rebate Program slides. SMCWPPP also purchased four rain barrels to display and raffle off at multiple outreach events and on social media as a strategy to expand the reach of the program, and recruit additional electronic subscribers of SMCWPPP’s Pollution Prevention Post newsletter. As of May 2015, 500 rain barrel rebate applications were submitted by San Mateo County residents.

C.7.f Watershed Stewardship Collaborative Efforts

Environmental Resource Guide of Groups and Organizations in San Mateo County with Watershed Stewardship Focus

SMCWPPP updated the online Resource Guide, created in 2009, of groups and organizations in San Mateo County that focus on watershed stewardship collaboration and encourage public involvement in watershed volunteer efforts. All groups were contacted to verify and update their information during this fiscal year. Groups are searchable by city or topic of interest. In addition, information on how to form a watershed group is available for interested residents to encourage the formation of groups in areas that do not currently have a local group.

Spring Cleanup Promotional Program

SMCWPPP once again promoted “Spring Cleaning SMC,” originally launched in FY 11-12, which is an annual campaign designed to provide an outlet for watershed stewardship groups and jurisdictions to promote small local spring cleanup events. The campaign is promoted as a cleanup “season,” from March 21 to June 21, including all Earth Day events that take place in late April. SMCWPPP revised the web page on www.flowstobay.org dedicated to posting cleanup events during this time period. Newspaper advertisements were developed and placed in newspapers throughout the County, directing the public to the web page. A total of 18 spring cleanup events in 11 cities were posted during the spring season. The page had 368 page views in March, 141 views in April, 138 in May, and 16 visits in June 2015, with a total of 663 page views.

Team Effort Campaign

SMCWPPP continued the Team Effort campaign, originally launched in FY 2012-13 to reach civic-minded County residents and organizations who may not historically have considered themselves to be watershed stewards. While the campaign has been scaled back, SMCWPPP continues to solicit invites to community groups such as Lion’s Clubs, Chamber’s of Commerce, and Rotary Clubs to give presentations related to water quality. Presentations completed this reporting period include San Bruno Rotary Club on July 23, 2014, Beresford Neighborhood Association in City of San Mateo on September 16, 2014, and Belmont Rotary Club on October 20, 2014, with one additional presentation scheduled for the next reporting period in the City of Pacifica. SMCWPPP’s cigarette butt litter pilot program also incorporates this campaign by partnering with non-profits to help implement the pilot by using volunteers and supporting in other ways (*The Cigarette Butt Litter Pilot Program is explained in greater detail in section C.7.b.ii 1 Advertising Campaign*). The website continues to display a Team Effort umbrella theme and message.

C.7.g Citizen Involvement Events

Coordination of California Coastal Cleanup Day - September 20, 2014

California Coastal Cleanup Day, held each year on the third Saturday in September, is the largest volunteer event in the state. The California Coastal Commission sponsors the event with the support of County and Regional Coordinators. SMCWPPP coordinated the event for the tenth year in San Mateo County, recognizing that this event is a great opportunity to get many residents of all ages actively involved with the problems associated with litter. This event qualifies as both a Public Outreach Event (C.7.e.) and Citizen Involvement Event (C.7.g.). In preparation for the event the following tasks were completed this fiscal year:

- Outreach materials such as posters and postcards provided by the California Coastal Commission were disseminated to public schools, libraries, community centers, non-profit organizations, churches, youth groups, site captains, and all jurisdictions in the County. These materials were also handed out at outreach events.
- An article was written in the San Mateo County Environmental Health, fall 2014 edition of the “Pollution Prevention Post” newsletter which informed residents about the event and where to find a location list of cleanup sites in San Mateo County. A total of 2,500 copies were distributed throughout the County to libraries, neighborhood and homeowner associations, local businesses, residents, and handed out at various outreach events.
- The following newspapers ran articles leading up to the event: Half Moon Bay Review Magazine (Appendix 7), SF Examiner, San Mateo Daily Journal, and the Redwood City Patch. Bay Area FOX affiliate, KTVU, did a television broadcast story on the cleanup effort at Linda Mar Beach in Pacifica, and the San Jose Mercury News ran an article after the event that named efforts in San Mateo County.
- The event was posted on the website home page, as well as on the online calendar. A special web page was set up devoted to Coastal Cleanup Day that provided residents with logistical information for the event (www.flowstobay.org/ccdlocations), including a Google map of sites (which received 2,982 hits by the event date). Many environmental groups, public schools, and cities included the event on their web calendars.
- SMCWPPP used Twitter, Facebook and Instagram to draw attention to the event as the date approached. In all, 75 Twitter posts/shares/retweets, 11 Facebook postings/shares, and 10 Instagram posts were issued to promote the event.
- All public schools were sent a memo which contained information about two ways that schools could support CCD: by displaying posters on campus where staff, students, and parents would see them; and to participate in a school or classroom cleanup activity on Friday, September 19 - the day before Coastal Cleanup Day. Participating students were asked to pick up litter around campus and record what they found on data cards. All the supplies were provided, and the students were counted among the thousands that participated. In 2014, over 286 students participated from a total of 5 public schools (1 elementary, 3 middle and 1 high school) from Burlingame, Daly City, Menlo Park, Millbrae, and San Mateo.
- A site captain’s meeting was held to disseminate the latest information from the Coastal Commission to the site captains, along with materials that would be needed to conduct the event. They were trained on signing in volunteers and providing safety talks. In an effort to move toward a change in reporting methods, captains were also trained on how to report their findings using volume measurements and gallons. Both weight and volume numbers were provided in the final reporting to the Coastal Commission.
- Established two new sites this fiscal year: Gray Whale Cove in Montara and the Bay Trail in East Palo Alto.

On the actual day of the event, 27 site captains managed over 70 sites throughout the County. There were 57 sites located on the coastal portion of the county (including 40 large and small sites in the City of Pacifica), and 15 sites were located bayside. A total of 4,265 volunteers were reported to have participated. A total of 15,662 pounds (16,178 gallons) of trash and 3,608 pounds (4,229 gallons) of recyclables were gathered. A total of 54 miles of area was cleaned.

Since SMCWPPP began coordinating the event for San Mateo County in 2005 the amount of volunteers who have turned out for Coastal Cleanup Day has grown by roughly 430%. In addition, an estimated total of over 289,000 pounds of debris has been removed since 2005 (Appendix 7).

C.7.h. School Age Children Outreach

Banana Slug String Band School Assembly Program

SMCWPPP continued contracting with the Banana Slug String Band (a two to four-person musical theatrical theme that specializes in school assemblies, originally contracted in 2010) to present interactive shows about stormwater. The show, entitled “We All Live Downstream,” provides information about storm drains, watersheds, the marine environment, and tips to keep water clean. The show uses songs and activities to engage students on pollution prevention topics. In 2014-5 the band conducted 51 performances at 25 schools throughout the County, reaching over 9,300 students on the following days and schools listed in Table 7-2.

Table 7-2. FY 2014/15 Elementary School Presentations

School	City	Date	# Shows	# Students
Serendipity School	Belmont	10/8/2014	2	120
Pescadero Elementary	Unincorporated	9/19/2014	2	200
La Honda Elementary	Unincorporated	9/19/2014	2	90
Meadows School	Millbrae	9/24/2014	2	430
John Muir Elementary	San Bruno	10/8/2014	2	352
Sunset Ridge Elementary	Pacifica	10/14/2014	2	700
Chavez Elementary	East Palo Alto	10/20/2014	2	700
San Carlos Learning Center	San Carlos	11/12/2014	2	295
Skyline Elementary	Daly City	10/30/2014	2	422
Beechwood School	Menlo Park	10/30/2014	2	175
College Park Elementary	San Mateo	12/17/2014	2	550
Audobon Elementary	Foster City	11/18/2014	2	680
Crocker Middle School	Hillsborough	11/24/2014	2	75
Learning Links Preschool	Burlingame	12/9/2014	2	95
Los Cerritos Elementary	South San Francisco	12/18/2014	2	285
Bayshore Elementary	Daly City	1/23/2014	2	365
Lomita Park Elementary	San Bruno	1/23/2015	2	317
Woodside Elementary	Woodside	3/4/2015	2	435
Hatch Elementary	Half Moon Bay	3/18/2015	2	650
Brisbane Elementary	Brisbane	3/28/2015	2	225
Laurel Elementary	Atherton	4/6/2015	2	470
Encinal Elementary	Atherton	4/6/2015	2	720
Clifford Elementary	Redwood City	4/9/2015	2	325
Seacrest Elementary	Half Moon Bay	4/20/2015	2	282
Farrallone View Elementary	Montara	5/20/2015	2	350

SMCWPPP Middle School Outreach

During FY 2013-14, SMCWPPP developed a presentation for middle school students that focused on litter education and reduction. The presentation consisted of images of litter in the environment and ways in which students can become involved in litter reduction in their community. It included an active participation game with incentive rewards as a method for gauging understanding of concepts introduced. Rewards included sustainable giveaways such as reusable bamboo utensil sets, fish carabineer key chains, and reusable canvas lunch bags. A total of 36 presentations were conducted at 9 schools, with a total of 985 students reached. Details of the presentations are shown in Table 7-3.

Table 7-3. FY 2014/15 Middle School Presentations

School	City	Date	# Classes	Grade	Students
Burlingame Intermediate School	Burlingame	9/18/2014	3	7	82
Burlingame Intermediate School	Burlingame	9/19/2014	3	7	86
Abbott Middle School	San Mateo	9/23/2014	1	7	29
Hillview Middle School	Menlo Park	10/24/2014	1	6,7,8	11
Ingrid B. Lacy Middle School	Pacifica	11/6/2014	3	7	94
Ingrid B. Lacy Middle School	Pacifica	11/7/2014	3	7	91
Bayside STEM Academy	San Mateo	11/19/2014	3	6	94
Bayside STEM Academy	San Mateo	11/20/2014	3	6	88
St. Robert Catholic School	San Bruno	1/13/2015	1	6	35
Ingrid B. Lacy Middle School	Pacifica	1/30/2015	3	8	85
Taylor Middle School	Millbrae	2/27/2015	2	6	55
Hillview Middle School	Menlo Park	3/24/2015	1	6,7,8	13
Abbott Middle School	San Mateo	4/23/2015	1	7	21
Tierra Linda Middle School	San Carlos	5/18/2015	4	6	97
Tierra Linda Middle School	San Carlos	5/19/2015	2	6	56
Parkside Intermediate School	San Bruno	5/27/2015	2	6	48

SMCWPPP High School Outreach

During the FY 2014/15, SMCWPPP continued a high school outreach presentation developed in FY 2012-13. Content was focused on water pollution prevention problems and solutions, with an emphasis on litter prevention and student involvement. The presentation was conducted at a total of 3 schools throughout the County reaching a total of 201 students. Grades 9-12 received presentations. Presentations were conducted at the following schools in the following cities listed in Table 7-4.

Table 7-4. FY 2014/15 High School Presentations

School	City	Date	# Classes	Grade	Students
Aargon High School	San Mateo	10/24/2014	2	11	70
Woodside High School	Woodside	11/6/2014	1	11	46
Hillsdale High School	San Mateo	11/25/2014	1	9,10,11,12	30
Hillsdale High School	San Mateo	3/3/2015	1	11,12	55

Science Fair

On March 3, 2015, two SMCWPPP representatives served as judges in the special awards category reviewing projects/exhibits in the Biological Systems or Environmental Sciences categories. Special awards were given in the two categories to Elementary and Middle School students. SMCWPPP awarded both students with a framed certificate, and a bag of promotional student giveaway items that included a canvas reusable bag, reusable bamboo utensil set, a reusable water bottle and other sustainable items.

FUTURE ACTIONS

- Conclude the Cigarette Butt Litter Pilot Program data collection, synthesize results, release findings, and provide recommendations on which strategies should be introduced for broad scale implementation.
- Continue to grow reach, engagement, and following of all four SMCWPPP social media platforms.
- Facilitate a car wash press conference in July 2015 to expand reach of sustainable car care and water conservation practices. Evaluate electronic redemptions and refine to further streamline participation by users.
- Support BAWSCA in promotion of the Rain Barrel Rebate Program extended until June 30, 2016 as an additional strategy to reducing urban runoff pollution.
- Maintain and update SMCWPPP's www.flowstobay.org website as needed.
- Participate in a BASMAA PIP Regional Ad Campaign, media relations, and regional pesticide programs.
- Conduct outreach and involvement events as specified in current and future requirements of the MRP.
- Maintain and develop new working relationships with watershed stewardship and other non-environmental organizations.
- Conduct Coastal Cleanup Day Countywide.
- Conduct School Outreach as specified in the current and future requirements of the MRP.

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. Much of this work is accomplished through participation in BASMAA regional projects. Per Provision C.8, water quality monitoring activities conducted from the beginning of the permit term through September 30, 2013 were documented, summarized, and evaluated in the comprehensive Integrated Monitoring Report (IMR), which was submitted to the Regional Water Board on March 17, 2014. Per Provision C.8, a complete documentation of all water quality monitoring data collected from October 1, 2014 through September 30, 2015 (i.e., Water Year or WY 2015) will be presented in SMCWPPP's Urban Creeks Monitoring Report, which will be submitted to the Water Board by March 15, 2016.

C.8.e Pollutants of Concern Monitoring

Based on the lessons learned through the implementation of the Small Tributaries Loading Strategy (STLS) Multi-Year Plan in WYs 2012, 2013, and 2014, and the reprioritization of near-term information needs, SMCWPPP and its Regional Monitoring Coalition (RMC) partners implemented a revised approach to Pollutants of Concern (POC) Loads monitoring in WY 2015. The alternative monitoring approach was discussed at numerous STLS workgroup meetings during FY 2013/14¹ and was agreed upon by STLS members, including Regional Water Board staff, as the best approach to addressing near-term high priority information needs regarding PCB and mercury sources and loadings. The approach was implemented in compliance with MRP provision C.8.e² beginning in the fall of 2014 (i.e., WY 2015). The alternative approach includes the discontinuation of most POC loads monitoring stations sampled in previous Water Years and includes the implementation of the following activities by SMCWPPP and/or the Regional Monitoring Program (RMP) via the STLS workgroup:³

- **Pulgas Creek Pump Station Watershed POC Loads Monitoring Station** – SMCWPPP monitored a total of seven storms at this station during Water Years 2013 and 2014. This station drains a small drainage with mostly industrial land uses located at the margin of the Bay in San Carlos. SMCWPPP reported on this monitoring in the March 2015 Urban Creeks Monitoring Report.

¹Revised POC loads monitoring approaches for FY 2014/15 (Water Year 2015) were discussed and ultimately agreed upon by Regional Water Board staff and other STLS and RMC partners at the following STLS meetings: October 13, 2013; March 19, 2014; April 1, 2014; April 16, 2014; May 15, 2014; and June 9, 2014.

²The FY 2014/15 revised alternative approach summarized in this section addresses each of the POC Loads Monitoring management information needs described in provision C.8.e and will be performed at an equivalent level of monitoring effort as the effort described in this MRP provision.

³ The revised monitoring approach was approved by the BASMAA Board of Directors on August 28, 2014.

SMCWPPP did not monitor additional storms at this station during WY 2015 but instead implemented the alternative approach described below.

- **PCB and Mercury Opportunity Area Analysis (SMCWPPP)** - SMCWPPP is conducting a *PCBs and Mercury Opportunity Area Analysis* as part of its revised POC loads monitoring approach in WY 2015 to assist Permittees in identifying source areas in San Mateo County. The outcome of this activity will be a refined understanding of PCB/mercury source area locations, which is anticipated to lead to further load reduction opportunities during future NPDES permit terms. The field and laboratory work have been completed and a draft report documenting the methods and results is under development.
- **POC Monitoring (RMP/STLS)** - Through the STLS workgroup, SMCWPPP has also worked with RMP staff on the implementation of a stormwater characterization field study that is intended to complement the opportunity area analysis described above. The goal of the project is to assist Permittees in identifying watershed sources of PCBs and mercury through sampling of stormwater and sediment transported from the watershed to stormwater conveyances during storm events. This monitoring was funded through the RMP and conducted during WY 2015.

The results of the above alternative monitoring approach will be presented in SMCWPPP's Urban Creeks Monitoring Report, which will be submitted to the Water Board by March 15, 2016.

SECTION 9

C.9 PESTICIDE TOXICITY CONTROLS

INTRODUCTION

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 Bay 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 including having 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 coordinated through SMCWPPP's Parks Maintenance and Integrated Pest Management (IPM) Work Group (except Provision C.9.h, the public outreach portion of Provision C.9, which is implemented through the SMCWPPP Public Information and Participation component - see Section 7 of this report).

IMPLEMENTATION OF MRP PROVISIONS

During FY 2014/15, 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.
- Conducted SMCWPPP's Annual Landscape IPM Training Workshop in March 2015.
- Finalized an "Orientation Piece" for the Parks Maintenance and IPM Work Group that can be used by Permittee staff to provide information about SMCWPPP and C.9 requirements to new and existing staff.
- Developed periodic updates on pesticide regulatory activities for the Parks Maintenance and IPM Work Group.
- Participated in meetings to discuss implementation of the California Department of Pesticide Regulations (DPR) funded "IPM Focus on Multi-Unit Housing" project. Participated in relevant BASMAA and CASQA activities.
- Participated in a region-wide integrated pest management "Our Water Our World" campaign by working with 22 local retail stores to maintain point of purchase information on less toxic pest control.

- Promoted IPM courses to 81 structural and landscape pest control operators registered with the County Agricultural Commissioner. Piloted a constituent relationship management system (CRM) to notify operators electronically of upcoming courses in addition to US postal mailings that provide analytics on open rates and link click totals. A total of 17 operators were emailed and insights showed that 6 opened the email. Maintained a web page identifying operators that are IPM trained as a resource for the public.

More information on each of these accomplishments is provided below.

Parks Maintenance and IPM Work Group

The Parks Maintenance and IPM Work Group met two times during FY 2014/15 to share information about MRP requirements and methods for achieving compliance. Valerie Matonis from the City of Redwood City continued to chair the IPM Work Group. A FY 2014/15 work group attendance summary table is included in Appendix 9. Both Work Group meetings were attended by staff from Colma, Foster City, Pacifica, Daly City, Hillsborough, Redwood City, and South San Francisco. Cities that attended one meeting were Brisbane, Burlingame, and Menlo Park. In addition, one meeting was attended by staff from San Mateo County Agriculture/Weights and Measures.

In FY 2014/15, the Parks Maintenance and IPM Work Group developed the following:

- Orientation Piece - SMCWPPP staff worked with the Parks and IPM Work Group to finalize an “Orientation Piece” that can be used to train and inform new and existing staff about SMCWPPP, the MRP, and the role of the Parks and IPM Work Group.
- Regulatory Update - In FY 2014/15, SMCWPPP staff continued to develop a periodic update document describing pesticide regulatory activities and upcoming IPM workshops and trainings. The updates were distributed along with Parks and IPM Work Group meeting agenda packets.

Fourteenth Annual Landscape Integrated Pest Management Workshop

The SMCWPPP annual Landscape IPM workshop was held on March 11, 2015 at the City of Foster City’s Library Community Center. Seventy-six people attended and the following topics were covered:

- Pesticides and Water Quality
- Gopher, Squirrel, Mole, and Raccoon Control
- Tree Management During Drought
- IPM for Ornamental Plants During Drought Conditions
- Regulatory Update, Common Violations, and Online Pesticide Use Reporting

SMCWPPP worked closely with San Mateo County Agriculture/Weights and Measures staff to provide Department of Pesticide Regulations Continuing Education Credits for participants. 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 completed evaluation forms. Other workshop materials are available on the SMCWPPP website (www.flowstobay.org) for use by agency staff.

Department of Pesticide Regulation Grant

In May 2014, BASMAA received a Department of Pesticide Regulation (DPR) grant to implement Integrated Pest Management (IPM) techniques at multi-family units. The project will focus on structural pest control and be implemented in select apartment buildings located in San Jose, East Palo Alto, Palo Alto and San Francisco. SMCWPPP staff is participating in the grant meetings and assisting with the development and review of materials.

Participation in BASMAA and CASQA

Provision C.9.e requires Permittees to track and participate in regulatory processes relevant to pesticide toxicity control. During FY 2014/15, SMCWPPP accomplished this task by working with BASMAA and CASQA. For additional information, see *Pesticides Subcommittee Annual Report and Effectiveness Assessment - 2014-2015, California Stormwater Quality Association, August 2015* (Appendix 16). In addition, SMCWPPP staff stayed current with pesticide regulatory work by participating in selected CASQA Pesticide Committee meetings.

C.9.h.i. Public Outreach: Point of Purchase

Our Water Our World

Since 1999, SMCWPPP has participated in the regional Our Water Our World (OWOW) program by attending all PIP meetings with BASMAA and participating jurisdictions to coordinate the program in San Mateo County. There were 15 stores when the program began with 22 stores now participating to date. Participating stores are listed in Table 1. Regional program leaders continue to report an overall increase in sales of less toxic products as a result of the program's implementation.

Early in 2013, a graduate of the IPM Advocate Regional Training Program was hired to devote her time to the program in San Mateo County, bringing with her specialized training and knowledge of the stores and the products in the program. The IPM advocate has visited each partner store a minimum of twice during this fiscal year, once in the fall and again in the spring with several larger stores, such as all Home Depots, visited more frequently. During each visit, communication with the store managers and employees was maintained, store displays were updated, and fact sheets restocked. Staff also noted any new less toxic products to report to BASMAA for investigation and inclusion on the master products list. Trainings have been offered to all store managers in order to better equip store employees with the knowledge needed to help the public. Tabling events have also been conducted to draw public attention to the resources that the program offers (Table 2).

Table 1. FY 2014/15 San Mateo County “Our Water Our World” Partner Stores

Store	Address	City
Brisbane Hardware	1 Visitacion Avenue	Brisbane
Carlmont Ace Hardware	1029 Alameda De Las Pulgas	Belmont
Carlmont Nursery	2029 Ralston	Belmont
El Granada Hardware	85 Portola Avenue	El Granada
Golden Nursery	1122 2nd Avenue	San Mateo
Half Moon Bay Nursery	11691 San Mateo Road	Half Moon Bay
Home Depot	2 Colma Boulevard	Colma
Home Depot	303 E. Lake Merced Boulevard	Daly City
Home Depot	1781 East Bayshore Road	East Palo Alto
Home Depot	1125 Old County Road	San Carlos
Home Depot	2001 Chess Drive	San Mateo
Linda Mar Ace Hardware	560 Pedro Avenue	Pacifica
Hassett’s Hardware	111 Main Street	Half Moon Bay
Hassett’s Hardware	545 First Avenue	San Mateo
Hassett’s Hardware	348 Woodside Plaza #282	Redwood City
Lyngso Garden Materials	19 Seaport Boulevard	Redwood City
Orchard Supply Hardware	1010 Metro Center Boulevard	Foster City
Orchard Supply Hardware	900 El Camino Real	Millbrae
Orchard Supply Hardware	2110 Middlefield Road	Redwood City
Orchard Supply Hardware	2245 Gellert Boulevard	South San Francisco
Wegman’s Nursery	492 Woodside Road	Redwood City
Portola Valley Hardware Inc.	112 Portola Road	Portola Valley

To promote the OWOW program, SMCWPPP conducted the following outreach during FY 2014/15:

- Maintained distribution of materials through partner stores by purchasing the OWOW fact sheets, brochures, booklets, children’s activity books, pocket guides, and business cards available from BASMAA.
- Partnered with County RecycleWorks to use and distribute fact sheets. Additional materials were given out at events that RecycleWorks staffed throughout the year.
- Conducted outreach tabling events promoting OWOW to customers at Hassett’s Hardware, Home Depot and Orchard Supply Hardware (see Table 2). Staff answered questions, educated, and mentored customers at point of purchase for home and garden pest problems, and offered tips and solutions. Staff provided non-toxic and less-toxic options for problem solving through discussion and distribution of printed OWOW materials and resources, as well as other printed materials with stormwater pollution prevention messages. An estimated 315 residents were reached.
- Conducted store employee trainings at partner stores (see Table 3). During the fiscal year, a total of 106 store employees were trained in IPM strategies and product identification in order to help the public when making purchases of garden and pest products. The trainings resulted in team building and empowerment of employees to feel comfortable answering questions and helping the customer solve pest problems. Post-

training surveys conducted of employees indicated that they found the training valuable and informative.

- Provided materials and information at the other (non-IPM) outreach tabling events hosted throughout the year.
- Worked with the owner and buying team at Hassett’s Ace Hardware to assist with pesticide purchasing decisions with the intent to reduce the toxic products and to add more eco-friendly/less toxic products for their customers.
- Obtained one of three University of California Statewide Integrated Pest Management (UCIPM) pest problem solver kiosks in the state for display at Orchard Supply Hardware (OSH) in Foster City as of May 5th, 2015 with intention of keeping it there through the fall of 2015. The UCIPM problem solver kiosk is a touch screen, interactive tool for the public to access, which offers IPM solutions to their pest problems and suggests less toxic pesticides when necessary. In addition to this, the UCIPM website lists the OSH Foster City as a location for this kiosk (Appendix 9).
- Attended the NorCal Landscape & Nursery show on February 2, 2015. Offered IPM solutions and purchasing advice for the retail store buying teams in San Mateo County.
- Conducted an IPM program for the San Mateo Garden Study Club on October 2, 2015.
- Aired a series of social media posts called “Pest of the Month,” promoting specific less toxic products and practices to control seasonal pests.
- On behalf of the Bay Area Water Supply Conservation Agency (BAWSCA), presented an IPM presentation for the residents of San Mateo County on March 14, 2015.

Table 2. FY 2014/15 Our Water Our World Tabling Events

Tabling Events		
Date	Store	City
10/11/2014	Orchard Supply Hardware	Foster City
10/12/2014	Orchard Supply Hardware	Millbrae
11/28/2015	Orchard Supply Hardware	Redwood City
11/29/2015	Orchard Supply Hardware	South San Francisco
4/11/2015	Hassett’s Hardware	Redwood City
4/18/2015	Orchard Supply Hardware	Foster City
5/9/2015	Home Depot	East Palo Alto
5/23/2015	Orchard Supply Hardware	Millbrae

Table 3. FY 2014/15 Our Water Our World Partner Store Employee Trainings

Employee Trainings			
Date	Store	City	# Reached
8/20/2014	Hassett's Hardware	San Mateo	4 trainees
10/26/2014	Home Depot	San Mateo	5 trainees
11/1/2014	Carlmont Nursery	Belmont	7 trainees
11/20/2014	Home Depot	San Carlos	6 trainees
1/25/2015	Hassett's Hardware	San Mateo	6 trainees
1/28/2015	Hassett's Hardware	Redwood City	6 trainees
2/6/2015	Hassett's Hardware	Half Moon Bay	7 trainees
3/11/2015	Home Depot	Daly City	14 trainees
3/16/2015	Orchard Supply Hardware	South San Francisco	8 trainees
3/19/2015	Home Depot	Colma	6 trainees
3/24/2015	Hassett's Hardware	San Mateo	10 trainees
4/1/2015	Hassett Hardware Management Team	Misc.	12 trainees
4/8/2015	Orchard Supply Hardware	Foster City	4 trainees
5/27/2015	Home Depot	East Palo Alto	11 trainees
		TOTAL	106

C.9.h.v. Public Outreach: Pest Control Operators

SMCWPPP used the San Mateo County Agricultural Commissioner list of Pest Control Operators (PCO's) in San Mateo County to send out a mailing on October 14, 2014 to 81 pest control operators. The mailing consisted of a packet with a cover letter explaining basic IPM and encouraged operators to become IPM certified. Flyers and information were included in the packet for the following opportunities:

- Ecowise Online IPM Certification Course
- 2015 Pesticide Applicators Professional Association Training Schedule
- Green Pro Certification Information
- Green Shield Certification Information

The cover letter also encouraged PCO's to contact SMCWPPP to be part of the web page dedicated to helping the public find IPM certified contractors at www.flowstobay.org/IPMPCO under the pest control tab. There are currently 6 PCOs listed on the web page. Contractors listed on the webpage were asked to verify their IPM experience before being promoted on the page. The public was directed to it during outreach events beginning in FY 2013-14. The page also contains links to the OWOW program and other pest control resources.

In addition to hard copy mailings, SMCWPPP has incorporated Constant Contact as a way to send IPM information to 17 pest control contractors with listed email addresses. The CRMS provides the ability to track open rates and specific link clicks within the body of the email sent out. Analytics showed that 6 pest control operators opened the email.

FUTURE ACTIONS

SMCWPPP activities that are planned for FY 2015/16 to assist member agencies comply with MRP requirements in Provision C.9 include the following:

- Continue holding Parks Maintenance and IPM Work Group meetings;
- Continue to assist member agencies with implementation of Provision C.9 including implementation of IPM programs and policies, with input and assistance provided by the Parks Maintenance and IPM Work Group.
- Assist with implementation of the DPR grant described above.
- Continue to track relevant regulatory processes and interface with County Agriculture/Weights & Measures staff to help implement MRP C.9 Pesticide Toxicity Control requirements.
- Consider holding additional IPM training workshops.
- Order, and replace all Our Water Our World signage and materials with updated materials reflecting new design and content from BASMAA.
- Conduct outreach to Pest Control Operators to encourage IPM training.

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 trash management activities.

More detailed information about SMCWPPP's assistance in helping member agencies comply with MRP requirements in Provision C.10 are included in the following sections. Details on tasks completed by member agencies can be found in each member agency's Annual Report.

IMPLEMENTATION OF MRP PROVISIONS

MRP Provision C.10 (Trash Load Reduction) requires Permittees (as applicable) to:

- Submit a Short-Term Trash Load Reduction Plan to the Water Board by February 1, 2012 that is designed to attain a 40% reduction from its MS4 by July 1, 2014.
- Determine its baseline load of trash from its stormwater system and document the method used to demonstrate progress towards load reduction levels (e.g., 40% reduction).
- Identify and select a required number of trash hot spots in creeks or shorelines to be the focus of required annual trash assessments and cleanups.
- Install and maintain full trash capture devices to treat runoff from a specified amount of land area.
- Submit a Long-Term Trash Load Reduction Plan to the Regional Water Board by February 1, 2014 that specifies actions designed to attain a 70% reduction from its MS4 by July 1, 2017, and a 100% reduction (i.e., "no adverse impacts") by July 1, 2022.

During FY 2014/15, SMCWPPP completed the tasks described below in support of member agency trash management activities conducted in compliance with the above requirements.

Participation and Coordination of the Trash Committee

SMCWPPP's Trash Committee assists member agencies with the implementation of new or enhanced trash control measures and actions required by the MRP. The Trash Committee generally meets four to six times a year. Additional meetings are scheduled as necessary to

address high priority issues. During FY 2014/15, SMCWPPP staff facilitated four Trash Committee meetings, which were chaired by Chris Sommers, SMCWPPP staff. The FY 2014/15 Trash Committee attendance list is included in Appendix 10. Staff from the following member agencies attended a majority of the committee's meetings during FY 2014/15: County of San Mateo and cities/towns of Belmont, Brisbane, Burlingame, Colma, Daly City, Half Moon Bay, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo and South San Francisco.

During the Trash Committee meetings in FY 2014/15, Committee members discussed and provided input on the following topics/projects:

- C.10 permit requirements.
- Developing the FY 2013/14 and FY 2014/2015 Annual Report format for Provision C.10.
- Developing the Trash Full Capture Device Operation and Maintenance Verification Program.
- Identifying or updating on-land trash assessment locations in Trash Management Areas (TMAs).
- Participating in and tracking the BASMAA awarded State Water Board Proposition 84 Stormwater Monitoring and Planning grant project "Tracking California's Trash".
- Identifying opportunities for collaboration with Caltrans.
- Tracking and participating in the development of the Statewide Trash Policy Amendments.
- Developing a County-wide Adopt-a-Block Program.
- Providing comments on the Administrative Draft of MRP 2.0 Section C.10 released on May 11, 2015.

Long-Term Plan Revisions

Program staff also assisted SMCWPPP member agencies in revising trash generation and management area maps per the direction of member agency staff. Revisions were intended to provide a more accurate depiction of trash generation in San Mateo County. All revisions were made via GIS and the Program continued to store all trash-related data in its GIS data management system.

Pilot Trash Assessment Strategy

SMCWPPP began implementing the Pilot Trash Assessment Strategy in FY 2014/15. The Strategy was submitted to the Water Board on February 3, 2014 as part of Long-Term Plan submittals. The Strategy is intended to provide information on magnitude and extent of trash reductions associated with stormwater in San Mateo County. The Strategy uses information on four indicators:

1. Level of trash observed on-land and available to MS4s;
2. Areas effectively treated by full-capture devices;
3. Extent and magnitude of trash control measures implementation; and
4. Levels of trash in receiving waters.

Information on the results of implementing the Strategy in FY 2014/15 is included in each member agency's Annual Report (see Section 10). The following summarizes the two major activities in support of the Strategy that were conducted by SMCWPPP staff during FY 2014/15:

- **On-land Visual Assessments** – In FY 2013/14, SMCWPPP staff developed guidance for member agencies on the selection of TMAs considered high priority for on-land visual trash assessments. Based on the TMAs selected by member agencies, SMCWPPP staff developed a randomized/probabilistic assessment approach that allows agencies to extrapolate data collected at assessment sites to an entire TMA. SMCWPPP staff and member agency staff began conducting on-land visual trash assessments in July 2014. In November 2015, SMCWPPP staff again provided guidance and worked with Permittee staff to better identify or update TMAs where on-land visual assessments should be conducted. During FY 2014/15, Program and Permittee staff conducted 535 assessments at 159 sites. Data generated through these assessments are incorporated into each member agency's trash reduction estimate included in Section 10 of their Annual Report.
- **On-land Assessment Database** - In late FY 2014/15, SMCWPPP staff began developing a web-accessible database to allow assessment data to be entered via a tablet or smartphone by field crews, and to house on-land trash visual assessment results. SMCWPPP member agencies will have the ability to view and download assessment data via the Program's website. It is anticipated that the website will be available for use by the fall of 2015.
- **On-land Trash Visual Assessment Training Workshop** – In late FY 2014/15, SMCWPPP staff began planning a half-day workshop entitled "SMCWPPP On-Land Visual Trash Assessment Training." The workshop was held in July 2015 and over 25 participants attended. The training workshop focused on how to conduct on-land visual trash assessments using the standardized assessment protocol. It included a group practice session performing assessments on city streets surrounding the workshop location. Information regarding the design of the protocol was also discussed.
- **Full Capture Operation and Maintenance Verification Program** – Starting in FY 2013/14, SMCWPPP made significant strides toward developing an operation and maintenance verification program for full-capture devices. Inspection and maintenance of these devices is required to maintain full-capture designation by the Water Board. The program was initiated in collaboration with the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) and includes standard operating procedures for inspections and cleaning, training materials and an operation and maintenance plan template for use by member agencies. Draft Model Program materials were distributed for review and discussed at the November 2014 Trash Committee meeting. Permittee staff provided comments on the Draft Model Program in November and December 2014. Based on feedback from Permittee staff, SMCWPPP staff tabled the development of the Draft Model Program until the adoption of MRP 2.0.

Trash Hot Spot Cleanup and Assessment Guidance

Provision C.10.b(ii) 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 Permittee Annual Reports.

During FY 2014/15, Permittees continued conducting annual cleanups and assessments required by the MRP. Results from this year's annual cleanups indicated that one cleanup/assessment was conducted at each of the 30 different sites within SMCWPPP member agency jurisdictions.¹ Approximately 40 cubic yards of trash was removed from these sites during FY 2014/15. The timing of annual assessments and cleanups vary between hot spots due to the location of the hot spot, potential for natural resource impacts, crew availability and other site-specific factors.

Coordination with San Mateo Countywide Recycling Committee

In an effort to increase coordination between 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 continues to coordinate with the Recycling Committee in FY 2014/15, 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 and dispersal from waste transfer vehicles.

Continuation of the Litter Work Group of the Trash Committee

Formed in March of 2014, SMCWPPP's Litter Work Group continued in FY 2014/15. The Work Group continued to coordinate litter reduction efforts between 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 and consultants working on litter reduction efforts both in Santa Clara County and San Mateo County attended several meetings in 2014 and 2015. 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 2014/15:

- Five Work Group meetings were held on the following dates: August 11th, October 29th, March 30th, and May 4th. Attendees represented 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 (Rethink Waste) and SMCWPPP.
- The Work Group organized the County's 2nd Annual Litter Reduction Roundtable event for municipal staff and waste hauling company staff on June 24, 2015 at the San Mateo Public Library. The focus of the event was on commercial waste container management.

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. Many 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.d – Part C of member agency Annual Reports for additional information.

The Key Note address was given by City Councilmember, Ruben Abrica of the City of East Palo Alto. A presentation was also made by Randy Breault from the City of Brisbane on their new container management program. During the 2nd half of the morning, the thirty-one attendees broke out into two groups of municipalities with 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 learned about the existing programs with their haulers. Based on the information gained through the Roundtable event, SMCWPPP plans to continue coordinating the Litter Work Group in FY 2015/16, with the focus on implementing projects designed to improve waste container management in the County. The Litter Work Group will also work with Re-Think Waste to prioritize issues for discussion in the Recology San Mateo franchise extension negotiations planned for 2017. The 2015 Roundtable announcement flyer, agenda and attendance list are included in Appendix 10.

Participation in BASMAA's Tracking California's Trash Project

In 2014, BASMAA was awarded a Proposition 84 Stormwater Monitoring and Planning grant by the State Water Board for a project entitled "Tracking California's Trash". SMCWPPP staff tracks the implementation of this project, which includes three major tasks: trash monitoring and assessment methods development, BMP effectiveness monitoring, and creek hotspot and on-land cleanup data management and website development. The project is funded for \$870,000. Project partners include the Five Gyres Institute and the San Francisco Estuary Partnership (SFEP).

In FY 2013/14 a consultant team was selected through a Request for Qualifications (RFQ) process to assist on the project monitoring design and sampling/characterization. Draft monitoring, quality assurance/control, and project evaluation/assessment plans developed by the consultant were submitted to the State Board in April 2014. Additionally, a request for potential project partners was sent to municipal representatives and more than ten cities/counties in the Bay Area and Los Angeles region responded with interest in participating in the project.

An initial Project Management Team meeting was held on May 27, 2014 to orient potential project partners to the project and answer questions. Additionally, a Stakeholder Committee meeting was held on May 27, 2014 to allow for initial feedback from interested parties, including staff from non-governmental organizations. Potential project sites were visited in June 2014. Many of the sites within the Program's jurisdiction were not selected due to the limited amount of trash present on the streets. In July 2014, a BMP Literature Review and Draft Sampling and Analysis Plan (SAP) were completed. A Monitoring Technical Advisory Committee (TAC) meeting was held on August 20, 2014 to discuss the project and receive input on the study designs proposed in the Draft SAP. The Draft SAP was well received by technical advisors. Comments from technical advisors were incorporated into the Draft SAP in November/December 2014. The Final Draft SAP was approved by the BASMAA Board of Directors on December 5, 2014. The Draft Final SAP was submitted to the State Board in mid-December 2014. A total of three study sites were selected for the evaluation of street sweeping performance and four sites were selected for receiving water monitoring.

Monitoring/assessments to evaluate street sweeping performance began in late February 2015 and will continue through February 2016. As of September 15, 2015, a total of 18 of 32 events have been performed. Two trash characterization events have been conducted to quantify the trash observed during these events. Additionally, Five Gyres Institute has conducted receiving water monitoring at one of the four sites to-date. Monitoring was conducted in early 2015 at the Colma Creek location, followed by a trash characterization event to quantify the material collected. Additionally monitoring is planned for fall/winter 2015/16 in San Mateo Creek, Coyote Creek and Arroyo Seco (Los Angeles). The Cities of South San Francisco and Santa Mateo, and the County of San Mateo have all participated in the project to-date. The project is currently scheduled for completion in late 2016.

Participation in Bay Area Water Board Workshops

Water Board staff released a staff summary report on *Trash Load Reduction Requirements of the MRP: Compliance Review and Lessons Learned for Permit Reissuance*. The report included the preliminary results of the compliance evaluation with regards to the 40% trash load reduction requirement. The vast majority of SMCWPPP member agencies were deemed in compliance with the reduction goal. On December 10, 2014, a workshop was held at the regularly scheduled Water Board meeting to allow Water Board staff to present their results and allow Permittees and interested parties to also discuss compliance challenges and opportunities for improvement. A summary of the workshop was developed by SMCWPPP staff in mid-December 2014.

Tracking Statewide Trash Amendment Development

The State Board began the development of amendments to the *California Ocean Plan* and the *Inland Surface Waters, Enclosed Bays, and Estuaries Plan* in 2010 that are intended to significantly reduce the impacts of trash on receiving waters. The proposed amendments will include five elements: (1) Water Quality Objective, (2) Prohibition of Discharge, (3) Implementation Plan, (4) Compliance Schedule, and (5) Monitoring, and could directly affect Co-permittees and other municipalities throughout the region and state. The Proposed Trash Amendments and Draft Staff Report were released by the State Board on June 10, 2014 for public comment. SMCWPPP staff attended (via webcast) a State Board workshop on the Proposed Trash Amendments on July 16, 2014, and coordinated the development of the BASMAA comment letter on the Proposed Trash Amendments.

On November 12, 2014, SMCWPPP staff met with State Board staff to discuss comments provided in the BASMAA comment letter. The Proposed Final Trash Amendments and the final staff report were released on December 31, 2014. A response to comments was posted on March 24, 2015 and a final adoption hearing was held on April 7, 2015. The amendments were adopted by the State Board with minor modifications. The amendments are generally consistent with the trash reduction framework developed in the Bay Area. The adopted trash amendments will be submitted to the California Office of Administrative Law and the U.S. Environmental Protection Agency for approval. Once approved, requirements will be incorporated into permits over an 18-month period. Since the MRP already contains requirements consistent with the amendments, it is expected that there will be little effect on the MRP reissuance.

FUTURE ACTIONS

FY 2015/16 activities that are planned by SMCWPPP to assist member agencies comply with MRP requirements in Provision C.10 include the following:

- Coordination of SMCWPPP Trash Committee meetings.
- Continued implementation of the SMCWPPP pilot trash assessment strategy designed to demonstrate progress towards MRP trash load reduction goals.
- Continued maintenance of the SMCWPPP on-land assessment database.
- Completion of the trash full-capture operation and maintenance verification program, in coordination with SCVURPPP.
- Calculate and report on the amount and types of trash removed via creek and/or shoreline cleanups required by the MRP.
- Develop a work plan with the Litter Work Group including prioritized recommendations for improving container management programs, metrics and issues with franchise agreement negotiations.
- Coordinate and plan the 3rd Annual Litter Roundtable with municipal solid waste/recyclables haulers, in coordination with the San Mateo Countywide Recycling Committee and permittee staff.
- Prepare Best Management Practices materials for SMCWPPP on the subject of Litter Reduction and Waste Hauling in San Mateo County.
- Continue to coordinate and share information with the Zero Litter Initiative in Santa Clara County.
- Active participation in implementing the Proposition 84 grant-funded “Tracking California’s Trash” project.

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. On behalf of its member agencies, SMCWPPP performs a variety of activities to address mercury in stormwater runoff in compliance with MRP Provision C.11. Much of this work has been accomplished through participation in BASMAA regional projects. Many of these projects address PCBs in addition to mercury and are described in this section rather than Section 12 (PCBs Controls).

All mercury and PCB-related activities conducted through approximately the end of calendar year 2013 by SMCWPPP and BASMAA were documented, summarized, and evaluated in SMCWPPP's comprehensive Integrated Monitoring Report (IMR), which was submitted to the Regional Water Board on March 17, 2014.

IMPLEMENTATION OF MRP PROVISIONS

C.11.a Mercury Recycling

MRP Provision C.11.a requires member agencies to promote, facilitate and/or participate in collection and recycling of mercury-containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs). To meet this requirement, member agencies continued to participate in San Mateo County Health Department's Household Hazardous Waste (HHW) Program and Very Small Quantity Generator Business Collection (VSQG) Program during FY 2014/15. 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. During FY 2014/15 County programs assisted approximately 11,545 households and 254 businesses in disposing of their unwanted HHW. Descriptions of any member agency efforts to promote, facilitate and/or participate in collection and recycling of mercury-containing devices and equipment during FY 2014/15 are provided in individual Permittee Annual Reports.

C.11.a also requires that Permittees report an estimate of the mass of mercury collected via mercury collection and recycling efforts. During FY 2014/15, the HHW Program reported

collection of 25,532 linear feet of fluorescent lamps (tubes, u-shapes, circles¹, etc.) and 1,881 compact fluorescent lamps. In addition, the HHW Program also reported collection of the following mercury-containing devices and equipment:

- 26 thermostats; and
- 313 thermometers; and
- 18 switches.

Eleven of the 26 thermostats were shipped to Thermostat Recycling Corporation.

To assist with estimating the mass of mercury collected during FY 2014/15 by the HHW Program, SMCWPPP staff used a spreadsheet calculator developed earlier in the permit term in collaboration with BASMAA. The estimated mass of mercury collected is calculated based on the total amount of mercury-containing devices and equipment collected and the best available information from manufacturers and trade organizations regarding the amount of mercury contained in the devices and equipment. The estimated mass of mercury collected by the HHW Program during FY 2014/15 is provided in Table 11-1.

Table 11-1. Estimated mercury mass collected by SM County HHW Program in FY 2014/15.

Mercury Containing Device/Equipment	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)
Fluorescent Lamps (linear feet) ²	25,532	0.05
CFLs (each) ³	1,881	0.008
Thermostats (each) ⁴	26	0.10
Thermometers (each) ⁵	313	0.19
Switches (each)	18	0.05
Total Estimated Mass of Mercury Collected During FY 2014/15:		0.4

¹The 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.

²The 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.

³The 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.

⁴The amount of mercury in a thermostat is determined by the number of ampoules. There are generally one or two ampoules per thermostat (average is 1.4) and each ampoule contains an average of 2.8 grams (g) of mercury. Therefore, each thermostat recycled is assumed to contain approximately 4.0 g of mercury. Source: TRC 2008. Thermostat Recycling Corporation's Annual Report for the U.S. Prepared by the Thermostat Recycling Corporation. [http://www.thermostat-recycle.org/files/u3/2008 TRC Annual Report.pdf](http://www.thermostat-recycle.org/files/u3/2008%20TRC%20Annual%20Report.pdf).

⁵ USEPA reports that glass mercury fever thermometers contain about 0.61 g of mercury. Source: USEPA 2012. Thermometers. Available at <http://www.epa.gov/mercury/thermometer-main.html>. Accessed April 11, 2012.

C.11.b. Monitor Methylmercury

MRP Provision C.11.b requires Permittees to monitor methylmercury in runoff discharges by analyzing samples already being collected for total mercury analysis, consistent with provision C.8.e. In FY 2014/15, samples for methylmercury continued to be collected and analyzed consistent with the Small Tributaries Load Strategy (STLS) and the STLS multiyear monitoring plan. Data collected in compliance with this provision during FY 2014/15 will be discussed in SMCWPPP's Urban Creeks Monitoring Report, which will be submitted to the Regional Water Board by March 15, 2016.

C.11/12.c. Mercury/PCBs Source Identification Pilot Project

MRP Provisions C.11.c and C.12.c require Permittees to conduct investigations to attempt to identify PCBs and mercury source properties discharging to their storm drain systems at five pilot watershed locations (region-wide). Activities associated with this provision are being conducted through Clean Watersheds for a Clean Bay (CW4CB), a BASMAA project that is funded through a USEPA grant. Matching funds are provided by SMCWPPP and other BASMAA member agencies mainly via in-kind services. The pilot watershed in San Mateo County is the Pulgas Creek Pump Station watershed in the City of San Carlos. This source property investigation has been ongoing for several years and, in compliance with MRP provision C.11.c and C.12.c, consists of the following tasks:

1. Records review. Review general information (e.g., spill site databases) and records on specific properties/businesses in the watershed to begin identifying potential source properties.
2. Reconnaissance survey. Perform a driving/walking survey to further identify potential source properties and begin looking for evidence that runoff from such locations is likely to convey pollutants to storm drains.
3. Facility inspections. Perform inspections of selected facilities.
4. Surface soil/sediment testing. Test surface soils/sediments from the public right-of-way and private properties for PCBs, mercury and other particle-bound pollutants.
5. Property referrals. Where laboratory data confirm elevated pollutant concentrations, refer properties to regulatory agencies for further investigation and abatement.
6. Reporting. Write a comprehensive report to describe in detail the methods and results of the investigation.

All field work for the source property investigation in the Pulgas Creek Pump Station watershed was completed prior to FY 2014/15. A total of forty properties in the watershed were inspected, and the combined results of the records review/reconnaissance survey and inspections were used to select public right-of-way (ROW) areas and private properties for soil/sediment testing. All soil/sediment samples collected were analyzed for PCBs, mercury, total organic carbon (TOC), and grain size, and ten percent of these samples (selected randomly) were also analyzed for secondary analytes, including dioxins, PBDEs, organochlorine pesticides, and PAHs.

During FY 2014/15, SMCWPPP staff reviewed the combined results of the property records reviews, reconnaissance surveys, and inspections and soil/sediment monitoring data to identify private properties for referral to the Regional Water Board for follow-up investigation and

abatement. PCBs concentrations in soil/sediment samples from the watershed ranged from 0.02mg/kg to 193 mg/kg. The highest PCB concentration was found on a private property that will be referred to the Regional Water Board. Other elevated PCB concentrations (> 1 mg/Kg) were found in public right-of-way areas across the watershed, and continued investigation of a number of properties that drain to locations with elevated PCBs is anticipated in the future, and may result in additional referrals to the Regional Water Board. Mercury concentrations in the watershed ranged from 0.04 mg/kg to 1.1 mg/kg, with higher concentrations found in public right-of-way areas, none of which also had elevated PCBs concentrations. The need for further investigation into properties draining to these locations is under evaluation. SMCWPPP staff anticipates completing a source property investigation report (as part of the CW4CB reporting) and submitting source property referrals to the Regional Water Board during FY 2015/16.

C.11/12.d. Enhanced Operation and Maintenance Pilot Projects

MRP Provisions C.11.d and C.12.d require developing and pilot-testing methods to enhance removal of sediment with PCBs and mercury during municipal street and storm drain system operation and maintenance (O&M) activities. Region-wide, municipal O&M enhancement pilot projects are being implemented at a total of six locations, one of which is the Pulgas Creek Pump Station watershed. These projects are part of the overall CW4CB project.

A pilot street flush and capture project was conducted in the Pulgas Creek Pump Station watershed in September 2013. Four flush and capture events were implemented by City of San Carlos staff, which entailed flushing approximately 500 - 1,000 feet of street (curb-to-curb) with water from a vacuor truck equipped with a wand attachment and using a second vacuor truck to capture the debris and wash water for disposal to the sanitary sewer. A wastewater discharge permit was obtained from the Silicon Valley Clean Water (SVCW) wastewater treatment plant for the discharges. Street dirt samples were collected before and after each flush and capture event to help estimate the mass of pollutants removed. In addition, samples of the wastewater were collected from each flushing event and analyzed for pollutants. Sediment and water samples collected during the flushing study were analyzed for mercury, PCBs, total organic carbon, and grain size. All field and laboratory work was completed prior to FY 2014/15. During FY2014/15, SMCWPPP staff began review and interpretation of the results. It is anticipated that a final project report (as part of the CW4CB reporting) will be completed in FY 2015/16.

C.11/12.e. Stormwater Treatment Retrofit

Per MRP Provisions C.11.e and C.12.e, BASMAA is evaluating the effectiveness to remove PCBs and mercury of ten urban runoff treatment facilities retrofitted into existing storm drainage infrastructure in the Bay Area. These projects are part of the overall CW4CB project. One retrofit project is located in San Mateo County in the Pulgas Creek Pump Station watershed. This project is called the Bransten Road bioretention curb extensions and its construction was completed in November 2013. Effectiveness monitoring was conducted at the site during three storms of the 2013/14 rainy season and one storm of the 2014/15 rainy season. During each of these storms, flow monitoring and water quality sampling of influent/effluent pairs from two selected bioretention areas were conducted. Water quality samples were analyzed for PCBs, mercury, total organic carbon, suspended sediment concentration, and particle size distribution. All laboratory analysis has been completed and a data quality review of the analytical results and field methods began in late spring 2015. SMCWPPP staff anticipates conducting the data analysis

and interpretation and preparing a final project report (as part of the CW4CB reporting) in FY2015/16.

C.11/12.f. Diversion of Flows to Publicly Owned Treatment Works

MRP Provisions C.11.f and C.12.f require pilot studies to evaluate the effectiveness at mercury and PCBs removal of diversion of dry weather urban runoff and first flush events into publicly owned treatment works (POTWs). The first deliverable required under these provisions was met through submittal of BASMAA's Feasibility Evaluation Report (FER), which was submitted with SMCWPPP's FY 2009/10 Annual Report. The FER was revised in December 2010 in response to Regional Water Board staff comments. Preliminary descriptions of candidate diversion projects were then summarized by BASMAA on behalf of member programs in a brief memorandum to the Regional Water Board in February 2011. In addition, updates were provided in stormwater program FY 2010/11 Annual Reports and a status report submitted by BASMAA to Regional Water Board staff in May 2012.

One of the pilot diversion projects is located in San Mateo County at the Pulgas Creek Pump Station. A workplan for this project was submitted to Regional Water Board staff in May 2012, along with the above BASMAA status report. Fieldwork for the project, including diversions from the storm drain line to the sanitary sewer and associated monitoring was completed during the 2012/13 and 2013/14 rainy seasons. Water quality samples were collected from the storm drain during four storm events and one dry weather event. During each event, approximately 500 gallons of water was diverted from the storm drain to a holding tank using a submersible pump. Following each diversion event, City of San Carlos maintenance staff removed the water from the tank with a vacor truck for discharge to the sanitary sewer according to the terms of a SVCW wastewater discharge permit. Water quality samples collected during each event were analyzed for PCBs, mercury, metals, total organic carbon, suspended sediment, and particle size distribution. Continuous flow and turbidity monitoring was also conducted in the storm drain line throughout most of the 2012/13 and 2013/14 rainy seasons. Data review and preliminary interpretation of the monitoring results were completed during FY 2014/15.

The project is also evaluating the projected costs and benefits of larger scale and more permanent dry and/or wet weather diversion scenarios at this pump station in order to scope potential implementation of building such a diversion structure during future permit terms. During FY 2014/15, SMCWPPP staff worked with City of San Carlos and SVCW staff to gather relevant information on sanitary sewer capacity and other logistical considerations to develop urban runoff diversion scenarios and began development of planning level designs and cost estimates for construction of a diversion structure. The cost estimates will be combined with the potential load reduction benefits (based on the pollutant loads at the site estimated via the monitoring data) to develop an estimated cost per gram of pollutants diverted that could be achieved at this location. SMCWPPP staff anticipates completing the monitoring data interpretation and cost-benefit analysis for diversion scale-up scenarios and final project reporting during early FY 2015/16.

C.11/12.g. Monitor Stormwater Pollutant Loads and Loads Reduced

MRP provisions C.11.g and C.12.g require Permittees to develop and implement a monitoring program to quantify mercury and PCB loads reduced through the implementation of control measures and to compare these loads against the Waste Load Allocations (WLAs) described in

the Bay mercury and PCBs TMDLs. Consistent with the TMDLs, load reductions and progress toward urban stormwater runoff WLAs may be demonstrated through one of three methods:

1. Quantify through estimates the average annual load reduced by implementing pollution prevention, source control, and treatment control efforts required by the provisions of the MRP or other relevant efforts;
2. Quantify the load as a rolling five-year average using data on flow and water column PCB/mercury concentrations; or
3. Quantitatively demonstrate that the concentration of mercury on suspended sediment that best represents sediment discharged with urban runoff is below the target of 0.2 mg mercury/kg dry sediment.

During the term of the MRP, Permittees have conducted and continue to conduct studies to demonstrate loads reduced and progress towards WLAs using each of the methods described above. Water quality monitoring activities conducted through the Regional Monitoring Program for Water Quality in the San Francisco Bay (RMP) and the BASMAA Regional Monitoring Coalition (RMC) have attempted to quantify pollutant loads (Method No. 2) and sediment concentrations (Method No. 3). However, observable trends in loads and concentrations in creeks and rivers draining to the Bay may take decades to observe. The results of initial quantification of loads reduced or avoided through pollution prevention, source controls, and treatment controls (Method No.1) were provided in SMCWPPP's IMR (Part B). Methods described in the IMR are consistent with the preliminary methods described by BASMAA in 2010 and submitted to the Regional Water Board in compliance with MRP provision C.11/12.g.

C.11/12.h. Fate and Transport Study of POCs in Urban Runoff

MRP provisions C.11.h and C.12.h require Permittees to “conduct or cause to be conducted studies aimed at better understanding the fate, transport, and biological uptake of mercury and PCBs discharged in urban runoff to San Francisco Bay and tidal areas.” Working through BASMAA, in FY 2014/15 SMCWPPP Permittees continued to comply with these provisions through their participation in the RMP. SMCWPPP staff actively represented San Mateo County Permittees on various committees and work groups to oversee the implementation of studies, review results and comment on draft reports. For further information, see SMCWPPP's Urban Creeks Monitoring Report that will be submitted in March 2016.

C.11/12.i. Risk Reduction Program

MRP Provisions C.11.i and C.12.i require development of a risk reduction program implemented throughout the region. This has been accomplished through the San Francisco Bay Fish Project, a two-year regional project to improve communication to the public about how to reduce their exposure to PCBs and mercury from consuming San Francisco Bay fish. The San Francisco Bay Fish Project was partly funded through CW4CB and BASMAA was one of the project partners.

The San Mateo County Environmental Health Department (SMCEHD) has distributed education materials created by the San Francisco Bay Fish Project, including posting signs along the Bay's shore in most cities in San Mateo County. SMCEHD also has a program to provide educational materials (e.g., a Fish Project brochure entitled “Guide to Eating Fish and Shellfish from San Francisco Bay”) to at-risk populations (e.g., subsistence fisherman) by working with private

marinas, public parks, and nurses with the San Mateo County Health System who serve appropriate communities.

C.11.j. Develop Allocation Sharing Scheme with Caltrans

The San Francisco Bay Mercury TMDL wasteload allocations for urban stormwater implicitly include California Department of Transportation (Caltrans) facilities located within the geographic boundaries of Bay Area urban runoff management agencies. Caltrans manages roadways and other transportation facilities within the urban areas that are covered under both the MRP and the TMDL. Consistent with the TMDL, MRP Provision C.11.j requires Permittees to develop an equitable mercury allocation sharing scheme, in consultation with Caltrans, to address runoff from the Caltrans facilities in the MRP footprint. Caltrans may elect to pursue its own program of mercury load reduction, in lieu of sharing the allocation with the urban runoff management agencies, in which case the Regional Water Board may designate a separate mercury wasteload allocation for Caltrans.

To address this MRP provision, Permittee representatives and Caltrans met several times to review provision C.11.j and to discuss the manner by which the allocation would be shared. Those discussions led to a February 2014 Caltrans letter. In the letter Caltrans agreed (per MRP Provision C.11.j) to develop an equitable TMDL allocation sharing scheme with MRP Permittees and to implement mercury load reduction actions on a watershed or region-wide basis, consistent with TMDL implementation requirements in Caltrans' MS4 Permit. Permittees intend to work with Caltrans to identify load reduction actions that can be implemented on a watershed or region-wide basis. For further information, see SMCWPPP's IMR.

FUTURE ACTIONS

SMCWPPP activities that are planned for FY 2015/16 to assist member agencies comply with MRP requirements in Provision C.11 include the following:

- SMCWPPP staff anticipates finalizing the Pulgas Creek Pump Station source property investigation report and submitting private property referrals to the Regional Water Board during FY 2015/16.
- SMCWPPP staff anticipates completing a final project report on the pilot street flush and capture project conducted in the Pulgas Creek Pump Station watershed during FY 2015/16.
- SMCWPPP staff anticipates finalizing the Bransten Road bioretention curb extensions stormwater treatment retrofit load reduction effectiveness evaluation and final project report during 2015/16.
- For the Pulgas Creek Pump Station pilot diversion project, SMCWPPP staff anticipates completing the cost-benefit analysis for diversion scale-up scenarios, and final project reporting during FY 2015/16.
- SMCWPPP staff will continue to participate in the RMP in FY 2015/16 to promote implementation of studies to address priority information needs for mercury and PCBs.

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. On behalf of its member agencies, SMCWPPP performs a variety of activities to address PCBs in stormwater runoff in compliance with MRP Provision C.12. Many of these projects address mercury in addition to PCBs and are described in the previous section (Section 11, Mercury Controls) rather than this section.

All mercury and PCB-related activities conducted through approximately the end of calendar year 2013 by SMCWPPP and BASMAA were documented, summarized, and evaluated in SMCWPPP's comprehensive Integrated Monitoring Report (IMR), which was submitted to the Regional Water Board on March 17, 2014.

IMPLEMENTATION OF MRP PROVISIONS

C.12.a. Incorporating PCBs into Existing Industrial Inspections

MRP Provision C.12.a, incorporating PCBs and PCB-containing equipment identification into existing industrial inspections, is implemented through SMCWPPP's CII component. The BASMAA Pollutants of Concern (POC) Commercial/Industrial Inspector Training Materials (June 2010) are available on the CII Subcommittee web page and identified in SMCWPPP guidance to stormwater inspectors on meeting MRP's annual training requirements.

C.12.b. Pilot Project to Evaluate PCBs in Building Materials

Projects and actions conducted to fulfill MRP requirements in Provision C.12.b were completed in previous fiscal years. A description of the results of the projects conducted in fulfillment of this provision were included in SMCWPPP's IMR.

C.12.c through C.12.i.

MRP Provisions C.12.c through C.12.i address both mercury and PCBs and were discussed in the previous section of this report (Section 11, Mercury Controls).

FUTURE ACTIONS

SMCWPPP activities that are planned for FY 2015/16 to assist member agencies comply with MRP requirements in Provision C.12 include the following:

- SMCWPPP staff will continue to provide Permittees guidance and training on incorporating PCBs and PCB-containing equipment identification into existing industrial inspections through SMCWPPP's CII Subcommittee and/or inspector training workshops.
- Many of SMCWPPP/BASMAA's regional PCB projects address mercury in addition to PCBs and related future activities are described in the previous section (Section 11, Mercury Controls).

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) that the Regional Water Board has deemed 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;
- C.13.c. Vehicle Brake Pads;
- C.13.d. Industrial Sources; and,
- C.13.e. Studies to Reduce Copper Pollutant Impact Uncertainties.

In FY 2014/15, activities associated with Provision C.13 were conducted at the Permittee, SMCWPPP and regional levels. Local actions are documented in each Permittee's individual Annual Report. This section summarizes copper control activities conducted at the SMCWPPP and regional levels.

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.

SMCWPPP's main focus in FY 2014/15 was education and outreach to suppliers and installers of architectural copper materials. The Factsheet entitled "Requirements for Architectural Copper: Protect water quality during installation, cleaning, treating, and washing!" was emailed and mailed in March of 2015 to 42 companies operating in San Mateo County. Appendix 3 contains a copy of the flyer.

Municipal inspectors were also trained on the MRP requirements and BMPs for architectural copper installation, cleaning, and treating. The training utilized the same fact sheet described above for suppliers and installers of copper materials. Construction site inspectors received the information during the May 5, 2015 SMCWPPP Construction Site Inspection Workshop and

building inspectors received the information from a SMCWPPP staff presentation at the California Building Inspectors Group (CALBIG) meeting on October 8, 2014 (see Section 6.)

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

Provision C.13.b requires Permittees to manage discharges from pools, spas and fountains that contain copper-based chemicals by adopting local ordinances. These requirements are implemented by individual Permittees and were reported on in the FY 2010/11 and FY 2011/12 Permittee Annual Reports, but were not included in the FY 2012/13, FY 2013/14 or FY 2014/15 Annual Report forms. 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.

C.13.c. Vehicle Brake Pads

C.13.c. Vehicle Brake Pads

This MRP provision requires Permittees to engage in efforts to reduce the copper discharged from automobile brake pads to surface waters via stormwater. Provision C.13.c.iii requires that the Permittees report annually on legislation development and implementation status. Permittee compliance is achieved through continued participation in a process originally initiated by the Brake Pad Partnership (BPP) that achieved the 2010 passage of Senate Bill 346, which will phase out copper and other heavy metals in brake pads over the next 15-20 years (see Table 1)¹. Because the State of Washington passed brake pad legislation a few months before California and the Washington law is similar but different in a few key areas, the automotive brake pad-related industry is responding to both laws simultaneously, and Permittees must do likewise regarding the laws' implementation status.

Table 1. Implementation Timeline for SB346 Regulation of Vehicle Brake Pads

Year	SB 346 Key Milestones or Provisions
2011	SB 346 became effective January 1 - California Brake Friction Material Law (or CA Brake Pad Law) When reformulating brake pads, manufacturers must select alternatives to copper that pose less potential hazard to public health and the environment.
2012	Target date - finalization for certification and marking criteria.
2014	Limits on cadmium, chromium, lead, mercury and asbestos took effect January 1. (Non-compliant pads can be sold solely for inventory depletion until 2024) Compliance certification must be marked on pads and listed on the Internet.
2018	Cal-EPA Secretary appoints extension application advisory committee.
2019	Manufacturers may apply for extensions to the 2025 0.5% copper limit beginning January 1.

¹ Full text of the legislation was submitted with the FY 2010-11 Regional POC Report. The law is the Brake Friction Material Law (or CA Brake Pad Law) (Health and Safety Code sections 25250.50 et seq.).

Year	SB 346 Key Milestones or Provisions
2021	5% copper limit takes effect January 1. (No extensions allowed, but non-compliant pads for pre-2021 vehicles may continue to be sold indefinitely)
2023	State Water Board & DTSC report to legislature on brake pad copper reductions and copper TMDL implementation progress. (The report can make recommendations for any additional brake pad copper controls needed to achieve TMDLs)
2025	0.5% copper limit takes effect January 1.
2032	Final end date for all light duty vehicle compliance extensions. (Non-compliant replacement pads for pre-2025 vehicles may continue to be sold indefinitely)

In FY 2014-15, Permittees continued to track and support implementation of SB 346 through participation in CASQA, which is engaged through a CASQA-funded project in the following implementation efforts:

- Legislation
- Regulations
- Marking
- Certification
- Education
- National Memorandum of Understanding (MOU)
- Metrics

Legislation

The fact that the California and Washington state legislation and subsequent laws and regulations are different, and now there is a national Memorandum of Understanding (MOU) (see below) that has some differences from the Washington or California laws and regulations, creates an incentive for industry associations to propose state legislation that would revise for example, California’s laws to match Washington state’s laws where the provisions are weaker than those in California. With assistance from the lobbyist that assisted the Brake Pad Partnership, CASQA tries to ensure that does not happen by tracking California legislation and being prepared to engage on potentially problematic legislation. No such legislation was proposed in the second year (2014) of the previous California legislative session (2013-2014) or to-date in the first year (2015) of the current session (2015-2016).

Regulations

CASQA continued to engage in the development of regulations for SB 346 by the Department of Toxic Substances Control (DTSC) and also by the Washington Department of Ecology (DOE) for that state’s Better Brakes Law, which is similar to SB 346 in many respects². CASQA’s engagement

² SB 346 includes a requirement that California regulations must be consistent with those of other states concerning compliance markings and certification. Washington's brake pad law required adoption of implementing regulations by December 2012, which was ahead of DTSC’s timeline for preparing regulations

included tracking developments and regular check-ins with key staff at California DTSC, and at Washington DOE as needed.

In 2014, DTSC determined that SB 346 could not be enforced unless DTSC issues regulations to clarify a few elements in the law. On June 20, 2014, DTSC announced it had prepared informal draft regulations to help implement the law that became effective January 1, 2014. The proposed regulations would clarify the standards for implementing the law, including the marking of the brake pads, the analytical testing methodology, and the analytical laboratory qualifications. The regulations are also intended to provide details on the processes that DTSC would use to provide extensions to the January 1, 2025 restrictions, and approve certification requirements used by the testing certification agencies.

DTSC held a series of four workshops in the summer of 2014 designed to discuss the scope and content of the draft regulations on the CA Brake Pad Law, and to provide DTSC with comments or submit questions regarding the proposed draft regulations before initiating the formal rulemaking process later in 2014. CASQA participated and will continue to participate in the regulatory process – conducting reviews and analyses and preparing and delivery comments – to try to ensure the full intent and letter of SB346 is implemented as designed. CASQA reviewed and submitted comments on the draft informal regulations for the CA Brake Pad Law³, as well as reviewed and submitted comments on the revised draft informal regulations⁴. In each instance, CASQA was generally supportive of the approach being taken by DTSC and provided comments on one or two key aspects. In mid-June 2015, DTSC announced that it anticipates starting the formal rulemaking process in August 2015. The draft formal regulations are expected in late 2015.

Marking

Both California and Washington State laws require brake friction material to be marked according to an industry standard “edge code” certifying the formulation of the material complies with the concentration limits for copper and other constituents in the laws and enabling people throughout the supply chain to identify the information contained in an edge code quickly and easily.

Washington State law (but not California law) also requires brake packaging to be marked with a registered certification mark that is intended to certify compliance with Washington State’s law. On October 2, 2013, Washington DOE issued [guidelines on marking requirements](#) under the Washington Better Brakes Law. The industry developed a logo for packaging (“LeafMark”™) with three designations:

- Level A designates compliance with requirements concerning cadmium, chromium, lead, mercury and asbestos. Level A compliance was required by January 1, 2014, in California and by January 2015 in Washington.

for SB 346. Washington Department of Ecology adopted final Better Brakes Rules in October 2012; available at <http://www.ecy.wa.gov/programs/hwtr/betterbrakes.html>

³ Comments on Draft Informal Regulations for Brake Friction Material Law, CASQA, September 2, 2014.

⁴ CASQA Response to 15-day Comment Period on the Revised Informal Draft Regulations for the California Brake Pad Law, CASQA, December 5, 2014.

- Level B designates compliance with each of the above metals as well as copper, which must be reduced to less than 5% of material weight. Level B compliance is required by 2021.
- Level N designates compliance with the “Zero Copper” requirement, which takes effect in 2025.



CASQA has been working to try to secure pre-approved rights for local governments and non-governmental organizations (NGOs) to use the LeafMark™ name and logos to conduct public education and promote customers switching to low or non-copper brake pads (see National Memorandum of Understanding (MOU) below for more information).

Certification

An independent certification organization, NSF certifies pads for compliance with the toxic metals, asbestos, and copper standards (see the certification website [here](#) and certified product list [here](#)).

DTSC has assigned enforcement staff to this program and they have been involved in discussions with Bureau of Automotive Repair (BAR) and representatives of the Automotive Services Councils of America. But DTSC cannot start enforcement until the regulations are adopted (see above). DTSC must enforce directly—it does not have authority to delegate to others, like CUPAs (Certified Unified Program Agencies), but DTSC can accept referrals.

The industry has reported its baseline use of copper, nickel, zinc, and antimony to Washington DOE (see the data summary [here](#)). Progress in reducing these constituents in brake friction materials may now be tracked [here](#).

Education

Both states have developed websites ([California](#)) ([Washington](#)) that provide an increasing amount of information and links to additional information on the requirements and their implementation. ‘Completion’ of the California website is pending adoption of the California regulations. DTSC also plans to provide materials to support industry's compliance education efforts.

National Memorandum of Understanding (MOU)

In late 2013, a coalition of automotive-related industry representatives approached EPA with a proposal to develop and reach an agreement on a nationwide Memorandum of Understanding – purportedly to avoid a patchwork of laws and regulations and provide a streamlined, national

approach to phasing out the use of copper and other constituents in brake friction materials. Both Washington DOE and California DTSC were made aware of the effort in early February 2014, and CASQA was made aware in early March 2014. It appeared that Washington DOE and California DTSC were consulted regularly during the negotiations, while CASQA and other stakeholders were consulted less regularly.

CASQA representatives participated in a conference call with EPA staff in early April and followed that up with a comment letter⁵. In the letter, CASQA, in general:

- noted it supports and encourages EPA's interest in establishing nationwide source control (pollution prevention) solutions for stormwater pollution,
- pointed out that numerous California agencies are relying on implementation of laws adopted to control brake pad copper content that form the foundation of their compliance with requirements for stormwater copper discharge reductions, and
- urged any MOU established between EPA and the vehicle industry strongly support timely, robust implementation of existing state laws.

CASQA also stated the draft MOU fell significantly short of its stated intent of consistency with adopted California and Washington state laws and regulations, despite EPA's commitment to ensure the MOU meets the most stringent provisions in the combination of the existing state laws. So CASQA also made specific recommendations to bring the language of the draft MOU as close as possible to the stated intent. Negotiations continued into FY 14-15, some of which CASQA was made party to indirectly through EPA but for most of which CASQA was not involved.

On January 21, 2015 EPA announced the signing of the MOU by EPA, eight automotive industry associations, and the Environmental Council of the States. The most significant difference between the last draft of the MOU provided to CASQA and the final version was that provisions were removed allowing local governments or NGOs (e.g., BASMAA) use of the educational materials (e.g., the LeafMark™). The MOU contains LeafMark™ usage guidelines that require industry association pre-approval for all uses of the LeafMark™. The day before the MOU signing was announced, CASQA wrote to the industry association asking:

1. *“Under the current MOU and trademark guidance, would MEMA [Motor & Equipment Manufacturers Association] be willing and able to provide pre-approval for the use of materials in a generic form that may be subject to minor or non-substantive modifications?”*
2. *“Under the current MOU and trademark guidance would MEMA be willing and able to grant permission to use the logos to a local government agency and/or a legally recognized organization on behalf of its members?”*

To-date, no response has been received from MEMA but CASQA does plan to make another attempt to secure a generic pre-approval.

⁵ CASQA Comments to EPA on Proposed MOU regarding Brake Pad Copper Content (April 15, 2014)

Metrics

California law requires the virtual elimination of copper in vehicle brake pads by 2025. Many California municipal stormwater programs are relying on the reduction in copper in brake pads to help achieve TMDL waste load allocations and/or to comply with permit requirements to reduce copper in stormwater. To address these needs, CASQA developed a memorandum that:

“...identifies quantitative metrics that can be used to track the pace of brake pad copper reduction and provides current and baseline values for each metric⁶.”

Based on data [detailed below], it is apparent that brake pad copper reductions are underway—and are well ahead of regulatory deadlines. Average brake pad formulation copper content—currently 5.6%—has dropped about 30% since 2006. “Copper-free” (<0.5% copper) brake pad formulations have become widely available, comprising 41.2% of all available formulations. Most of the vehicle industry appears to be planning to transition to <0.5% copper brake pads prior to the first copper reduction compliance deadline in 2021.”

C.13.d. Industrial Sources

Provision C.13.d 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 program staff 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).

C.13.e. Studies to Reduce Uncertainties

This MRP provision requires Permittees to conduct or cause to be conducted technical studies to investigate possible copper sediment toxicity and technical studies to investigate sub-lethal effects on salmonids. These uncertainties regarding copper effects in the Bay are described in the amended Basin Plan's implementation program for copper site-specific objectives. MRP Permittee compliance with this provision has been achieved through continued participation in the RMP, whose multi-year planning process addresses these gaps through studies overseen by the Exposure and Effects Workgroup. While the MRP does not require reporting for this provision in FY 2014/15, the RMP's efforts in FY 2014/15 included completion of two studies addressing uncertainties about potential copper effects in San Francisco Bay:

- A follow up study⁷ on the effect of changes in salmon physiology and water salinity on the olfactory toxicity of copper found that both freshwater- and seawater-phase juvenile Coho salmon showed no significant olfactory toxicity from exposure to copper at 50 µg /L in salinities typical of estuarine (10 ppt) or seawater (32 ppt) conditions. These results indicate that the Site Specific Objectives adopted for copper also protect the olfactory system of juvenile salmon from toxicity under water conditions likely to be present in various segments of San Francisco Bay.

⁶ Brake Pad Copper Reduction – Metrics for Tracking Progress, CASQA Memorandum (December 1, 2014).

⁷ <http://www.sfei.org/documents/impact-dissolved-copper-olfactory-system-juvenile-salmon-phase-ii-effect-estuarine>

- Another study⁸ indicated that the small particle sizes characteristic of benthic sediment samples from most of the Bay is a significant factor in the widespread observations of moderate toxicity in test amphipods that is not explained by contaminant exposures. If a planned follow-up study with actual Bay sediments confirms that this effect is strongest with larger sizes of *Eohaustorius estuarius* (associated with increasing age and variability in breeding condition), the RMP may revise its criteria for selecting the test amphipods used in toxicity tests.

FUTURE ACTIONS

FY 2015/16 activities planned by SMCWPPP to assist member agencies comply with MRP requirements in Provision C.13 include the following:

- Conduct outreach to local vendors of copper roofing materials and local contractors that install copper roofs, including mailing or emailing them copies of the SMCWPPP's fact sheet on architectural copper BMPs.
- Continue to provide information on MRP requirements regarding architectural sources of copper to construction site and building inspectors at SMCWPPP's Construction Site Inspection Workshop and at presentations to CALBIG or other partner organizations.
- Provide guidance via SMCWPPP's CII Subcommittee and/or workshops to San Mateo County Permittees to assist them ensure through routine industrial facility inspections that proper BMPs are in place at industrial facilities likely to use copper or have sources of copper.
- Continue working with BASMAA and CASQA to participate in the Brake Pad Partnership process.
- Continue participation in the RMP to oversee technical studies to investigate possible copper sediment toxicity and technical studies to investigate sub-lethal effects on salmonids.

⁸ <http://www.sfei.org/documents/effects-kaolin-clay-amphipod-eohaustorius-estuarius>

SECTION 14

C.14 PBDEs, LEGACY PESTICIDES AND SELENIUM

MRP Provision C.14 requires San Mateo County and other MRP Permittees to work collaboratively to begin identifying, assessing, and managing controllable sources of the following lower priority pollutants that have been found in stormwater runoff: polybrominated diphenyl ethers (PBDEs), legacy pesticides, and selenium. During FY 2012/13, SMCWPPP staff worked with BASMAA on regional projects that addressed this provision. SMCWPPP's FY 2012/13 Annual Report, Appendix 16 (*Regional Pollutants of Concern Report for FY 2012-2013*) documented the results of these projects. MRP Provision C.14 does not include any further tasks or reporting requirements.

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's role is to help 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.

The most extensive tracking, monitoring, and reporting requirements in Provision C.15 are for planned and unplanned potable water discharges by water purveyors. There are eleven SMCWPPP agencies that have identified themselves as water utilities in their MRP Annual Reports. In April 2012 an ad hoc Water Utility Work Group was formed to specifically address the Provision C.15.b.iii requirements related to conditionally exempt planned and unplanned potable water discharges.

SMCWPPP and regional activities that address outreach requirements for C.15.b.iv (Individual Residential Car Washing Discharge) are discussed in Section 7 (Public Information and Outreach) of this report.

IMPLEMENTATION OF MRP PROVISIONS

SMCWPPP member agencies are responsible for complying with managing certain non-stormwater discharges exempted or conditionally exempted by the MRP (Provision C.15). SMCWPPP's CII component assists member agency staff with understanding these MRP requirements and developing various tools, templates, reporting forms, and other MRP compliance support materials.

During FY 2014/15, SMCWPPP performed a number of tasks to assist member agencies with implementation of Provision C.15, with input and assistance provided by the Water Utility Work Group. Accomplishments included the following:

- Participated in the Bay Area Water Agency Task Force (WATF);
- Kept Water Utility Work Group members apprised of state and regional activities regarding development of a general permit; and
- Held a Water Utility Work Group meeting on the Statewide General Permit for drinking water system discharges.

More information on each of these accomplishments is provided below.

General Permits

SMCWPPP staff continued to participate in the WATF, comprised of eight water agencies that funded a Regional Water Board staff position to facilitate development of a regional general permit for water utility potable water discharges. The WATF continued to meet to discuss implementation of the General Permit for Drinking Water System Discharges (Order 2014-0194-DWQ) adopted by the State Water Resources Control Board in November 2014. Applicable Drinking Water Systems must file a Notice of Intent (NOI) or Notice of Non-applicability (NONA) by September 1, 2015.

SMCWPPP staff provided information to the Water Utility Work Group on, and participated in, a Bay Area Implementation Workshop on the State Drinking Water System General Permit held March 6, 2015.

Water Utility Work Group

MRP Provision C.15.b.iii Planned and Unplanned Potable Water Discharges has a number of monitoring and reporting requirements for Permittees that are also potable water purveyors. Municipal potable water purveyors in San Mateo County are: Cities of Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Hillsborough, Menlo Park, Millbrae, Redwood City, and San Bruno and San Mateo County. These requirements include documenting, monitoring, notifying, and reporting on various types of planned (e.g., fire hydrant flushing) and unplanned (e.g., water line breaks) potable water discharges.

During FY 2012/13 an ad hoc Water Utility Work Group was formed to facilitate any training needs identified by SMCWPPP's member agencies. The Work Group developed guidance materials and held a training workshop in FY 2012/13. The four Fact Sheets that were developed are available on the SMCWPPP website (www.flowstobay.org).

During FY 2014/15 the Water Utility Work Group met on June 16, 2015 to discuss the options for coverage under the MRP and State Drinking Water System General Permit. Representatives from the cities of Burlingame, Daly City, East Palo Alto, Menlo Park, Millbrae, San Bruno, San Mateo, and Redwood City attended. A draft fact sheet on the State General Permit was developed and is currently under review by the Work Group.

FUTURE ACTIONS

FY 2015/16 activities planned by SMCWPPP to assist member agencies comply with MRP requirements in Provision C.15 include the following:

- Continue to assist member agency staff with understanding and implementing MRP Provision C.15 requirements and future reissued MRP C.15 requirements (if any), including developing various tools, templates, reporting forms, and other compliance support materials if needed; and
- Hold Water Utility Work Group meetings, if necessary.



Appendix 1

- Stormwater Committee – Attendance List – FY 2014-15
- Technical Advisory Committee – Attendance List – FY 2014 - 2015

2014-15 Stormwater Committee Roster			2014		2015		
Agency	Representative	Position	July	Oct	Feb	Apr	June
Atherton	Gordon Siebert	Public Works Director		X			
Belmont	Afshin Oskoui	Public Works Director	X	X	X	X	
Brisbane	Randy Breault	Public Works Director/City Engineer	X	X		X	X
Burlingame	Syed Murtuza	Public Works Director	X	X	X	X	X
Colma	Brad Donohue	Director of Public Works and Planning	O	O	X	X	
Daly City	Patrick Sweetland	Director of Water & Wastewater	O	X	O	X	X
East Palo Alto	Kamal Fallaha	City Engineer	X	O			O
Foster City	Brad U./Jeff Moneda	Public Works Director	X	O		X	
Half Moon Bay	Mo Sharma	City Engineer	X	X		X	X
Hillsborough	Paul Willis	Public Works Director		X	X	X	X
Menlo Park	Jesse Quirion	Interim Public Works Director	X				
Millbrae	Charles Taylor	Public Works Director			X		X
Pacifica	Van Ocampo	Public Works Director/City Engineer					
Portola Valley	Howard Young	Public Works Director	X		X		
Redwood City	Saber Sarwary	Supervising Civil Engineer	X	X	X	X	
San Bruno	Jimmy Tan	City Engineer		X	X		X
San Carlos	Jay Walter	Public Works Director	X	X	X		X
San Mateo	Brad Underwood	Public Works Director	O	O	X	X	X
South San Francisco	Brian McMinn	Public Works Director	X	X	X	X	X
Woodside	Paul Nagengast	Deputy Town Manager/Town Engineer	X				X
San Mateo County	Jim Porter	Public Works Director	O	X	X	X	X
Regional Water Quality Control Board	Tom Mumley	Assistant Executive Officer		X	O		

"X" - Committee Member Attended

"O" - Other Jurisdictional Representative Attended

2014-15 NPDES TAC Attendance Record			2014		2015
AGENCY AND NAME	Telephone #	Email Address	Jul	Oct	Apr
SMCWPPP/ CCAG					
Matt Fabry	599-1419	mfabry@co.sanmateo.ca.us	X	X	X
Sandy Wong	599-1409	slwong@co.sanmateo.ca.us			
EOA, Inc.					
Jon Konnan	510 832-2852 x111	jkonnan@eoainc.com	X	X	X
Adam Olivieri	510-832-2852x115	awo@eoainc.com			
Regional Board					
Sue Ma	510-622-2386	sma@waterboards.ca.gov			
Selina Louie	510-622-2383	slouie@waterboards.ca.gov			
Dale Bowyer	510-622-2323	dbowyer@waterboards.ca.gov			
Atherton					
Steve Tyler	752-0570	styler@ci.atherton.ca.us			
Belmont					
Gilbert Yau	595-7425	gyau@belmont.gov			
Leticia Alvarez	595-7469	lavarez@belmont.gov			
Dalia Corpus	595-7468	dcorpus@belmont.gov			
Brisbane					
Randy Breault	415-508-2130	rbreault@ci.brisbane.ca.us			
Karen Kinser	415-508-2133	kkinser@ci.brisbane.ca.us			
Shelley Romriell	415-508-2128	sromriell@ci.brisbane.ca.us			
Burlingame					
Victor Voong	558-7230	vvoong@burlingame.org	X	X	
Eva Justimbaste		eva.justimbaste@veoliawaterna.com			
Steve Daldrup		stephen.daldrup@veoliawaterna.com	X		
Kiley Kinnon	826-1554	kiley.kinnon@veolia.com			X
Pamela Boyle-Rodriguez		pboylorodriguez@burlingame.org			X
Colma					
Muneer Ahmed	757-8888	muneer.ahmed@colma.ca.gov			X
Brad Donohue					
Saied Mostafavi					
Daly City					
Cynthia Royer	991-8203	croyer@dalycity.org			
John Fuller		jfuller@dalycity.org			
East Palo Alto					
Michelle Daher	853-3165	mdaher@cityofepa.org	X		
Vivian Ma	853-3126	vma@cityofepa.org			
Foster City					
Norm Dorais	286-3279	ndorais@fostercity.org			
Mike McElligott	286-8140	mmcelligott@fostercity.org			
Half Moon Bay					
Muneer Ahmed		muneer@csgengr.com			X
Mark Lander		markl@csgengr.com			
Hillsborough					
Natalie Asai	375-7510	nasai@hillsborough.net			X
Menlo Park					
Vanessa Marcadejas	330-6765	VAMarcadejas@menlopark.org			

2014-15 NPDES TAC Attendance Record			2014		2015
AGENCY AND NAME	Telephone #	Email Address	Jul	Oct	Apr
Millbrae					
Khee Lim	259-2347	klim@ci.millbrae.ca.us		X	
Kelly O'Dea	259-2448	kodea@ci.millbrae.ca.us			
Pacifica					
Raymond Donguines	738-3768	donguinesr@ci.pacifica.ca.us	X	X	X
Portola Valley					
Howard Young	851-1700x214	hyoung@portolavalley.net			
Redwood City					
Adrian Lee		alee@redwoodcity.org			
Harry Kwong	650-780-7473				
Terence Kyaw	780-7466	tkyaw@redwoodcity.org			
Charlie Drechsler		cdrechsler@redwoodcity.org			
San Bruno					
Joseph Cervantes	616-7068	icervantes@sanbruno.ca.gov	X	X	
David Wong	616-7069	dhwong@sanbruno.ca.gov			X
San Carlos					
Jay Walter		jwalter@cityofsancarlos.org			
Paul Baker	802-4143	pbaker@cityofsancarlos.org			
Matt Lee	802-4201	mlee@cityofsancarlos.org	X		
Kaveh Forouhi		kforouhi@cityofsancarlos.org		X	
San Mateo, City					
Sarah Scheidt		sscheidt@cityofsanmateo.org	X	X	
San Mateo, County					
Dermot Casey	372-6257	dcasey@smcgov.org			
Julie Casagrande	599-1457	icasagrande@smcgov.org	X	X	X
Patrick Ledesma	372-6241	pledesma@smcgov.org		X	X
Tim Swillinger	372-6245	tswillinger@smcgov.org			
Jim Eggemeyer	363-4189	jeggemeyer@smcgov.org	X		
Carole Foster		cfoster@smcgov.org			
So. San Francisco					
Rob Lecel	829-3882	rob.lecel@ssf.net	X	X	X
Andrew Wemmer	829-3883	andrew.wemmer@ssf.net			
Woodside					
Dong Nguyen	851-6790	dnguyen@woodsidetown.org			
Caltrans					
Karen Mai		kmai@caltrans.ca.gov			
Guests/Public					
Attendance			12	11	12



Appendix 2

- Municipal Maintenance Subcommittee – Attendance List– FY 2014-15
- Municipal Maintenance Corporation Yard Stormwater BMPs Training – April 21, 2015
 - Registration Flyer
 - Attendance List
 - Summary of workshop evaluations

Municipal Maintenance Subcommittee Meetings - FY 2014/15

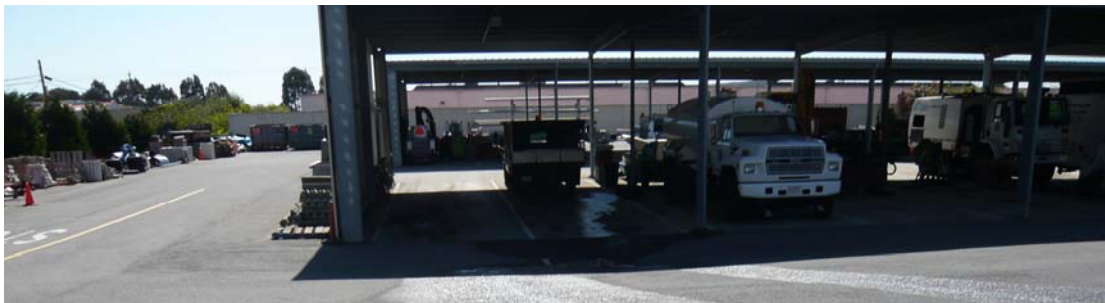
NAME	MUNICIPALITY	Aug 14	Oct 22	Jan 28	Mar 25
Steve Tyler	Atherton	✓			
Randy Ferrando	Belmont	✓	✓	✓	✓
Brandon Tyler	Belmont	✓	✓	✓	✓
Tim Murray	Belmont	✓	✓		
Peter Gaines	Burlingame	✓			
Pam Boyle Rodriguez	Burlingame			✓	✓
Kiley Kinnon	Burlingame		✓	✓	
Vince Falzon	Burlingame	✓		✓	
Louis Gotelli	Colma	✓	✓	✓	✓
Jeff Fornesi	Daly City	✓	✓		
Javier Barajos	Daly City	✓	✓		
Dan Godwin	Daly City			✓	
Joe Stabile Sr.	Daly City	✓	✓	✓	
Michelle Daher	East Palo Alto			✓	
Frank Schoering	Foster City	✓		✓	
Larry Carnahan	Half Moon Bay			✓	✓
Irv Meachum	Menlo Park	✓	✓	✓	✓
Hugo Torres	Menlo Park	✓		✓	✓
Nelson Guitierrez	Menlo Park			✓	
Gabriel Ortiz	Menlo Park	✓		✓	
Natividad Alamo	Menlo Park	✓			
Craig Centis	Millbrae	✓			
Heather Henwood	Millbrae	✓	✓	✓	✓
Michael Killigrew	Millbrae	✓	✓	✓	✓
Cipriano Romero	Millbrae			✓	
Christopher Falzon	Millbrae				✓
Chris Junio	Millbrae				✓
Mathew Harrington	Millbrae				✓
Bernie Mau	Pacifica	✓	✓	✓	✓
Ron Fascenda	Pacifica				✓
Albert Munguis	Redwood City	✓	✓	✓	✓
Eddy Lopez	Redwood City	✓	✓	✓	✓
Victor Castaneda	Redwood City	✓	✓		✓
Elliott Johnson	Redwood City	✓		✓	✓
Ted Chapman	San Bruno	✓		✓	✓
Frank Amoroso	San Carlos				✓
Paul Baker	San Carlos	✓			
Lou Duran	San Carlos			✓	
Rick Viles	San Carlos			✓	
Mark Marelich	San Mateo County			✓	
Dewayne Johnson	San Mateo County	✓			
Bob Correa	City of San Mateo				✓

Municipal Maintenance Subcommittee Meetings - FY 2014/15

NAME	MUNICIPALITY	Aug 14	Oct 22	Jan 28	Mar 25
Tony Baltobano	City of San Mateo				✓
Steve Camilleri	City of San Mateo				✓
James Hardie	South San Francisco		✓		
Casey Stevenson	San Mateo County Mosquito & Vector Control District	✓			
Kristin Kerr	EOA, Inc.	✓	✓	✓	✓

MUNICIPAL MAINTENANCE SUBCOMMITTEE CORPORATION YARD STORMWATER BMPs TRAINING

The training will provide an opportunity for municipal maintenance staff to walk through a corporation yard and discuss observations, corporation yard BMPs and interact with staff from other local agencies. MRP Provision C.2.f requires municipal corporation yards to have a site specific Stormwater Pollution Prevention Control Plan (SWPPP), minimum BMPs and conduct an annual inspection. This field exercise provides the opportunity to review the activities of a typical corporation yard and appropriate BMPs.



Register below for ONE corporation yard visit. There will be a brief time for registration and then we will spend approximately one hour walking through the corporation yard and discussing stormwater BMPs.

Please pass this flyer to appropriate staff within your organization.

REGISTRATION FORM:

Name: _____

Agency/Company: _____

Phone: _____ Email: _____

I will attend (choose one):

- 10:00am Thursday April 23rd at Redwood City Corp Yard, 1400 Broadway, Redwood City
- 10:00am Wednesday April 29th at South San Francisco Corp Yard, 550 North Canal Street, South San Francisco
- 10:00am Thursday April 30th at City of San Mateo Corp Yard, 1949 Pacific Blvd., San Mateo

**Please complete and fax to (fax no. 510- 832-2856) or email melissa@eoainc.com
no later than Tuesday April 21, 2015**

Questions? Call Melissa Morgan at 510-832-2852 or email melissa@eoainc.com

**SMCWPPP Municipal Maintenance Subcommittee Corporation Yard Stormwater BMPs Training
Attendance**

	<i>Last Name</i>	<i>First Name</i>	<i>Municipality</i>	<i>Training Date</i>
1	Locke	Rick	City of Belmont	April 23rd
2	Murray	Tim	City of Belmont	April 23rd
3	Boyle Rodriguez	Pam	City of Burlingame	April 30th
4	Horne	Rick	City of Burlingame	April 30th
5	Robles	Jose	City of East Palo Alto	April 23rd
6	Teo	Al	City of East Palo Alto	April 23rd
7	Henwood	Heather	City of Millbrae	April 29th
8	Mendez	Ray	City of Millbrae	April 29th
9	Fascenda	Ron	City of Pacifica Public Works	April 29th
10	Mau	Bernie	City of Pacifica Public Works	April 29th
11	Ramirez	Claudio	City of Pacifica Public Works	April 29th
12	Renteria	Estevan	City of Pacifica Public Works	April 29th
13	Valencia	Juan	City of Pacifica Public Works	April 29th
14	Chapman	Ted	City of San Bruno	April 23rd
15	Ortiz	Joe	City of San Bruno	April 23rd
16	Camillery	Steve	City of San Mateo	April 30th
17	Donaldson	Thomas	City of So. San Francisco	April 29th
18	Pawleson	Matt	City of So. San Francisco	April 29th
19	Casagrande	Julie	County of San Mateo	April 30th
20	Gomes	Richard	County of San Mateo	April 30th
21	Marelich	Mark	County of San Mateo	April 30th
22	Pacini	Jeff	County of San Mateo	April 30th
23	Silva	John	County of San Mateo	April 30th
24	Stanfield	Tim	County of San Mateo	April 30th
25	Boeddiker	Bud	County of San Mateo	April 30th
26	Huynh	Michael	County of San Mateo Public Works	April 23rd
27	McCarthy	Tom	County of San Mateo Public Works	April 23rd
28	Foster	Carole	County of San Mateo Public Works	April 29th
29	Lopez	Eddie	Redwood City	April 23rd



Summary
29 Attendees
27 Evaluations

Corporation Yard Stormwater BMP Trainings
April 23, 29, and 30, 2015

What Did You Think of the Following?

1. Corp Yard Walk Through

very helpful **23** somewhat helpful **4** not helpful

Comments:

- Thank you to RWC Public Works and Kristin Kerr.
- Nice yard.
- Very informative.
- SSF yard covered most corp yard BMP issues.
- The whole yard is clean and organized.
- Very nice yard! Good ideas for storage, etc.
- County of San Mateo implementing most of these BMPs already that we covered here at City of San Mateo.
- Good adaptations to the MRP for an old yard.

2. Did you watch the training video by San Diego County? Yes **20** No **6**

If Yes, was the video

very helpful **12** somewhat helpful **9** not helpful

Comments:

- It's a good reminder on good housekeeping.
- Pretty basic stuff
- Very telling/helpful, would recommend using in the future.
- Well articulated, viewed and interpreted well!
- Good video, it was helpful.

Did this workshop meet your expectations? Yes **26** No

- Yes. Everything is very explained.
- I would like to attend a workshop at a newer facility to show newer type concepts that are being implemented.

What would have made this workshop more useful?

- Faking a spill and cleaning it.
- More helpful.
- More time.
- N/A
- Getting ideas from other yards.
- Nothing I can think of.
- Nothing.
- Was very useful.
- Tour of corp yard was very useful. Was great to have someone from SSF with us on the tour to answer questions.
- You'll always win me over with some food.
- Maybe if there was anything wrong to point out! (joking).
- Nothing.
- More time to discuss how this city does common types of work we all do.
- Again, a newer facility to walk through.
- None.

What topics would you recommend for a future workshop?

- To keep it clean.
- In class video.
- This was a great experience.
- Going to other corp yards and seeing different yards.
- None.
- Working with other cities to see what practices work. Sharing of ideas.
- Rural corp yards BMPs would be helpful as the county has 3 yards on the coast in sensitive areas (steehead streams, etc).
- Street sweeping details, painting of stops and bars on city streets?
- Underground fueling requirements/regulations.
- Seeing another corp yard is always helpful.
- Disposal methods for Hazmat Materials.
- Learning about non-invasive cleaning products; most effective equipment.

General Comments:

- I like it.
- None.
- Good job and thank you for arranging the workshop/tour.
- Thank you.
- Thank you EOA!
- Well presented in a clean yard. Sets a good standard for what we should have ourselves.
- Good stuff.
- Workshop was very helpful. SSF Corp Yard is very well kept.
- Nice to see how another city with more resources does things.
- Very informative and helpful.

- Great facilitator, and Steve from City of San Mateo to show current BMP's in use and how they conduct business.
- Thank you.
- Good to see what other cities are doing.



Appendix 3

- New Development Subcommittee – Attendance List– FY 2014-15
- C3 Training Workshop – May 5, 2015
 - Announcement flyer
 - Agenda
 - Attendance List
 - Summary of workshop evaluations
- New Development Workshop – June 17, 2015
 - Announcement flyer
 - Agenda
 - Attendance list
 - Summary of workshop evaluations
- Updated Biotreatment Soil Mix Supplier List
- Draft Updated C.3-C.6 Checklist Summary Pages
- LID White Paper Executive Summary
- Architectural Copper BMP Flyer
- Architectural Copper Vendor List
- Draft Updated Bioretention Plant List

New Development Subcommittee FY 2014/15 Meeting Attendance

Representing	Name	Phone Number	Meetings Attended			
			Aug	Oct	Feb	May
Atherton	David Huynh	650-752-0555				
	Andrea Mardesich	650-752-0544	X	X		
Belmont	Gilbert Yau	650-595-7467	X		X	
	Dalia Manaois	650-595-7468				
Brisbane	Ken Johnson	415-508-2120		X	X	X
Burlingame	Pam Boyle Rodriguez	650-342-3727			X	X
	Kiley Kinnon	650-342-3727		X	X	X
Colma	Michael Laughlin	650-757-8896				
	Turhan Sonmez	650-757-8898	X		X	
	Muneer Ahmed	650-757-8894		X	X	X
Daly City	Mike Van Lonkhuysen	650-991-8158	X			
	Tendai Mtunga	650-991-8035		X		
East Palo Alto	Michelle Daher	650-853-3197		X		
	Bret Swain	650-853-3159				
EOA/SMCWPPP	Jill Bicknell	408-720-8811 x 1	X	X	X	
	Peter Schultze-Allen	510-832-2852 x128	X	X	X	X
Foster City	Kohar Kojayan	650-286-3237				
	Norm Dorais					
	Christina Horrisberger	650-286-3242				
Half Moon Bay	Mark Lander	925-785-4518				
	Muneer Ahmed	650-757-8894		X	X	X
Hillsborough	Natalie Asai	650-375-7444			X	X
Menlo Park	Shaun Mao	650-330-6740	X	X	X	X
	Ebby Sohrabi	650-330-6740	X			
Millbrae	Khee Lim	650-259-2347				
	Tanya Benedik	650-259-2339				
	Tonya Ward	650-259-2346				
Pacifica	Kathryn Farbstein	650-738-7361	X			
	Christian Murdock	650-738-7444	X	X	X	
Portola Valley	Greg Beverlin	650-851-1700		X	X	
Redwood City	Patrick LaBruzzo	650-780-7366				X
	Harris Siddiqui	650-780-7362	X	X	X	
	James O'Connell	650-780-5923	X	X	X	X
San Bruno	Matt Neuebaumer	650-616-7042			X	X
San Carlos	Andrea Mardesich	650-802-4258	X	X	X	
San Mateo	Ken Pacini	650-522-7333	X	X		
County of San Mateo	Camille Leung	650-363-1826	X		X	X
	Kirsten Pringle	650-363-4088		X		
	Diana Shu	650-599-1414				
Countywide Program	Matt Fabry	650-599-1419				
South S.F.	Andrew Wemmer	650-829-3840				
	Rob Lecel	650-829-3882			X	X
Woodside	Dong Nguyen	650-851-6790				
	Doug Rider					
Water Board	Sue Ma	510-622-2386				

Construction Site Stormwater Inspection and C.3.h Inspection/O&M Stormwater Compliance Workshop: Provision C.6 and C.3.h Training for Municipal Staff

*Sponsored by the San Mateo Countywide Water Pollution Prevention Program's
New Development Subcommittee*

Tuesday, May 5, 2015

San Mateo Public Library – Oak Room

55 W. 3rd Avenue, San Mateo

9:00 am to 12:00 pm and 1:00 pm to 3:30 p.m.

MORNING SESSION: Construction Site Stormwater Inspections

The morning 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,
- ✓ Preview of possible changes in the MRP reissuance,
- ✓ Construction BMPs and recognizing issues,
- ✓ Group exercise for determining inspection findings and appropriate enforcement actions.

This session will end at 12 noon but feel free to stay for lunch.

AFTERNOON SESSION: C.3.h Inspection/O&M Stormwater Compliance

The afternoon training workshop is related to MRP Provision C.3.h for municipal staff who inspect new development projects during and after construction and/or for municipal staff who maintain stormwater treatment systems. Workshop topics include:

- ✓ Regulatory refresher of Municipal Regional Stormwater Permit (MRP) requirements for C.3.h site inspections, treatment system operation and maintenance
- ✓ Preview of possible changes in the MRP reissuance,
- ✓ Group exercise on inspection issues, maintenance trouble-shooting and practices.

This session begins at 1:00 pm but feel free to come for lunch and registration beginning at 12:15pm.

Registrations Due April 28!

Email or fax this RSVP to Melissa Morgan, melissa@eoainc.com, fax: 510-832-2856, by **Tuesday, April 28, 2015**. For additional information, contact Melissa at 510-832-2852 ext. 101.

Name: _____

Agency: _____

Phone: _____

Email: _____

- I will be attending:**
- Morning Session: C.6 Construction SW Inspections (9:00am – 12:00 noon)
 - Afternoon Session: C.3.h Inspection/O&M SW Compliance (1:00pm – 3:00pm)
 - Lunch (12:15pm – 1:00pm)

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

This training is FREE and will include a lunch.

You will be sent a confirmation, including an agenda and directions, one week prior to the workshop.



C.3.h INSPECTION, O&M STORMWATER COMPLIANCE WORKSHOP

*Implementing the requirements in Provision C.3.h
of the Municipal Regional Stormwater Permit (MRP)*

Tuesday, May 5, 2015

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

WORKSHOP AGENDA

11:45 AM Registration and Lunch

1:00 PM Overview of C.3.h Requirements in MRP 1.0 and
the Future

Kristin Kerr
Program Staff

1:30 PM Inspecting, Operating and Maintaining Stormwater
Treatment Systems

Peter Schultze-Allen
Program Staff

2:30 PM **Break**

2:45 PM Group Exercise

Program Staff

3:15 PM Adjourn

**** Attendance at this workshop is acceptable for 2 PDUs toward maintaining CPESC, CESSWI
and/or CPSWQ certifications. ****

SMCWPPP Construction Workshop
Attendance May 5, 2015

	A	B	C	D	E
1	<i>Last Name</i>	<i>First Name</i>	<i>C.6 Morning</i>	<i>C.3.h Afternoon</i>	<i>Municipality</i>
2	Tallitsch	John	X	X	City of Belmont
3	Breault	Randy	X		City of Brisbane
4	Capasso	Julia		X	City of Brisbane
5	Johnson	Ken		X	City of Brisbane
6	Boyle Rodriguez	Pam	X	X	City of Burlingame
7	Calilong	Henry	X		City of Burlingame
8	Cavalieri	Marco	X		City of Burlingame
9	Horne	Rick	X	X	City of Burlingame
10	Kinnon	Kiley	X	X	City of Burlingame
11	MacNeil	Brooks	X		City of Burlingame
12	Craig	Randolph	X	X	City of East Palo Alto
13	Middleton	Michael	X	X	City of Menlo Park
14	Morales	Rene	X	X	City of Menlo Park
15	Punsalan	Rene	X	X	City of Menlo Park
16	Sohrabi	Ebby	X	X	City of Menlo Park
17	Yambao	Mel	X	X	City of Menlo Park
18	Benedik	Tanya	X	X	City of Millbrae
19	Chow	Sydney	X	X	City of Millbrae
20	Donguines	Raymund	X	X	City of Pacifica
21	Murdock	Christian	X		City of Pacifica
22	Varela	Carlos	X	X	City of Redwood City
23	Hannigan	Jeff	X	X	City of San Bruno
24	Amoroso	Frank	X		City of San Carlos
25	Baker	Jason	X	X	City of San Carlos
26	Duran	Louis		X	City of San Carlos
27	Riddell	Anthony	X	X	City of San Carlos
28	Albert	Evan		X	City of San Mateo
29	Edlund	Sven	X		City of San Mateo
30	Kenyon	Michelle	X		City of San Mateo
31	Swenson	Mark		X	City of San Mateo
32	Tran	Trieu		X	City of San Mateo
33	Ung	Mario	X	X	City of San Mateo
34	Abdulmajeed	Zaid	X	X	County of San Mateo
35	Azzari	Zack	X	X	County of San Mateo
36	Burlison	Summer	X		County of San Mateo
37	Diana	Shu	X	X	County of San Mateo
38	Dickinson	Rebecca	X	X	County of San Mateo
39	Hernandez	Hector	X	X	County of San Mateo

SMCWPPP Construction Workshop
Attendance May 5, 2015

	A	B	C	D	E
1	<i>Last Name</i>	<i>First Name</i>	<i>C.6 Morning</i>	<i>C.3.h Afternoon</i>	<i>Municipality</i>
40	Hundal	Amritpal	X		County of San Mateo
41	Koenig	Doug	X	X	County of San Mateo
42	Lee	Richard	X	X	County of San Mateo
43	Oshaghi	Alisina	X	X	County of San Mateo
44	Peres	Joe	X	X	County of San Mateo
45	Ramirez	Michael	X	X	County of San Mateo
46	Rasmussen	Ryan	X	X	County of San Mateo
47	Yee	Theresa	X	X	County of San Mateo
48	Carlos	Armando	X	X	County of San Mateo DPW
49	Casagrande	Julie	X	X	County of San Mateo DPW
50	Jackson	Emmett	X	X	County of San Mateo DPW
51	Manuel	Noel	X		County of San Mateo DPW
52	Chan	Catherine	X	X	CSG Consultants Inc.
53	Schnell	Jerry	X		CSG Consultants Inc.
54	Kerr	Kristin	X	X	EOA, Inc.
55	Schultze-Allen	Peter	X	X	EOA, Inc.
56	Ruess	Liz	X		Town of Atherton
57	Ahmed	Muneer	X	X	Town of Colma
58	Gotelli	Louis		X	Town of Colma
59	Asai	Natalie	X		Town of Hillsborough



Evaluation Form

C.3.h INSPECTION AND O&M STORMWATER SYSTEM WORKSHOP

San Mateo, CA

Tuesday, May 5, 2015

AFTERNOON SESSION 24 Evaluations

1. **Overview of C.3.h Requirements in MRP 1.0 and the Future** – Given by Kristin Kerr, SMCWPPP Program Staff

Very Useful 13 Somewhat Useful 11 Not useful

Comments:

- New systems still somewhat vague about requirements and how to implement them. Who is responsible?
- Good update on requirements and 2.0 proposals for new MRP.
- Explain more on the history/background of MRP 1.0/O&M program.

2. **Inspecting, Operating and Maintaining Stormwater Treatment Systems** - Given by Peter Schultze-Allen, SMCWPPP Program Staff

Very Useful 17 Somewhat Useful 5 Not useful 1

Comments:

- Did not explain what to look for, did not explain standard specifications for treatment systems or where specific systems we're applicable.
- Photos useful.
- Lots of examples. Great!
- Good info and base knowledge related to C.3./C.6. relationships and Comm. C.3./C.6. inspectors in reference to M+R and examples to SW R/O.
- Understood by examples.
- BMP examples scattered in order of presentation (felt like we "jumped around" a bit). Not much about LID what qualifies what doesn't.

3. **Group Exercise** – Facilitator, SMCWPPP Program Staff

Very Useful 13 Somewhat Useful 9 Not useful

Comments:

- Prizes, no break out was good; discussion instead.
- I really enjoyed the group exercises.
- Interesting solutions.
- Good examples to show simplicity of possible problem mitigations.
- Stimulating discussion of options.

4. **Did this training meet your expectations? Yes: 23 No: 1**

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

- Practices of common problems and discussion.
- Examples/photos.
- Anecdotes – successful vs. unsuccessful. Define terms where meaning was changed over time.
- Group exercises.
- C.6. morning session.
- Photo discussion.
- Experience of presenters.
- Discussions.
- Examples of good and bad bioretention landscapes.
- Good and bad examples.
- Pictures and examples.
- The illustrations.
- Problem areas from installed treatments.
- C.3. requirements and 2.0 Proposed changes.
- Pictures.

6. **What would have made this training more useful?**

- Move information on inspection practices for treatment facilities.
- Field trip to look at LIDs.
- More practical cases.
- How effective are we? How do we compare to where we were 5 years ago? 10 years ago?
- Which pollutants have we released?
- What can we improve?
- A bit more in depth on relationship between C.6./C.3 cooperation ie. Effect of SW mitigation on municipal systems.

7. **What topics would you recommend for a future training?**

- See above.
- N/A
- Lessons learned.
- Interceptor tree – pros and cons.

- Detailed way of inspection for pervious pavement as part of treatment facilities.
- Coffee in the afternoon would be great.
- Responsibility or roles between private, public and consultants representing a jurisdiction.
- I would be interested if you have the same problem for green roof implementation.

8. **General Comments?**

- Great training!
- None.
- Thanks!
- Good job.
- Good training.
- Thanks for feeding us, but limit lunch to ½ hour if there will be food on site.
- Good workshop.
- Coffee with lunch.
- G/f options.
- Good conference room.
- A good update/refreshers on SWPP policy and this year, proposed chg. for MRP 2.0 recommendations.

**ANNUAL C.3 STORMWATER WORKSHOP:
“Low Impact Development and Green Infrastructure:
What Will the Future Bring?”**

**Wednesday, June 17, 2015
9:00 am – 3:00 pm**

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

Who should attend this workshop: Municipal stormwater program coordinators, arborists, and planning and public works staff who:

- Review and approve private development projects
- Plan, design, and construct public projects, including transportation projects
- Manage stormwater programs and oversee regulatory compliance
- Plan, design and maintain Urban Forestry programs

Workshop agenda: This full-day workshop will include updates on future requirements in the Municipal Regional Permit Provision C.3; an overview of C.3 requirements and best practices, a presentation on urban forestry integration with green infrastructure; LID in local new development and redevelopment projects; and a session on planning and implementing green infrastructure projects.

Also included: AICP Certification Maintenance Credits (Pending)

*There will be **no charge** for the workshop. Continental breakfast & lunch will be served.
Please forward this flyer to appropriate staff within your organization.*

REGISTRATION FORM

Name: _____

Title: _____

Agency/Company: _____

Phone: _____ **Email:** _____

Please complete and email to Melissa@eoainc.com or fax to 510- 832-2856 no later than Wednesday, June 10, 2015



**ANNUAL C.3 STORMWATER WORKSHOP:
Low Impact Development and Green Infrastructure:
What Will the Future Bring?**

Wednesday, June 17, 2015

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

WORKSHOP AGENDA

- | | |
|----------|--|
| 9:00 AM | Registration and Refreshments |
| 9:05 AM | Welcome and Introduction |
| 9:10 AM | Stormwater Controls for Development Projects
Jill Bicknell: SMCWPPP/EOA |
| 10:00 AM | Update on Upcoming Stormwater Permit Requirements
Jill Bicknell: SMCWPPP/EOA |
| 10:30 AM | Break |
| 10:45 PM | Keynote Speaker:
The State of Science - Using Urban Trees for Stormwater Management
Peter MacDonagh: Kestrel Design Group |
| 12:00 PM | Lunch |
| 12:45 PM | Local Perspectives Panel - Urban Forestry and Stormwater Treatment Integration
Moderator: Peter Schultze-Allen, SMCWPPP/EOA
Dave Dockter, City of Palo Alto, Planning Arborist
Christian Bonner, City of Menlo Park, City Arborist
Peter MacDonagh, Kestrel Design |
| 1:15 PM | How to get started on Green Infrastructure (GI) Planning
Peter Schultze-Allen: SMCWPPP/EOA |
| 2:00 PM | Break |
| 2:10 PM | Group Exercise
Peter Schultze-Allen: SMCWPPP/EOA |
| 2:45 PM | Adjourn |

SMCWPPP Annual C.3 Stormwater Workshop: "Low Impact Development and Green Infrastructure: What Will the Future Bring?"
Tuesday, June 17, 2015 9AM to 3PM San Mateo Public Library - Oakroom

	A	B	C
1	<i>Last Name</i>	<i>First Name</i>	<i>Municipality</i>
2	Yau	Gilbert	City of Belmont
3	Breault	Randy	City of Brisbane
4	Capasso	Julia	City of Brisbane
5	Friars	Joe	City of Brisbane
6	Boyle Rodriguez	Pam	City of Burlingame
7	Disco	Bob	City of Burlingame
8	Gardiner	Kevin	City of Burlingame
9	Kinnon	Kiley	City of Burlingame
10	Kolokihakaufisi	Amelia	City of Burlingame
11	Mtungu	Tendai	City of Daly City
12	Dorais	Norman	City of Foster City
13	Galli	Laura	City of Foster City
14	Glancy	Leah	City of Foster City
15	Shah	Ashraf	City of Foster City
16	Avedian	Theresa	City of Menlo Park
17	Bansal	Megha	City of Menlo Park
18	Bonner	Christian	City of Menlo Park
19	Mao	Shaun	City of Menlo Park
20	Middleton	Michael	City of Menlo Park
21	Mitch	Azalea	City of Menlo Park
22	Parks	Virginia	City of Menlo Park
23	Sohrabi	Ebby	City of Menlo Park
24	Chow	Sydney	City of Millbrae
25	Donguines	Raymund	City of Pacifica
26	Murdock	Christian	City of Pacifica
27	Dockter	David	City of Palo Alto

SMCWPPP Annual C.3 Stormwater Workshop: "Low Impact Development and Green Infrastructure: What Will the Future Bring?"
Tuesday, June 17, 2015 9AM to 3PM San Mateo Public Library - Oakroom

	A	B	C
1	<i>Last Name</i>	<i>First Name</i>	<i>Municipality</i>
28	Willis	Elise	City of Palo Alto
29	Kim	Philip	City of Redwood City
30	O'Connel	James	City of Redwood City
31	LaBruzzo	Patrick	City of Redwood City
32	Siddiqui	Harris	City of Redwood City
33	Cervantez	Joseph	City of San Bruno
34	Wong	David	City of San Bruno
35	Riddell	Anthony	City of San Carlos
36	Albert	Evan	City of San Mateo
37	Edlund	Sven	City of San Mateo
38	Fried	Matthew	City of San Mateo
39	Pacini	Kenneth	City of San Mateo
40	Swenson	Mark	City of San Mateo
41	Abdollahi	Amir	CSG Consultants, Inc.
42	Bocalan	Michelle	CSG Consultants, Inc.
43	Chan	Catherine	CSG Consultants, Inc.
44	Gonzales	Eric	CSG Consultants, Inc.
45	Kaderi	Babak	CSG Consultants, Inc.
46	Kong	Lynette	CSG Consultants, Inc.
47	Lander	Mark	CSG Consultants, Inc.
48	Rombod	Hakhamaneshi	CSG Consultants, Inc.
49	Seto	David	CSG Consultants, Inc.
50	Sharifi	Mehdi	CSG Consultants, Inc.
51	Truong	Sophie	CSG Consultants, Inc.
52	Freedberg	Shawn	Deeproot Green Infrastructure
53	Bicknell	Jill	EOA, Inc.

SMCWPPP Annual C.3 Stormwater Workshop: "Low Impact Development and Green Infrastructure: What Will the Future Bring?"
Tuesday, June 17, 2015 9AM to 3PM San Mateo Public Library - Oakroom

	A	B	C
	<i>Last Name</i>	<i>First Name</i>	<i>Municipality</i>
1			
54	Schultze-Allen	Peter	EOA, Inc.
55	MacDonagh	Peter	Kestrel Design Group
56	Azzari	Zack	San Mateo County
57	Burlison	Summer	San Mateo County
58	Casagrande	Julie	San Mateo County
59	Enriquez	Robert	San Mateo County
60	Leung	Camille	San Mateo County
61	Lisaj	Krzysztof	San Mateo County
62	Oshaghi	Alisina	San Mateo County PW
63	Rasmussen	Ryan	San Mateo County PW
64	Ruble	Matthew	San Mateo County PW
65	Shu	Diana	San Mateo County PW
66	Tourel	Gilbert	San Mateo County PW
67	Huynh	David	Town of Atherton
68	Asai	Natalie	Town of Hillsborough



Summary of Evaluations
70 Attendees (41 evaluations, 58.57% of attendees)
ANNUAL C3 WORKSHOP
Low Impact Development and Green Infrastructure: What Will the Future Bring?

San Mateo, CA

Wednesday, June 17, 2015

1. Stormwater Controls for Development Projects – Given by Jill Bicknell, SMCWPPP Program Staff

Very Useful 29 Somewhat Useful 12 Not useful 0

Comments:

- Content for people new to process.
- As someone not involved with C.3. ideas presented were concise and understandable.
- Very thoughtful overview of requirement and overview of SMCWPPP.
- Great job.
- Can see how it can be very useful for new attendees.
- This was a very informative presentation.
- Covered a lot of old material.
- Good information relative to MRP Projects and requirements.
- This was my first time so it was great to hear about all the options available for developers to utilize.
- I like the update of changes to the permit.

2. Update on Upcoming Stormwater Permit Requirements - Given by Jill Bicknell, SMCWPPP Program Staff

Very Useful 36 Somewhat Useful 5 Not useful 0

Comments:

- Good breakdown of upcoming changes.
- Could have spent more time on this.
- Need more time allowed for presentation.
- Very thorough.
- This will be a challenge, however, the more we do it the more we shall get better at it and even improve our methods.
- Great overview of changes coming in MRP 2.0. Good to hear that there will be challenge to some proposals.
- Now I know what challenges I face. This is also helpful for me to update management.

Note: More on back....

3. **The State of Science: Using Urban Trees for Stormwater Management** – Given by Peter MacDonagh, Kestrel Design Group

Very Useful **28** **Somewhat Useful** **13** **Not useful** **0**

Comments:

- Would have liked it to be more applicable to Bay Area; regional examples.
- Very good at showing value of street trees w/useful ways to attain water quality goals.
- Great! Happy to learn about importance of trees to stormwater and water quality. Great way to introduce a new area of learning.
- Peter is a great, funny person. However, his presentation was not too organized and hard to follow.
- Enjoyed statistics on what really works in the field.
- Some parts interesting buy not clear delivery of talk.
- Very interesting presentation, helpful with what types of trees to use and emphasized on use of big trees.
- Very interesting.
- Presentation went very fast. He glossed over many slides and didn't cover all his slides. Could do a better job of setting up the discussion. I was a little lost without the framing of the discussion.
- Very informative info. Enjoyed this presentation and gained some useful into (re: thinking of trees relation to stormwater) to take back to County as we are in a process of updating our tree ordinance.
- Not so useful for engineering, but very interesting anyway.
- Speaker had good information, but difficult to follow at times.
- Great information and a much better knowledge of the requirements and functionality of trees related to stormwater management.
- This was interesting. I had no idea the long term benefits trees have on infrastructure and property values.

4. **Local Perspectives Panel - Urban Forestry and Stormwater Treatment Integration**
Dave Dockter, Christian Bonner, Peter MacDonagh (moderator: Peter Schultze-Allen)

Very Useful **16** **Somewhat Useful** **25** **Not useful** **0**

Comments:

- Yes, but too short. Would've liked to hear more local examples.
- Reinforced need for collaboration between departments.
- Good questions/informative and great responses.
- Too short of time.
- Answered questions directly that I had, I have a better understanding of the challenges of urban forestry.
- Okay, only 3 q's. Speakers could be more succinct.
- The discussion dragged at times, not a lot of useful information.
- Good to hear variances in approach to relevant questions posed to the panel of experts related to tree selection and performance in stormwater treatment applications.
- A little over my head as an engineer.

5. How to get started on Green Infrastructure Planning – Given by Peter Schultze-Allen, SMCWPPP Program Staff

Very Useful 26 Somewhat Useful 14 Not useful 0

Comments:

- Would have been interesting to use Green Plan IT.
- Liked contact info.
- Ahead of the curve! Thank you!
- More workshops will be required.
- Helpful with different ways/techniques of SMCWPPP and the requirement for GI process.
- Upcoming process was good.
- Good overview of upcoming permit requirements.
- Not directly responsible for this task however the overview perspective is of value.

6. Group Exercise – Given by Peter Schultze-Allen, SMCWPPP Program Staff

Very Useful 25 Somewhat Useful 8 Not useful 0

Comments:

- Fun!
- Great examples of challenges and implementing solutions.
- Great examples shown before and after examples. Fun and funny.
- Good graphics.
- Good application of training/vs real world scenario related to training.
- Interesting examples.

7. Did this training meet your expectations? Yes: 39 No: 1

- I expected more technical design information.
- But based on my minimal exposure to the C.3 subject, I would like to attend a more basic workshop.

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

- The update and the green infrastructure planning.
- All.
- The explanation of all the different bio filtration systems.
- Trees.
- Entitlement processes. Panel discussion.
- New requirements for new permit.
- New requirements.
- State of Science and GI.
- Importance of Trees.
- The updates to the permit.
- MRP issues.
- Update on new permit requirements links to LID details.
- Project examples.
- The types of plants to use.
- Requirements and tree selection.
- Urban Forestry – trees and stormwater treatment.
- Upcoming permit requirements.
- Group exercise.
- MRP update.
- Very first part.
- MRP update.
- GI requirements/process and Trees presentation.
- The beginning review of regulations. Always good to rehear them. Hearing about the regs that are coming to prepare us and get us thinking about how we will handle.
- Understanding of GI. What it means and ways GI can be incorporated into projects.
- Upcoming Stormwater Permit updates.
- Design of the water treatment areas and locations.
- Changes to C.3. regulations.
- Items 1, 5 and 6 above.
- GI planning, Group Exercise.
- Right of way related issues.

- Explanations of the different treatment measures. I am new to stormwater mgmt., but until now it was assumed that everybody knew what all the measures were. Also, the value of trees in stormwater management was very informative.
- Update to the permit.
- How to have healthy trees.

9. What would have made this training more useful?

- It was useful. Live examples/work videos, maybe.
- Need list of trees and soil requirements.
- Great!
- It was all helpful.
- More interactive and hands on exercises.
- More clarity on new MRP requirements.
- More roadway details and how to implement LID's into design of existing roadway when there is not lots of R-O-W room.
- More examples.
- Talk more about Public ROW and Road reconstructions.
- More examples like the ones at the end.
- More case study.
- More info on GI requirements.
- The format is very good as it is.
- To let us know if EOA would be preparing revised templates for O&M Agreements based on new regs. To let us know what we need to take to our council for action based on the coming changes.
- See #7.
- Its fine the way it is.
- To also include a more basic information workshop for C.3 training.
- More discussions on permit changes.
- Good outline, more ROW relation to MRP + vs. private development in ROW.

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

- Continued GI planning.
- Different lunch.
- Hydro-modification.
- Pavers – do's and donts, how to control.
- Education for Property owners so they can understand their roles and responsibility.
- How are we doing? TMDL in 2008 vs. TMDL in 2016.
- How to deal with existing native trees when roots need to be trimmed or cut.
- Road treatment and Road reconstruction.
- Updates to regulations.

- How to implement G.I.
- GI plan implementation.
- An overall review of all C.3 topics.
- A field trip to a well-designed storm treatment facility.
- More C.6 information.
- More on the G.I. requirements and detailed requirements.
- More GI training; incorporating C.10 measures into new development.
- Permeable areas in and adjacent to road/travel way re. saturation in roadbed.
- Talking through in greater detail the technical function of the major treatment measures. Understanding the relationships between drainage area, measure sizing, soil type, drainage rate, height of underdrain, etc., would help me to ensure developers are designing facilities appropriately.

11. General Comments?

- Gluten free lunch options.
- Coffee after lunch.
- I didn't like the sandwiches.
- Thank you.
- Provide water.
- More group exercise with new life scenarios.
- Thanks.
- :)
- Nice work.
- Great sandwiches! Thank you!
- Very good training.
- Good training.
- I liked the panel and that there were different types of things on the agenda – not just presentations.
- Thanks.
- This should be done more often. :)

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 St., Bldg. 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 Ave.	Oakland	94601	chris.stromberg@lehighhanson.com	www.lehighhanson.com
Lyngso Garden Materials, Inc.	Paul Truyts	650-333-1044 650-364-1730 x131	19 Seaport Blvd.	Redwood City	94063	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
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: 8/1/2015

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.

C.3 and C.6 Development Review Checklist

Address _____
Phone _____
Website _____

Project Information

I.A Enter Project Data (For "C.3 Regulated Projects," data will be reported in the municipality's stormwater Annual Report.)

Project Name: _____ Case Number: _____
Project Address & Cross Street: _____
Project APN: _____ Project Watershed: _____
Applicant Name: _____ Project Phase No. _____
Applicant Phone: _____ Applicant E-mail: _____

- Development Type: (check all that apply)
- Single Family Residential: A stand-alone home that is not part of a larger project.
 - Single Family Residential: Two or more lot residential development.¹ # of units: _____
 - Multi-Family Residential # of units: _____
 - Commercial
 - Industrial, Manufacturing
 - Mixed-Use # of units: _____
 - Streets, Roads, etc.
 - Redevelopment¹ as defined by MRP: creating, adding and/or replacing exterior existing impervious surface on a site where past development has occurred.²

- I.A.1**
- 'Special land use categories' as defined by MRP: (1) auto service facilities³, (2) retail gasoline outlets, (3) restaurants, (4) uncovered parking area (stand-alone or part of a larger project)
 - Institutions: schools, libraries, jails, etc.
 - Parks and trails, camp grounds, other recreational
 - Agricultural, wineries
 - Kennels, Ranches
 - Other, Please specify _____

Project Description
(Also not any past or future phases of the project.)

I.A.2 Total Area of Site: _____ acres
I.A.3 Total Area of land disturbed during construction : _____ acres
(include clearing, grading, excavating and stockpile area)

I.A.4 Certification:

I certify that the information provided on this form is correct and acknowledge that, should the project exceed the amount of new and/or replaced impervious surface provided in this form, the as-built project may be subject to additional improvements.

- Attach Preliminary Calculations Attach Final Calculations Attach copy of site plan showing areas

Name of person completing the form: _____ Title: _____
Signature: _____ Date: _____
Phone Number: _____ E-mail: _____

1 Common Plans of Development (subdivisions or contiguous, commonly owned lots, for the construction of two or more homes developed within 1 year of each other) are not considered single family projects by the MRP.

2 Roadway projects that replace existing impervious surface are subject to C.3 requirements only if one or more lanes of travel are added.

3 See Standard Industrial Classification (SIC) codes here: http://www.flowstobay.org/documents/business/new-development/Notice_to_Applicants-LID_FINAL.doc

4 Project description examples: 5-story office building, industrial warehouse, residential with five 4-story buildings for 200 condominiums, etc.

I.B Is the project a “C.3 Regulated Project” per MRP Provision C.3.b?

I.B.1 Enter the amount of Impervious surface Retained, Replaced and/or Created by the project:

Table I.B.1 Impervious⁵ and Pervious Surfaces

Type of Impervious Surface	I.B.1.a	I.B.1.b	I.B.1.c	I.B.1.d	I.B.1.e
	Pre-Project Impervious Surface (sq.ft.)	Existing Impervious Surface to be Retained ⁶ (sq.ft.)	Existing Impervious Surface to be Replaced ⁶ (sq.ft.)	New Impervious Surface to be Created ⁶ (sq.ft.)	Post-Project Impervious Surface (sq.ft.) (=b+c+d)
Roof area(s)					0
Impervious ⁵ sidewalks, patios, paths, driveways, streets					0
Impervious ⁵ uncovered parking ⁷					0
Totals:	0	0	0	0	0
I.B.1.f - Total Impervious Surface Replaced and Created: (sum of totals for columns I.B.1.c and I.B.1.d):			0		
Type of Pervious Surface	Pre-Project Pervious Surface (sq.ft.)				Post-project Pervious Surface(sq.ft.)
Landscaping					
Pervious Paving					
Green Roof					
Totals:	0				0
Total Site Area (Total Impervious + Total Pervious)	0				0

I.B.2 Please review and attach additional worksheets as required below using the Total Impervious Surface Replaced and Created in cell **I.B.1.f** from Table **I.B.1** above and other factors:

	Review Steps	Check If Yes	Attach Worksheet
I.B.2.a	Does this project involve any earthwork? If YES, then Check Yes, and Complete Worksheet A. If NO, then go to I.B.2.b	<input type="checkbox"/>	A
I.B.2.b	Is I.B.1.f greater than or equal to 2,500 sq.ft? If YES, then the Project is subject to Provision C.3.i. - complete Worksheets B, C & go to I.B.2.c. If NO, then Stop here - go to I.A.4 and complete Certification.	<input type="checkbox"/>	B, C
I.B.2.c	Is the total Existing Impervious Surface to be Replaced (column I.B.1.c) 50 percent or more of the total Pre-Project Impervious Surface (column I.B.1.a)? If YES, site design, source control and treatment requirements apply to the whole site. Continue to I.B.2.d If NO, these requirements apply only to the impervious surface created and/or replaced. Continue to I.B.2.d	<input type="checkbox"/>	
I.B.2.d	Is this project a Special Land Use Category (I.A.1) and is I.B.1.f greater than or equal to 5,000 sq.ft? If YES, project is a Regulated Project. Fill out Worksheets D, D-1 & D-2. Go to I.B.2.e. If NO, go to I.B.2.e	<input type="checkbox"/>	D, D-1, D-2
I.B.2.e	Is I.B.1.f greater than or equal to 10,000 sq.ft? If YES, project is a C.3 Regulated Project - complete Worksheets, D, D-1 and D-2. Then continue to I.B.2.f. If NO, then skip to I.B.2.g.	<input type="checkbox"/>	D, D-1, D-2
I.B.2.f	Is I.B.1.f greater than or equal to 43,560 sq.ft? If YES, project may be subject to Hydromodification Management requirements - complete Worksheet E then continue to I.B.2.g. If NO, then go to I.B.2.g.	<input type="checkbox"/>	E
I.B.2.g	Is I.A.3 greater than or equal to 1 acre? If YES, check box and obtain coverage under the state's Construction General Permit and submit to the municipality a copy of your Notice of Intent - then continue to I.B.2.h. If NO, then go to I.B.2.h. For more information see: www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml	<input type="checkbox"/>	
I.B.2.h	Is this a Special Project or does it have the potential to be a Special Project? If YES, complete Worksheet F - then continue to I.B.2.i. If NO, go to I.B.2.i.	<input type="checkbox"/>	F
I.B.2.i	Is this project a High Priority Site? (Determined by the Permitting Jurisdiction. High Priority Sites can include those located in or within 100 feet of a sensitive habitat, an Area of Special Biological Significance (ASBS), or body of water, or on sites with slopes and are subject to monthly inspections from Oct 1 to April 30.) If YES, complete section G-2 on Worksheet G - then continue to I.B.2.j. If NO, then go to I.B.2.j	<input type="checkbox"/>	G
I.B.2.j	For Municipal Staff Use Only: Are you using Alternative Certification for the project review? If YES, then fill out section G-1 on Worksheet G. Fill out other sections of Worksheet G as appropriate.	<input type="checkbox"/>	G

⁵ Per the MRP, pavement that meets the following definition of pervious pavement is NOT an impervious surface. Pervious pavement is defined as pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3.

⁶ "Retained" means to leave existing impervious surfaces in place; "Replaced" means to install new impervious surface where existing impervious surface is removed anywhere on the same property; and "Created" means the amount of new impervious surface being proposed which exceeds the total existing amount of impervious surface at the property.

⁷ Uncovered parking includes the top level of a parking structure.

Bay Area
Stormwater Management
Agencies Association

“White Paper” on
Provision C.3
in MRP 2.0

Final Report
February 27, 2015

Prepared by:
Dan Cloak Environmental Consulting
EOA, Inc.

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Executive Summary

Introduction

The major urbanized areas in the San Francisco Bay area, including Alameda, Contra Costa, San Mateo and Santa Clara Counties and the Vallejo and Fairfield-Suisun areas, are subject to the requirements of a Phase I stormwater permit known as the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP)¹. Countywide and areawide stormwater management programs have collaborated on a regional basis through the Bay Area Stormwater Management Agencies Association (BASMAA) to meet some of the permit requirements.

In 2013, BASMAA Phase I stormwater program managers began discussions with Regional Water Quality Control Board (Water Board) staff about potential requirements in the next permit (known as MRP 2.0). As part of this effort, the BASMAA Development Committee began discussions with Water Board at its regular meetings on future requirements for Provision C.3, New Development and Redevelopment.

In early 2014, the Development Committee proposed, and Water Board staff agreed, to take a “big picture” view of Low Impact Development (LID) implementation in the Bay Area – where we’ve been and where we are headed in the long term. There was a shared desire to address the following questions: what is the vision for LID in the Bay Area, what is the approach to achieving that vision, and how should permit provisions be designed to follow that approach and achieve the vision? The Committee proposed that BASMAA prepare a white paper to help address these questions and provide the technical support and rationale for future permit requirements. This “White Paper on Provision C.3 in MRP 2.0” is the product of that effort.

Bay Area Approach

The San Francisco Bay Area is California’s second-largest metropolitan region, covering about 7,000 square miles across nine Bay Area counties. Regional planning documents estimate that by 2040, the population will increase from 7 million today to around 9 million, the number of jobs will increase by 33% and the number of housing units will increase by 24% (ABAG/MTC, 2013). Much of the expected development in the Bay Area will be

¹ California Regional Water Quality Control Board Order R2-2009-0074, NPDES Permit No. CAS612008, adopted October 14, 2009, revised November 28, 2011. The permit expired on November 30, 2014, but has been administratively extended.

influenced by the strategies and funding mechanisms associated with Plan Bay Area, a long-range integrated transportation and land-use/housing strategy for the Bay Area. Plan Bay Area provides a strategy for meeting 80 percent of the region's future housing needs in Priority Development Areas, where mixed-use residential and commercial development will support the needs of residents and workers in a pedestrian-friendly environment served by transit.

In the coming decades, there will be a steady increase in the number of sites on which LID stormwater treatment and/or flow control facilities are in operation. If the C.3 requirements remain in effect over the very long term, eventually most commercial, industrial, and multi-family residential sites will have such facilities. This is good news for water quality. However, all these facilities will need to be maintained, and their condition will need to be tracked and periodically verified. Within 10-20 years, municipal Permittees will be responsible for tracking the condition of thousands of LID facilities and taking necessary actions to ensure each is operating properly.

This paper proposes a "Bay Area Approach" to implementing new development requirements, based on substantial experience with implementing LID measures on private development projects and expected future challenges, with the aim of using available municipal resources to maximize effectiveness on a regional scale. The key issues that are addressed in this White Paper relative to the Bay Area Approach include the following:

- Regulated project thresholds and applicability;
- Alternative compliance, including Special Projects criteria and requirements;
- LID requirements, feasibility, criteria, and standards;
- Hydromodification management (HM) requirements and integration with LID; and
- Operation and maintenance verification requirements for LID and HM facilities.

Methodology

The general approach taken in this document to evaluating current permit provisions and the key issues follows these four steps:

1. Investigate the origin and justification for the current requirements in Provision C.3;

2. Evaluate the potential beneficial effects of the requirements in terms of regional-scale pollutant load reductions, or benefits to urban hydrology, based on current knowledge (e.g., using the amount of impervious area subjected to LID treatment as a metric);
3. Consult with municipal staff practitioners to understand the costs and staffing resources required for implementation;
4. Consider alternatives that may address the original objective more efficiently and effectively, or may be more suitable to the Bay Area's development patterns in the coming decades.

Findings, Conclusions, and Recommendations

A summary of the findings, conclusions, and recommendations for the key issues presented in this White Paper is provided below and in Table ES-1. These recommendations will be promoted by BASMAA for inclusion in Provision C.3 as part of the continuing MRP 2.0 permit negotiations in the coming year.

Regulated Project Thresholds and Applicability

Findings

The current MRP defines Regulated Projects as: 1) new and redevelopment projects that create and/or replace 10,000 square feet (SF) or more of impervious surface; 2) special land use projects (auto service facilities, retail gasoline outlets, restaurants, and uncovered parking lots) that create and/or replace 5,000 SF or more of impervious surface; and 3) road projects that create 10,000 SF or more of contiguous impervious surface. Water Board staff has suggested reducing the Regulated Projects threshold to 5,000 SF of impervious surface created or replaced for all projects.

BASMAA conducted an analysis of development projects throughout the MRP Permittees' jurisdictions, to determine the relationship between project threshold and the proportion of the total amount of new and replaced impervious surface that would be subject to the requirements, using a previously compiled dataset of 533 projects that received municipal development approvals and were subject to C.3 during 2006-2010. The analysis indicates that reducing the threshold to 5,000 SF for all projects would increase the proportion of total impervious area subject to the MRP Regulated Projects requirements by 0.5%,

which is roughly comparable to implementation of C.3 requirements on one large project.

Analysis of more recent data from the Cities of Fremont and San Jose confirmed the previous analysis, and also showed that lowering the threshold would increase the total number of MRP Regulated Projects by approximately 8%. Since smaller projects tend to require more staff time for processing and review, in part because the applicants tend to have less experience with the development review process and have fewer resources to hire land development professionals, the additional municipal staff level of effort resulting from the proposed threshold change could be considerably larger than 8%.

Conclusions and Recommendations

We conclude that the proposed lower threshold would result in a disproportionate and ineffective use of limited municipal staff resources that could otherwise be used to advance strong, proactive C.3 implementation programs. We recommend that the current MRP thresholds be retained.

C.3 Applicability to Road Projects

In lieu of requiring road replacement or rehabilitation projects to be subject to stormwater treatment requirements, the current MRP requires Permittees to construct ten green street pilot projects within the region (a requirement that is nearly completed). For MRP 2.0, the BASMAA Green Infrastructure (GI) Work Group and Water Board staff have discussed the concept of a GI permit provision that would address the Permittees' potential load allocations for mercury and PCB TMDLs and also contribute to implementation of other permit provisions, including trash reduction requirements. It is BASMAA's understanding, based on discussions with Water Board staff, that implementation of a GI permit provision would allow Permittees to maintain the current C.3 requirements for road projects (i.e., applicable only to creation of new roads and addition of travel lanes)

We support the GI program approach to achieving multiple benefits, including pollutant load and flow reduction, and recommend maintaining the current C.3 requirements for road projects.

Alternative Compliance

Findings

Under the current MRP, Permittees may allow applicants for development project approvals to comply by implementing LID to treat an equivalent amount of runoff at an off-site location, or paying an in-lieu fee to treat an equivalent amount of runoff at a municipal or regional stormwater treatment facility. Over the past decade, few projects have chosen to use alternative compliance and no municipalities have pursued implementation of a regional treatment facility funded by in-lieu contributions from project proponents, for a number of technical, logistical and institutional reasons.

Water Board staff has stated their interest in seeing more alternative compliance projects implemented, especially as part of GI programs. However, some of the barriers to alternative compliance include: 1) limitations on the timing of the offsite treatment project relative to the proposed project; 2) limiting the location of the offsite project to the same watershed as the proposed project; 3) additional costs associated with the offsite project; 4) long term implications for the status of the offsite project; 5) institutional, financial, and legal complexities of regional treatment projects; and 6) long term O&M and funding responsibilities for offsite and regional projects.

Conclusions and Recommendations

The current MRP alternative compliance provisions have proven useful in very limited applications. However, more flexible provisions are essential to expansion of alternative compliance programs and the success of GI and mitigation banking programs.

We recommend that the alternative compliance provision be rewritten to eliminate, or provide more flexibility on, the restrictions as to the timing and location of the alternative compliance project relative to the proposed project. The provision should 1) allow the alternative project location to be anywhere within the municipal jurisdiction, and for regional projects, anywhere within the countywide or area-wide program area; and 2) allow the timing of projects to be consistent with current legal requirements regarding municipalities' use of development funds.

Special Projects

Findings

Current provisions allow development projects that meet certain location, lot coverage, density and parking criteria (“Special Projects”) to use tree-box-type high flowrate biofilters or vault-based high flowrate media filters in lieu of LID treatment, for a specified proportion of site runoff. The purpose of allowing these “LID treatment reduction credits” is to facilitate smart growth, infill and transit-oriented development projects, consistent with regional, state and federal plans and policies.

BASMAA’s analysis of Permittee data collected for two complete years (FYs 2012-2013 and 2013-2014) indicated that approved Special Projects accounted for about 88 acres of impervious area, or about 3.6% of the total impervious area attributable to Regulated Projects receiving discretionary approval during those years. Implementation of the Special Project provisions resulted in runoff from about 1.3% of the total impervious area associated with approved Regulated Projects being treated by non-LID treatment facilities within the approved Special Projects. This is a very small percentage given the benefits associated with Special Projects, including improved access to transit, reduced automobile-related runoff pollution and greenhouse gas emissions, preservation of open space, and efficient use of previously developed land and existing infrastructure.

The Special Projects provisions have generally been implemented successfully; however two particular criteria related to ground-level plazas and retail components of residential developments have had unintended consequences and need to be fixed (see recommendations).

The reporting requirements related to Special Projects have been burdensome. Permittees are required to track and report when they receive planning applications for Special Projects, twice per year, as well as report when the projects receive discretionary approval. Reports must include a narrative discussion of the feasibility or infeasibility of 100% LID treatment, onsite and offsite. BASMAA developed guidance for preparing the narrative, which recognizes the barriers to offsite alternative compliance.

Water Board staff has suggested that MRP 2.0 explicitly require that Permittees evaluate the feasibility of 100% LID onsite, offsite or at a regional project, payment of in-lieu fees, or a combination of all options before allowing non-LID treatment. This prioritization does not reflect our experience with implementing stormwater treatment on development projects and the

difficulties with implementing off-site or regional projects and in-lieu fees, and doesn't recognize the inherent environmental benefit of Special Projects, which was the basis for allowing selective non-LID treatment in the first place.

Conclusions and Recommendations

Based on current trends, maintaining the Special Project provisions will facilitate environmentally-beneficial smart growth projects and result in nearly 99% of the total impervious area subject to Provision C.3 being treated with LID measures. The best strategy for maximizing the use of LID on these projects is to craft LID-appropriate permit criteria and conduct educational outreach to the land development community regarding the advantages of bioretention and strategies for incorporating LID in high density projects. Conducting educational outreach to land development professionals is a more productive use of limited municipal resources than continuing to implement the current reporting requirement.

We recommend that the Special Projects provisions be maintained in MRP 2.0 with the following changes:

- Allow exclusion of ground-level public plaza areas from the calculation of the 85% coverage requirement, and require public plaza areas to drain to LID facilities.
- Allow mixed use projects to use either FAR or residential density criteria to determine Special Projects eligibility and/or allowable LID treatment reduction credits.
- Eliminate the requirements to report any potential Special Projects that have submitted planning applications and to submit semi-annual reports on Special Projects, and include reporting of Special Projects with other approved projects in Annual Reports;
- Eliminate the requirement to evaluate the feasibility of LID treatment offsite or at a regional project or payment of in-lieu fees.
- Encourage Permittees to increase educational outreach to land development professionals on bioretention design and strategies for incorporating LID in high density projects.

LID Feasibility, Criteria, and Standards

Findings

Current MRP provisions require implementation of site design strategies that reduce runoff and LID treatment. In defining LID treatment, the MRP states that “a properly engineered and maintained biotreatment system may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site”.

The MRP does not contain or reference standards for site design measures, nor does the MRP contain methods for determining the amount of runoff reduced, or the extent to which the site design measures reduce the required size or capacity of treatment measures. For this reason, each of the stormwater programs has created guidance for applicants to follow when integrating site design measures and treatment measures into an overall design to achieve stormwater quality compliance. This guidance promotes dividing the project site into Drainage Management Areas (DMAs), identifying “self-treating” and “self-retaining” areas (including impervious areas that drain to self-retaining areas), and identifying remaining impervious areas that require treatment. These concepts have proven essential for translating LID objectives into verifiable and enforceable criteria, and have become standard practice in stormwater control plans throughout the Bay area.

Since the concept of LID was conceived in the late 1990s, bioretention has been the most commonly used “integrated management practice” across the U.S. When LID became part of MRP Provision C.3 in 2009, LID was redefined such that a biotreatment (i.e., bioretention) facility may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration. This definition appears to have originated from a 2009 NRDC comment letter on a Tentative Order for an Orange County permit.

BASMAA completed two MRP required reports to address the question of feasibility. The *Harvest and Use, Infiltration and Evapotranspiration Feasibility/ Infeasibility Criteria Report* (2011), presented the results of technical analyses to develop criteria and procedures for Permittees to follow to determine whether harvesting and use, infiltration, or evapotranspiration are feasible or infeasible at a Regulated Project site and when biotreatment may be used. The Permittees subsequently incorporated the criteria in the report into guidance which has been used by applicants for development approvals and by municipal staff when reviewing those applications since

December 1, 2011 (the start date for implementation of LID requirements.)

The *Status Report on the Application of Feasibility/Infeasibility Criteria for Low Impact Development* (2013) conducted a review of Permittee Annual Reports submitted for Fiscal Years 2011-2012 and 2012-2013 to evaluate the results of applying the feasibility/infeasibility criteria. The report found that the application of current feasibility/infeasibility criteria resulted in widespread installation of bioretention facilities that are effectively treating water quality design runoff volumes and are retaining a significant portion of total runoff.

Conclusions of the *Status Report* on LID feasibility/infeasibility were:

- Infiltration of some runoff is feasible on most projects. In the clay soils typical of our Region, the amount of runoff that can be infiltrated is unpredictable and highly variable. On most sites, it is not practical or feasible to design facilities that can reliably and dependably infiltrate the Provision C.3.d.i.(3) amount of runoff (that is, 80% of the total quantity of runoff over a period of 30 years or more).
- Very few development projects create the quantity and timing of non-potable-water demand required to feasibly harvest and use the amount of runoff specified in MRP Provision C.3.d.i.(3). Harvesting and use of a smaller quantity of runoff is technically feasible on some projects. In particular, proponents of some development projects are willing and able to incorporate harvesting and use systems when those systems are sized and designed for cost-effective augmentation of water supply, which requires considerably less storage than would be required to meet current MRP requirements. However, the complexity and operation and maintenance requirements for harvesting and use systems make it inadvisable to require those systems on developments where it cannot be assured that a qualified maintenance staff will be employed on-site at all times during the life of the project.
- Bioretention facilities, when designed according to the criteria in current Permittee guidance, could infiltrate between 40% and 80% or more of total runoff, depending on rainfall patterns and facility size. However, the amount of runoff that would be infiltrated over the life of a particular project is variable and unpredictable because of uncertainty in the near-term and long-term infiltration performance of underlying soils. Infiltration can be maximized by ensuring

project designs adhere to current design criteria and by ensuring facilities are constructed as designed.

Further analyses conducted for this White Paper found that bioretention facilities can approximate the hypothetical pollutant-reduction performance associated with harvest/use and infiltration facilities. When high reductions in pollutant concentration are achieved via biotreatment soil filtration (such as with sediment-bound pollutants like PCBs), the percent retained on-site has little effect on overall pollutant load reduction. Variability in pollutant removal rates is driven mostly by variation in influent concentration rather than actual variation in performance.

A necessary component of utilizing bioretention as a “top tier” LID treatment measure is the development of consistent design, installation and maintenance guidance and standards for bioretention facilities. This information is provided in Bay Area stormwater program guidance manuals and used by nearly all Permittees. Design guidance and standards, including soil specifications, are best developed and maintained by Permittees and not specified in the Permit, so that guidance can continue to be adjusted and fine-tuned with experience.

Conclusions and Recommendations

Based on the White Paper analysis, the pollutant removal performance of bioretention facilities, overall and on average, is equivalent or better than the likely real-world performance of harvest/use facilities—and as good as the likely performance of infiltration facilities when considered over the long term. There is no water-quality-based justification for preferring infiltration systems or harvest/use, even in the rare cases where such systems are feasible on Bay Area development sites. It is also important to consider that bioretention facilities require less maintenance and are less prone to failure than harvest and use facilities, and in some case, are also preferable to direct infiltration facilities.

Implementation of the recommendation to make bioretention facilities—built according to the recommended design to maximize infiltration where allowed—a “first-tier” option under the MRP is also consistent with the State Water Board’s Phase II permit and would create a consistent standard for stormwater treatment for new development throughout the Bay Area Region.

In summary, the following are recommended for MRP 2.0:

- Site Design Requirements
 - Require Regulated Projects to show the site delineated into DMAs, and make explicit how self-treating areas and self-retaining areas may be used to reduce the amount of runoff that must be treated.
 - Require Permittees to adopt and implement design requirements for self-treating and self-retaining areas, including pervious pavements and green roofs.
 - Allow Permittees to keep site design requirements and specifications in guidance manuals and do not include specific design requirements in the Permit.
- LID Treatment
 - Omit the feasibility test and allow bioretention as an equivalent “first tier” option for LID treatment.
 - Omit the criteria for biotreatment soil media (Attachment L). Generally, for design criteria, state the objectives to be met, and require Permittees to develop and implement criteria, but do not incorporate criteria into the permit.
 - Continue to include performance criteria for LID treatment in the Permit, and allow Permittees to maintain guidance and standards for bioretention design and construction outside of the permit.

Hydromodification Management Requirements

Findings

C.3 provisions added to Bay Area Phase I permits during 2001-2003 required development of Hydromodification Management Plans (HMPs), to be “implemented so that post-project runoff shall not exceed estimated pre-project rates and/or durations, where the increased stormwater discharge rates and/or durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the amount and timing of runoff.” Studies conducted in the Pacific Northwest and by Bay Area Permittees as part of development of their HMPs demonstrated that flow duration control at the project level, i.e., limiting the duration of flows to that which existed prior to development, and to allow increased

durations of flow only for flows below the threshold at which sediment movement is likely to occur, would protect downstream channels from increased erosion.

Additional studies defined “erosion potential” (E_P) as the ratio of the post-project effective “work” (erosive force over time on channel bed or banks) to the pre-project effective work. The hydromodification management (HM) standard in the current MRP is that post-project stormwater discharges shall not cause an increase in the erosion potential of the receiving stream over the pre-project condition, i.e., an E_P of 1.0 must be achieved.

An evaluation of the range of flows that are the most important for stream channel erosion and hydromodification impacts in Santa Clara Valley was performed as part of preparation of the Santa Clara Program HMP submittal, based on field-based watershed assessments conducted for three subwatersheds in Santa Clara Valley. This evaluation and subsequent HMP submittals established criteria that HM controls be designed such that post-project flow durations match pre-project flow durations from 10 percent of the 2-year peak flow (0.1Q₂) to the 10-year peak flow (Q₁₀) for these programs. The Fairfield-Suisun Program was assigned a design low flow threshold of 20 percent of the 2-year peak flow (0.2Q₂) based on local, stream-specific studies. The Contra Costa Program was allowed to meet a low flow threshold of 0.2Q₂ when Integrated Management Practices (IMPs, or LID facilities), sized using established sizing factors, are used. Attachments B, C, D, E, and F to the MRP describe the different sets of criteria and exemptions that apply to each area-wide program.

Hydromodification management requirements have been primarily met with on-site controls, including 1) site design and treatment measures that help reduce flow; and 2) flow duration control measures as needed. The most commonly used flow duration control measures include detention/infiltration basins, underground vaults (or large diameter storm drain pipes), and modified bioretention facilities. The flow duration control design approach requires the use of a continuous simulation hydrologic model to analyze the runoff flows resulting from a long term rainfall record. Several tools have been developed and are currently used to facilitate the design and review process: 1) the Bay Area Hydrology Model (allowed to be used by the Santa Clara, San Mateo and Alameda Programs); 2) sizing factors for bioretention facilities (used by the Contra Costa Program); and 3) sizing curves for bioretention and detention basins (specific to Fairfield-Suisun watersheds).

Recently, additional studies have been done to evaluate facility sizing criteria. The Contra Costa Program conducted *in situ* monitoring of some bioretention facilities and then used the monitoring results to calibrate the continuous simulation model used to develop its sizing factors. Observed values for the rate of infiltration into subsurface soils were about eight times higher than were assumed in the model—0.24 inches per hour vs. the previously assumed (textbook) rate of 0.03 inches per hour. Another study by the Contra Costa Program analyzed the relationships between required facility size and different low flow thresholds for flow duration curve matching, as well as different curve matching criteria. A current study being performed for BASMAA is evaluating the erosion potential (E_P) resulting from discharge from bioretention facilities sized according to existing and alternative flow-duration-control curve-matching criteria, and also analyzing whether an E_P control standard could be used to develop more efficient sizing factors.

Conclusions and Recommendations

The current Provision C.3.g containing the HM requirements (and associated attachments) represents one of the few sections of the MRP where there are different requirements for each area-wide program. Based on experience implementing this provision, Permittees desire a consistent and more flexible set of requirements that gives project proponents options for cost-effective solutions and better integrates HM and LID approaches.

To achieve this goal, we recommend the following:

- Eliminate the attachments with separate HM requirements and create one consistent set of requirements for all Permittees, including consistent exemptions, while allowing some variation in low flow thresholds based on stream-specific studies if available.
- Allow Permittees to utilize any of the available tools, including the BAHM, IMP sizing factors, and sizing curves, as applicable and calibrated to the particular hydrologic and geologic conditions of the project site.
- Allow flexibility in the numerical control standard for hydromodification management in order to meet an overarching erosion potential management objective. The sizing methodology should be allowed to be based on either a flow duration control standard, an E_P Control standard, or a flow duration curve matching criterion that more closely approximates an E_P Control standard (to be explored in future studies).

Operation and Maintenance (O&M) Verification

Findings

The current MRP requires Permittees to:

- Have a means to make owners of facilities responsible for O&M.
- Have the authority to inspect privately-owned facilities.
- Conduct inspections of privately-owned facilities at a prescribed frequency.
- Conduct O&M and inspections of the facilities they own.
- Maintain records and submit annual reports.

After a decade of C.3 implementation, some municipalities' O&M verification programs are organized on a small scale to address a limited number of facilities. However, other municipalities have large numbers of facilities, both LID and non-LID, that have been installed over the years, and have developed detailed tracking systems and databases as well as permitting and fee recovery programs.

As the number of facilities that have been built and are subject to O&M verification requirements continues to increase each year, all municipalities will need to shift additional resources toward the oversight of thousands of facilities distributed across the urban landscape. It is essential that MRP 2.0 anticipate this shift, by allowing flexibility in the frequency of O&M verification inspections, eliminating unnecessary and nonproductive requirements from within Provision C.3, and promoting the planning, design, and construction of robust and easily inspected facilities.

Conclusions and Recommendations

The Permittees' O&M verification programs have become institutionalized over the past decade and have been relatively successful. There are no compelling reasons to make major changes to the current O&M verification requirements. However, based on our experience with implementation of the current requirements, we make the following recommendations for improvement:

- Eliminate the requirement to annually inspect 20% of the total number of installed stormwater treatment systems and HM controls, but maintain the requirement to inspect facilities at least once every five years.

- Allow Permittees options and flexibility to make O&M verification programs more efficient, such as utilizing third party inspectors and allowing responsible property owners to self-certify by submitting self-inspection reports and proof of maintenance.
- Pervious pavements should not be required to be tracked and inspected, but permittees should include them in maintenance agreements and provide educational information on proper maintenance of pervious pavement to the property owner.
- Reduce annual reporting requirements for O&M verification programs, but require Permittees to continue to track ownership, status, and inspection history of each facility and maintain detailed records.
- Eliminate unnecessary and nonproductive requirements from other sections of Provision C.3 and promote the planning, design, and construction of robust and easily inspected facilities.

Table ES-1 Findings, Conclusions and Recommendations for Key C.3 Issues

Key C.3 Issue	Findings / Conclusions	Recommendations
<p>C.3.b. - Regulated Project Size Thresholds</p> <p><u>Current requirement:</u> Defines Regulated Projects as: 1) new and redevelopment projects that create and/or replace 10,000 square feet (SF) or more of impervious surface; 2) special land use projects (auto service facilities, retail gasoline outlets, restaurants, and uncovered parking lots) that create and/or replace 5,000 SF or more of impervious surface; and 3) road projects that create 10,000 SF or more of contiguous impervious surface.</p> <p><u>Issue:</u> Water Board staff has suggested threshold for all projects be lowered to 5,000 SF impervious area created/replaced.</p>	<p>Analysis of past Permittee data showed an insignificant amount of additional impervious area (0.5% of total subject to C.3) would be regulated, but with significant additional Permittee effort. The proposed lower threshold would result in a disproportionate and ineffective use of limited municipal staff resources that could otherwise be used to advance strong, pro-active C.3 implementation programs</p>	<ul style="list-style-type: none"> • Maintain current Regulated Project thresholds. • Maintain current exemption for road reconstruction projects.
<p>C.3.e. - Alternative Compliance</p> <p><u>Current requirement:</u> Permittees may allow applicants for development project approvals to comply by implementing LID to treat an equivalent amount of runoff at an off-site location, or paying an in-lieu fee to treat an equivalent amount of runoff at a municipal or regional stormwater treatment facility.</p> <p><u>Issue:</u> Water Board staff has stated their interest in seeing more alternative compliance projects implemented, especially as part of green infrastructure (GI) programs. However, numerous barriers to alternative compliance exist.</p>	<p>Barriers include: 1) limitations on the timing of the offsite treatment project relative to the proposed project; 2) limiting the location of the offsite project to the same watershed as the proposed project; 3) additional costs associated with the offsite project; 4) long term implications for the status of the offsite project; 5) institutional, financial, and legal complexities of regional treatment projects; and 6) long term O&M and funding responsibilities for offsite and regional projects. More flexible provisions are essential to expansion of alternative compliance programs and the success of GI and mitigation banking programs.</p>	<ul style="list-style-type: none"> • Rewrite the alternative compliance provision to eliminate, or provide more flexibility on, the restrictions as to the timing and location of the alternative compliance project relative to the proposed project. The provision should: <ul style="list-style-type: none"> ○ Allow the alternative project location to be anywhere within the municipal jurisdiction, and for regional projects, anywhere within the countywide-program area; and ○ Allow the timing of projects to be consistent with current legal requirements regarding municipalities' use of development funds.

Table ES-1 Findings, Conclusions and Recommendations for Key C.3 Issues

Key C.3 Issue	Findings / Conclusions	Recommendations
<p>C.3.e. – Special Projects</p> <p><u>Current requirement:</u> Development projects that meet certain location, lot coverage, density and parking criteria (“Special Projects”) may use tree-box-type high flowrate biofilters or vault-based high flowrate media filters in lieu of LID treatment, for a specified proportion of site runoff.</p> <p><u>Current reporting requirement:</u> Track and report potential Special Projects that have submitted planning applications, twice per year, as well as report when the projects receive discretionary approval. Reports must include a narrative discussion of the feasibility or infeasibility of 100% LID treatment, onsite and offsite.</p> <p><u>Issues:</u> Water Board staff has suggested that Permittees should evaluate the feasibility of 100% LID onsite, offsite or at a regional project, payment of in-lieu fees, or a combination of all options before allowing non-LID treatment.</p> <p>Current reporting and feasibility analysis are burdensome and non-productive.</p> <p>Two particular criteria related to ground-level plazas and retail components of residential developments have had unintended consequences and need to be fixed (see recommendations).</p>	<p>Maintaining the Special Project provisions will facilitate environmentally-beneficial smart growth projects and result in runoff from nearly 99% of the total impervious area subject to Provision C.3 being treated with LID measures. Runoff from the remaining 1-2% of impervious area would be treated by higher-rate filtration measures.</p> <p>Prioritization of offsite LID over limited non-LID does not reflect our experience with the difficulties of implementing off-site or regional projects and in-lieu fees, and doesn’t recognize the inherent environmental benefit of Special Projects.</p> <p>The best strategy for maximizing the use of LID on these projects is to craft LID-appropriate permit criteria and conduct educational outreach to the land development community regarding the advantages of bioretention and strategies for incorporating LID in high density projects.</p> <p>Conducting educational outreach to land development professionals is a more productive use of limited municipal resources than continuing to implement the current reporting requirement.</p>	<p>Maintain Special Projects provisions, with the following changes:</p> <ul style="list-style-type: none"> • Allow exclusion of ground-level public plaza areas from the calculation of the 85% coverage requirement, and require public plaza areas to drain to LID facilities. • Allow mixed use projects to use either FAR or residential density criteria to determine Special Projects eligibility and/or allowable LID treatment reduction credits. • Eliminate the requirements to report any potential Special Projects that have submitted planning applications and to submit semi-annual reports on Special Projects, and include reporting of Special Projects with other approved projects in Annual Reports. • Eliminate the requirement to evaluate the feasibility of LID treatment offsite or at a regional project or payment of in-lieu fees. • Encourage Permittees to increase educational outreach to land development professionals on bioretention design and strategies for incorporating LID in high density projects.
<p>C.3.c – Feasibility of Infiltration and Harvesting/Use</p> <p><u>Current requirement:</u> Implement site design strategies that reduce runoff and LID treatment. LID is defined such that a biotreatment (i.e., bioretention) facility may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration.</p> <p><u>Issue:</u> Current permit does not describe how site design measures can be used to reduce the amount of impervious area needing treatment.</p>	<p>Countywide program guidance promotes dividing the project site into Drainage Management Areas (DMAs), identifying “self-treating” and “self-retaining” areas (including impervious areas that drain to self-retaining areas), and identifying remaining impervious areas that require treatment. These concepts have proven essential for translating LID objectives into verifiable and enforceable criteria and have become standard practice. Stormwater program guidance also contains design, installation and maintenance guidance and standards for bioretention and other LID facilities.</p>	<p>Site Design Requirements:</p> <ul style="list-style-type: none"> • Require Regulated Projects to show the site delineated into DMAs, and how self-treating areas and self-retaining areas may be used to reduce the amount of runoff that must be treated. • Require Permittees to adopt and implement design requirements for self-treating and self-retaining areas, including pervious pavements and green roofs. • Allow Permittees to keep site design requirements and specifications in guidance manuals and do not include specific design requirements in the Permit.

Table ES-1 Findings, Conclusions and Recommendations for Key C.3 Issues

Key C.3 Issue	Findings / Conclusions	Recommendations
<p>Current permit contains design specifications (e.g., for biotreatment soil) that cannot be changed.</p> <p>Current permit requires feasibility analysis for harvesting/use, infiltration and evapotranspiration for every project before bioretention, a proven and effective LID treatment measure, can be used.</p>	<p>The application of current LID feasibility/infeasibility criteria has resulted in widespread installation of bioretention facilities that are effectively treating water quality design runoff volumes and are retaining a significant portion of total runoff.</p> <p>The pollutant removal performance of bioretention facilities, overall and on average, is equivalent or better than the likely real-world performance of harvest/use facilities—and as good as the likely performance of infiltration facilities when considered over the long term. There is no water-quality-based justification for preferring infiltration systems or harvest/use, even in the rare cases where such systems are feasible on Bay Area development sites. Bioretention facilities require less maintenance and are less prone to failure than harvest and use facilities, and in some case, are also preferable to direct infiltration facilities.</p>	<p>LID Treatment:</p> <ul style="list-style-type: none"> • Omit the feasibility test and allow bioretention as an equivalent “first tier” option for LID treatment. • Omit the criteria for biotreatment soil media (Attachment L). Generally, for design criteria, state the objectives to be met, and require Permittees to develop and implement criteria, but do not incorporate criteria into the permit. • Continue to include performance criteria for LID treatment in the Permit, and allow Permittees to maintain guidance and standards for bioretention design and construction outside of the permit.
<p>C.3.g. Hydromodification Management</p> <p><u>Current requirement:</u> Hydromodification management (HM) controls must be implemented so that post-project runoff shall not exceed estimated pre-project rates and/or durations, where the increased stormwater discharge rates and/or durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses.</p> <p><u>Issue:</u> Low flow threshold for compliance, “goodness of fit” criteria, exemptions, and acceptable sizing tools vary among Permittees.</p>	<p>The current provision for HM requirements (and associated attachments) represents one of the few sections of the MRP where there are different requirements for each area-wide program. Based on experience implementing this provision, Permittees desire a consistent and more flexible set of requirements that gives project proponents options for cost-effective solutions and better integrates HM and LID approaches.</p>	<ul style="list-style-type: none"> • Eliminate the attachments with separate HM requirements and create one consistent set of requirements for all Permittees, including consistent exemptions, while allowing some variation in low flow thresholds based on stream-specific studies if available. • Allow Permittees to utilize any of the available tools, including the BAHM, IMP sizing factors, and sizing curves, as applicable and calibrated to the particular hydrologic and geologic conditions of the project site. • Allow flexibility in the numerical control standard for HM in order to meet an overarching erosion potential (Ep) management objective. The sizing methodology should be allowed to be based on either a flow duration control standard, an Ep control standard, or a flow duration curve matching criterion that more closely approximates an Ep control standard (to be explored in future studies).

Table ES-1 Findings, Conclusions and Recommendations for Key C.3 Issues

Key C.3 Issue	Findings / Conclusions	Recommendations
<p>C.3.h. – O&M Verification</p> <p><u>Current requirement:</u> Permittees must have a means to make owners of facilities responsible for O&M; have the authority to inspect privately-owned facilities; conduct inspections of privately-owned facilities at a prescribed frequency; conduct O&M and inspections of the facilities they own; and maintain records and submit annual reports.</p> <p><u>Issues:</u> Water Board staff have suggested increasing requirements for O&M and inspections of pervious pavement and other site design features.</p> <p>Number of facilities and inspections is increasing, and reporting is burdensome.</p>	<p>Permittees' O&M verification programs have become institutionalized over the past decade and have been relatively successful. There are no compelling reasons to make major changes to the current O&M verification requirements. However, as the number of facilities that are subject to O&M verification requirements continues to increase each year, all municipalities will need to shift additional resources toward the oversight of thousands of facilities distributed across the urban landscape.</p> <p>Permit requirements need to allow flexibility in the frequency of O&M verification inspections, eliminating unnecessary and nonproductive requirements from within Provision C.3, and promoting the planning, design, and construction of robust and easily inspected facilities.</p>	<ul style="list-style-type: none"> • Eliminate the requirement to annually inspect 20% of the total number of installed stormwater treatment systems and HM controls, but maintain the requirement to inspect facilities at least once every five years. • Allow Permittees options and flexibility to make O&M verification programs more efficient, such as utilizing third party inspectors and allowing responsible property owners to self-certify by submitting self-inspection reports and proof of maintenance. • Pervious pavements should not be required to be tracked and inspected, but Permittees should include them in maintenance agreements and provide educational information on proper maintenance of pervious pavement to the property owner. • Reduce annual reporting requirements for O&M verification programs, but require Permittees to continue to track ownership, status, and inspection history of each facility and maintain detailed records. • Eliminate unnecessary and nonproductive requirements from other sections of Provision C.3 and promote the planning, design, and construction of robust and easily inspected facilities.

Requirements for Architectural Copper

Protect water quality during installation, cleaning, treating, and washing!

Copper from Buildings May Harm Aquatic Life

Copper can harm aquatic life in San Francisco Bay. Water that comes into contact with architectural copper may contribute to impacts, especially during installation, cleaning, treating, or washing. Patination solutions that are used to obtain the desired shade of green or brown typically contain acids. After treatment, when the copper is rinsed to remove these acids, the rinse water is a source of pollutants. Municipalities prohibit discharges to the storm drain of water used in the installation, cleaning, treating and washing of architectural copper.



Building with copper flashing, gutter and drainpipe.

Use Best Management Practices (BMPs)

The following Best Management Practices (BMPs) must be implemented to prevent prohibited discharges to storm drains.

During Installation

- If possible, purchase copper materials that have been pre-patinated at the factory.
- If patination is done on-site, implement one or more of the following BMPs:
 - Discharge the rinse water to landscaping. Ensure that the rinse water does not flow to the street or storm drain. Block off storm drain inlet if needed.
 - Collect rinse water in a tank and pump to the sanitary sewer. Contact your local sanitary sewer agency before discharging to the sanitary sewer.
 - Collect the rinse water in a tank and haul off-site for proper disposal.
- Consider coating the copper materials with an impervious coating that prevents further corrosion and runoff. This will also maintain the desired color for a longer time, requiring less maintenance.



Storm drain inlet is blocked to prevent prohibited discharge. The water must be pumped and disposed of properly.

During Maintenance

Implement the following BMPs during routine maintenance activities, such as power washing the roof, re-patination or re-application of impervious coating:

- Block storm drain inlets as needed to prevent runoff from entering storm drains.
- Discharge the wash water to landscaping or to the sanitary sewer (with permission from the local sanitary sewer agency). If this is not an option, haul the wash water off-site for proper disposal.

Protect the Bay/Ocean and yourself!

If you are responsible for a discharge to the storm drain of non-stormwater generated by installing, cleaning, treating or washing copper architectural features, you are in violation of the municipal stormwater ordinance and may be subject to a fine.



Photo credit: Don Edwards National Wildlife Sanctuary

Contact Information

The San Mateo Countywide Water Pollution Prevention Program lists municipal stormwater contacts at www.flowstobay.org (click on “Business”, then “New Development”, then “local permitting agency”).

Ace Roofing Company
863 Warrington Avenue
Redwood City, CA 94063

Baker Roofing Services
153 Central Avenue
Redwood, CA 94063

Del Rio Roofing Co.
2260 Bay Road
Redwood City, CA 94063

ABC Roofing Inc.
400 Walnut Street
Redwood City, CA 94063

Brown's Roofing Inc.
205 De Anza Blvd., Suite 227
San Mateo, CA 94402

Ridout Roofing Company
1326 Madera Avenue
Menlo Park, CA 94025

AC Seigart Construction
1030 Terminal Way
San Carlos, CA 94070

Responsible Roofing Co.
2882 Spring Street
Redwood City, CA 94063

Fellman Michael Siding Roofing
106 Bismark Street
Daly City, CA 94014

Major Roofing Inc.
123 Skyline Drive
Daly City, CA 94015

Shaughnessy Roofing Inc.
1280 Hillside Blvd.
Daly City, CA 94014

Alpha Roofing Co.
3017 Middlefield Road
Redwood City, CA 94063

A & B Roofing, Inc.
3570 Haven Avenue
Redwood City, CA 94063

Peterson & Jenkins Roofing
861 Warrington Avenue
Redwood City, CA 94063

Grove Roofing & Construction
865 Sweeney Avenue
Redwood City, CA 94063

Falcon Roofing
990 Terra Bella Avenue
Mountain View, CA 94043

Eppler Roofing Company
1713 Roosevelt Avenue
Redwood City, CA 94061

Rainbow Roofing
1205 Valota Road
Redwood City, CA 94061

Aire Sheet Metal, Inc.
1973 East Bayshore Road
Redwood City, CA 94063

Bay Cities Roofing
1900 S. Norfolk Street, Ste 350
San Francisco, CA 94403

Dan McCarthy Roofing
2013 Brewster Avenue
Redwood City, CA 94062

Jose Ramirez Roofing
2725 Northside Avenue
Redwood City, CA 94063

Guys Roofing, Inc.
3620 Haven Avenue
Redwood City, CA 94063

Mather Roofing Company
412 Hurlingame Avenue
Redwood City, CA 94063

Golden Roofing C.
828 Willow Street
Redwood City, CA 94063

Limey Roofing
342 San Carlos Avenue
Redwood City, CA 94061

Specialized Roofing
547 Jackson Avenue
Redwood City, CA 94061

Jaac Roofing
1405 Marshall Street
Redwood City, CA 94063

AP Brothers Roofing
506 Quartz Street
Redwood City, CA 94062

Grove Construction Co.
865 Sweeney Avenue
Redwood City, CA 94063

McDaniel Metals
202 Canoe Court
Redwood City, CA 94065

IMR Roofing
20 Greenwood Lane
Redwood City, CA 94063

Joseph Tapia Roofing
3008 Page Street
Redwood City, CA 94063

EM Roofing
843 7th Avenue
Redwood City, CA 94063

R&J Roofing
1855 Woodside Road
Redwood City, CA 94061

Ace Roofing Company
863 Warrington Avenue
Redwood City, CA 94063

Kent M Lim and Company
170 Alameda
Redwood City, CA 94062

Azteca De Oro, Inc.
3008 Page Street
Redwood City, CA 94063

Foitzik Roofing
312 E. Oakwood Blvd.
Redwood City, CA 94061

Barriga Roofing
3609 Florence Street
Redwood City, CA 94063

Caruzo's Roofing Contractors
3609 Florence Street
Redwood City, CA 94063

Draft Plant List and Planting Guidance for Landscape-Based Stormwater Measures

TREES		DESCRIPTION					PLANTING & MAINTENANCE					LANDSCAPE INTEREST/USES	TREATMENT TYPES		
Scientific Name	Common Name	Evergreen (E) or Deciduous (D)	Height (Feet)	Spread (Feet)	Shape: Round (R), Pyramidal (P), Broad (B), Oval (O), Upright (U)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs: Low (L), Moderate (M)	CA Native		Bioretention Planter	Flow-Through Planter	Tree Well Filter	
<i>Acer circinatum</i>	vine maple	D	15	15-20	R	f	M	PS	M	●	Understory small tree from Pacific NW, avoid direct hot sun, orange-red fall color; adaptable to clay, rocky soils; tolerates moisture, drought tolerant when established.	●	●	●	
<i>Acer macrophyllum</i>	big leaf maple	D	40 to 80	30 to 50	B	F	M	FS to PS	M	●	Striking fast growing native maple with bright yellow fall color.	●			
<i>Arbutus 'Marina'</i>	strawberry tree	E	20	15	R	M	L	FS to PS	M	●	Red-brown trunks and large branches of mature trees become twisted and gnarled in appearance; can be messy. Clay-tolerant; acid to neutral soil.	●	●	●	
<i>SPreading</i>	fastigate European hornbeam	D	30 - 40	20 - 30	U	S-M	M	FS to PS	L		Upright, dense form; long lived. Tolerates moisture in well-drained soils.	●			
<i>Celtis reticulata</i>	western hackberry	D	30-60	30-60	R	M	L	FS to PS	L	●	Spreading tree canopy. Tolerates poor soils.	●			
<i>Cercis canadensis</i>	eastern redbud	D	25-35	25-35	R	F	L-M	FS to PS	L		Wine red winter bloom; glossy, heat resistant leaves; short lived	●	●	●	
<i>Cercis occidentalis</i>	western redbud	D	10-18	10-18	R	S	L	FS	M	●	Use multi-trunk where possible; short lived. Clay-tolerant.	●	●	●	
<i>Eriobotrya deflexa</i>	bronze loquat	E	20	20	R	M	M	FS	M		Small, compact evergreen tree. Fruit producing.	●	●	●	

<i>Fraxinus angustifolia oxycarpa</i> 'Raywood'	raywood ash	D	20	20	O	F	M	FS	M		Fine-textured foliage turns bronze-red in fall. Requires careful pruning to reduce breakage from acute branch attachment.	●	●	●
<i>Geijera parviflora</i>	australian willow	E	40	30	O	S	M	FS to PS	L		Low, early pruning; train prune longer due to slow growth; long lived. Clay-tolerant.	●		
<i>Ginkgo biloba</i> 'Autumn Gold'	autumn gold maidenhair tree	D	40	30	O	S	M	FS to PS	L		Low, early pruning; train prune longer due to slow growth; long lived. Clay-tolerant. Prefers moist, well-drained soils. Golden fall color.	●		
<i>Ginkgo biloba</i> 'Fairmount'	fairmount maidenhair tree	D	50	20	P	F	M	FS to PS	L		Faster growing than other Ginkgos; erect pyramidal form; long lived. Clay-tolerant. Prefers moist, well-drained soils. Golden fall color.	●		
<i>Ginkgo biloba</i> 'Fastigiata'	columnar ginkgo	D	30-50	10-15	U	S	M	FS to PS	L		Columnar. Clay-tolerant. Prefers moist, well-drained soils. Golden fall color.	●		
<i>Ginkgo biloba</i> 'Magyar'	Magyar ginkgo	D	50	15	U	M	M	FS to PS	L		Clay-tolerant. Prefers moist, well-drained soils. Golden fall color. Tol. urban conditions.	●		
<i>Ginkgo biloba</i> 'Princeton Sentry'	Princeton Sentry maidenhair tree	D	40	15	P	S	M	FS to PS	L		Erect, pyramidal form; long lived. Clay tolerant. Prefers moist, well-drained soils. Heat tolerant. Golden yellow fall color.	●		
<i>Grevillea robusta</i>	silk oak	E	40-70	25-35	U	F	L-M	FS	L		Orange bottle brush-like blooms in spring prodcue nectar for birds. Leaf litter can be problematic.	●		
<i>Koelreuteria bipinnata</i>	Chinese flame tree	D	30	30	R	M	M	FS	L		Summer orange, red, or salmon bloom. Clay-tolerant.	●		
<i>Koelreuteria paniculata</i> 'Fastigiata'	goldenrain tree	D	20-25	20-25	R	S	M	FS	L		Yellow bloom; upright habit. Adaptable.	●		
<i>Lagerstroemia indica</i> (cultivars)	crape myrtle	D	15-25	8 to 15	R	S	L	FS	M		Attractive peeling cinnamon bark, excellent winter feature; spec cultivars: 'Muskogee', 'Natchez', 'Osage', 'Tuscarora'. Tolerates most soils; well-drained.	●		

<i>Laurus nobilis 'Saratoga'</i>	Saratoga bay laurel	E	12-40	12-40	O	S	L	FS to PS	L		Tolerates many soils and climate conditions. Prefers moist, fast-draining soils.	●	●	●
<i>Platanus racemosa</i>	California sycamore	D	30-80	20-50	B	M	M	FS	L	●	Use sparingly; protected species, which creates pruning challenges; heavy seasonal pollen droppings; high VOC absorption/ CO2 sequestration; long lived. Well-drained soils.	●		
<i>Platanus x acerifolia 'Bloodgood'</i>	Bloodgood London plane tree	D	70-100	60	B	M/F	L/M	FS	M		Withstands high pH, and pollution and grime of cities. Prefers deep, rich, moist, well-drained soils.	●		
<i>Platanus x acerifolia 'Liberty'</i>	Liberty London plane tree	D	70-100	70	B	M/F	L-M	FS	M		Allergy concern; long lived; mildew resistant. Tolerates most soils.	●		
<i>Platanus x acerifolia 'Yarwood'</i>	Yarwood London plane tree	D	40-80	30-40	B	M/F	L-M	FS	M		Allergy concern; long lived; mildew resistant; 'Yarwood' foliage holds up better than most plane trees in late summer; yellow fall color. Tolerates most soils.	●		
<i>Platanus x acerifolia 'Columbia'</i>	Columbia London plane tree	D	45	40		M-F	L-M	FS	M		Allergy concern; long lived. Tolerates most soils.	●		
<i>Prunus x blireiana</i>	purple-leafed plum	D	25	20	R	M	M	FS	L		Reddish-purple leaves; produces little/no fruit; use as an accent tree. Tolerates most soils.	●	●	●
<i>Prunus ilicifolia</i>	holleyleaf cherry	E	15	15	O	M	L	FS	L	●	Skinny branches with large leaves and cherry looking fruit; can be trained into a small tree. Adaptable to most soils.	●	●	●
<i>Prunus ilicifolia spp. Lyonii</i>	Catalina cherry laurel	E	10	15	O	M	L	FS	L	●	Shiny green leaves with small white flowers. Adaptable to most soils.	●	●	●
<i>Quercus agrifolia</i>	coast live oak	E	20-70	70	O	M	VL	FS	L	●	Long-lived; attractive bark; attracts birds and butterflies; deer resistant; drought resilient. Prefers a deep loam. Use only where sufficient room for roots.	●		
<i>Quercus coccinea</i>	scarlet oak	D	70-80	40-50	R	M	L/M	FS	L		Foliage is a glossy green in summer turning to scarlet in fall.	●		

<i>Quercus ilex</i>	holly oak	E	30-60	30-60	R	S	L	FS	L		Tolerates water. Adaptable.	●		
<i>Quercus suber</i>	cork oak	E	40-70	35-40	R	M	L	FS	L		High VOC absorption and CO2 sequestration; long lived; ornamental cork bark. Acidic, dry to medium, well-drained loams.	●		
<i>Quercus wislizenii</i>	interior live oak	E	25-40	25-40	O	F	VL	FS	L	●	Attractive bark; attractive birds and butterflies; deer resistant; very tough, adaptable tree. Dry, well-drained, loams, clay and gravelly loams.	●		
<i>Robina x ambigua 'Purple Robe'</i>	purple robe locust	D	30-35	20-25	O	F	L	FS	M		Purplish bronze new foliage, showy violet purple flowers. Tolerate poor soils, heat, low water when established.	●		
<i>Tristania laurina 'Elegant'</i>	Elegant Water Gum	E	45	35		S					Profuse fragrant yellow flowers April-June. Tolerates damp well-drained soils, drought tolerant, cold tolerant to 28 degrees.	●		●

SHRUBS

Scientific Name	Common Name	DESCRIPTION					PLANTING & MAINTENANCE				LANDSCAPE INTEREST/USES	PLANTING ZONES			TREATMENT TYPES		
		Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native		Ponding Area	Banks	Upland	Bioretention	Flow-Through Planter	Tree Well Filter
<i>Anigozanthus spp.</i>	kangaroo paw	red, purple, green, yellow	to 6	to 3	U	F	L	FS	L		Attracts hummingbirds. Well-drained soils.		●	●	●	●	
<i>Arctostaphylos densiflora 'McMinn'</i>	mazanita 'McMinn'	white	5-6	7	M	M	L	FS to PS	L	●	Fine textured bright green foliage and red bark. Well-drained soils.		●	●	●	●	
<i>Arctostaphylos hookeri</i>	Hooker's manzanita	white	2-8	3-12	S	M	L	FS to PS	L	●	Fine textured bright green foliage and red bark. Well-drained soils.		●	●	●	●	
<i>Callistemon viminalis 'Little John'</i>	dwarf bottlebrush	blood red	3-4	4-8	R	M	L/M	FS	L		Can be pruned up to small trees; heat tolerant. Clay tolerant.		●	●	●	●	
<i>Cistus spp.</i>	rockrose	varies	varies 3-5 x 3-5		R	L	L	FS	M		neat, compact shrub with showy white, pink or rose-purple blooms. Adaptable.		●	●	●	●	
<i>Cornus sericea</i>	red twig dogwood	white	6-9	8-12	R	F	L/M	FS to PS	M	●	Deciduous shrub w/showy red stems in winter. Fragrant white flowers in Spring. Tolerates clay, moist well-drained soils. Erosion control plant.	●	●		●	●	
<i>Cotinus coggygria</i>	smoke tree	purple	12-15	up to 25	U	M	L	FS	L		Deciduous small tree/large shrub; flowers form smoke-like look around the plant; slow growing. Well-drained soils. Cold and heat tolerant.		●	●	●	●	●

<i>Garrya elliptica</i>	silk tassel	white	10-20	10-20	R	M	L	FS to PS	L	●	Interesting flowers hang in tassels; large shrub/small tree. Well-drained soil.		●	●	●	●	●	
<i>Gaura lindheimeri</i>	gaura	white	2.5-4	2-3	U	M	L/M	FS	L		Delicate wispy form, with white flowers from pink buds; long-lived; deep taproot makes it drought tolerant.		●	●	●	●		
<i>Grevillea spp.</i>	grevillea	varies					M	L	FS to PS	L		Very heat tolerant; attracts hummingbirds. Tolerant of poor soils.		●	●	●	●	
<i>Heteromeles arbutifolia</i>	toyon	white	6-15	15-20	R	F	VL	PS	M	●	Large shrub/small tree; red berries; green leaves with white flowers and red "berry" like flowers; sharp blades; takes pruning well, but flowers only on second year growth. Adaptable.		●	●	●	●	●	
<i>Mahonia aquifolium 'Compacta'</i>	Oregon grape	yellow	1.5-2	3-4	S	S	L	FS to PS	L	●	Yellow flowers in spring. Berries attract birds. Well-drained soil.		●	●	●	●	●	
<i>Mahonia aquifolium var. repens</i>	creeping barberry	yellow	2-3	3-4	S	S	L	FS to PS	L	●	Yellow flowers in spring. Berries attract birds. Well-drained soil.		●	●	●	●	●	
<i>Mahonia nevinii</i>	nevin mahonia	yellow	6-10	6-12	U	M	L	FS to PS	L	●	Rigid branches covered with gray-blue foliage. Adaptable; tolerates clay and alkaline		●	●	●	●		
<i>Mahonia pinnata</i>	California holly grape	yellow	4-5	4-5	U	M	L	FS to PS	L	●	Reddish orange new growth.		●	●	●	●		
<i>Rhamnus californica 'Little Sur'</i>	coffeeberry	inconspicuous	3-4	3-4	R	M	L/M	FS to PS	M	●	Grey-green leaves, red bark, and showy berries in fall. Adaptable.			●	●	●		
<i>Ribes sanguineum (incl cultivars)</i>	red-flowering currant	pink	6	6	U	F	L	PS	M	●	Red-pink showy flower clusters. Adaptable.		●	●	●	●		
<i>Symphoricarpos albus</i>	snowberry	white	6	8	S	M	L/M	PS	M	●	Large white berries in the fall; berries are not edible. Adaptable.		●	●	●	●		

GRASSES

		DESCRIPTION					PLANTING & MAINTENANCE				LANDSCAPE INTEREST/USES	PLANTING ZONES			TREATMENT TYPES			
Scientific Name	Common Name	Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native		Ponding Area	Banks	Upland	Bioretention	Flow-Through Planter	Tree Well Filter	Green Roof
<i>Aristida purpurea</i>	purple three-awn	white	2-3	2	U	F	VL	FS	L	●	Purple seed heads that wave gracefully in the wind; recommended for erosion control on slopes, hillsides, and in canyons. Well-drained soil.	●	●	●	●	●	●	
<i>Bouteloua gracilis 'Blonde Ambition'</i>	Blonde Ambition blue grama	creamy white	1.5-2	1	M	M	L	FS	L	●	Can be mowed to 1.5 high but best as a meadow; can be grown from seed; no irrigation needed once established. Well-draining.	●	●	●	●	●	●	
<i>Calamagrostis x acutiflora 'Karl Foerster'</i>	feather reed grass	light tan	2-3	2-3	U	F	L	PS	L	●	Background plant. Well-draining.			●	●			
<i>Carex barbarae</i>	Santa Barbara sedge		1-3	1	S	M	L	FS	L		Rich green leaves; good for erosion control; little or no summer water. Tolerates damp soil.	●	●	●	●	●		
<i>Carex divulsa (C. tumulicola)</i>	Berkeley sedge		2	2	U	F	L	FS to PS	L	●	Greenish flowers age to brown in winter and spring. Clay-tolerant; tolerates damp, well-drained soil.	●	●	●	●	●		
<i>Carex pansa</i>	dune sedge		1	1	M	F	L	FS to PS	L	●	Creeping meadow sedge, good on slopes. Tolerates variety of soil and climate conditions.	●	●	●	●	●		
<i>Chondropetalum elephantinum</i>	large cape rush	brown	3-5	4-6	U	M	Low/Mod	PS	L		Tolerates wet well-draining soils and drought. Large striking upright form.	●	●	●	●	●		

<i>Chondropetalum tectorum</i>	small cape rush	brown	2-3	3-4	U	M	L	FS	L		Small, unique plant forms broad clumps of thin erect jointed stems; evergreen; good for erosion control. Accepts both dry and wet conditions	●	●	●	●	●		
<i>Deschampsia caespitosa</i>	tufted hairgrass	creamy white	1-2	2 (flr stalk to 3')	U	M	L	FS to PS	L	●	green to greenish gold, turning straw color in the winter; they generally maintain good color through the summer, but won't grow much when it is hot. tolerates most soils		●	●	●	●		
<i>Deschampsia caespitosa ssp. Holciformis</i>	Pacific hairgrass		1-2	2	U	M	L	FS to PS	L	●	dense dark green foliage; good choice for erosion control near constant moisture such as marsh, vernal pool or seeps. tolerates most soils		●	●	●	●		
<i>Festuca californica</i>	California fescue		2	2	U	M	L	FS to PS	L	●	Cool season bunchgrass with flower stalks that reach 5 ft. tall and create fountain-like clumps. Beneficial insect plant.		●	●	●	●		
<i>Festuca glauca</i> 'Elijah Blue'	blue fescue		>1	>1	R	F	L	PS	L		Forms clumps of silver-blue leaves; long lived; use as edging. well-drained		●	●	●	●		
<i>Festuca idahoensis</i>	blue bunchgrass		1	1	R	F	L	FS to PS	L		Well-drained		●	●	●	●	●	
<i>Helictotrichon sempervirens</i>	blue oat grass	light blue	1-2	1-2	U	M	L	PS	L		Attractive symmetrical form and blue color with straw-colored flower. well-drained		●	●	●	●		
<i>Juncus patens</i>	Californis grey rush	brown	2	1	U	M	L	FS to PS	L	●	Accepts both dry and wet conditions	●	●	●	●	●		
<i>Muhlenbergia rigens</i>	deer grass	yellow	4	4-6	R	M	L	FS	L	●	Clean, dependable form; very rugged. Adaptable.		●	●	●	●		
<i>Muhlenbergia capillaris</i>	pink muhly grass	pink	4	3-4	R	M	L	PS	L		Showy pink panicles in late summer. well-drained		●	●	●	●		
<i>Sisyrinchium bellum</i>	blue-eyed grass	blue, yellow	1-1.5	0.5	U	F	VL/L	FS to PS	L	●	Dies back in summer; use as a small accent plant; long green leaves with blue and purple flowers with yellow center; goes dormant in summer. Adaptable		●	●	●	●		●
<i>Stipa arundinacea</i>	New Zealand Wind Grass	NA	3	3	M	F	M*	S to FS	L		Arching olive, amber & gold foliage; cut to 12" in winter. *Some sources state low water req'mt. adaptable.	●	●	●	●	●		
<i>Stipa pulchra</i>	purple needlegrass		4-6	4-6	U	F	L	FS	L		Long-lived native bunch grass. Adaptable.	●	●	●	●	●		

GROUNDCOVERS & TURF ALTERNATIVES

Scientific Name	Common Name	DESCRIPTION				PLANTING & MAINTENANCE				LANDSCAPE INTEREST/USES	PLANTING ZONES			TREATMENT TYPES				
		Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs		CA Native	Ponding Area	Banks	Upland	Bioretention	Flow-Through Planter	Tree Well Filter	Green Roof
GROUNDCOVERS																		
<i>Arctostaphylos 'Emerald Carpet'</i>	Emerald Carpet manzanita	white	1-1.5	3-6	S	M	L	FS	L	●	Neat, green, spreader. Adaptable, prefers well-drained		●	●	●	●		
<i>Arctostaphylos uva-ursi</i>	bearberry, kinnikinnick	blood red	3-12	4-9	S	M	Low	FS	L	●	Set out plants 2' apart for solid cover. Clay-tolerant.		●	●	●	●		
<i>Baccharis pilularis 'Twin Peaks'</i>	dwarf coyote brush	white	1-2	6-10	S	F	L/M	FS	M	●	Small dark green leaves; excellent for erosion control; very important shrub for wildlife. Tolerates most soils.		●	●	●	●		
<i>Fragaria chiloensis</i>	beach strawberry	white	6-12"	1-2'	S	F	M	FS to PS	L	●	Spreading groundcover, prefers light, well-drained soils and moisture, partial shade in hotter climates. Flowers in spring folowed by edible fruit.		●	●	●	●	●	
<i>Fragaria vesca</i>	mountain strawberry; woodland strawberry	white	6-12"	1-2'	S	F	M	FS to PS	L	●	Similar to F. chiloensis with smaller leaves and tiny edible and tasty fruit.		●	●	●	●	●	
<i>Grindelia stricta platyphylla</i>	Coastal Gum Plant	yellow	6"	3'	S	M	L	FS	L	●	2" blooms from May thru Fall. Clay, sand & salt tolerant.		●	●	●	●		
<i>Mahonia repens</i>	creeping Oregon grape	yellow	2.5'	3-5'	S	M	L/M	FS to PS	M	●	Fall color; Well-draining soil.		●	●	●	●		

<i>Salvia sonomensis</i>	creeping sage	purple	2	6-8	S	M	L	FS	M	●	Nice mounding and spreading groundcover with purple/blue flowers; fragrant leaves, especially in summer. Adaptable.		●	●	●	●	●	●
<i>Verbena peruviana</i>	Peruvian verbena	scarlet, white	>1	2-3	S	M	L	FS	M		Set out plants 2' apart for solid cover; offers super vibrant red flowers with small white centers. Well-drained; adaptable.		●	●	●	●		
TURF ALTERNATIVES																		
<i>Bouteloua gracilis</i>	blue gramma grass		1.5-2	1	S	F	L	FS	L	●	irrigate to 1ft to establish; after established needs no irrigation; nice as border planting; okay to mow down to 1.5in		●	●	●	●	●	●
<i>Buchloe dactyloides</i>	buffalograss		<1	<1	S	F	VL	FS	L		requires little or no mowing; grows to 4" tall; start from sod or plugs. Adaptable to soil types.		●	●	●	●		●
<i>Festuca rubra 'molate'</i>	molate fescue		1	-	S	F	M/L	FS/ PS	M		Prefers part shade, regular water in hot areas, lawn alternative				●	●	●	●
<i>Dymondia margaretae</i>	dymondia, silver carpet	yellow	1-3"	1-2'	S	M	M/L	FS	L		Tight ground-hugging groundcover good as turf substitute in small areas. Tolerates heat, sun and cold to 28 degrees.		●	●	●	●		●
NA	Biofiltration Sod		<1	<1	S	F	M	FS	L		Tolerates periodic inundation	●			●	●		
NA	Native, no-mow sod		<1	<1	S	S	M/L	FS/PS	L	●	Slow growing, narrow leafed grass with blades that are very lax and flexuous. Provides soil stabilization for sloped areas. Can be mowed as turf lawn, or left unmowed.		●	●	●	●	●	●

PERENNIALS

Scientific Name		Common Name		DESCRIPTION			PLANTING & MAINTENANCE				LANDSCAPE INTEREST/USES	PLANTING ZONES			TREATMENT TYPES				
				Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U) - Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)		Maintenance Needs	CA Native	Ponding Area	Banks	Upland	Bioretention	Flow-Through Planter	Tree Well Filter
<i>Achillea millefolium</i>	common yarrow	white	3	2	U	F	L	FS	L	●	Erect plant with narrow green stems and wide white flowers - easy, full sun near bay, part shade inland; attracts beneficial insects. tolerates most soils		●	●	●	●		●	
<i>Achillea filipendulina</i>	fern-leaf yarrow	golden	3-4	2-3	U	M	L	FS	M		Deeply-dissected, fern-like, aromatic, grayish-green to green foliage and its tiny, long-lasting, bright golden flowers. Tolerates most soils.		●	●	●	●		●	
<i>Armeria maritima</i>	sea pink	pink	1	1	M	S	L-M	FS	L		Only in zones 16-17; not for hot interior landscapes		●	●	●	●		●	
<i>Coreopsis grandiflora</i>	coreopsis	purple-blue	1.5-2.5	2-3	S	M	L	FS	L		Daisy-like single flowers feature deep yellow rays (notched at the tips) surrounding a darker golden yellow center disk. Tolerates most soils.		●	●	●	●		●	
<i>Dietes iridioides</i>	fortnight lily	pale yellow; light blue; white	up to 3	1-1.5	U	M	L	FS	L		Use as accent or massing, orchid-like flowers. Clay-tolerant.		●	●	●	●			
<i>Echeveria spp.</i>	hens and chicks	pink	varies			M	L/VL	FS	L		Succulent; use in small areas; colorful foliage - variety of species and textures. Prefer light well-drained soil w/some moisture spring/summer.		●	●	●	●			
<i>Epilobium bowman</i>	Bowman California fuchsia	orange	varies	1.5-3	S	F	L	FS	L	●	Gray foliage; showy summer flowers; height varies by cultivar		●	●	●	●			
<i>Epilobium canum</i>	California fuchsia	orange-red	varies	1.5-3	S	F	L	FS	L	●	Gray foliage; showy summer flowers; height varies by cultivar		●	●	●	●			
<i>Erigeron glaucus 'Wayne Roderick'</i>	Wayne Roderick daisy	lavender	1	3	M	M	M	FS to PS	L	●	Blooms spring thru fall. Well-drained soil.		●	●	●	●			
<i>Erigeron karvinskianus</i>	Santa Barbara daisy	white with pink tinge	10-18"	2-3'	M	F	L-M	FS to PS	L	●	Small daisy-like flowers, feathery texture. Well-drained soil.		●	●	●	●			
<i>Eriogonum grande var. rubescens</i>	red-flowered buckwheat	rosy red	1-2'	1-2'	S	F	L	FS to PS	L	●	Flowers spring-summer atop slender stems, attracts beneficial insects. Tolerates most soils.		●	●	●	●		●	

<i>Eriogonum latifolium</i>	coast buckwheat	pink, white	6	6	S	F	Low	FS	Low	●	Creamy white pom-poms rise above dark green, spoon-shaped leaves in the summer; good in containers. Tolerates most soils.		●	●	●	●	●	●
<i>Eschscholzia californica</i>	California poppy	orange	1.5	1.5-2	S	F	VL	FS	L	●	Reseeds easily; summer dormant. Well-drained soils.		●	●	●	●	●	●
<i>Gaillardia grandiflora</i>	blanket flower	varies	2-3	1-2	U	M	L	FS	L		Daisy-like flowers, usually yellow to orange to red rays with maroon to orange banding at the petal bases and dark burgundy center disks. Well-drained soils.		●	●	●	●	●	●
<i>Heuchera maxima</i>	island alum root	white, pink	1-2	3-4	S	M	L	PS	L	●	Needs shade; good edging plant. Clay-tolerant.		●	●	●	●	●	●
<i>Iris douglasiana</i>	Douglas iris	varies	1.5	1.5	S	M	L	PS	L	●	Well-drained soil.		●	●	●	●	●	●
<i>Mimulus aurantiacus</i>	sticky monkey flower	varies	3-4	3-4	M	M	L	FS to PS	L	●	Well adapted to heat, sun, summer drought. Well-drained soils.		●	●	●	●	●	●
<i>Mimulus aurantiacus var. puniceus</i>	red monkey flower	red	3-4	3-4	M	M	L	FS to PS	L	●	Well-drained soil.		●	●	●	●	●	●
<i>Monardella villosa</i>	coyote mint	light purple	2	2	M	F	VL	FS to PS	L	●	Attracts butterflies, including Monarchs, Tiger Swallowtails Well-drained soil.		●	●	●	●	●	●
<i>Penstemon heterophyllus 'Blue Springs'</i>	foothill penstemon	Iridescent blue-purple	1-2	2	M	F	L	FS	M	●	Very tough plant. Tolerates full sun, heat, most soils. Flowers attract butterflies, bees, hummingbirds.		●	●	●	●	●	●
<i>Sedum sp. (many)</i>	stone crop	varies	varies		S	M	L	FS	L		Varied succulent species. Prefer well-drained soils. Many heat adapted and thrive in dry gardens, green roofs.		●	●	●	●	●	●
<i>Tulbaghia violacea</i>	society garlic	pink	2	1	M	F	L	FS	L		Very dependable grass-like plant with pink flower atop 2' stalks. Distinctive garlic odor. Tolerates most soils.		●	●	●	●	●	●
<i>Verbena lilacina</i>	de la mina lilac	purple	3	3	S	M	L	S to PS	L		Low, mounding perennial, attracts bees and butterflies.		●	●	●	●	●	●



Appendix 4

- CII Subcommittee – Attendance List– FY 2014-15

Commercial, Industrial and Illicit Discharge (CII) Subcommittee Meetings – FY 2014/15

Name	Agency	Sept. 17th	Dec. 17th	March 18th	June 17th
Bozhena Palatnik	City of Belmont	✓			
John Tallitsch	City of Belmont			✓	
Pam Boyle Rodriguez	City of Burlingame			✓	
Kiley Kinnon	City of Burlingame			✓	
Louis Gotelli	City of Colma			✓	
Ward Donnelly	City of Daly City	✓	✓	✓	✓
Larry Carnahan	City of Half Moon Bay	✓			
Virginia Parks	City of Menlo Park	✓	✓		✓
Megha Bansal	City of Menlo Park				✓
Azalea Mitch	City of Menlo Park				✓
Ebby Sohrobi	City of Menlo Park	✓			
Kevin Cesar	City of Millbrae	✓		✓	✓
Raymund Donguines	City of Pacifica	✓	✓	✓	
Adrian Lee	City of Redwood City	✓	✓	✓	✓
Mark Swenson	City of San Mateo	✓	✓	✓	
Sven Edlund	City of San Mateo			✓	✓
Kian Atkinson	City of San Mateo	✓	✓		
Andy Wemmer	South San Francisco		✓	✓	
Pat Ledesma	County of San Mateo	✓	✓	✓	✓
Susan Hiestand	Silicon Valley Clean Water (SVCW)		✓		✓
Kristin Kerr	EOA, Inc.	✓	✓	✓	✓
Joanne Janin	County of San Mateo	✓			



Appendix 6

- CalBig Meeting: Construction Site Stormwater Compliance – October 8, 2014
 - Announcement Flyer
 - Agenda
 - Attendance list
- Stormwater Training for Construction Site Inspectors – May 5, 2015
 - Announcement Flyer
 - Agenda
 - Attendance list
 - Summary of workshop evaluations



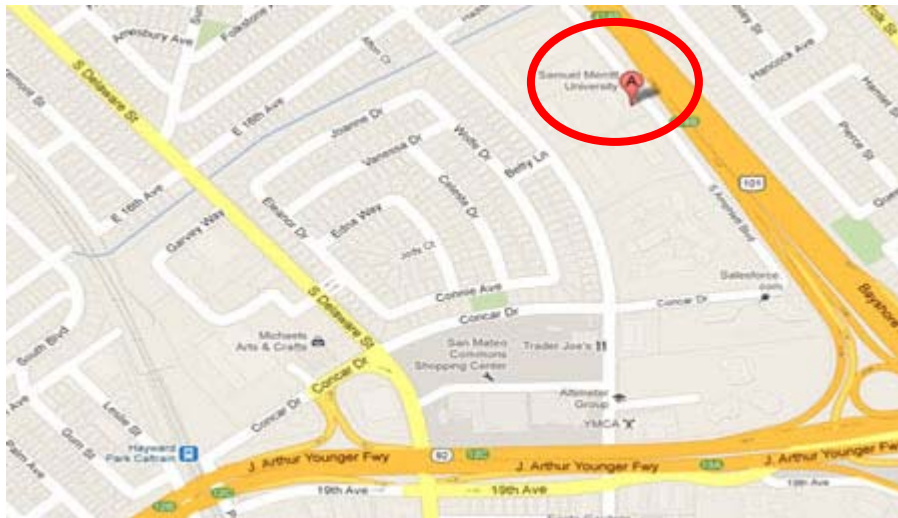
CALBIG MEETING ANNOUNCEMENT

Stormwater Requirements for Construction Sites

(See Below)

This month's CALBIG meeting will be held on Wednesday, October 8, 2014 from 11:30am to 1pm at CSG's offices, 1700 S. Amphlett, Blvd, 3rd flr, San Mateo.

For directions, see map below.



Directions: Take US 101 to Hwy 92 West. Exit Hwy 92 at Delaware. Turn right to Concar Dr. and follow it to S. Amphlett (which fronts Hwy 101). There is ample parking at 1700 S. Amphlett.

Fee: A fee of \$20 per attendee will be taken at the door. We accept cash or check. All checks are to be made out to CALBIG.

Lunch: A catered lunch will be provided.



Speakers: Kristin Kerr (PE)
EOA, Inc.

Topic 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 SMCWPPP resources.

CSG Consultants
1700 S. Amphlett Blvd, 3rd Floor
San Mateo, CA
October 8, 2014

Agenda

Registration/Seating	11:30 - 11:45
Dan Mauldin, President - Welcome and Pledge of Allegiance	11:45 - 11:46
Old Business	11:46 - 11:52
New Business - Upcoming educational opportunities	11:52 - 12:00
Keynote Speakers - Kristin Kerr	12:00 - 1:00
Dan Mauldin, President - Closing	1:00

Please RSVP to Michael Gorman (mgorman@smcgov.org) by Monday, October 6th. Out of consideration for the catering order, we need an accurate head count.

Thank you !

★ Attendance - October 8, 2014 ★

First	Last	City or Business	Email	Initial	Paid
Muneev	Ahmed	Town of Colma			
Brad	Andersen	Andersen Associates			
Dawn	Anderson	As It Stands			
Timothy	Anderson	City of Hillsborough ✓		✓	TA
Kathy	Anderson	City of Atherton			
Greg	Anderson	City of Los Altos			
Les	Arias	City of Redwood City			
Darcy	Axiaq	City of Burlingame			
Charlie	Blanchard	City of San Mateo			
Vince	Badillo	V.B. Electric			
Kirk	Ballard	City of Los Altos			
Don	Bartlett	City of Foster City			
Rick	Bellew	City of Redwood City			
Tanya	Benedik	City of Millbrae			
Gordon	Blancher	City of Sunnyvale			
Paul	Bosman	City of Los Altos			
Roy	Bronold	City of San Bruno			
Larry	Brugger	International Code Council			
Kirk	Buckman	City of Belmont			
Andrew	Burke	Town of Atherton			
Rini K.	Bunje	City of Menlo Park			
Patrick J.	Burger	Archit & Inspection Svcs			
James	Caccia	Caccia Plumbing Inc			
Geno	Caccia	Caccia Plumbing Inc			
Henry	Calilong	Bay Area Builders			
Benjamin	Campbell	County of San Mateo			
Rigoberto	Caro	City of San Mateo			
Marco	Cavelieri	City of Burlingame			
Allen	Chan	County of San Mateo			
Stephen	Chan	County of San Mateo			
Gerald	Chapman	County of San Mateo			
Jason	Chen	Town of Woodside			
Nena	Chung	City of Mountain View			
Michael	Clarke	CSG Consultants, Inc. ✓	MichaelC@csgeast.com	MC	20
Martin	Cooper	City of Foster City			
Paul	Cowan	City of South San Francisco			
Fred	Cullum	4LEAF, Inc.			
Michael	Cully	City of Colma ✓	Michael.Cully	✓	MC
Joseph	Cyr	City of Burlingame			
Bob	Davies	Pen Buiders Exchange			
Connie	Davies	City of Burlingame			

June	De Castro	One Energy Solution		
Jay	de Wolf	de Wolf Inspection Services		
Steve	Diaz	City of Redwood City		
Michael	Dillon	City of San Carlos ✓	<i>M. Dillon</i>	<i>pd</i>
Tony	Dini	Cal Electric Company		
Eric	Dreesman	City of Foster City		
Don	Dutcher	City of Sunnyvale		
Robert	Dunbar	City of Palo Alto		
Matt	Farrell	City of San Carlos		
Brian	Faught	Shums Coda Associates		
Gary	Fitzer	Town of Portola Valley		
Jeff	Frishof	Eagle One Services LLC		
Dino	Francesconi	City of Belmont		
Karl	Gettrost	City of Mountain View		
Anthoney	Ghoissi	City of Mountain View		
Michael	Gorman	County of San Mateo ✓		<i>[Signature]</i>
Christian	Greene	City of Los Altos		
Mike	Greenlee	Town of Atherton		
Patrick	Haniger	City of Mountain View		
Miles	Hancock	City of South San Francisco		
Douglas	Hansen	CodeCheck		
Jay	Harrison	City of Santa Clara		
Russell	Hayden	Fire Fighter Diversity Council		
Hector	Hernandez	City of Burlingame		
Farris	Hix	City of Redwood City		
Brent	Hipsher	City of Palo Alto		
David	Hirzel	Building Design / Lic. # 436465B		
Farris	Hix	City of Redwood City		
Robert	Johnson	CSM Bldg Inspection Student		
Garrett	Jones	City of Los Altos		
Sean	Kelley	California Electric Co		
David	Kenney	County of San Mateo		
Jim	Kirkman	City of South San Francisco		
Daniel	Kulda	City of San Carlos		
JoAnn	Kurz	Town of Woodside		
Yolanda	Lara	City of Mountain View		
David	Lasater	Town of Atherton		
John	La Torra	CSG Consulting, Inc.		
Stephen	Lau	City of San Mateo		
Diane	Laughridge	City of Burlingame		
Jamie	Lee	City of Redwood City		
Sheila	Lee	City of Santa Clara		
Armand	Lobao	City of Foster City		
Chai	Lor	CSG Consultants, Inc.		
Christina	Lucchini	City of Redwood City		
Robert	Luna	City of East Palo Alto		
Brooks	MacNeel	City of Burlingame		

Umesh	Maharaj	City of San Bruno			
Charlie	Maloney	City of Mountain View			
Barry	Mammini	City of South San Francisco			
Jeanne	Mangerich	San Francisco State Univ			
Lane	Manuel	City of Santa Clara			
Greg	Maselli	City of Los Altos			
Daniel	Mauldin	City of San Carlos			
Maureen	McCann	Town of Hillsborough			
Joe	McCluskey	City of Burlingame			
Rick	McManis	City of East Palo Alto			
Tim	McMillian	City of Santa Clara			
Cedric	McNicol	City of South San Francisco	✓		cm
Robert	Moreno	City of Santa Clara			
John	Murphy	City of San Bruno			
Val	Mandapat	City of Daly City			
David	Newton	Dana General			
Mark	Nolfi	City of Belmont			
Michael	O'Connell	County of San Mateo			
Kelly	O'Dea	City of Redwood City			
Stacey	Olgado	Residential Const. Mgmt			
Anthony	Ortiz	Shums Code Consultants			
Andrei	Oustinov	City of Santa Clara			
Tino	Padilla	City of San Bruno			
Rhonda	Parkhurst	City of Palo Alto			
Uli	Peretz	City of Redwood City			
Diana	Perkins	City of Sunnyvale	✓		
Will	Racanelli	Town of Hillsborough	✓	w	wp.
Michael	Richards	Consultant			
Douglas	Rider	CSG Consultants, Inc.			
Erik	Rietdorf	City of South San Francisco			
Elizabeth	Rider	City of South San Francisco			
Ryan	Rucher	Town of Woodside			
Amery	Sandoval	Co. of San Mateo			
John	Sayers	City of Palo Alto			
Vivian	Seto	Town of Colma			
Jerry	Schaell	CSG Consultants, Inc.			
Thomas	Silipin	City of Redwood City			
Leigh	Simpson	Bay Area Electric			LD ✓
Steven	Solorio	City of Redwood City			
Bob	Staford	City of Mountain View			
John	Taecker	Underwriters Laboratory			
Joe	Travers	City of Daly City			
Bill	Tott	City of Santa Clara			
Bud	Starmer	City of Palo Alto			
Chris	Valley	City of San Carlos			
Ken	Vitorelo	City of San Carlos			
Mike	Wayne	City of Redwood City			
Skip	Walker	Walker Prop. Evaluation			

Bruce	Welch	City of Daly City		
Shauna	Williams	City of San Bruno		
Shellie	Woodworth	City of Mountain View		
Ray	Yniguez	Town of Hillsborough		
Wing	Yee	CSG Cosultants, INC.		
Homer	Yim	Simpson StrongTie		
CAMILLA	LEUNG	San Mateo County ✓		✓
ROB	BARTOLI	" " " ✓		✓
GORDON	TONG	" " " ✓		✓
Jemel	Laurie	CSG		
Mehdi	Sharifi	CSG		
DAVID	SETO	CSG		

FRANK NAVAREO CSG
 Ryan Featherstone CSG
 ALLAN SMED CSG
 Jerry Schupell CSG
 ERIC GONZALES CSG
 AMIR ABDOLLAHI CSG
 CATHERINE CHAN CSG
 Jen Chen CSG

Nourdin Khayata CSG
 CHAI LOR CSG
 Deryk Daquigan CSG
 Sophie Truong CSG
 Rambod Hakhamaneshi CSG

Elizabeth Rider

10-PERSON FOR CSG

CALSIG MEMBERS @ 10- PEOPLE

★ TOTAL = 26-PERSONS ★

Construction Site Stormwater Inspection and C.3.h Inspection/O&M Stormwater Compliance Workshop: Provision C.6 and C.3.h Training for Municipal Staff

*Sponsored by the San Mateo Countywide Water Pollution Prevention Program's
New Development Subcommittee*

Tuesday, May 5, 2015
San Mateo Public Library – Oak Room
55 W. 3rd Avenue, San Mateo
9:00 am to 12:00 pm and 1:00 pm to 3:30 p.m.

MORNING SESSION: Construction Site Stormwater Inspections

The morning 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,
- ✓ Preview of possible changes in the MRP reissuance,
- ✓ Construction BMPs and recognizing issues,
- ✓ Group exercise for determining inspection findings and appropriate enforcement actions.

This session will end at 12 noon but feel free to stay for lunch.

AFTERNOON SESSION: C.3.h Inspection/O&M Stormwater Compliance

The afternoon training workshop is related to MRP Provision C.3.h for municipal staff who inspect new development projects during and after construction and/or for municipal staff who maintain stormwater treatment systems. Workshop topics include:

- ✓ Regulatory refresher of Municipal Regional Stormwater Permit (MRP) requirements for C.3.h site inspections, treatment system operation and maintenance
- ✓ Preview of possible changes in the MRP reissuance,
- ✓ Group exercise on inspection issues, maintenance trouble-shooting and practices.

This session begins at 1:00 pm but feel free to come for lunch and registration beginning at 12:15pm.

Registrations Due April 28!

Email or fax this RSVP to Melissa Morgan, melissa@eoainc.com, fax: 510-832-2856, by **Tuesday, April 28, 2015**. For additional information, contact Melissa at 510-832-2852 ext. 101.

Name: _____

Agency: _____

Phone: _____

Email: _____

- I will be attending:**
- Morning Session: C.6 Construction SW Inspections (9:00am – 12:00 noon)
 - Afternoon Session: C.3.h Inspection/O&M SW Compliance (1:00pm – 3:00pm)
 - Lunch (12:15pm – 1:00pm)

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

This training is FREE and will include a lunch.

You will be sent a confirmation, including an agenda and directions, one week prior to the workshop.



CONSTRUCTION SITE STORMWATER INSPECTION WORKSHOP

*Implementing the requirements in Provision C.6
of the Municipal Regional Stormwater Permit (MRP)*

Tuesday, May5, 2015

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

WORKSHOP AGENDA

9:00 AM	Registration and Refreshments	Vendors
9:20 AM	Stormwater Regulatory Landscape at Construction Sites	Peter Schultze-Allen <i>Program Staff</i>
9:40 AM	Inspecting Construction Site BMPs	Kristin Kerr <i>Program Staff</i>
10:30 AM	Break	Vendors
10:45 AM	Group Exercise	<i>Program Staff</i>
11:45 AM	Lunch	Vendors
12:45 PM	Registration for Afternoon Session: C.3.h Inspection/O&M Stormwater Compliance Workshop	

**** Attendance at this workshop is acceptable for 2.2 PDUs toward maintaining CPESC, CESSWI and/or CPSWQ certifications. ****

SMCWPPP Construction Workshop
Attendance May 5, 2015

	A	B	C	D	E
1	<i>Last Name</i>	<i>First Name</i>	<i>C.6 Morning</i>	<i>C.3.h Afternoon</i>	<i>Municipality</i>
2	Tallitsch	John	X	X	City of Belmont
3	Breault	Randy	X		City of Brisbane
4	Capasso	Julia		X	City of Brisbane
5	Johnson	Ken		X	City of Brisbane
6	Boyle Rodriguez	Pam	X	X	City of Burlingame
7	Calilong	Henry	X		City of Burlingame
8	Cavalieri	Marco	X		City of Burlingame
9	Horne	Rick	X	X	City of Burlingame
10	Kinnon	Kiley	X	X	City of Burlingame
11	MacNeil	Brooks	X		City of Burlingame
12	Craig	Randolph	X	X	City of East Palo Alto
13	Middleton	Michael	X	X	City of Menlo Park
14	Morales	Rene	X	X	City of Menlo Park
15	Punsalan	Rene	X	X	City of Menlo Park
16	Sohrabi	Ebby	X	X	City of Menlo Park
17	Yambao	Mel	X	X	City of Menlo Park
18	Benedik	Tanya	X	X	City of Millbrae
19	Chow	Sydney	X	X	City of Millbrae
20	Donguines	Raymund	X	X	City of Pacifica
21	Murdock	Christian	X		City of Pacifica
22	Varela	Carlos	X	X	City of Redwood City
23	Hannigan	Jeff	X	X	City of San Bruno
24	Amoroso	Frank	X		City of San Carlos
25	Baker	Jason	X	X	City of San Carlos
26	Duran	Louis		X	City of San Carlos
27	Riddell	Anthony	X	X	City of San Carlos
28	Albert	Evan		X	City of San Mateo
29	Edlund	Sven	X		City of San Mateo
30	Kenyon	Michelle	X		City of San Mateo
31	Swenson	Mark		X	City of San Mateo
32	Tran	Trieu		X	City of San Mateo
33	Ung	Mario	X	X	City of San Mateo
34	Abdulmajeed	Zaid	X	X	County of San Mateo
35	Azzari	Zack	X	X	County of San Mateo
36	Burlison	Summer	X		County of San Mateo
37	Diana	Shu	X	X	County of San Mateo
38	Dickinson	Rebecca	X	X	County of San Mateo
39	Hernandez	Hector	X	X	County of San Mateo

SMCWPPP Construction Workshop
Attendance May 5, 2015

	A	B	C	D	E
1	<i>Last Name</i>	<i>First Name</i>	<i>C.6 Morning</i>	<i>C.3.h Afternoon</i>	<i>Municipality</i>
40	Hundal	Amritpal	X		County of San Mateo
41	Koenig	Doug	X	X	County of San Mateo
42	Lee	Richard	X	X	County of San Mateo
43	Oshaghi	Alisina	X	X	County of San Mateo
44	Peres	Joe	X	X	County of San Mateo
45	Ramirez	Michael	X	X	County of San Mateo
46	Rasmussen	Ryan	X	X	County of San Mateo
47	Yee	Theresa	X	X	County of San Mateo
48	Carlos	Armando	X	X	County of San Mateo DPW
49	Casagrande	Julie	X	X	County of San Mateo DPW
50	Jackson	Emmett	X	X	County of San Mateo DPW
51	Manuel	Noel	X		County of San Mateo DPW
52	Chan	Catherine	X	X	CSG Consultants Inc.
53	Schnell	Jerry	X		CSG Consultants Inc.
54	Kerr	Kristin	X	X	EOA, Inc.
55	Schultze-Allen	Peter	X	X	EOA, Inc.
56	Ruess	Liz	X		Town of Atherton
57	Ahmed	Muneer	X	X	Town of Colma
58	Gotelli	Louis		X	Town of Colma
59	Asai	Natalie	X		Town of Hillsborough



Evaluation Summary

CONSTRUCTION SITE STORMWATER INSPECTOR WORKSHOP

San Mateo, CA

Tuesday, May 5, 2015

MORNING SESSION 33 Evaluations

1. **Stormwater Regulatory Landscape at Construction Sites** – Given by Peter Schultze-Allen, SMCWPPP Program Staff

Very Useful 20 Somewhat Useful 12 Not useful 1

Comments:

- Should have started at 9:00 (not 9:20) would have had more time for this and following.
- Have background in compliance but useful to provide background for those in the field.
- Clear concise.
- rushed.
- Rushed at end, possible allow more time.
- Would like to emphasize on definitions.

2. **Inspection Construction Site BMPs** - Given by Kristin Kerr, SMCWPPP Program Staff

Very Useful 31 Somewhat Useful 1 Not useful

Comments:

- Good use of video.
- Good illustrations.
- I found the video presentation very informative.
- Videos very good; less monotonous.
- I really liked the videos.
- Good lecture with appropriate examples and visual references.
- Videos were a great addition.
- The video and practical info. Were very helpful.
- I liked the video incorporation.
- Provide more guidance with exercises.
- Video pictures = ok.
- Like videos as opposed to the lecture.
- Video is a big plus!
- Videos were great.

- Videos showing BMP installations for erosion and sediment controls were very helpful.

3. **Group Exercise** – Facilitator, SMCWPPP Program Staff

Very Useful 18 Somewhat Useful 12 Not useful

Comments:

- Always good to talk with peers and share thoughts.
- Good connections, illustrations.
- Appreciated talking to inspectors and hearing others.
- The pictures are a little grainy, may suggest sprinkling group exercises with discussion.
- Hard in larger group, not quite enough time.
- Could have used facilitation to ensure we're coming up with the right approaches.
- Useful hearing the analysis of other agencies.
- Don't spend time on breakout groups, just do facilitated discussion and walk group through photos.
- Next time (just a friendly suggestion) treat exercise as actual inspection w/specifics including filling out an inspection report.
- 1-3 exercises would be adequate.
- Great way to practice what to look out for on a job site.

4. **Vendors**

Very Useful 10 Somewhat Useful 17 Not useful 1

Comments:

- N/A didn't talk with them.
- Good to see new product developments.
- Maybe suggest a presentation during break time?
- Provide examples of projects worked on. I like the product presentations.

5. **Did this training meet your expectations? Yes: 29 No:**

- And more!
- Somewhat.

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

- Site Inspection.
- Discussions.
- Group exercises, videos.
- Learning what type of devices are utilized. I had no idea.
- Seeing how erosion/sediment control measures were installed. Also seeing some installation techniques I haven't seen before.
- Group exercise and video.

- The step by step video presentation and the group exercise.
- Exercise.
- I appreciate the slides printed out.
- Inspection/requirements and ID of MRP vs. SGP.
- Practical examples and videos.
- The exercises.
- Being new to the field of construction, training overall was very helpful for me.
- Erosion and sediment control.
- All of it.
- Construction site BMPs presentation. I don't do site inspections but I do review erosion and sediment control plans prior to permit issuance. Seeing how measures function and how to identify where measures are most appropriate, their effectiveness, or lack of in the field scenarios is very helpful when working through plan reviews.
- Field inspection and system to look for.
- Provide ref. CASQA website.
- Slides on MRP 2.0.
- Inspection processes and scenarios.
- Having the presentation materials on hand and discussing the group exercises.
- BMP video/Group Exercise.
- Videos.
- Construction inspection section and appropriate ways of installing BMPs.
- Videos of product installation.

7. What would have made this training more useful?

- Actual NOAs discussion.
- Off-site inspection of construction site.
- Identifying rules to have less talking during discussions.
- Shorter lunches.
- More videos.
- More vendors and scenarios.
- Better photos for group exercise.
- More demos.
- Less time on group discussions, discussions stray just facilitated may be more effective.
- Updates.
- More before and after corrections to site deficiencies.
- More definition of explanation.

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

- Discussion about tracking violations.
- More Insp./Proj. applications.
- How to set up internal processes for C.3.
- Field training on hand.

- Cover: Enforcement Response Plan.
- Describing the role of an inspector on what to do when there is a violation.
- Responsibility of municipal inspection in detail.
- More examples of violations.
- More new BMP review on market and applications.

9. **General Comments?**

- Thanks.
- Good workshop.
- Great office/meeting space.
- Overall, I learned how system shall work how it is installed, what action to consider.
- Good Job!
- Good workshop.



Appendix 7

- Public Information and Participation Subcommittee – Attendance List– FY 2014-15
- Cigarette Butt Pilot Program
- People Behaving Badly: Don't Drop & Drive, June 12, 2015
- FY 2014-15 Website Analytics
- FY 2014-15 Top Website Document Downloads
- FY 2014-15 Facebook Analytics
- FY 2014-15 Twitter Analytics
- FY 2014-15 Instagram Analytics
- Example of a Car Wash Reward Program Community TV Slide
- 2015 San Mateo County Fair SMCWPPP outreach table
- Spring 2015 Pollution Prevention Post newsletter
- Car Wash Reward Program social media post
- Pollution prevention banner displayed at a partner car wash location
- Coastal Cleanup Day article in Half Moon Bay Review Magazine, September 2014
- 2005-2014 Coastal Cleanup Day historical volunteers and debris removed insights

Public Information and Participation Subcommittee				FY-2014-15			
AGENCY	NAME	ALTERNATE	PHONE	Aug-14	Nov-14	Feb-15	May-15
Prog. Coordinator	Matthew Fabry		415-599-1419				
Atherton	Liz Ruess		752-0544	1		1	1
Belmont	Diane Lynn		595-7425	1	1	1	1
Brisbane	Shelley Romriell	Diane Cannon	415-508-2128				
Burlingame	Pam Boyle Rodriguez	Kiley Kinnon	342-3727	1	1	1	1
Colma	Muneer Ahmed	Jason Chen	757-8888	{1}	{1}	{1}	
Daly City	Ward Donnelly		991-8200		1		
East Palo Alto	Michelle Daher		853-3197		1		
Foster City	Nick Leonoudakis	Norm Dorias	286-3546	1		1	
Half Moon Bay	Mark Lander	Muneer Ahmed	522-2562	1	1	1	
Hillsborough	Perla Maciel		375-7444			1	1
Menlo Park	Heather Abrams	Sheena Ignacio	330-6740 x1496	2		1	1
Millbrae	Shelly Reider		259-2444		1	1	
Pacifica	Ray Donguines		738-3768				
Portola Valley	Brandi de Garreaux	Howard Young	851-1700	1	1	1	
Redwood City	Terence Kyaw	Adrian Lee	780-7466		1		2
San Bruno	William Li		616-7069	1		1	
San Carlos	Andrea Mardesich		802-4361	1	1	1	
San Mateo City	Mark Swenson	Sven Edlund	522-7342/522-7349	2		2	1
San Mateo County	Kirsten Pringle	Carole Foster	363-4088		1	1	
S. San Francisco	Kristen Font	Andrew Wemmer	829-3383	1		1	
Woodside	Dong Nguyen		851-6790				

TOTAL CO-PERMITTEES IN ATTENDANCE							
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PIP Consultants:

Environ. Health	Waymond Wong		372-6248				
Environ. Health	Timothy Swillinger		372-6245	1	1	1	1
Environ. Health	Ana Clayton		372-6259				
Environ. Health	Julia Au		372-6214				
Environ. Health	Kathryn Cooke		372-6227	1	1	1	1
Environ. Health	Cynthia Knowles		372-6135				
Environ. Health	Suzanne Bontempo		372-6252			1	
Environ. Health	Allison Milch		372-6252				

Resident/Guest							
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				Total Attendance	15	12	18	10
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1 - Attendance

{1} - Dual Coverage

Cigarette Butt Pilot Program

Examples of receptacle and sign behavior change tools introduced at Pillar Point Harbor, Belmont, and Pacifica.



Cigarette butt litter business pledge static window cling



People Behaving Badly: Don't Drop & Drive, June 12, 2015



NEWS ▾ WEATHER ▾ TRAFFIC ▾ SPORTS ▾ FEATURES ▾ KRON ▾ KRON 4 LIVE MO

People Behaving Badly: don't drop and drive

By Molly Martinez

Published: June 12, 2015, 10:59 am | Updated: June 12, 2015, 11:03 am



Related Coverage

[People Behaving Badly: Do not enter signs](#)

[People Behaving Badly: Marin cell phone tickets](#)

BELMONT (KRON) — The city of Belmont wants you to butt out. The city has taken an initiative to reduce cigarette butt pollution with their new campaign "Don't drop and drive," which targets smokers who litter their butts and drive away.

The cigarette butts make their way into local waterways, poisoning the water and the animals who live in it.

The smoker's excuse? New cars don't come equipped with ashtrays.

FY 2014-15 Website Analytics

	Q1/Q2 Reporting Period							Q3/Q4 Reporting Period						Average FY 2014-15	Total FY 2014-15			
	July	August	September	October	November	December	Total	January	February	March	April	May	June	Total	Average	Total		
Total Sessions	1,452	1,981	2,904	3,282	2,999	2,325	14,943	2,491	1,993	5,110	4,034	3,309	1,643	1,607	17,696	2,949	2,855	32,639
Desktop Sessions	1,219	1,653	2,239	2,307	1,852	1,791	11,061	1,844	1,611	3,621	1,887	1,858	1,155	1,207	11,339	1,890	1,935	22,400
Mobile Sessions	123	262	446	733	854	422	2,840	473	276	1,134	1,984	1,252	421	309	5,376	896	743	8,216
Tablet Sessions	110	66	219	242	293	112	1,042	174	106	355	163	199	67	91	981	163.5	176	2,023
Users	974	1,254	1,961	2,669	2,096	1,741	10,695	1,782.5	1,584	4,260	2,556	2,395	1,225	1,233	13,253	2,209	2,093	23,948
New Users	858	1,113	1,769	2,503	1,779	1,574	9,596	1,599	1,453	4,055	2,296	1,959	1,033	1,090	11,886	1,981	1,879	21,482
% New Users	59%	56%	61%	76%	59%	68%	N/A	63%	73%	79%	60%	59%	63%	68%	N/A	67%	65%	N/A
Page Views	4,005	5,353	6,353	6,544	5,776	4,975	33,006	5,501	4,260	8,993	6,672	5,709	3,180	3,082	31,896	5,316	5,632	64,902
Average Session Duration	3:17	3:14	2:32	2:11	2:20	2:24	N/A	2:39	1:59	1:19	1:28	1:32	2:01	1:52	N/A	1:41	2:09	N/A
Sessions 31-60 seconds	95	160	267	293	230	158	1,203	200.5	143	526	160	220	103	108	1,260	210	215	2,463
Sessions longer than 60 seconds	487	665	918	852	729	538	4,189	698	478	1,080	666	752	435	443	3,854	642.3333	690	8,043
Average Bounce Rate	45.00%	43.00%	44.00%	53.00%	55.00%	52%	N/A	49%	49%	57%	73%	62%	55%	52%	N/A	58%	54%	N/A

FY 2014-15 Top Website Document Downloads

FY 2014-15 Top Website Downloads												
#1 Document Download	2008-2009 Annual Report	C.3 Technical Guidance 2013	CCD Waiver Form	2006-2007 Annual Report	Section 4: C.3 Technical Guidance 2013	Section 4: C.3 Technical Guidance	C.3 Technical Guidance (2013)	C.3 Technical Guidance (2013)	C.3 Technical Guidance (2013)	C.3 Technical Guidance (2013)	C.3 Technical Guidance (2013)	C.3 Technical Guidance (2013)
# of Downloads	468	268	351	203	231	167	180	223	222	249	137	110
#2 Document Download	C3 Technical Guidance 2013	Green Streets & Parking Lots Guidebook 2009	Section 4: C.3 Technical Guidance 2013	Section 4: C.3 Technical Guidance 2013	Green Streets & Parking Lots Guidebook 2009	Green Streets & Parking Lots 2009	Green Streets & Parking Lots (2009)	Green Streets & Parking Lots Guidebook (2009)	Green Streets & Parking Lots Guidebook (2009)	Green Streets & Parking Lots Guidebook	Green Streets & Parking Lots Guidebook (2009)	C.3 Technical Guidance ND (2013)
# of Downloads	360	211	252	173	210	142	148	172	197	184	108	83
#3 Document Download	Green Streets & Parking Lots Guidebook 2009	2008-2009 Annual Report	2008-2009 Annual Report	Green Streets & Parking Lots Guidebook 2009	Green Streets & Parking Lots 2009 (book layout)	2006-2007 Annual Report	C.3 Stormwater Technical Guidance (2014)	Water Utility O&M Potable Water Discharges	Water Utility O&M Potable Water Discharges	Green Streets: Design Details - Types of Curb Cuts	C.3 Stormwater Guidance (2014)	Green Streets: Design Details - Types of Curb Cuts
# of Downloads	128	183	154	119	135	101	125	122	103	99	70	75

FY 2014-15 Facebook Analytics

	2012-2013	2013-2014	July	August	September	October	November	December	Q1/Q2 2014-15 Total	Q1/Q2 2014-15 Monthly Average	January	February	March	April	May	June	Q3/Q4 2014-15 Total	Q3/Q4 2014-15 Average	FY 2014-15 Total	FY 2014-15 Annual Monthly Average
Total Likes	57	439	879	898	950	1006	1,054	1,102	N/A	N/A	1,139	1,183	1,417	1,639	1,881	2,394	N/A	N/A	N/A	N/A
New Likes			157	19	52	64	48	50	390	65	37	44	234	222	242	513	1,292	679	1,682	372
Daily Total Reach			74,357	39,421	8,644	80,153	65,621	49,102	317,298	52,883	47,664	50,154	50,889	59,569	55,216	80,046	343,538	57,256	660,836	55,070
Lifetime Post Total Reach			5,911	32,652	4,390	58,290	47,737	29,784	178,764	29,794	44,472	49,795	32,773	30,933	31,476	36,829	226,278	37,713	405,042	33,754
Daily Total Impressions			247,588	73,969	18,584	70,818	101,553	78,507	591,019	98,503	65,737	69,997	58,554	85,152	79,050	105,190	463,680	77,280	1,054,699	87,892
Link Clicks			27	832	20	284	266	422	1,851	308.5	165	419	210	328	446	475	2,043	341	3,894	325
Video & Photo Clicks			44	63	122	523	308	172	1,232	205	253	290	417	204	258	343	1,765	294	2,997	250
Likes			159	631	146	480	468	572	2,456	409	531	673	706	874	829	796	4,409	735	6,865	572
Comments/Share			87	418	55	114	105	207	986	164	106	215	249	214	293	200	1,277	213	2,263	188.5
Daily Page Engagement			783	3,913	574	1,691	1,383	1,728	10,072	1,679	1,163	1,787	1,790	1,582	1,864	2,612	10,798	1,800	20,870	1,740

FY 2014-15 Twitter Analytics

	July	August	September	October	November	December	Q1/Q2 Total	Q1/Q2 Average	January	February	March	April	May	June	Q3/Q4 Total	Q3/Q4 Average	2014-15 FY Total	2014-15 FY Average
Total Followers	397	430	457	498	559	585	N/A	N/A	590	609	632	647	671	691	N/A	N/A	N/A	N/A
New Followers	0	33	27	41	61	26	188	31	5	19	23	15	24	20	106	18	294	25
Engagement	75	127	228	107	95	178	810	135	140	121	145	104	91	60	661	110.167	1471	123
Engagement Rate	0.01%	1.00%	0.02%	0.02%	0.02%	0.02%	N/A	0.18%	0.02%	0.03%	0.02%	0.02%	0.02%	0.02%	N/A	0.02%	N/A	0.10%
Retweets/Mentions/Favorites	35	45	134	19	42	65	340	57	47	41	45	48	28	20	229	38	569	48
URL Clicks	17	29	18	30	23	27	144	24	24	26	34	14	21	16	135	22.5	279	23.25
Impressions	10,719	8,123	12,795	4,244	4,611	11,466	51,958	8,660	7,446	5,434	6,167	5,734	4,957	3,853	33,591	5,599	85,549	7,130
# Hashtag Clicks	0	10	4	5	1	13	33	5.5	0	1	3	1	4	1	10	1.66667	43	4

FY 2014-15 Instagram Analytics

FY 2014-15 Instagram Analytics													
	2013-2014	July	August	September	October	November	December	January	February	March	April	May	June
Total Followers	208	240	276	311	336	366	346	360	386	399	401	404	407

Example of a Car Wash Reward Program Community TV Slide

*Thank you **Ducky's Car Wash** for helping
protect our waterways from pollution.*

Email **pollutionprevention@smcgov.org**
or call **(650) 372-6227**
to sign up for monthly discounts to
over 9 car wash locations
throughout San Mateo County..

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



Eco Green Auto Clean free waterless car wash voucher



www.ecogreenautoclean.com

FREE
Waterless
Car Wash*

2801 El Camino Real
 Redwood City, CA
 (650) 216-6600

*Offer Expires 8/4/2015
 Exterior Only



SAN MATEO COUNTYWIDE
WATER POLLUTION
PREVENTION PROGRAM



www.flowstobay.org/carwash

Why choose a green waterless car wash?

Save up to 150 gallons of water per wash during the drought.

Protect local creeks, the Bay, and the Ocean from dirty car wash water pollution.

2015-16 20% OFF Car Wash Reward Card



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

20% OFF
any car wash service.

Join the movement to save water and protect our waterways from car wash pollution.

*See reverse side for participating car washes, excludes car detail services.
 Discount card expires 2/15/2016

Ducky's Car Wash 716 N. San Mateo Dr. San Mateo	Jack's Car Wash 3651 S. El Camino Real San Mateo
Ducky's Car Wash 1301 Old County Rd. San Carlos	Millbrae Car Wash 310 Adrian Rd. Millbrae
Ducky's Car Wash 1436 El Camino Real Menlo Park	Redwood City Car Wash 215 El Camino Real Redwood City
Eagle Car Wash 177 California Dr. Burlingame	San Mateo Car Wash 221 E. Hillsdale Blvd. San Mateo
Eco Green Auto Clean 2801 El Camino Real Redwood City	South City Car Wash 988 El Camino Real South San Francisco

Dirty water washed from cars contain copper dust, motor oil, soap, and other harmful pollutants. Protect local waterways by taking your car to a commercial car wash, or wash cars on grass or gravel.

For more information, visit: Flowstobay.org/carwash

*Discount restrictions apply, refer to website listed above for additional information. Coupon #120

Keychain ashtray



Worried about the Drought?



Save Water.

Prevent Pollution.

Install a Rain Barrel.

Get a Rebate of up to \$100

For an application & additional information visit:

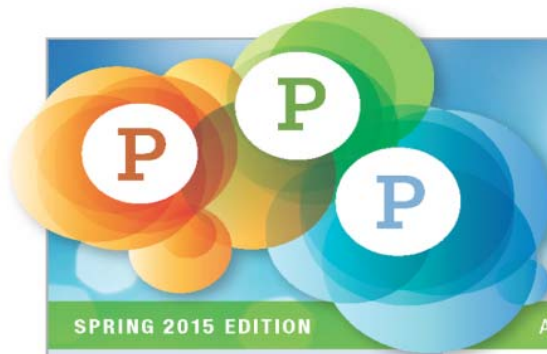
www.flowstobay.org/rainbarrel

Effective October 1, 2014 through June 30, 2015



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

BAWSCA
Bay Area Water Supply & Conservation Agency
& participating water agencies



Pollution Prevention Post

SPRING 2015 EDITION

A PUBLICATION OF SAN MATEO COUNTY ENVIRONMENTAL HEALTH SERVICES DIVISION

What's New

Car Wash e-Coupon

Save money, water and the environment while keeping your car clean. Sign up to receive text message coupons redeemable right from your phone. Just text CARWASH (no spaces) to 38470, or visit www.flowstobay.org/carwash and automatically get pollution prevention discounts of up to ½ off from local businesses!

(Phone numbers received will be used exclusively for coupon dissemination.)

Prefer an email coupon? Just email pollutionprevention@smcgov.org with the word "CARWASH" and we will email you a coupon.

Participating Water Pollution Prevention car wash partners are located in San Mateo, San Carlos, South San Francisco, Menlo Park, Burlingame, Millbrae, Redwood City and include Ducky's, Eagle, Eco Green, Jack's, Millbrae Express, Redwood City, San Mateo and South City Car Wash companies. Call us at (650)372-6200 and we'll help you locate a participating car wash near you.

What Do You Do with Old or Unwanted Medicine?



DON'T FLUSH YOUR OLD MEDICATIONS!

Have you heard of Extended Producer Responsibility (EPR)? EPR is an approach in which the manufacturer takes responsibility for proper disposal of the products they generate. The EPR model is a free market solution that allows manufacturers to assume the cost of product waste management and develop a program that provides residents with convenient access to environmentally responsible disposal solutions.

An EPR model program for unused medicine disposal is currently being considered in San Mateo County. Presently, there are 14 medicine collection sites at police stations throughout the County. "To date our San Mateo County Drug Take Back Program has resulted in over 145,000 pounds of medications collected," Supervisor Adrienne Tissier said. "It allows consumers to dispose of these products in a safe, environmentally-friendly way while also helping to prevent accidental overdoses and deaths associated with mismanagement of medications. These medications may no longer be needed yet have remained in a person's medicine cabinet."

This existing program has proven to be a successful start, but the time has come to expand the program. San Mateo County would greatly appreciate residents' help to assess public knowledge of handling unused and excess medicine from your home. Please participate in this short survey: www.surveymonkey.com/r/BVVBPDS



Pollution Prevention Post

Healthy Nail Salons

Have you noticed the Healthy Nail Salon Program logo displayed at various local nail salons? Wondering what it means? To protect the health of nail salon technicians and customers, San Mateo County Environmental Health has developed the County's first Healthy Nail Salon Recognition Program. This innovative program requires nail salons to choose safer products for their employees, customers and the environment.

Nail salon-related chemicals emit vapors, dusts or mists that can be breathed in or absorbed through the skin and eyes. Participating salons must provide proper ventilation and go through training that helps nail salons implement safer practices that protect both worker and customer health. To date, 13 salons have voluntarily completed certification. To find out where you can find a recognized Healthy Nail Salon in San Mateo County, visit smchealth.org/healthynails



Please Don't Drop & Drive

On Coastal Cleanup Day 2014, volunteers picked up an astonishing 13,099 cigarette butts in San Mateo County! Cigarette butts are the most common form of litter picked up on this day both in San Mateo County and internationally. Littered cigarette butts are easily washed, blown, or flicked down storm drains that lead straight into local creeks, the Bay and the Ocean. These unsightly cigarette butts never disappear because they are made of plastic and do not biodegrade. According to a recent study published in the journal *Tobacco Control*, cigarette butts are also toxic to marine and freshwater fish due to the chemicals they



Belmont Public Works sends a message on Balston and 6th Ave.

contain. Littered cigarette butts may look small but these toxic items are a big problem because they are everywhere.

Pacifica Beach Coalition is installing receptacles in hot spot areas in Pacifica where dedicated volunteers pick up a detestable number of cigarette butts from beaches weekly.

Be a part of the solution — get your free keychain ashtray. E-mail us at pollutionprevention@smc.gov and we'll send it to you! Visit flowstobay.org/cigbutts to read more about the problem, and how you can be part of the solution.

Remember, you have the right to request healthy nail salon products WITHOUT the "toxic trio:" toluene, formaldehyde and dibutyl phthalate.

- Ask your local nail salon to join this new program! Print out the fact sheet located at smchealth.org/healthynails and give it to the salon you frequent.
- Encourage your nail technician to protect his/her health by using gloves and masks.

Stay Connected



Remember, you can find us on Facebook, Twitter, YouTube and Instagram! [@flowstobay](https://www.instagram.com/flowstobay)

Online at smchealth.org/hhw or flowstobay.org

Email us at: pollutionprevention@smc.gov

Spring into Health!

Spring is a time for sunshine, flowers, new growth and exploring the outdoors. Get outside and join a community cleanup event and help preserve our local waterways and environment. On or around **Earth Day on April 22nd**, neighborhood litter pickup events, habitat restorations, graffiti abatement and other general sprucing up activities take place. Help capture trash before it goes into the storm drain!

Once in the storm drain, litter easily flows directly to our creeks, Bay, beaches and ocean. Find a spring cleanup event near you at www.flowstobay.org/cleanupsmc.



Breathe Easy! Safer Home Cleaning

Open those windows while you do some spring cleaning with safer products! You can avoid the harmful ingredients in many household products by making your own products with ingredients that you can find in your own kitchen cupboard! Visit <http://www.womensvoices.org/avoid-toxic-chemicals/diy-recipes/> for safer, easy-to-prepare cleaners. The videos are especially helpful. Then e-mail us! We would love to hear your safer cleaning questions and suggestions. Contact us at pollutionprevention@smc.gov.



P2 Staff Spotlight Check Your Number

Most cars manufactured after 2000 don't need an oil change every 3,000 miles. Wesley Won of San Mateo County's Household Hazardous Waste Recycling Team needs an oil change only every 10,000 miles! Conserve non-renewable resources and check your car's number at checkyournumber.org, then post your number on [facebook.com/flowstobay](https://www.facebook.com/flowstobay)



Ellyssa Win reminds her Dad when to change his oil.

Rain Barrel Rebates!


The call to conserve water is a priority. One way to help mitigate the effects of extreme drought is to install a rain barrel. The San Mateo Countywide Water Pollution Prevention Program is partnering with the Bay Area Water Conservation Supply Agency to provide rebates of up to \$100 for residents who choose to install one. Rain barrels reduce rain runoff pollution and prevent litter from entering storm drains that lead directly to the Bay and ocean. And the water can be used to irrigate your garden (but not vegetable gardens). For more information, visit flowstobay.org/rainbarrel.




I grow up on the islands where everyone captures rainwater with some type of rain barrel. It is a great way to save a lot of water, especially when there isn't a lot of it.
—Leasia, San Mateo County

Car Wash Reward Program social media post

Post Details Reported stats may be delayed from what appears on posts ✕

**FlowstoBay**
Published by Kathryn Sanmateocounty [?] · April 30 · Edited [?] · 🌐

WORRIED ABOUT THE DROUGHT but still want to keep your car clean? Use an Eco Green Auto Clean waterless car wash kit that requires less than a cup of water. Text "CARWASH" to 38470, or visit www.flowstobay.org/carwash to get 15% off today. Offer expires May 4th.



Save Water, Protect Local Waterways, & Keep Your Car Clean
Text "CARWASH" to 38470 & get 15% off a waterless car wash kit.

1,986 people reached Boosted

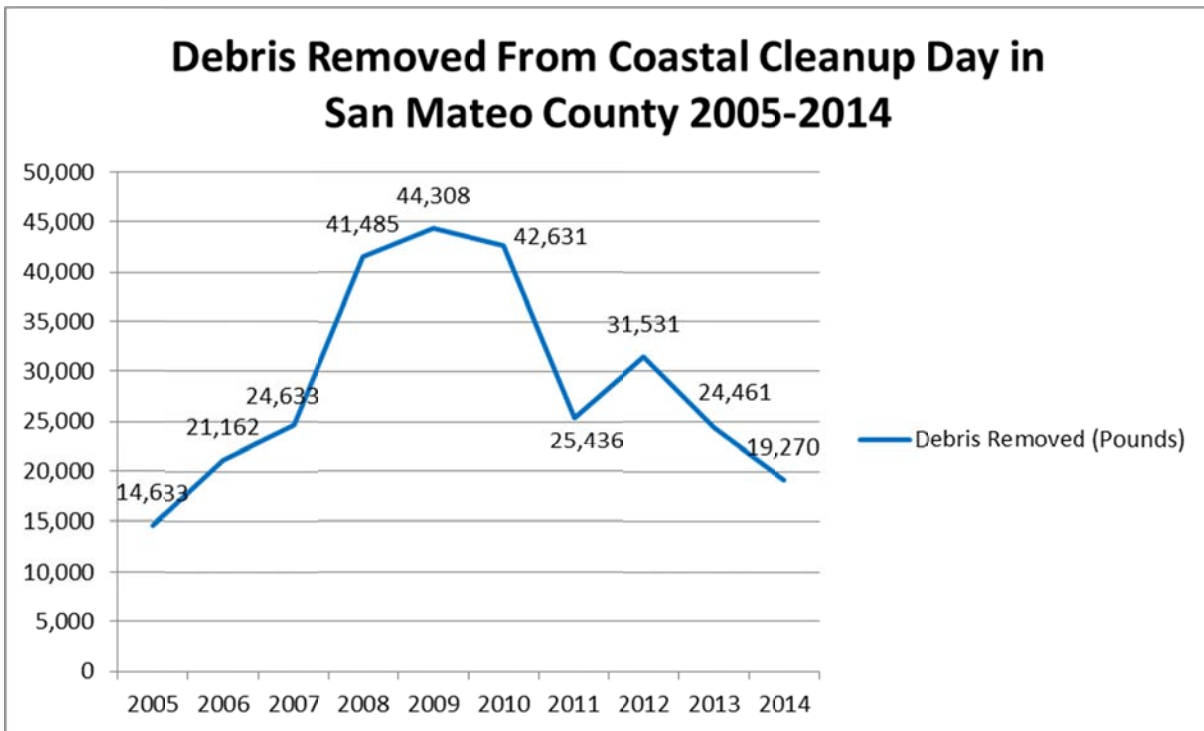
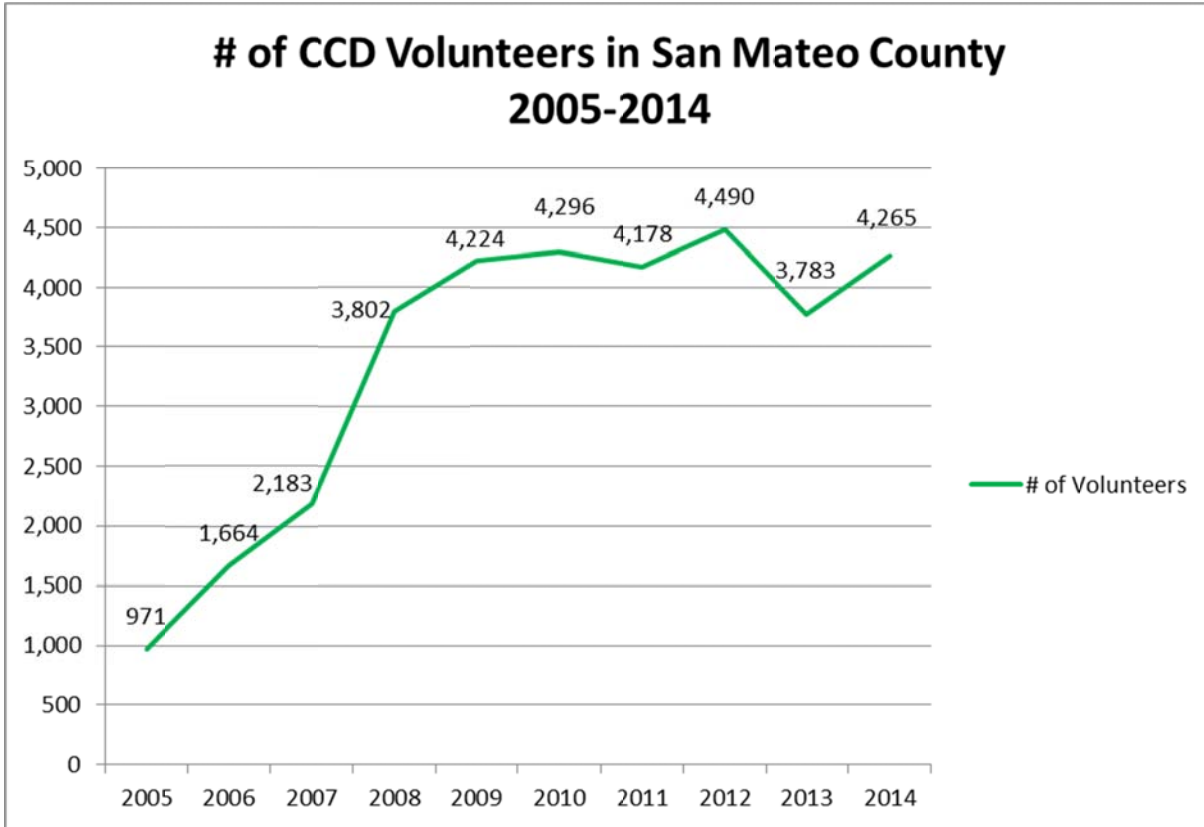
Like · Comment · Share · 🍷 22 ↻ 1

1,986 People Reached		
25 Likes, Comments & Shares		
22 Likes	22 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
3 Shares	1 On Post	2 On Shares
21 Post Clicks		
12 Photo Views	4 Link Clicks	5 Other Clicks ⓘ
NEGATIVE FEEDBACK		
0 Hide Post	0 Hide All Posts	
0 Report as Spam	0 Unlike Page	

Pollution prevention banner displayed at a partner car wash location



2005-2014 Coastal Cleanup Day historical volunteers and debris removed insights





Appendix 9

- Parks Maintenance & IPM Work Group Attendance List FY 2014-15
- UC IPM Problem Solver Kisok at OSH in Foster City
- Landscape Integrated Pest Management Workshop – March 11, 2015
 - Agenda
 - Attendance list
 - Summary of workshop evaluations

**San Mateo Countywide Water Pollution Prevention Program
Parks Maintenance & IPM Work Group Attendance List - FY 2014/15**

		Contact Information		Attendance		
MUNICIPALITY	REPRESENTATIVE	EMAIL	TELEPHONE NO.	8/26/2014	1/27/2015 (canceled)	4/28/2015
Atherton	Steve Tyler	styler@ci.atherton.ca.us				
Belmont	Daniel Ourtiague	dourtiague@belmont.gov	650/595-7441			
	Jonathan Gervais	Jgervais@belmont.gov				
Brisbane	Joe Friars	jfriars@ci.brisbane.ca.us	650-766-4353	X		
Burlingame	Greg Foell	gfoell@burlingame.org				
	Bob Disco	bdisco@burlingame.org				
	Pam Boyle Rodrigues	pboylerodriquez@burlingame.org	650/558-7381			X
Colma	Louis Gotelli	Louis.Gotelli@colma.ca.gov	650/333-0295	X		X
	Brian Dossey	brian.dossey@colma.ca.gov				
Daly City	Paul Thompson	pthompson@dalycity.org	650/991-8006	X		X
	Dennis Bray	dbray@dalycity.org				
East Palo Alto	Jay Farr	jfarr@cityofepa.org	650/853-3105			
	Michelle Daher	mdaher@cityofepa.org				
Foster City	Dorte Drastrup	ddrastrup@fostercity.org	650/286-3553	X		X
Half Moon Bay	Larry Carnahan	larryC@hmbcity.com	650/726-7177			
	Mark Lander	markl@csgengr.com				
Hillsborough	Garry Francis	gfrancis@hillsca.org	650/375-7506			
	John Mullins	jmullins@hillsborough.net				
Menlo Park	David Mooney	damooney@menlopark.org	650/330-6794			
	Sheena Ignacio	smignacio@menlopark.org	650/330-6767			X
Millbrae	Ken Crosetti	kcrosetti@ci.millbrae.ca.us				
	John Gianoli	jgianoli@ci.millbrae.ca.us				
Pacifica	Ron Fascenda	fascendar@ci.pacifica.ca.us	650-738-3760			
	A. Clark	clarka@ci.pacifica.ca.us				
	Jean Pierre Elissetche		650-738-3760	X		X
	Raymond Donguines	donguinesr@ci.pacifica.ca.us				
Portola Valley	Howard Young	hyoung@portolavalley.net	650/851-1700 x.214			
	Tony Macias	tmacias@portolavalley.net				
Redwood City	Valerie Matonis	vmatonis@redwoodcity.org	650/780-7280	X		X
	Terence Kyaw	TKyaw@redwoodcity.org				
	Daniel Burton	dburton@redwoodcity.org				
	Francisco Espinoza	fespinoza@redwoodcity.org	650-280-5094	X		
San Bruno	Rene Walsh	rwalsh@ci.sanbruno.ca.us	650/616-7193			
	Dan Barros	Dbarros@sanbruno.ca.gov				
San Carlos	Arturo Burgueno	aburgueno@cityofsancarlos.org	650.802.4140			
City of San Mateo	Mike Blondino	mblondino@cityofsanmateo.org				
	Bruce Reed	breed@cityofsanmateo.org				
	Dennis Pawl	dpawl@cityofsanmateo.org				
San Mateo Co. Parks	Stephen Kraemer	SKraemer@smcgov.org				
	Maria Mastrangelo	mmastrangelo@co.sanmateo.ca.us				
	Sam Herzberg	SHerzberg@co.sanmateo.ca.us				
	Scott Lombardi	slombardi@co.sanmateo.ca.us				
	Ramona Arechiga	TRArechiga@smcgov.org	650/599-1375			
	J Hannen	jhannen@co.sanmateo.org				
	Julie Casagrande	jcasagrande@co.sanmateo.ca.us				
	Matthew DelCarlo	madelcarlo@smcgov.org				
Suzanne Bontempo	suzannebontempo@gmail.com					
SM County PW	Jeff Pacini	JPacini@co.sanmateo.ca.us				
County Agriculture Weights and Measures	Jeremy Eide	jeide@co.sanmateo.ca.us	650/363-4700			
	Ricard Garcia	rgarcia@co.sanmateo.ca.us				
	Jeremy Wagner	JWagner@smcgov.org	650/776-5583	X		
	Koren Widdel	kwiddel@smc.gov.org				
	Fred Crowder	fcrowder@co.sanmateo.ca.us				
SSF	Donald Louie	donald.louie@ssf.net	650/829-3837	X		X
	Brian Brunelli	brian.brunelli@ssf.net	650/829-3837			
	Andrew Arzaga	andrew.arzaga@ssf.net				
Woodside	Dong Nguyen	DNgyuen@woodsidetown.org				

**San Mateo Countywide Water Pollution Prevention Program
Parks Maintenance & IPM Work Group Attendance List - FY 2014/15**

Contact Information				Attendance		
MUNICIPALITY	REPRESENTATIVE	EMAIL	TELEPHONE NO.	8/26/2014	1/27/2015 (canceled)	4/28/2015
UCCE/UC IPM	Andrew Sutherland	amsutherland@ucanr.edu	510/499-2930	X		
EOA	Jon Konnan	jkonnan@eoainc.com	510/832-2852 x.111			
	Vishakha Atre	vatre@eoainc.com	408/720-8811	X		
SMCWPPP	Matt Fabry	mfabry@smcgov.org	415/508-2134			
SM County	Kathryn Cooke	kcooke@smcgov.org				
Other Attendees						
Dionara Dunsmore-Bertoni	San Mateo County Parks					
Salvador Vela	Frank and Grossman Landscpare Contractors, inc.	salvador@frankandgrossman.com	415-601-9705	X		
Micheline Chagniot	Frank and Grossman Landscpare	michelin@frankandgrossman.com	415-260-7167	X		

UC IPM Problem Solver Kisok at OSH in Foster City





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 11, 2015
11:00 a.m. – 3:00 p.m.

Lunch <i>Registration</i>	11:00 – 11:30
Welcoming Remarks	11:30 – 11:35
Pesticides and Water Quality <i>Vishakha Atre, EOA</i>	11:35 – 11:50
Gopher, Squirrel, Mole, and Raccoon Control <i>Steven Hebert, Swat Pest Control</i>	11:50 – 12:25
Tree Management During Drought <i>Igor Lacan, UC Cooperative Extension</i>	12:25 – 1:15
Break	1:15 – 1:25
IPM for Ornamental Plants During Drought Conditions <i>Steven Swain, UC Cooperative Extension</i>	1:25 – 2:10
Regulatory Update, Common Violations, and Online Pesticide Use Reporting <i>Richard Garcia, San Mateo County Agricultural Weights and Measures</i>	2:10 – 3:00
Closing Remarks	3:00

SMCWPPP
Landscape IPM Workshop
Final Attendance
Wednesday, March 11, 2015

Last Name	First Name	Municipality
Aizawa	Brian	City of Redwood City
Armenta	Martin	City of Foster City
Atre	Vishakha	EOA
Barros	Dan	City of San Bruno
Baumgartner	Lori	EOA
Bond	Frank	City of Redwood City
Bravo	Jose Antonio	City of Redwood City
Bravo	Omar	City of Redwood City
Brunelli	Brian	City of South San Francisco
Cardenas	Jorge	Loral Landscaping, Inc.
Charles	Evans	City of Redwood City
Chiamos	Peter	City of Foster City
Cipres	Hector	City of Menlo Park
Clark	Aaron	City of Pacifica
Dahl	Clay	Town of Hillsborough
DeOliveira	Joao	City of San Bruno
Deras	Miguel	City of Redwood City
Dowdell	Keith	City of Menlo Park
Drastrup	Dorte	City of Foster City
Eide	Jeremy	San Mateo County
Ellington	Matt	Bayscape Landscape Mngmt.
Ellington	Tom	Bayscape Landscape Mngmt.
Espinoza	Francisco	City of Redwood City
Espinoza	Alex	City of Redwood City
Fa	Matiu	City of Foster City
Francis	Gary	Town of Hillsborough
Fukudome	Glenn	City of Redwood City
Gonzalez	Rosalio	City of Foster City
Gotelli	Louis	Town of Colma
Gotthardt	Garrett	City of Foster City
Haena	Todd	City of Foster City
Hanson	Donald	City of Foster City
Harmison	Richard	City of Foster City
Harmison	Robin	City of Foster City
Haro	Jose	Frank and Grossman Landscape Contractors
Hebert	Steven	Swat Pest Control
Herbert	Dominique	City of Redwood City
Hernandez	Martin	City of Redwood City
Hollis	Mike	City of Redwood City
Holomuzki	Carole	San Mateo County
Hummel	Gordon	City of Menlo Park
Ignacio	Sheena	City of Menlo Park
Kioa	Lava	City of Foster City
Komin	Kai	City of South San Francisco
Kraemer	Stephen	San Mateo County Parks
Lacan	Igor	UC Cooperative Extension
Louie	Donald	City of South San Francisco
Matonis	Valerie	City of Redwood City
Mitchell	Cynthia	City of Redwood City
Montoya	Mario	Serpico Landscaping
Moran	Caleb	City of South San Francisco
Moreno	Leonardo	City of Redwood City
Munoz	Genaro	City of Foster City
Nicholls	Ed	City of San Bruno
Ochoa	Juan	City of Redwood City

**SMCWPPP
Landscape IPM Workshop
Final Attendance
Wednesday, March 11, 2015**

Last Name	First Name	Municipality
Penisini	Sharom	City of Redwood City
Perez	Leno	City of Menlo Park
Piper	Lori	Jensen Landscape
Ryan	Matthew	City of Foster City
Salazar	Raul	City of Foster City
Sanchez	Federico	Frank and Grossman Landscape Contractors
Schaffer	Kurt	City of Foster City
Smith	Myles	City of Foster City
Stevens-Nappi	Michael	City of Belmont
Stupi	Don	City of South San Francisco
Swain	Steven	UC Cooperative Extension
Templin	Jeff	City of Daly City
Thompson	Paul	City of Daly City
Urruty	Alain	City of Belmont
Vela	Salvador	Frank and Grossman Landscape Contractors
Venezia	Dan	City of San Bruno
Vetter	Steve	City of San Bruno
Walsh	Rene	City of San Bruno
Ward	Matt	City of Belmont
Weber	Daniel	City of Foster City
Wheeler	Howard	Loral Landscaping, Inc.



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 11, 2015
11:00 a.m. – 3:00 p.m.

What Did You Think of the Following Presentations and Activities?

- 1. Pesticides and Water Quality – Vishakha Atre, EOA**
very helpful 28 somewhat helpful 10 not helpful 0

- 2. Gopher, Squirrel, Mole, and Raccoon Control – Steven Herbert, Swat Pest Control**
very helpful 32 somewhat helpful 5 not helpful 1
 - Presentation was not helpful but the speaker was good.

- 3. Tree Management During Drought – Igor Lacan, UC Cooperative Extension**
very helpful 35 somewhat helpful 4 not helpful 0
 - Fun to watch

- 4. IPM for Ornamental Plants During Drought Conditions - Steven Swain, UC Cooperative Extension**
very helpful 33 somewhat helpful 5 not helpful 0

- 5. Regulatory Update, Common Violations, and Online Pesticide Use Reporting - Richard Garcia, San Mateo County Agricultural Weights and Measures**
very helpful 25 somewhat helpful 11 not helpful 0

Did this workshop meet your expectations?

Yes **36**

No **0**

Suggestions for future workshop topics:

- Two workshops per year would be great.
- Bees.
- Better to have County Ag focus on field inspections and how to read label.
- Safe mixing and loading.

General Comments:

- Good and new information.
- Good topics and speakers.
- Everything was very good.
- Thanks for the lunch.
- Thank you.
- Speakers were good. Sense of humor made it even more interesting.
- Helpful information on stormwater history and regulatory factors.
- Good lunch.
- More breaks.
- Very good.
- Door opening and closing is distracting. Maybe leave the door open.
- Fast moving and informative...good!
- More time.
- The Co Ag use report only applies to very few people in the room.
- Great job regarding drought conditions.

Please submit at the end of the workshop. ***Thank You for Your Comments!***



Appendix 10

- Trash Work Group Attendance List- FY 2014-15
- Litter Reduction Roundtable – June 24, 2015
 - Announcement Flyer
 - Agenda
 - Attendance list

Trash Work Group Meeting Attendance – FY 2014/15

Name	Agency	Phone	E-Mail	08/14/14	11/12/14	02/26/15	05/27/15
Steve Tyler	Town of Atherton	(650) 752-0541	styler@ci.atherton.ca.us				
Andrea Mardesich	Town of Atherton	(650) 752-0544	amardesich@ci.atherton.ca.us	X			
Liz Ruess	Town of Atherton	(650) 752-0544	lruess@ci.atherton.ca.us			X	
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	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			
Matt Fabry	SMCWPPP Program Coordinator	(650) 599-1410	mfabry@co.sanmateo.ca.us				
Shelley Romriell	City of Brisbane	(415) 508-2128	sromriell@ci.brisbane.ca.us				
Keegan Black	City of Brisbane	(415) 728-7986	kblack@ci.brisbane.ca.us	X	X	X	
Karen Kinser	City of Brisbane	(415) 508-2133	kinser@ci.brisbane.ca.us				
Randy Breault	City of Brisbane	(415) 508-2131	rbreault@ci.brisbane.ca.us	X			
Jerry Flanagan	City of Brisbane	(415) 508-2137	jflanagan@ci.brisbane.ca.us				
Vincent Falzon	City of Burlingame	(650) 558-7679	vfalzon@burlingame.org	X	X		
Peter Gaines	City of Burlingame	(650) 558-7672	pgaines@burlingame.org	X			
John Baack	City of Burlingame		JBaack@burlingame.org				
Kiley Kinnon	City of Burlingame		kiley.kinnon@veoliawaterna.com		X		
Rob Mallick	City of Burlingame	(650) 558-7673	rmallick@burlingame.org	X			X
Eva Justimbaste	City of Burlingame	(650) 342-3727	eva.justimbaste@veoliawaterna.com	X			
Rick Horne	City of Burlingame	(650) 558-7672	rhorne@burlingame.org		X		
Pamela Boyle Rodriguez	City of Burlingame		pboylerodriguez@burlingame.org			X	
Louis Gotelli	Town of Colma	(650) 333-0295	louis.gotelli@colma.ca.gov	X	X	X	X
Muneer Ahmed	Town of Colma	(650) 757-8894	Muneer.ahmed@colma.ca.gov	X		X	
Brad Donohue	Town of Colma	(650) 757-8888	Brad.donohue@colma.ca.gov				
Jeff Fornesi	City of Daly City	(650) 991-5752	jfornesi@dalcycity.org				
John Fuller	City of Daly City	(650) 991-8039	jfuller@dalcycity.org		X		
John Sanchez	City of Daly City	(650) 991-8265	jsanchez@dalcycity.org	X	X	X	X
Michelle Daher	City of East Palo Alto	(650) 853-3197	mdaher@cityofepa.org	X		X	
Jay Farr	City of East Palo	(650) 853-3105	jfarr@cityofepa.org				
Norm Dorais	City of Foster City	(650) 286-3279	ndorais@fostercity.org		X		
Larry Carnahan	City of Half Moon Bay	(650) 636-3753	larryc@hmbcity.com		X	X	

Name	Agency	Phone	E-Mail	08/14/14	11/12/14	02/26/15	05/27/15
Mo Sharma	City of Half Moon Bay		mosharma@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	X			
Sheena Ignacio	City of Menlo Park	(650) 330-6767	smignacio@menlopark.org	X			
Heather Abrams	City of Menlo Park	(650) 330-6765	habrams@menlopark.org			X	X
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	X	X
Heather Henwood	City of Millbrae	(650) 259-2374	hhenwood@ci.millbrae.ca.us	X	X	X	X
Raymund Donguines	City of Pacifica	(650) 738-3767	donguinesr@ci.pacifica.ca.us	X			
Ron Fascenda	City of Pacifica	(650) 738-3762	Fascendar@ci.pacifica.ca.us	X	X	X	X
Bernie Mau	City of Pacifica	(650) 738-3775	Maub@ci.pacifica.ca.us		X		
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		X	X	X
Robin Kim	City of Redwood City						X
Jim Burch	City of San Bruno	(650) 616-7179	jburch@sanbruno.ca.gov				
Robert Wood	City of San Bruno	(650) 616-7046	rwood@sanbruno.ca.gov				
Ted Chapman	City of San Bruno	(650) 616-7169	TChapman@sanbruno.ca.gov	X	X	X	X
Paul Baker	City of San Carlos	(650) 802-4140	pbaker@cityofsancarlos.org	X	X		
Lou Duran	City of San Carlos	(650) 743-6769	lduran@cityofsancarlos.org			X	
Rick Viles	City of San Carlos	(650) 863-6782	rviles@cityofsancarlos.org			X	
Sarah Scheidt	City of San Mateo	(650) 522-7385	sscheidt@cityofsanmateo.org	X	X	X	X
Roxanne Murray	City of San Mateo	(650) 522-7346	rmurray@cityofsanmateo.org		X		
Kristine Corneillie	LWA/City of San Mateo	(408) 261-3996	KrisC@lwa.com				
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
Stephen Fischer	County of San Mateo - DPW	(650) 599-7281	SFischer@co.sanmateo.ca.us				
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		X	X		
Gordon Tong	County of San Mateo	(650) 363-4159	gtong@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				

Name	Agency	Phone	E-Mail	08/14/14	11/12/14	02/26/15	05/27/15
Steve Balestieri	County of San Mateo						
Cara Bautista	County of San Mateo	(650) 363-4125	cxbautista@smcgov.org				
Stephen Stolte	County of San Mateo	(650) 363-4133	sstolte@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@woodsidetown.org	X			
Catherine Chan	CSG Consultants	(650) 522-2517	catherinec@gsgengr.com	X			
Misty Hasty	CSG Consultants	(650) 522-2532	mistyh@csgengr.com	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
Kristin Kerr	EOA, Inc.	(510) 832-2852 X122	kakerr@eoainc.com	X	X		
No. Attending				34	26	26	18



San Mateo County

2nd Annual Litter Roundtable

- ✓ **This workshop is for:**
Municipal Waste and
Stormwater staff, and staff from
Municipal Waste Hauling
Companies

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

Wednesday, June 24, 2015
9:00 am – 12:00 pm

*There will be **no charge** for the workshop. A Continental breakfast will be provided.
Please pass this flyer to appropriate staff within your organization.*



Roundtable Highlights:

- Overview of Litter Issues and Regulations
- Commercial Waste Container Management Best Practices
- Work Session to produce a Draft Commercial Right Size, Right Service Outreach Effort for attending municipalities

REGISTRATION FORM

Name: _____

Title: _____

Agency: _____

Phone: _____

Email: _____

Please complete and send to Melissa Morgan by email melissa@eoainc.com

or fax (510-832-2856) no later than Wednesday, June 17th, 2015.

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



Countywide Litter Work Group

2nd Annual Litter Roundtable

San Mateo Public Library
55 W. 3rd Ave, San Mateo
June 25, 2014

Agenda

The goal of the Roundtable is to bring together municipal staff and staff from their respective franchised waste haulers to develop efforts for reducing litter in their communities and to comply with the Municipal Regional Stormwater Permit.

This year's Roundtable is focusing on the business community.

One strategy, called "Right Size – Right Service" aims to reduce litter through ensuring that commercial customers have the right waste services – minimizing overflowing containers and increasing recycling and composting where possible.

Attendees will review policies and procedures for this effort and then go through an exercise to develop their own conceptual outreach effort.

Registration and Refreshments	8:45 – 9:00
Welcome and Overview Matt Fabry, <i>SMCWPPP</i>	9:00 – 9:15
Keynote Speaker Councilmember Ruben Abrica, City of East Palo Alto Introduction by Michelle Daher, City of East Palo Alto	9:15 – 9:40
Experience from Brisbane: Franchised Hauler Changes Randy Breault, <i>City of Brisbane</i>	9:40 – 10:00
Break Out Sessions Each municipality will work with their hauler representatives to develop individualized conceptual outreach efforts with the following elements: <ul style="list-style-type: none">• Target Areas• Program Elements• Measuring Success• Outreach Materials• Timeframe and Next Steps	10:00 – 12:00

SMCWPPP 2nd Annual Litter Roundtable
Wednesday, June 24, 2015

First Name	Last Name	Agency
Diane	Lynn	City of Belmont
Randy	Breault	City of Brisbane
Rick	Horne	City of Burlingame
Pam	Boyle Rodriguez	City of Burlingame
Ruben	Abrica	City of East Palo Alto
Michelle	Daher	City of East Palo Alto
Heather	Abrams	City of Menlo Park
Michael	Killigrew	City of Millbrae
Shelly	Reider	City of Millbrae
Mike	Gibbons	City of Redwood City
William	Li	City of San Bruno
Lou	Duran	City of San Carlos
Frank	Amoroso	City of San Carlos
Roxanne	Murray	City of San Mateo
Ron	Kasper	City of San Mateo
Andrew	Wemmer	City of South San Francisco
Lillian	Clark	County of San Mateo
Julie	Casagrande	County of San Mateo
Gordon	Tong	County of San Mateo
Carole	Foster	County of San Mateo
Peter	Schultze-Allen	EOA
John	Fusco	EOA
Chris	Sommers	EOA

SMCWPPP 2nd Annual Litter Roundtable
Wednesday, June 24, 2015

<i>First Name</i>	<i>Last Name</i>	<i>Agency</i>
Gino	Gasperini	Recology San Mateo
Mia	Rossi	Recology San Mateo
Yvette	Madera	Recology San Mateo
Monica	Devincenzi	RethinkWaste
Cliff	Feldman	RethinkWaste
Trish	Mulvey	SCBWMI
Susan	Kennedy	South San Francisco Scavenger
Barbara	Bernardini	South San Francisco Scavenger



Appendix 16

- MRP Regional Supplement for Training and Outreach: Annual Reporting for FY 2014-2015
- Pesticides Subcommittee Annual Report and Effectiveness Assessment 2014-2015

Annual Reporting for FY 2014-2015

Regional Supplement for Training and Outreach

San Francisco Bay Area Municipal Regional Stormwater Permit



September 2015



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

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

Tom Dalziel, 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

Douglas Scott, Vallejo Sanitation and Flood Control District

**MRP Regional Supplement for Training and Outreach
Annual Reporting for FY 2014-2015**

Table of Contents	Page
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C.9.h.i. Point of Purchase Outreach	4

LIST OF ATTACHMENTS:

C.7.c. Media Relations – Use of Free Media

BASMAA Media Relations Campaign Final Report

C.9.h.i. Point of Purchase Outreach

New *Our Water, Our World* graphic / display materials

Photos of trade show booths

Copy of *Our Water, Our World* advertisement

Final report on Pilot Enhanced Program at Home Depots

Summary of tasks for Advanced Regional Trainings with Home Depot

Screen shots of Mobile Inline Content in the Chinook Book App

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2014-2015

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.d., Control of Mobile Sources,
- Provision C.7.c., Media Relations – Use of Free Media,
- Provision C.7.d., Stormwater Point of Contact, and
- Provision C.9.h.i., Point of Purchase Outreach.

These regionally implemented activities are conducted under the auspices of the Bay Area Stormwater Management Agencies Association (BASMAA), a 501(c)(3) non-profit organization comprised of the municipal stormwater programs in the San Francisco Bay Area. Most of the 2014-2015 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.d. Control of Mobile Sources

This provision requires Permittees to develop and implement a program to reduce the discharge of pollutants from mobile businesses, including development and implementation of minimum standards and BMPs, and outreach to mobile businesses. 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](#)

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2014-2015

[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.

Subsequent to the development and implementation of the existing program, BASMAA and the Permittees scoped and budgeted for a new project to enhance the existing Surface Cleaner Training and Recognition program in the following ways.

1. Expand the existing Surface Cleaner Training and Recognition Program to include two new mobile business categories - vehicle-related cleaning and carpet cleaning;
2. Develop best management practices for the two new categories based on existing BMPs; and
3. Create outreach materials for the new categories.

The following has been accomplished:

- BMPs – Best management practices were developed and are being finalized for vehicle-related cleaning and carpet cleaning based on existing sets from BASMAA member agencies, other public agencies, and the trade association.
- Outreach – Outreach materials are being developed for vehicle-related cleaning and carpet cleaning.

Public Information and Outreach

C.7.c. Media Relations – Use of Free Media

This provision requires Permittees to participate in or contribute to a media relations campaign, maximize use of free media/media coverage with the objective of significantly increasing the overall awareness of stormwater pollution prevention messages and associated behavior change in target audiences, and to achieve public goals. The Annual Reporting requirement includes providing the details of each media pitch, such as the medium, date, and content of the pitch. BASMAA has conducted a Regional Media Relations project since FY 1996-1997 that assists Permittees in complying with this type of provision. The FY 2014-2015 BASMAA Regional Media Relations project conducted work on six pitches (see attached Media Relations Campaign Final Report FY 2014-2015 for details):

- Ants / Pesticides,
- No Burning Gift Wrap,
- Car Washing,
- Trash,
- Native Plants, and
- Social Media.

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2014-2015

C.7.d. Stormwater Point of Contact

This provision requires Permittees to individually or collectively create and maintain a point of contact, e.g., phone number or website, to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives. The Annual Reporting requirement states that any change in the contact be reported in annual reports subsequent to FY 2009-2010 annual report. There was no change in FY 2014-2015 to the point of contact provided by BASMAA. 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.h.i. 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 requirement allows Permittees who participate in a regional effort to comply with C.9.h.i., to reference a report that summarizes these actions. Below is a report of activities and accomplishments of the *Our Water, Our World* program for FY 2014-2015.

- Initiated comprehensive review and major overhaul of program materials resulting in new (see attachments):
 - Logo,
 - Shelf tag,
 - Literature rack header and side panel signage,
 - Product Guide, and
 - Aisle signage.
- Conducted an informal survey of selected stores' customers (n=65) and employees / managers (n = 21) to assess the status and visibility of the in-store display materials. The results provided general direction to the overhaul of the program materials – primarily a refocus of the in-store materials on making customers aware of and helping them find less-toxic products.
- 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.
- Printed an inventory of the following: fact sheets, shelf tags, and Home Depot-

MRP Regional Supplement for Training and Outreach Annual Reporting for FY 2014-2015

specific pocket guide, from which participating agencies could purchase materials.

- Updated less-toxic Product Lists: general plus OSH and Home Depot-specific lists/labels.
- Maintained [Our Water, Our World website](#).
- Provided [Ask-the-Expert](#) service—which provides 24-hour turnaround on answers to pest management questions.
- Provided and staffed exhibitor booths (see photos attached).
 - Excel Gardens Dealer Show, Las Vegas (August 2014)
 - L&L Dealer Show, Reno (October 2014)
 - NorCal trade show, San Mateo (February 2015)
- Provided on-call assistance (e.g., display set-up, training, IPM materials review) to specific stores (e.g., OSH, Home Depots).
- Provided print and web advertising – [Chinook Coupon Book](#) (see back cover ad attached).
- Worked with Chinook Book to make changes to the mobile application (app) – [OWOW mobile app](#) (see attached screen shots of Mobile Inline Content in the Chinook Book App).
- Continued to work with select local agencies and with Home Depot to implement, a pilot enhanced program in 10 Home Depots in the greater Bay Area and Sacramento. The enhanced program was implemented primarily by the IPM Advocates (see attached Final Report).
- Developed and conducted advanced regional trainings for Home Depot (see attached summary of tasks).
- Advocates trained 1,000 store employees and reached 4,300 customers at *Our Water, Our World* store events in fiscal year 2014/2015.

Additionally in FY 2014-2015, BASMAA continued work on a project related to *Our Water, Our World*:

Greener Pesticides for Cleaner Waterways – This EPA funded grant project is being led by the San Francisco Estuary Partnership. The project is implementing pesticide pollution prevention through engaging residential pesticide users to use less toxic products. Part of the project involves doing so through the *Our Water, Our World* program using the IPM Advocates, the former managed and the latter qualified by BASMAA (see [Greener Pesticides for Cleaner Waterways](#) for more details).

ATTACHMENT

C.7.c. Media Relations – Use of Free Media

BASMAA Media Relations Campaign Final
Report

**Bay Area Stormwater Management Agencies Association (BASMAA)
Media Relations Campaign
Final Report FY 2014-2015**

**Submitted by O'Rorke Inc
July 13, 2015**

During the fiscal year 2014-2015, O'Rorke Inc. continued to serve as BASMAA's media relations contractor.

Early in the year O'Rorke worked directly with project manager Sharon Gosselin and the PIP committee to brainstorm pitch topics. The result was an expansion of what constitutes a pitch. This year, the work plan allowed for five planned pitches (pesticides/ants, holiday/gift wrap burning, trash, native plants, car washing) and for a sixth in the form of establishing a social media presence for BASMAA on Facebook and Twitter. As always news monitoring and looking for potential break news responses was an ongoing task.

Additionally, O'Rorke provided localized templates of many of the press releases developed for the regional campaign as a way to assist local programs with their own media efforts.

In FY 2014-15 work was conducted on six pitches resulting in sixty-three total media placements (stories and PSAs). The report that follows gives a synopsis of each pitch and the number and type of placements each garnered. Coverage reports for the year are attached.

Social Media

This year saw the start of a social media presence for BASMAA and Facebook and, later, Twitter, which were launched in the fall. This year's efforts focused on following relevant pages and accounts, promoting the resources on baywise.org through the platforms and—when possible—promoting media coverage of BASMAA stories. As time went on efforts also included boosted posts on Facebook and sharing of other agencies' and organizations' materials.

Although O'Rorke fully expected a slow start to this effort, we felt strongly it was important for BASMAA to make the leap to social media. As the media relations landscape continues to change, it is crucial for the agency to have its own voice and promote its own messages via this very powerful medium.

As of this writing the BASMAA Facebook page has fifty likes and the Twitter account has twenty-seven followers.

Boosted posts on Facebook performed very well. For minimal cost, boosted posts allowed BASMAA to achieve over 65,000 impressions as follows:

- A post linking to a BASMAA story about ants on claycord.com had 22,085 impressions and received 229 clicks.
- Another boosted post linking to Baywise.org had 4,576 impressions and 15 clicks.
- A post on gardening achieved 39,128 impressions and 79 clicks. Boosted posts are a way to help increase BASMAA's presence as a resource in the Bay Area community and a strategy O'Rorke would recommend for the coming year.

Ants/Pesticides

This pitch focused on ant invasions and less-toxic ways of controlling them. The story was picked up by seventeen media outlets.

No Burning Gift Wrap

O'Rorke coordinated a joint pitch between BASMAA and the Bay Area Air Quality Management Association, an agency that has a high profile during the winter because of no burn nights. The story garnered twenty-four media placements.

Car Washing

This pitch included PSAs and development of a local use article template. As of this writing the PSAs had been used on air and online by five radio stations.

Trash

O'Rorke put together a multi-faceted pitch to address this important pollutant of concern. We worked with a Bay Area resident to develop an op-ed about his personal connection to the Bay and his concerns about trash in the Bay. As for this writing, despite aggressive pitch efforts, the piece has not been published.

The other elements of the pitch included development of a local use article template (for customizing) and sending PSAs to all regional radio stations.

Native Plants

As of this writing the native plants release and local template are being finalized. The pitch focuses on the importance of native plants in a time of drought and offers resources for getting information about native plants.

Recommendations for FY 2015-16

- Build on the start of BASMAA's social media presence on Facebook and Twitter. Continue to post, boost posts and Facebook and look for linking/sharing opportunities as well as ways to promote BASMAA's own content. Work with committee to set growth goals for FY 15-16.
- Continue to look to new local/regional studies as a jumping off point for pitching.
- Utilize BayWise.org in pitches as a resource; have homepage and content updated as needed to keep site relevant to media relations efforts.

O’RORKE, INC.

ANTS PITCH

BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION

NOVEMBER 2014

This report summarizes the coverage of the Ants pitch for November 2014.

Media Coverage:

Patch.com

The Ants release was published in the following Patches. An article was written by Susan C. Schena.

- [Alameda](#)
- [Belmont](#)
- [Campbell](#)
- [Castro Valley](#)
- [Cupertino](#)
- [Los Altos](#)
- [Los Gatos](#)
- [Menlo Park – Atherton](#)
- [Napa Valley](#)
- [Oakland](#)
- [Palo Alto](#)
- [Pleasanton](#)
- [Redwood City – Woodside](#)
- [San Anselmo – Fairfax](#)
- [San Leandro](#)
- [San Mateo](#)

Claycord.com

The Ants release was published on claycord.com.:

- <http://claycord.com/2014/11/09/got-ants-avoid-exterior-spraying-and-manage-this-common-household-nuisance-with-effective-less-toxic-controls/>

O’RORKE, INC.

GIFT WRAP PITCH

BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION

JANUARY 7, 2015

This report summarizes the broadcast and online coverage of the Gift Wrap pitch for the period between 12/4/2014 – 12/25/2014 issued by the Bay Area Stormwater Management Agencies Association and Bay Area Air Quality Management District.

Media Coverage:

Patch.com

The Gift Wrap release was published in the following Patches (all links available):

- [Alameda](#)
- [Belmont](#)
- [Campbell](#)
- [Castro Valley](#)
- [Cupertino](#)
- [Los Altos](#)
- [Los Gatos](#)
- [Menlo Park – Atherton](#)
- [Mill Valley](#)
- [Mountain View](#)
- [Napa Valley](#)
- [Oakland](#)
- [Palo Alto](#)
- [Pleasanton](#)
- [Redwood City – Woodside](#)
- [San Anselmo – Fairfax](#)
- [San Leandro](#)
- [San Mateo](#)
- [Saratoga](#)
- [South San Francisco](#)

Santa Rosa Press Democrat

The Gift Wrap release was published in the *Santa Rosa Press Democrat*:

- [Did you know burning gift wrap is illegal – and dangerous?](#)

Broadcast

- KNTV-TV covered the story on NBC Bay Area News at 11am and twice on the Today in the Bay segment on December 5.
- Sharon Gosselin on behalf of BASMAA was interviewed by Michael Finney on Consumer Talk on KGO radio on December 6.
- Ralph Borrmann on behalf of BAAQMD was interviewed by KLIV radio on December 7.

O'RORKE, INC.

CAR WASHING PITCH--PSAS

BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION

JUNE 30, 2015

This report summarizes the broadcast coverage of the Car Washing PSA, which were distributed to regional radio stations in late June.

O'Rorke reached out to 41 stations in the Bay Area with written PSAs and secured on air spots and website posts with 21 stations.

Media Coverage:

Broadcast and Online

The Trash release aired on the following stations, and was also posted to station websites:

- KISQ-FM 98.1
- KKSF-FM 103.7
- KMEL-FM 106
- KIOI-FM 101.3
- KYLD-FM 94.9

O’RORKE, INC.

TRASH PITCH--PSAS

BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION

JULY 8, 2015

This report summarizes the broadcast coverage of the Trash PSAs pitch for the period between 5/1/2015 – 5/30/2015.

O’Rorke reached out to 41 stations in the Bay Area with written PSAs and secured on air spots and website posts with 21 stations.

Media Coverage:

Broadcast

The Trash release aired on the following stations:

- KKIQ-FM 101.7
- KALW-FM 91.7
- KCBS-AM 740
- KITS-FM 105.3
- KLLC-FM 97.3
- KMVQ-FM 99.7
- KPOO-FM 89.5
- KKDV-FM 92.7

The Trash release was posted onto the websites of the following stations:

- KOIT-FM 96.5
- KLBX-FM 102.9
- KISQ-FM 98.1 – posted on 5/1
- KMEL-FM 106 – posted on 5/1
- KIOI-FM 101.3 – posted on 5/1
- KYLD-FM 94.9 – posted on 5/1
- KKSF-FM 103.7 – posted on 5/1
- KBAY-FM 94.7 – posted on 5/1
- KEZR-FM 106.5 – posted on 5/1

The Trash release aired and was posted onto the websites of the following stations:

- KSAN-FM 107.7 – week of 5/10
- KNBR-AM 680 – week of 5/10
- KFFG-FM 104.5/KFOG-FM 97/7 – week of 5/10
- KVVF-FM 105.7/KVVZ-FM 100.7
 - Aired from 5/15 to 5/30
 - Posted from 5/18 to 5/24

ATTACHMENTS

C.9.h.i. Point of Purchase Outreach

New *Our Water, Our World* graphic / display materials (2 pages)

Photos of trade show booths (1 page)

Copy of *Our Water, Our World* advertisement (1 page)

Final report on Pilot Enhanced Program at Home Depots (38 pages)

Summary of tasks for Advanced Regional Trainings with Home Depot (101 pages)

Screen shots of Mobile Inline Content in the Chinook Book App (3 pages)

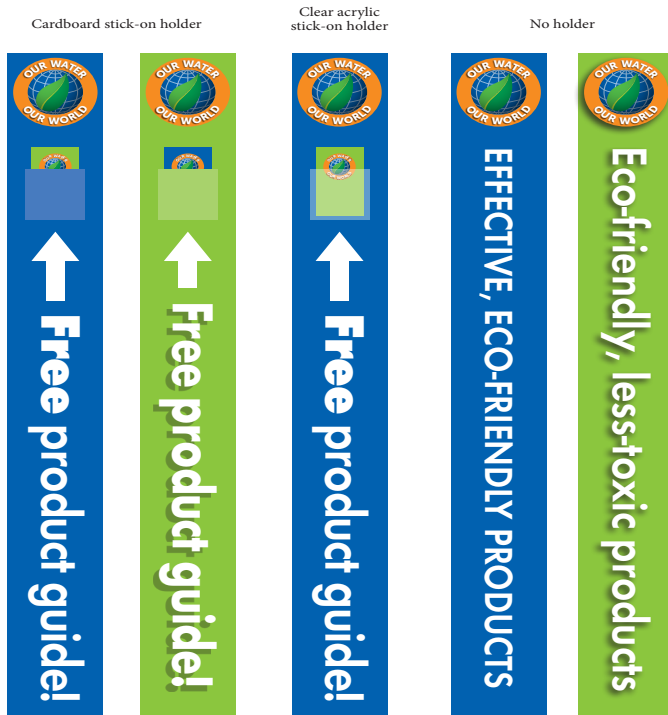
New Our Water, Our World graphic / display materials



Logo



Shelf tag



Literature rack header and side panel signage

New Our Water, Our World graphic / display materials (continued)

EFFECTIVE • ECO-FRIENDLY **LOOK FOR THESE LESS-TOXIC PRODUCTS**



Less Toxic Products

Manage Pests in Your Home and Garden

www.ourwaterourworld.org

Ants
Diatomaceous earth
 Concern, Safer Brand, St. Gabriel Organics
Enclosed bait stations
 Amdro Kills Ants, Combat Source Kill 4 Ant Bait, Terro Ant Killer II Liquid Ant Bait Station
Plant-based insecticides/repellents
 Orange Guard, EcoSmart Ant & Roach Killer
Aphids and Whiteflies
Insecticidal soap
 Bayer Advanced Natria, Bonide, Garden Safe, Nature's Care, Safer Brand
Mineral oil
 Bonide All Seasons, Monterey, Summit
Neem oil
 Bayer Advanced Natria, Bonide, Bonide Rose RX 3 in 1, Monterey
Physical controls
 Bug Blaster, Sticky Aphid Whitefly Trap
Plant-based insecticides/repellents
 Dr. Earth Final Stop sprays, Organocide
Pyrethrins with canola oil
 Monterey Take Down Garden Spray, Nature's Care Garden Insect Control

Fleas
Beneficial nematodes
 Steinernema carpocapsae, Heterorhabditis bacteriophora
Borates
 Ecology Works Dust Mite and Flea Control
Diatomaceous earth
 Concern, Safer Brand, St. Gabriel Organics
Insecticidal soap
 Bayer Advanced Natria, Bonide, Garden Safe, Nature's Care, Safer Brand — Apply outdoors where pets lie
Gophers, Moles, Voles
Physical controls
 Digger's Root Guard Gopher Baskets, gopher traps
Repellents containing castor oil
 Bonide Mole Max, Sweeney's, Tomcat Mole and Gopher Repellent, Uncle Ian's
Mosquitoes
Biological controls
 Bonide Mosquito Plunks, Summit Mosquito Dunks and Bits

Roaches
Boric acid powders
 Hot Shot Max Attract Roach Killing Powder, Roach Prufe
Diatomaceous earth
 Concern, Safer Brand, St. Gabriel Organics
Enclosed bait stations
 Combat Source Kill 5, Combat Source Kill for small and large roaches
Roach traps
 Black Flag Roach Motel, Victor Insect Magnet
Snails and Slugs
Copper barrier tape
Iron phosphate bait
 Bayer Advanced Natria, Bonide Slug Magic, Escar-Gol, Garden Safe, Sluggo, Nature's Care, Worry Free

Spider Mites
Azadirachtin
 Azamax, Azatrol
Mineral oil
 Bonide All Seasons, Monterey, Summit
Neem oil
 Bayer Advanced Natria, Bonide, Bonide Rose RX 3 in 1, Monterey
Pyrethrins with canola oil
 Monterey Take Down Garden Spray, Nature's Care Garden Insect Control
Spinosad
 Bonide Captain Jack's Dead Bug Brew
Yellowjackets
Plant-based insecticides
 EcoSmart Wasp and Hornet Killer, Safer Brand Wasp and Hornet Killer
Traps
 Rescue, Safer Brand

This pocket guide was developed by Marin County Stormwater Pollution Prevention Program (MCSTOPP), San Rafael, CA, with assistance from Ann Joseph Consulting.
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MANAGE PESTS WITH EFFECTIVE, ECO-FRIENDLY PRODUCTS! **PLANTS THAT ATTRACT HELPFUL INSECTS AND BUTTERFLIES** **LESS TOXIC ACTIVE INGREDIENTS** **MORE INFORMATION**

When you water a lawn or garden after using pesticides or fertilizer, polluted water can run off into storm drains and on to local creeks, lakes, bays, or the ocean. But there are plenty of ways to keep pests away that don't pollute, like using the less-toxic products you'll find in this guide!

Our Water Our World is a partnership between home and garden centers and local government agencies working together to reduce water pollution caused by pesticides. Look for **Our Water Our World** fact sheets in your local store.

Look for this tag to find less-toxic products



Aster (*Aster* spp.)
 Baby blue eyes (*Nemophila menziesii*)
 Calendula (*Calendula* spp.)
 California poppy (*Eschscholzia californica*)
 California wild lilac (*Ceanothus* spp.)
 Chervil (*Anthriscus cerefolium*)
 Chrysanthemum (*Chrysanthemum* spp.)
 Coriander (*Coriander sativum*)
 Cosmos (*Cosmos* spp.)
 Coyote brush (*Baccharis pilularis*)
 Dill (*Anethum graveolens*)
 Elderberry (*Sambucus* spp.)
 Fleabane (*Erigeron* spp.)
 Pincushion flower (*Scabiosa columbaria*)
 Rosemary (*Rosmarinus officinalis*)
 Rudbeckia (*Rudbeckia* spp.)
 Sticky monkey flower (*Mimulus aurantiacus*)
 Sunflower (*Helianthus* spp.)
 Sweet alyssum (*Labularia maritima*)
 Wild buckwheat (*Eriogonum* spp.)
 Yarrow (*Achillea millefolium*)
 Zinnia (*Zinnia* spp.)

Active ingredients are listed on the front of the product. For a more complete list, go to www.ourwaterourworld.org.

Abamectin	Hydramethylnon <small>(ONLY use in containerized bait or gel form)</small>
Ammoniated soap of fatty acids	Hydrophobic extract of neem
Azadirachtin	Iron phosphate
Bacillus subtilis	Lemon eucalyptus oil
Bacillus thuringiensis israelensis	Methoprene
Borax and boric acid	Orthoboric acid
Canola oil	Paraffinic oil
Castor oil, vegetable wax, gum resin	Petroleum oil
Citric acid	Picardin
Clove, rosemary, sesame and thyme oil	Potassium bicarbonate
Corn gluten	Potassium soap (or salts) of fatty acids
Cottonseed oil	Pyrethrins
D-Limonene	Sodium tetraborate decahydrate
Diatomaceous earth	Soybean oil
Eugenol	Spinosad

Visit www.ourwaterourworld.org for more information, including:

- Common pests and ways to manage them without using toxic products
- Photos and information about helpful bugs that eat pests, and the plants that attract them

Learn more about less-toxic pest control:

- To see photos and learn more about helpful insects, visit the Natural Enemies Gallery at the UC IPM website at www.ipm.ucdavis.edu/PMG/NE/index.html
- Contact your local Agricultural Extension Office for help identifying and managing pests

GETTING RID OF UNWANTED PRODUCTS
 Take pest control products you don't want to a household hazardous waste collection site. To find a site near you, go to search.earth911.com and type 'pesticide' and your zip code.

Product Guide

FOR HEALTHY GARDENS, PEOPLE, AND PETS

Find effective, eco-friendly products

Look for this tag



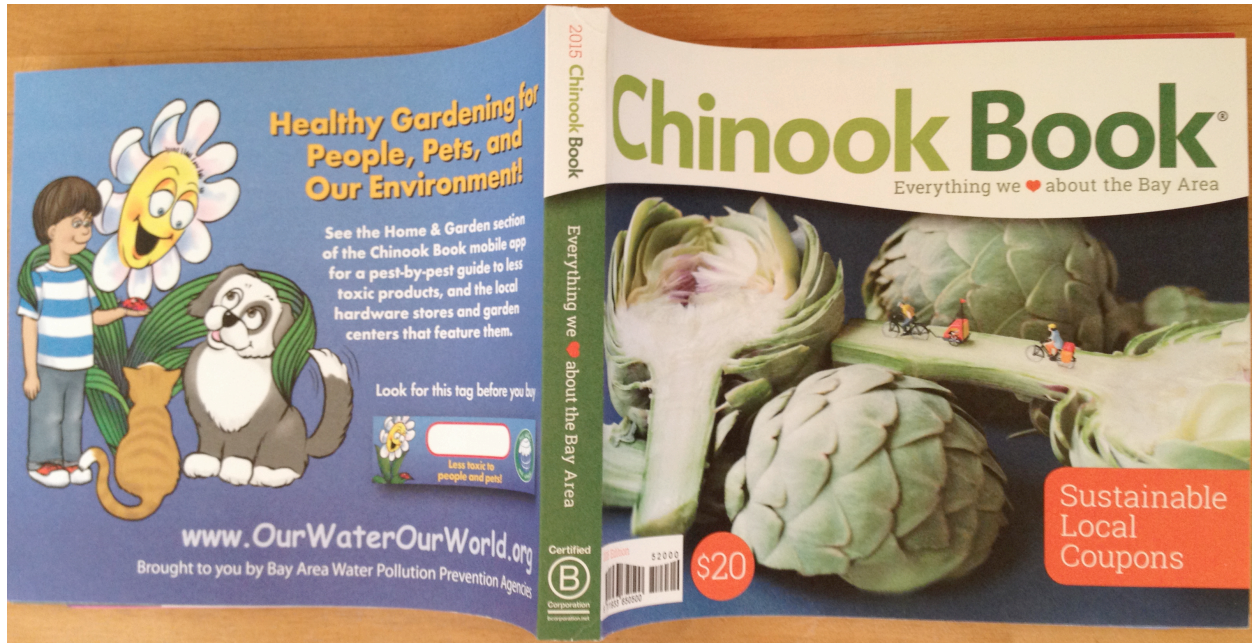
www.OurWaterOurWorld.org

Aisle signage

Photos of trade show booths



Copy of *Our Water, Our World* advertisement



Home Depot and *Our Water Our World* Regional Pilot Program



Project Final Report

Prepared by:
Ann Joseph Consulting
Debi Tidd Consulting

March 30, 2015

Our Water Our World
Home Depot
Bay Area Stormwater Management Agencies Association



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Our Water - Our World



The Home Depot and *Our Water Our World* Regional Pilot Program

INTRODUCTION

The Our Water Our World Program is a collaboration among regional and local water agencies in California designed to provide information to consumers about pest management strategies and less-toxic alternatives that help protect water quality. Since 2003, Home Depot and Our Water Our World (OWOW) have partnered to reduce toxic runoff from fertilizers and pesticides into local waterways. The OWOW program currently works with 56 Home Depot stores in California.

This project grew out of this successful partnership and the ever-increasing needs of consumers seeking less-toxic products. With Home Depot's continually expanding stock of less-toxic products, OWOW works to help expand these choices and to respond to each store's needs for assistance with customer questions, product information, displays and Associate trainings.

The goal of this project was to improve delivery of Integrated Pest Management (IPM) information at Home Depot stores through education of employees and customers. In addressing this goal, this project has helped to improve Associates' knowledge of less-toxic products and pest management strategies, increase visibility of these products, and promote stores as environmentally-friendly businesses while maintaining or helping to increase the sales of less-toxic pest control products.

This enhanced program brought a two-level training format for Home Depot Associates: a standard training for all Associates, and an advanced training for one Associate per store who was designated as the Green Garden Specialist.

SCOPE OF WORK

PROJECT DELIVERABLES

To meet these goals, several program components were developed including:

- Development of two levels of training curriculum, including extensive training binders and packets, supplemental handouts, and powerpoint presentations.
- Identification of a Green Garden Specialist at each store. Specialists were provided with specialized training, a set of resource materials and continuing education/information.

- Training for all Associates on how to explain/provide customers with solutions to seasonal pest problems
- Development of resource materials specific to Home Depot stores including a seasonal pest management calendar and *Pests Bugging You Pocket Guide*.
- Creation and promotion of large end-cap displays and smaller seasonal wing-stack displays of less-toxic products

Outline of the enhanced resources for the 10 stores:

- Identified a Green Garden Specialist (HD Associate) who became the expert at each store. This specialist mentored other Associates. (OWOW worked with Store Managers to identify ideal candidates).
- Provided resources so that Associates had confidence when helping customers. These included access to websites and support agencies, and support from OWOW Advocates, IPM consultants trained to work with Associates and customers. (See The Role of IPM Advocates below.)
- Provided tools for pest management including books, Pest ID cards, pest samples, and hand lenses with lanyards.
- Provided monthly store visits from an OWOW Advocate. Many Advocates visited stores weekly during the busy Spring and Summer season.
- Provided a Seasonal Pest Calendar to address pest problems ahead of the pest problems that will focus on the products Home Depot carries.
- Provided an enhanced training for Associates.
- Provided an advanced training for Green Garden Specialists.
- Provided one year of mentoring for each Green Garden Specialist by Advocates.
- Provided access to an entomologist for OWOW Advocates to help identify pests and diseases and to answer customer questions.
- Provided one outreach event for customers during the year focusing on current pest problems and customer questions (One 4-hour event per store.) During this time, we actually provided 2 outreach events at each store.
- Added seasonal display with ideas for pest management (wing stacks and end caps) and provide signage.

THE ROLE OF IPM ADVOCATES

OWOW Advocates are IPM consultants working for the OWOW program and local agencies. Advocates work closely with store managers and staff to implement OWOW in stores in their service areas. During the full year of the program (January to December, 2014), six IPM Advocates were assigned to 10 project stores. During monthly store visits, they maintained tags labeling less-toxic products called shelf talkers (see page 10) and racks of pest management fact sheets (see page 11), mentored the Green

Garden Specialists by answering questions on products and pests, and kept them up to date on invasive pests coming to the area. They scheduled and conducted Associate trainings and customer outreach events. During the store visits and outreach events many customers were guided to less toxic solutions for their pest problems. In addition, the IPM Advocates assisted Associates and vendors with end cap implementation and signage.



IPM Advocates receiving an IPM Innovators Award from the California State Dept of Pesticide Regulation

PARTICIPATING STORES

Here is a list of the 10 Home Depot stores included in this project:

COUNTY	CITY & STORE #	IPM Advocate
Alameda	Emeryville 627	Suzanne Bontempo
Marin	San Rafael 657	Anne Rogers
Napa	Napa 6652	Teresa Lavell
San Mateo	San Mateo 632, E. Palo Alto 6603	Suzanne Bontempo
Solano	Fairfield 637, Vallejo 633	Teresa Lavelle
Sonoma	Santa Rosa 1379	Annie Joseph
Contra Costa	San Ramon 6604	Debi Tidd
Sacramento	Elk Grove 6674	Steve Zien

RESULTS AT A GLANCE

During the this project, IPM Advocates successfully:

- Trained 130 Associates
- Provided 20 outreach events
- Helped create/label 10 end caps and participated in wing stack displays (see page 9).
- Reached over 1400 customers with work in-aisle and at outreach events

As a result of this project:

- 100% of store managers surveyed reported greater sales of less-toxic products from 2013 - 2014 even with a drought.
- 100% of the managers say their employees now have more confidence when identifying pest problems.
- 100% of the stores increased their shelf space for less-toxic products in 2013 – 2014 with the end cap displays. The store managers attribute these changes to the efforts of the IPM Advocates in the Home Depot Regional Pilot Program.

PROJECT TASKS

TASK 1: Develop Materials

Task 1.1: Develop resources for a two-tiered training program for Associates, and identify a key individual at each store who will become the Green Gardening Specialist.

Providing Home Depot Associates with extensive training and supporting resource materials is a key component of this program. This training helps Associates know how to use the OWOW in-store materials, such as shelf talkers and fact sheets, and gives them an understanding of water pollution issues associated with more toxic-products. Trainings were designed to help them answer a variety of customer questions on pest management, and to help them quickly identify less-toxic products.

A Green Garden Specialist was identified at each store and provided with additional training and resources. Working as a mentor to other Associates, each Green Garden Specialist helped to disseminate product and pest management information provided by Advocates.

All store Associates were offered a basic training in pest identification and management techniques. These trainings also included helping customers to select plant material, fertilizers and soil amendments. In addition to this training, Green Garden Specialists were provided with a more advanced training with detailed information on pests and products, as well as new pests and diseases. This training included hands-on experience using pest management resources and identification of pests with hand lenses.



Learning to use a hand lens at the Green Garden Specialist Training



Training for Associates in San Mateo

Task 1.2: Provide easy-to-access resources for Associates so they can confidently assist customers with pest management questions.

Each Associate was provided with an extensive resource packet, and Green Garden Specialists were provided with even more advanced resource materials in a training binder. These materials included:

- A laminated Good Bug/Bad Bug insect identification chart.
- 10 Most Wanted Bugs brochures for identifying beneficial insects and associated plants.
- A *Home Depot Monthly Pest-at-a Glance Calendar* of seasonal pest management techniques and products specific to Home Depot stores (See Appendix A)
- Copies of the OWOW fact sheet handouts on a variety of specific pests and landscape problems.
- A copy of *Plants and Landscapes for Summer-Dry Climates* to help with customer plant selections.
- A list of less-toxic products carried by Home Depot, information on ordering beneficial insects on Home Depot on-line (see Appendix C), and lists of other store materials for pest management such as screening, caulking, mulch, etc.

- An extensive resource list with books and web-sites for locating more detailed information on pest management solutions.
- A set of UC Statewide IPM retail newsletters with articles on pest management and marketing tips.
- Additional training packet information including: information on product ingredients and how they work, how to read a pesticide label, lists of plants to attract beneficial insects, guides to managing common landscape pests, instructions for helping customers with management techniques such as dormant spraying and using nematodes, and information on identifying new and invasive pests.

Task 1.3: Provide IPM Materials from the University of California for Associates to use when assisting customers.

During the training, Associates were introduced to several easy-to-use resource materials published by the University of California, and were instructed in the use of these materials to answer customer questions. These materials included:

- Two sets of laminated, Pest Identification Cards along with hand lenses to help with identification.
- Copies of Pests of Landscape Trees and Shrubs for identifying pests and diseases.

Task 1.4: Develop and provide a Pests Bugging You Pocket Guide for Associates with solutions specific to Home Depot’s product line. (See Appendix B)

Part of this project included the development of a small, folded, ‘apron-pocket’ sized pest management guide called “**Pests Bugging You? Products Less Toxic to People and Pets.**” This guide was designed to be used by Associates when answering customer questions, and to be given out to store customers to refer to on future visits. The guide was designed to reflect products and plants specific to Home Depot stores. Included in the guide:

- A list of 10 common pests with less-toxic products for managing each pest.
- A list of less-toxic ingredients listed on product labels.
- General information on choosing products and managing pests with less-toxic products.
- How to safely dispose of unwanted products.
- Resource information for more detailed information.
- A list of plants that attract beneficial insects and butterflies.

Pests Bugging You? Products Less Toxic to People and Pets

www.ourwaterourworld.org

LESS TOXIC PRODUCTS

Ants
 Amdro Kills Ants (bait stations)
 EcoSmart Ant & Roach Killer
 EcoSmart Organic Insect Killer (spray)
 Safer Brand Diatomaceous Earth Ant & Crawling Insect Killer
 Terminix Ultimate Protection Crawling Insect Killer (aerosol)
 Terro II Liquid Baits

Aphids
 Bayer Advanced Natria Insecticidal Soap
 Bayer Advanced Natria Insect, Disease and Mite Control (spray)
 Bayer Advanced Natria Neem Oil
 Bayer Advanced Natria Rose and Flower Spray
 Bonide All Seasons Horticultural and Dormant Spray Oil
 Bonide Rose Rx 3 in 1 Spray
 EcoSmart Garden Insect Killer
 Ladybugs (Home Depot On-line)
 Organic Labs Organocide

Fleas
 Insecticidal soaps (apply outdoors where pets lie)
 Safer Brand Diatomaceous Earth Ant & Crawling Insect Killer
 Victor Ultimate Flea Trap (monitoring tool)

LESS TOXIC PRODUCTS

Gophers and Moles
 Digger's Root Guard Gopher Baskets
 Gopher Traps
 Sweeney's Mole and Gopher Repellent
 Uncle Sam's Mole and Gopher Repellent

Mealybugs
 Bayer Advanced Natria Insect, Disease and Mite Control (spray)
 Bayer Advanced Natria Insecticidal Soap
 Organic Labs Organocide

Mites and Whiteflies
 Bayer Advanced Natria Insecticidal Soap
 Bayer Advanced Natria Insect, Disease and Mite Control (spray)
 Bayer Advanced Natria Neem Oil
 Bayer Advanced Natria Rose & Flower Insect, Disease and Mite Control (spray)
 Bonide All Seasons Horticultural and Dormant Spray Oil
 Bonide Captain Jack's Dead Bug Brew
 Bonide Rx 3 in 1 Spray

Mosquitoes
 Mosquito Dunks

LESS TOXIC PRODUCTS

Roaches
 Black Flag Roach Motel
 Combat Source Kill Max Small Roach Bait Station
 EcoSmart Ant and Roach Killer
 Harris Famous Roach Tablets
 Safer Brand Diatomaceous Earth Ant & Crawling Insect Killer
 Terminix Ultimate Protection Crawling Insect Killer (aerosol)

Snails and Slugs
 Bayer Advanced Natria Snail and Slug Killer Bait
 Corey's Slug and Snail Copper Tape (barrier)
 Sluggo

Yellowjackets
 Eco Smart Flying Insect Killer
 Rescue WFF Trap
 Rescue Yellowjacket Trap Attractant
 Rescue Yellowjacket Traps
 Terminix Ultimate Protection Stinging Insect Killer (Aerosol)

LESS TOXIC ACTIVE INGREDIENTS

Active ingredients are listed on the front of the product. This is a partial list of active ingredients found in products considered less toxic. For a more complete list, go to www.ourwaterourworld.org.

Abamectin	Hydramethylnon (ONLY use in containerize/bait or gel form)
Azinphos methyl	Hydrophobic extract of neem
Bacillus thuringiensis	Iron phosphate
Isoselenic	Limonene eucalyptus oil
Borax and boric acid	Methoxyfenozide
Castor oil, vegetable wax, gum resin	Orthoboric acid
Citric acid	Paraffinic oil
Clove, rosemary, scallion and thyme oil	Petroleum oil
Corn gluten	Picardrin
Cottonseed oil	Potassium bicarb onate of fatty acids
D-Limonene	Sodium tetraborate decahydrate
Diatomaceous earth	Soybean oil
Eggenol	Spiromesifen
Figuralol (ONLY use in containerized/bait form)	

Developed for Home Depot stores by the Bay Area Stormwater Management Agencies Association © 2014

Manage pests with LESS TOXIC PRODUCTS!

Watering your lawn or garden after applying pesticides or fertilizer can pollute water that runs off into storm drains and on to local creeks, lakes, bays, or the ocean. In fact, there are plenty of ways to manage pests, and many products that keep pests away and don't pollute.

Our Water Our World is a partnership between Home Depot stores and local government agencies working together to reduce water pollution caused by pesticides. The **Our Water Our World** literature stand has a wide selection of fact sheets that explain less toxic ways to manage common pests.

This pocket-guide highlights Home Depot products that are less toxic to people, pets, and the environment. For a longer list and more information, visit www.ourwaterourworld.org.

Choosing Products

Good pest management often means preventing pest problems before they happen.

Indoors

- Good housekeeping practices can keep ants and cockroaches away.
- Enclosed ant or roach baits are less toxic than other applications.

In the garden

- Prune away and hose off aphid infestations.
- Buy plants that attract ladybugs and other beneficial insects to help keep garden pests like aphids and mealybugs under control.
- Order ladybugs from Home Depot online.
- Slow-release and organic fertilizers or compost keep plants and grass healthy by helping them absorb nutrients more efficiently.

Many gardeners kill beneficial insects because they mistake them for pests. When you lose beneficial insects, you lose one of the best nontoxic defenses to a healthy garden! For more information on these garden predators, go to www.ipm.ucdavis.edu/PMG/NE/index.html.

Plants that Attract Helpful Insects and Butterflies

- Aster (*Aster spp.*)
- Calendula (*Calendula spp.*)
- California poppy (*Eschscholzia californica*)
- California wild lilac (*Ceanothus spp.*)
- Chervil (*Anthriscus cerefolium*)
- Chrysanthemum (*Chrysanthemum spp.*)
- Coriander (*Coriander sativum*)
- Cosmos (*Cosmos spp.*)
- Coyote brush (*Baccharis pilularis*)
- Dill (*Anethum graveolens*)
- Eklaflower (*Gemfibucos spp.*)
- Fleabane (*Erigonum spp.*)
- Pincushion flower (*Scabiosa columbaria*)
- Rosemary (*Rosmarinus officinalis*)
- Rudbeckia (*Rudbeckia spp.*)
- Sticky monkey flower (*Mimulus aurantiacus*)
- Sunflower (*Helianthus spp.*)
- Sweet alyssum (*Lyabridora maritima*)
- Wild buckwheat (*Eriogonum spp.*)
- Yarrow (*Achillea millefolium*)
- Zinnia (*Zinnia spp.*)

Disposing of Unwanted Products

If you have pest control products you no longer want, drop them off at a local household hazardous waste collection site. To find a nearby location, go to www.earth11.com and enter 'pesticide' and your zip code.

Visit www.ourwaterourworld.org for more information, including:

- **Pest Fact Sheets** – detailed information on common pests and methods to manage them without using toxic materials.
- **Beneficial bugs brochure** (*The 10 Most Wanted Bugs in Your Garden*) with color photos of beneficial bugs that eat pests and plants that attract them.

Learn more about less-toxic pest control:

- To see photos and learn more about beneficial insects, visit the Natural Enemies Gallery at the UC IPM website at: www.ipm.ucdavis.edu/PMG/NE/index.html
- Contact your local Agricultural Extension Office for help identifying and managing pests

Pests Bugging You? pocket guide for Associates and customers

Task 1.5: Install new signage for wing-stack seasonal pest displays.

Working in partnership with Home Depot product vendors, the OWOW team was able to help design, install and label end-caps and wing-stacks highlighting less-toxic products. Large end-caps with OWOW banners were installed promoting less-toxic Kellogg and Bayer products. Small, wing-stacks were located in the nursery area promoting Miracle-Gro's line of organic fertilizers.



Miracle Gro wing stack display



Kellogg and Bayer display

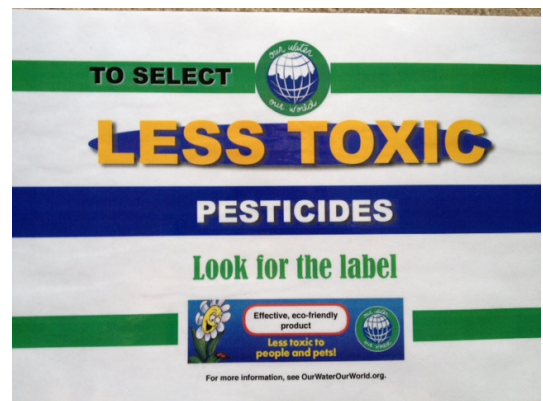
TASK 2: Establish store set-ups, call schedule, and training workshops

Task 2.1: Schedule meetings for Green Garden Specialist and IPM Advocate

Annie Joseph met with the Managers from each Home Depot pilot store to discuss the criteria for selecting an Associate as the Green Garden Specialist. Once an Associate was selected, Annie Joseph met with most of the Green Garden Specialists to introduce the IPM Advocate assigned to their store, and to explain the project.

Task 2.2: Place new signage for shelf talker awareness, wind-stack displays and banners.

In some of the project stores, we were able to place some additional signage highlighting the connection between shelf talkers and how to find less-toxic products.



Signage reminding customers to look for shelf talkers

Task 2.3: Label all less-toxic products; use laminated shelf talkers for outdoor products.

All less-toxic products were labeled with OWOW shelf talkers. The name of each product is printed on the shelf talkers to avoid confusion about which product is labeled. These labels were monitored on a monthly basis to make sure they were correctly placed and to add labels on new products. Labels for products and displays located outside were laminated to protect them from weather and humidity damage.



Shelf Talker



Laminated shelf talkers



Shelf talkers labeling less-toxic products

Task 2.4: Display Literature racks in prominent areas.

The OWOW program offers store customers 15 different fact sheets with pest management tips, including fact sheets on several common pests, lawn and rose care, creating a healthy garden, and how to protect water quality. In addition to fact sheets in English, each store is stocked with Spanish versions of the most commonly used fact sheets. The fact sheets are displayed in metal racks with signage identifying the OWOW program.

Each store in this program was provided with the fact sheets and rack. Racks were most commonly located in a prominent place near the pesticide aisle.



Literature rack in pesticide aisle



Task 2.5: Schedule monthly store visits.

Once shelf talkers and fact sheet racks were in place, IPM Advocates visited their stores on a monthly basis. During these visits, Advocates were able to

- Add or replace shelf talkers.
- Re-stock fact sheets
- Work with new Associates to explain the program and tools available to them.
- Answer any questions from Associates.
- Work with customers in aisle to help with product selection and answer questions.
- Research questions from Associates and customers and bring in answers and additional materials.
- Bring in seasonal information and information on new pests and products.

Task 2.6: Train Associates and Green Garden Specialists

In addition to the Green Garden Specialist training, trainings were provided to Associates at each store. These 1-hour trainings were conducted off the floor in the training room. Associates were provided with packets containing extensive resource materials, insect ID Guides, and product lists.



Home Depot, Emeryville Associate's training



Home Depot, Santa Rosa Associate's training

TASK 3: Develop Displays for Less-Toxic Products

Task 3.1: Provide and display end-cap banners for all ten stores.

Each of the stores in the project was provided with an OWOW banner to highlight less-toxic products. These full-color, 6' by 24" banners were used in pesticide aisles, or to promote special end caps/wing stacks of less-toxic products.



Our Water Our World banner to highlight less-toxic product displays

Task 3.2: Work with vendors who supply less-toxic products to build displays and order enough products to keep displays full.

Working in partnership with Home Depot product vendors, IPM Advocates were able to help design, install and label end-caps and wing-stacks highlighting less-toxic products. Large end-caps with OWOW banners were installed promoting less-toxic Kellogg and Bayer products. Small, wing-stacks were located in the nursery area promoting Miracle-Gro's line of organic fertilizer.



Kellogg and Bayer display



Miracle Gro Wingstack

Task 3.3: Add Seasonal Wing-Stack Displays with signage for bimonthly seasonal pests

At some of the stores in the project, Advocates were able to assist stores in putting together additional displays highlighting seasonal pests and products. These displays were labeled with OWOW shelf talkers, and helped promote less-toxic products.



Less-toxic spring display



Dormant spray display for fall



Poster used on end caps and wing stacks

Task 3.4: Provide stores with a seasonal pest calendar to help them plan in advance of pest problems

As part of this project, a monthly pest-at-a-glance calendar was developed specifically for Home Depot stores. This calendar was designed to alert Associates to pests, diseases or landscaping problems ahead of time so that they could become familiar with management options and products they could recommend to customers. Each month's pest or disease also includes a list of Home Depot products that can be used for management, and any OWOW resources they had to get more information or to help them work with customers.

For the complete Home Depot Monthly Pest-At-A Glance Calendar, see Appendix A.



Home Depot Monthly Pest-At-A Glance Calendar

Month	Pest/Disease	Notes	Resources	Products to Highlight
January	Dormant spray for diseases/over-wintering insects	remove/dispose of infected plant material	OWOW Dormant Spray handout	Bonide Copper Fungicide Bonide All-Seasons Oil
February	Rose Care	Mulch to prevent fungal diseases & conserve water	OWOW Rose Fact Sheet	Natria Neem Oil Bonide All Seasons Oil Nature's Care Insect Soap
March	Snail/Slug	Water early morning to prevent wet foliage at night	OWOW Snail & Slug Fact Sheet	Natria Slug & Snail Sluggo Nature's Care Slug and Snail
April	Aphids	Look for ladybugs & other beneficials that eat aphids	OWOW Aphid Fact Sheet	Nature's Care Insect Soap Bonide All Seasons Oil Organocide
May	Grubs	Buy beneficial nematodes on-line to manage young grubs	OWOW Grub Handout	Beneficial Nematodes
June	Mosquitoes	Check for standing water/screen windows	OWOW Mosquito Fact Sheet	Mosquito Dunks
July	Yellowjackets	Set traps at perimeter of yard, not near eating areas	OWOW Yellowjacket Fact Sheet	Yellowjacket traps/lures
August	Fleas & Flies	Flies: remove pet waste & fallen fruit. Fleas: use nematodes in outside breeding areas	OWOW Flea Fact Sheet	Fly Traps, Fly Tape Fly predators (on-line) Flea Traps, Nematodes EcoSmart Flying Insect
September	Ants	Use caulk to seal entries/manage aphids to discourage ants	OWOW Ant Fact Sheet	Amdro & Terro ant baits EcoSmart Ant & Roach
October	Rats/Mice	Pick up fallen fruit/nuts Seal entries with foam	OWOW Rats and Mice Fact Sheet	Rat/Mouse Traps Great Stuff Foam
November	Dormant Spray	Use when roses and fruit trees have lost their leaves	OWOW Rose Fact Sheet	Bonide All Seasons Oil Bonide Copper Fungicide
December	Bed Bugs	Use a monitoring tool to detect bed bugs	Bed Bugs Quick Tips	Safer Ant and Crawling Insect Killer

Task 3.5: Evaluate the effectiveness by keeping track of the SKUs on the end-cap and seasonal wing stack displays.

Over the course of the year, the Advocates worked closely with the vendors to make sure that displays were kept full and that shelf talkers were in place if displays were moved or rebuilt.

Sixty percent of the stores in the end cap program showed an increase in the sales of the less-toxic pesticides on display. 100% of the stores with wing stack displays showed an increase in the sales of the Miracle Gro organic fertilizers that were featured in the display.

TASK 4: Hold Tabling Events

Task 4.1: Provide two tabling events at each store with a theme, such as organic rose care.

One of the most important aspects of this program was to be able to offer Home Depot customers access to IPM Advocates to answer their pest management and landscaping questions. Advocates held two tablings at each store during the project period. Less-toxic products were highlighted, and we were able to bring in additional resource materials and handouts for customers. Customers were

helped at the table and in aisle. In addition, Associates that were not able to attend a training were able to stop by for information about the program and to get help with customer questions.

Each four-hour tabling was held on a busy weekend or weekday morning in the Pesticide aisle or in the nursery. Advocates were able to work with over 800 customers during the 20 tablings provided. The tablings held at the Home Depot Road Shows in Pleasanton and Elk Grove reached an additional 250 Associates.



Store tablings for customers



Tablings at Home Depot Road Shows in Pleasanton and Elk Grove

TASK 5: EVALUATION MEASURES

Task 5.1: Analyze pre- and post training surveys of Associates

During both basic Associate trainings and the more advanced Green Garden Specialist training, Associates were asked to fill out a short pre-training survey before the training, and an evaluation form at the conclusion of the training. The pre- survey helped us to determine the level of the Associate’s knowledge about pesticides and water quality issues before this information was provided to them in the training. The final survey included questions to help us determine how effective the training information was, and how the training could be adjusted to provide the most relevant and understandable information.

A total of 130 Associates were training during this project. We received 115 pre-surveys and 114 final evaluation forms back from training participants. In some cases, participants left questions blank. The percentages for each question represent the actual number of answers we got back.

Summary of Regional Pilot Program Pre-Training Survey

Survey Question	Yes	No	Don't Know
When water runs into a storm drain in the street, is it treated before it reaches a stream or the Bay?	9%	88%	3%
When water enters the sewer system from a house drain, are pesticides removed at the sewage treatment plant before the treated water enters the Bay?	48%	45%	7%
How do you dispose of leftover pesticides after you finish applying them, or when you no longer need the pesticides? (Number indicates number of answers for each method of disposal.) <ul style="list-style-type: none"> Household Hazardous Waste Sites: 36% Don't know: 27% Store for next use: 7% 			

- Use until empty: 6%
- Recycle: 9%
- Never have had leftovers: 2%
- Pour it down drain: 1%
- Throw away: 7%
- Dispose of properly: 3%
- Call for pickup: 1%
- Make sure it's not mixed and put back in the bottle: 1%

Do you know where your local Household Hazardous Waste facility is located?

YES: 39% NO: 61%

Summary of Regional Pilot Program End of Training Evaluation Form

Survey Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The information provided was useful to you.			1%	11%	88%
The training binder and resources will be useful to you in the future.			2%	4%	94%
The information will help you recommend and sell less-toxic products.			2%	10%	88%

What part of the training was most useful?

- Resource packets/information: 5%
- Pest calendar: 2%
- Information about less-toxic products: 28%
- Learning how to manage specific pests and diseases: 5%
- Everything was useful: 20%
- Good bug/bad bug information: 12%
- Learning about compost and mulch: 3%
- Learning about HHW/how to dispose of chemicals: 4%
- Product list: 1%
- Being more knowledgeable about pesticides and hazardous products/how they affect environment: 4%
- Learning about water pollution: 3%

- Knowing which products to recommend to customers who are eco-friendly
- Info on organic fertilizers: 2%
- Visuals: 3%
- Learning about natural bug repellents: 1%
- The question and answer portion: 1%
- Drought information/examples of water-wise landscapes: 2%
- Rebate information for irrigation and lawn removal: 2%
- Gardening guidelines: 1%
- The instructor – she was clear, informed, interesting: 1%

What part of the training was least useful?

- Everything was useful: 40%
- Need more time for training: 4%
- Identification of bug damage: 1%
- Outside garden products: 1%

Did the information change your views about pesticides? Why or why not?

Yes: 85%

- Now know more about how to use/recommend less-toxic products: 6%
- I feel more informed/know how to be eco-smart: 3%
- Good to know how to dispose of unwanted pesticides: 1%
- I know more about less-toxic choices: 4%
- Know more about pesticides and pesticide pollution impacts/issues: 6%
- More excited about using less-toxic products: 1%
- Know now to read the label: 1%
- I will only use/recommend less-toxics: 4%
- Made me more aware/more conscious about pesticide choices: 6%
- Now know the importance of keeping toxic pesticides out of water: 8%
- Will recommend products better for environment: 3%
- Knowing what to use when children and pets are near: 2%
- Better to use beneficial insects: 2%
- Will help me work with customers who are eco-friendly: 3%
- Reinforced my views: 1%
- Shows how something little has a big effect: 1%
- Know how to choose water-wise products: 1%
- Continual awareness of vastness of product offerings is helpful: 1%

No: 15%

- Already recommend less-toxic products: 13%

When this training is held again, what changes do you recommend?

- Longer time for training: 18%
- More training: 4%
- More Q & A: 1%
- More in-depth about what kills certain insects and diseases: 2%
- More info on pests: 2%
- Larger customer attention grabbers in store: 1%
- More on each type of toxic product: 1%
- More on soils: 2%
- Add a section on plants: 2%
- More detail on each best-selling product: 1%
- Discuss traps: 1%
- Don't need any changes: 4%

Additional Comments:

- It was all great; a great learning experience. (5 comments)
- Everything was good, a lot of information.
- Found all the information very interesting (2 comments)
- Love to see more instructors with more information. Love this.
- The instructor was great and super helpful.
- Would like you guys to stay longer. I'm fascinated.

Task 5.2: Measure changes of less-toxic product sales.

Partner stores were contacted to get data on changes in the types of products available, and changes in the sales of less-toxic products. Data on end caps and wing stacks was collected with the help of vendors.

As a result of this project, all of the stores reported an increase in sales of less-toxic products from 2013 to 2014 due to products displayed on end caps and wing stacks, even with an economy impacted by drought.

Task 5.3: Measure tabling evaluations by the number of customers reached and guided to less-toxic solutions for specific areas.

During the 20 tabling events, over 800 customers were reached and most took the guidance offered by the IPM Advocates. The tablings also offered additional opportunities for Associates to be mentored.

On their tables, the Advocates featured current pests problems that customers were likely to see along with their less toxic solutions. Because of the drought, the

Advocates were also able to feature two hand- outs “Ten Tips for Waterwise Gardening” and “Helping Landscapes Survive a Drought.” The “Helping Landscapes Survive a Drought” piece was created midsummer in response to the myriad of problems that occur more during those conditions and included tips for how the potential damage could be minimized. Advocates also showcased plant material that attracted beneficial insects so customers would know how to set their garden up for success.

In addition, Advocates provided customers with information on their local Household Hazardous Waste facilities for disposal of old pesticides and fertilizers. They also gave out information to customers and Associates on local Mosquito and Vector Control Districts for help with concerns about mosquito populations, rat and mouse infestations, and help with in-ground yellowjacket management.

Subjects covered during the tablings included:

Proper plant selection for various landscape situations, native plant selection, proper irrigation practices, benefits of mulching, use of organic and slow release fertilizers, how to attract beneficial insects to the garden, how products like neem oil, iron phosphate snail baits, and Bt work. The Advocates also promoted the array of beneficial insects that are available through the store online.

Pests covered during the tablings included:

Ants, aphids, bedbugs, blackspot, borers in fruit trees and ornamentals, caterpillars, citrus leaf miner, citrus psyllid, codling moth on apples and pears, fire blight, fleas, fungus gnats, gophers, grubs in lawns, lacebugs, leaf beetles, leafhoppers, mice, mites, moles, mosquitoes, olive fruit fly, peach leaf curl, rats, slugs and snails, spotted winged drosophila, skunks, spider mites, squash bugs , squirrels, thrips, voles, and yellow jackets.

Task 5.4: Evaluate store manager surveys.

A survey was developed to assess the effectiveness of the IPM Advocates and the OWOW program materials. At the conclusion of the project, managers from each store in the program were asked to evaluate the project. They were asked to determine how effective the program was at educating staff and customers, how helpful they found their IPM Advocate, if the OWOW materials were effective aids to Associates and customers, and if the project helped to boost sales of less-toxic products. Here are the results of that survey:

Home Depot Pilot Project – Exit Interview with Managers

Survey Question	Agree	Somewhat Agree	Not Sure	Disagree
Training Associates has helped them more confidently answer customer questions about pests and less-toxic products.	100%			
Training Associates has helped them more confidently sell less-toxic products.	90%	10%		
This program has helped to increase the visibility and sales of less-toxic products.	80%	20%		
Shelf talkers have helped Associates and customers to identify less-toxic products.	90%	10%		
The fact sheets have helped Associates and customers answer questions about pest problems.	100%			
This program has helped to promote your store in the community as a resource for eco-friendly, less-toxic solutions.	60%	40%		
The resource materials provided by this program (books, ID guides, hand lens, supplemental handouts) have helped Associates answer pest questions and recommend less-toxic products.	100%			

What additional things can this program do to help you promote less-toxic products?

- Training cashiers is very helpful.
- We would love a webinar that would cover plants, products, bugs.
- We would like to have training materials on-line.
- We would like more classes and tutorials by Advocates. These trainings show that our employer cares. It gives us a comfort level in what we are selling. We also learn from the tabling events.

- More training for all employees, especially all the new employees as they come on. All of the people on the floor need to be trained.
- Have the fact sheets at the cashier stands so they can hand them out.
- Would like Sudden Oak Death information put into the rack so they can hand this out to customers.
- Maybe season pest or invasive pests have a spot in the rack.
- I would like to see two days where we train all the people early in the season.
- I would like to have a less-toxic rat display if we could get approval and support from our district manager.
- Want more hands-on trainings of Associates.
- We would like a link to our garden club for Our Water Our World.
- We like suggestions for what we should have in stock for the season.
- More outreach for Spanish speakers.
- Need more signage that stands out with the end cap.
- I would like more coaching about our products.
- I would like Debi to go into the aisles answering customer questions (hang out in the aisle) in addition to tabling events.
- Would like more trainings of our Associates. It gives them a sense of pride in what they do.
- We need more end caps.

General Comments:

- The point of purchase is great. People come to us and we guide them. Keep doing the great job you are doing.
- Trainings are great and the customer tablings are very helpful.
- Teresa brings in the actual bug samples and we really learn from that, as do our customers.
- Fact sheets are so helpful to us and to our customers.
- Not sure if the program has helped to promote the store in the community, but think so, especially with the end cap.
- Want to set dates for tabling events with customers – those are extremely helpful.
- Training Associates makes them proud.
- Not sure how stores are being promoted through the OWOW program.
- Like the practical explanations of products and how they work that Suzanne does. We need it for more Associates more often.
- Having more customer tabling events helps customers understand more and helps us more too.
- Suzanne really knows how to explain things to us.
- Steve comes in once a month, but we would like to see him more and more.
- We really appreciate the program. Anne is helping to reach out to the Spanish speaking community with her tabling events with Spanish Speakers.
- I should use facts sheets more and get others to use them more.
- Resource materials have been a great help.
- The tabling events are very helpful to our Associates and our customers. Everything is helpful.

TASK 6: COORDINATION

Krissa Glasgow, Senior Manager of The Home Depot Environmental Innovations, helped to coordinate Home Depot's participation in the Green Garden Specialist training and mentoring pilot program with Our Water Our World. In December 2013, Krissa Glasgow came to tour several local stores to see the OWOW program in action. She was very supportive of the pilot program and planned a trip in the spring to attend a training at one of the pilot stores. Annie Joseph and Krissa Glasgow were in touch monthly throughout the pilot program as it was implemented.

Annie met with IPM Advocates in early December of 2013 to discuss the coming pilot program. In December and early January she went to the stores and met with the store managers along with the Advocates to tell them about the Green Garden Specialist training. They talked about selecting an Associate at their store to designate and train as the Green Garden Specialist.

In mid December 2013 Annie met with vendors to discuss the pilot program for the coming year. A coordinated plan was laid out to support all of the less-toxic products which Home Depot carries through Associate trainings, end cap promotions, and additional displays. The products would also be featured throughout the season during tabling events where time appropriate. The vendors were very supportive of the pilot program.

In January Annie arranged a meeting with District Manager Gregg Kenney, store manager Rod Wieldrayer of the Napa store, Debi Tidd IPM Advocate and educator, and several key Associates from the Napa Home Depot. They set the plan for the Regional training that would occur in February and would lay the ground for the Green Garden Specialist training kickoff. At the date selected, the ten Associates would meet for the kickoff at the Napa location.

Debi Tidd created the training materials and hands on activities for the Green Garden Specialists. Support materials were purchased consisting of reference books from UCANR "Pests of the Landscape Trees and Shrubs" and Landscape Pest ID Cards, hand lenses, and a book titled "Plants and Landscapes for Summer Dry Climates." Debi Tidd also created powerpoint presentations for the Advocates to use for the enhanced store trainings for the ten stores that spring.

The training was attended by the Green Garden Specialist Associates from the 10 pilot stores, IPM Advocates who were their future mentors, and sponsoring agency representatives. The agency representatives included Gina Purin from Marin County Stormwater Pollution Prevention Program, Jamison Crosby from Napa County Flood Control and Water Conservation District, and Jennifer Kaiser from Vallejo Sanitation and Flood District.

Following the training, the Advocates set dates for outreach events, store trainings, and call schedules. The end cap promotions were planned with the vendors. Vendors met many of the Advocates at the stores and were instrumental

in helping to build end caps, wing stacks, and displays. OWOW banners for displays were printed and distributed to the Advocates so each store had a banner. Annie made sure the Advocates were in communication with their vendors so the end cap signage would remain up and the products would be kept in stock during the season. Signage for wing stacks was also created and put up in the stores. Photographs were taken of end caps, wing stacks, and displays.

In March 2014, Krissa was able to travel to attend an enhanced store training at the Emeryville Home Depot. There she was able to meet Geoff Brossueau the Executive Director of BASMAA, Jim Scanlin from Alameda Countywide Clean Water Program, IPM Advocate Suzanne Bontempo, and Advocate and instructor Debi Tidd. After the training she was able to tour the store seeing the end cap display in the nursery and to discuss the less toxic products that Home Depot carries.

During the year the Advocates were in continuous communication with Annie via e-mail, texting, and phone calls regarding the progress of their mentoring of the Green Garden Specialists. They also kept her up to date on their mentoring of additional store Associates and the customers they helped while they were in the stores. Advocates sent Annie monthly reports that detailed their store visits and trainings. When they conducted tablings, they kept records of customer interactions and also sent photos of their tablings and displays.

In January and February of 2015 Annie interviewed the store managers and department leads to conduct a survey about the pilot program. It was very evident that the IPM Advocates had risen to a higher level of importance in the eyes of the stores over the past year.

The Advocates had deepened the confidence of the Associates through doing research to address Associate and customer questions using science based systems with support from UCIPM Collaborative Tools, UCIPM online, OWOW Ask the Expert Dr. Quarels from the Bio-Integral Resource Center, and the expertise of Dr. Nita Davidson from the Department of Pesticide Regulation. The Advocates also became valued partners by working tirelessly to maintain shelf talkers and signage on the end caps and displays. Vendors and Associates alike truly appreciated the work of the IPM Advocates.

Through this successful coordination with Associates, Advocates, and vendors with the Our Water Our World Program, Home Depot is supporting an expansion of the training to include more Associates in the Green Garden Specialist training in 2015.

CONCLUSIONS

Over the course of this pilot project, six IPM Advocates put in more than 1000 hours working in the 10 stores in the project. During this time they met with store managers and Associates, customers and vendors. They labeled less-toxic products with shelf talkers so that Associates and customers could easily find them, provided a series of fact sheets on pest management, and worked with customers in-aisle to help with pest management strategies.

- Advocates trained a total of 130 Associates in 13 workshops.
- Each Advocate participated in two tabling events for their store, totaling 20 outreach events, and reaching over 800 customers. In addition, Advocates reached an additional 600 customers during their regular store visits.
- In addition to researching Associates' pest questions, the Advocates showed them how to access additional information on the OWOW Ask the Expert feature and the UC Statewide IPM Project by using their store computer or showing how easy it is by using an I-pad or smart phone.

After the year was completed, the Green Garden Specialists, store managers, department leads, and additional Associates did not want the program to end. They valued the diligence with which the Advocates worked with vendors on displays, created additional signage, helped increase the sales of their less toxic products, guided many customers in the aisles to get answers for their pest questions, and supported all the Associates with additional materials and resources. The store managers realized the improved expertise and confidence their Associates gained working with the Advocates and wanted to have the Advocates in their stores full time.

As we move into 2015 and the completion of this pilot project, all of the 56 Home Depot stores in the OWOW partnership will continue to receive support from IPM Advocates or Public Agency personnel. All stores will be visited to refresh shelf talkers and fact sheets.

In most counties where Advocates are working in the stores, the store will also receive:

- Continued support for Associates, including providing seasonal pest information and researching pest questions.
- Working in-aisle with customers to answer pest management questions and to recommend products.
- Outreach and tabling events for customers.

Home Depot Stores Currently Partnering with the *Our Water Our World* Program

County	City and Store Number
Alameda	Fremont 6636, Newark 6964, Pleasanton 629, Union City 635, Oakland 1007, Hayward 1017, Emeryville 6627, and Livermore 6678
Contra Costa	Concord 634, El Cerrito 643, Pittsburg 644, Brentwood 1076, Hercules 1044, San Ramon 6604
Fresno (Pac.C.)	East King’s Canyon Road 1086
Marin	San Rafael 657
Mendocino	Ukiah 8408
Monterey	Salinas 1843, Seaside 6967
Napa	6652
Placer	Roseville 636, Roseville 6688
Sacramento	Carmichael 650, Florin Road 651, Folsom 6675; Sacramento: Meadowview Road 1003, Power Inn/Folsom Blvd. 6620, Truxel Road 6649, Howe Ave 6966, Rancho Cordova 652, Elk Grove 6678
Santa Cruz	Soquel 6968
San Mateo	Colma 639, Daly City 1092, San Carlos 628, San Mateo 632, East Palo Alto 6603
Santa Clara	Blossom Hill Road 622, Campbell 642, De Anza Blvd. 6635, Hillsdale 1009, Milpitas 1041, Monterey Hwy 1861, Santa Clara—Lafayette St. 630, Story Road 6672, Sunnyvale—Kiefer Road 640, West Capital Expressway 6621
San Luis Obispo	San Luis Obispo 1052
Shasta	Redding 6682
Solano	Fairfield 637, Vallejo 633
Sonoma	Rohnert Park 641, Santa Rosa 1379, Windsor 6667
Stanislaus	Modesto 6601

RECOMMENDATIONS

Going forward, we hope to continue all the work Advocates are currently doing in stores. As funding becomes available, we hope to expand the program by:

- Developing on-line training modules for Associates that would be available to them for expanded and seasonal information, and to help train new Associate's on less-toxic pest management.
- Developing and providing more seasonal pest identification and management information.
- Working with the stores to identify and promote water-wise plants and plants that attract beneficial insects.
- Providing research on new products and ways to reach customers and expand the market for less-toxic products.
- Developing a documentary about the partnership between Home Depot and the Our Water Our World program. As partners, Home Depot helped us to develop a truly unique program to reduce pesticide pollution while promoting less-toxic and sustainable landscaping practices. We hope to share this process and it's benefits with the public and other stores.

ACKNOWLEDGEMENTS

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- **Alameda Countywide Clean Water Program, Fairfield-Suisun Urban Runoff Management Program, Marin County Stormwater Pollution Prevention Program, Napa Countywide Stormwater Pollution Prevention Program, Palo Alto Regional Water Quality Control Plant, Sacramento Stormwater Quality Partnership, San Mateo Countywide Water Pollution Prevention Program, City of San Ramon, City of Santa Rosa and Sonoma County Water Agency, and Vallejo Sanitation and Flood Control District** for providing additional funding to support this enhanced pilot project in their local Home Depot store.
- **Geoff Brosseau**, Executive Director of BASMAA, who believed deeply in the project and made sure the Advocates received support for the Home Depot Pilot Program from the local public agencies and beyond.
- **Jim Scanlin**, Alameda Countywide Clean Water Program, for his undying support for this pilot program as soon as he heard it was a possibility.

- **Krissa Glasgow**, Senior Environmental Innovations for Home Depot, for her enthusiastic support for the pilot program. She helped to make the program flow smoothly and gain support throughout Home Depot so it could have such a great opportunity for success currently and in the future.
- **Debi Tidd**, OWOW, for her tireless efforts for the Our Water Our World Program in creating useful practical materials, offering vision and clarity to the pilot program, and to mentoring hundreds of Associates in the practice of IPM.
- **Karey Windbiel-Rojas**, Urban IPM Educator at UC IPM, for providing continuing education and training as well as resources and support materials for the Advocates.
- **Nita Davidson**, from the California Department of Pesticide Regulation, who donated endless hours to edit training materials, identify pest problems, and offer support on her own time at the road shows.
- **Dan Joseph** and **Jenna Tidd**, for their support.
- Thanks to the representatives from the companies that helped us to implement, build and support store displays:
 - Kellogg Garden Supply: National Account manager, **Frank Pierce**; Regional Manager, **Gary Burnett**; Reps **Adam Hall**, **Juan Ballestreros** and **Kris Kaczanowski**.
 - Bayer Company: Area Sales Manager, **Daniel Valez**, and Alice
 - Scott's Miracle Gro: District Market Manager, **Louie Licad**
 - Monterey Lawn and Garden Products: Key Account Manager, **Clayton Smith**
- And finally, our enthusiastic and committed IPM Advocates for their continuous commitment to mentoring the public, the Associates, and the vendors in less-toxic pest management: **Suzanne Bontempo**, **Debi Tidd**, **Annie Joseph**, **Teresa Lavell**, **Anne Rogers**, **Steve Zien**.



Emeryville Home Depot less-toxic display with Krissa Glasgow, from Home Depot, Jim Scanlin with Alameda Countywide Clean Water, and IPM Advocates Debi Tidd and Suzanne Bontempo



Santa Rosa Associates with Home Depot Pocket Guides



Annie Joseph at Santa Rosa tabling event

The point of purchase is great. People come to us and we guide them. Keep doing the great job you are doing!

Associate, Home Depot, Napa

I learned a lot of great information. I'll be recommending organic pesticides.

Associate, Home Depot, Elk Grove

It is nice to know there are more environmentally friendly ways to manage pests other than harsh chemicals.

Associate, Home Depot, San Ramon

Now it's a must for me to read the label on pesticides.

Associate, Home Depot, Vallejo

(Useful) knowing products to recommend to customers are eco-friendly.

Associate, Home Depot, Santa Rosa

Appendix A

Home Depot Monthly Pest At-a-Glance Calendar



Home Depot Monthly Pest-At-A Glance Calendar

Month	Pest/Disease	Notes	Resources	Products to Highlight
January	Dormant spray for diseases/over-wintering insects	remove/dispose of infected plant material	OWOW Dormant Spray handout	Bonide Copper Fungicide Bonide All-Seasons Oil
February	Rose Care	Mulch to prevent fungal diseases & conserve water	OWOW Rose Fact Sheet	Natria Neem Oil Bonide All Seasons Oil Nature's Care Insect Soap
March	Snail/Slug	Water early morning to prevent wet foliage at night	OWOW Snail & Slug Fact Sheet	Natria Slug & Snail Sluggo Nature's Care Slug and Snail
April	Aphids	Look for ladybugs & other beneficials that eat aphids	OWOW Aphid Fact Sheet	Nature's Care Insect Soap Bonide All Seasons Oil Organocide
May	Grubs	Buy beneficial nematodes on-line to manage young grubs	OWOW Grub Handout	Beneficial Nematodes
June	Mosquitoes	Check for standing water/screen windows	OWOW Mosquito Fact Sheet	Mosquito Dunks
July	Yellowjackets	Set traps at perimeter of yard, not near eating areas	OWOW Yellowjacket Fact Sheet	Yellowjacket traps/lures
August	Fleas & Flies	Flies: remove pet waste & fallen fruit Fleas: use nematodes in outside breeding areas	OWOW Flea Fact Sheet	Fly Traps, Fly Tape Fly predators (on-line) Flea Traps, Nematodes EcoSmart Flying Insect
September	Ants	Use caulk to seal entries/manage aphids to discourage ants	OWOW Ant Fact Sheet	Amdro & Terro ant baits EcoSmart Ant & Roach
October	Rats/Mice	Pick up fallen fruit/nuts Seal entries with foam	OWOW Rats and Mice Fact Sheet	Rat/Mouse Traps Great Stuff Foam
November	Dormant Spray	Use when roses and fruit trees have lost their leaves	OWOW Rose Fact Sheet	Bonide All Seasons Oil Bonide Copper Fungicide
December	Bed Bugs	Use a monitoring tool to detect bed bugs	Bed Bugs Quick Tips	Safer Ant and Crawling Insect Killer

Appendix B

Home Depot Pests Bugging You Pocket Guide

Pests Bugging You?

A Home Depot Pocket Guide



Choose Products Less Toxic to People and Pets

www.ourwaterourworld.org

LESS TOXIC PRODUCTS

Ants

Amdro Kills Ants (bait stations)
EcoSmart Ant & Roach Killer
EcoSmart Organic Insect Killer (spray)
Safer Brand Diatomaceous Earth Ant & Crawling Insect Killer
Terminix Ultimate Protection Crawling Insect Killer (aerosol)
Terro II Liquid Baits

Aphids

Bayer Advanced Natria Insecticidal Soap
Bayer Advanced Natria Insect, Disease and Mite Control (spray)
Bayer Advanced Natria Neem Oil
Bayer Advanced Natria Rose and Flower Spray
Bonide All Seasons Horticultural and Dormant Spray Oil
Bonide Rose Rx 3 in 1 Spray
EcoSmart Garden Insect Killer
Ladybugs (Home Depot On-line)
Organic Labs Organocide

Fleas

Insecticidal soaps (apply outdoors where pets lie)
Safer Brand Diatomaceous Earth Ant & Crawling Insect Killer
Victor Ultimate Flea Trap (monitoring tool)

LESS TOXIC PRODUCTS

Gophers and Moles

Digger's Root Guard Gopher Baskets
Gopher Traps
Sweeney's Mole and Gopher Repellent
Uncle Ian's Mole and Gopher Repellent

Mealybugs

Bayer Advanced Natria Insect, Disease and Mite Control (spray)
Bayer Advanced Natria Insecticidal Soap
Organic Labs Organocide

Mites and Whiteflies

Bayer Advanced Natria Insecticidal Soap
Bayer Advanced Natria Insect, Disease and Mite Control (spray)
Bayer Advanced Natria Neem Oil
Bayer Advanced Natria Rose & Flower Insect, Disease and Mite Control (spray)
Bonide All Seasons Horticultural and Dormant Spray Oil
Bonide Captain Jack's Dead Bug Brew
Bonide Rx 3 in 1 Spray

Mosquitoes

Mosquito Dunks

LESS TOXIC PRODUCTS

Roaches

Black Flag Roach Motel
Combat Source Kill Max Small Roach Bait Station
EcoSmart Ant and Roach Killer
Harris Famous Roach Tablets
Safer Brand Diatomaceous Earth Ant & Crawling Insect Killer
Terminix Ultimate Protection Crawling Insect Killer (aerosol)

Snails and Slugs

Bayer Advanced Natria Snail and Slug Killer Bait
Corry's Slug and Snail Copper Tape (barrier)
Sluggo

Yellowjackets

Eco Smart Flying Insect Killer
Rescue WHY Trap
Rescue Yellowjacket Trap Attractant
Rescue Yellowjacket Traps
Terminix Ultimate Protection Stinging Insect Killer (Aerosol)

LESS TOXIC ACTIVE INGREDIENTS

Active ingredients are listed on the front of the product. This is a partial list of active ingredients found in products considered less toxic. For a more complete list, go to www.ourwaterourworld.org.

Abamectin	Hydramethlynon (ONLY use in containerized bait or gel form)
Ammoniated soap of fatty acids	Hydrophobic extract of neem
Bacillus subtilis	Iron phosphate
Bacillus thuringiensis israelensis	Lemon eucalyptus oil
Borax and boric acid	Methoprene
Castor oil, vegetable wax, gum resin	Orthoboric acid
Citric acid	Paraffinic oil
Clove, rosemary, sesame and thyme oil	Petroleum oil
Corn gluten	Picaridin
Cottonseed oil	Potassium bicarbonate
D-Limonene	Potassium soap (or salts) of fatty acids
Diatomaceous earth	Sodium tetraborate decahydrate
Eugenol	Soybean oil
Fipronil (ONLY use in containerized bait form)	Spinosad

Disposing of Unwanted Products

If you have pest control products you no longer want, drop them off at a local household hazardous waste collection site. To find a nearby location, go to www.earth911.com and enter 'pesticide' and your zip code.

Visit www.ourwaterourworld.org for more information, including:

- **Pest Fact Sheets** – detailed information on common pests and methods to manage them without using toxic materials
- **Beneficial bugs brochure** (*The 10 Most Wanted Bugs in Your Garden*) with color photos of beneficial bugs that eat pests and plants that attract them

Learn more about less-toxic pest control:

- To see photos and learn more about beneficial insects, visit the Natural Enemies Gallery at the UC IPM website at: www.ipm.ucdavis.edu/PMG/NE/index.html
- Contact your local Agricultural Extension Office for help identifying and managing pests

Choosing Products

Good pest management often means preventing pest problems before they happen.

Indoors

- Good housekeeping practices can keep ants and cockroaches away.
- Enclosed ant or roach baits are less toxic than other applications.

In the garden

- Prune away and hose off aphid infestations.
- Buy plants that attract ladybugs and other beneficial insects to help keep garden pests like aphids and mealybugs under control.
- Order ladybugs from Home Depot online.
- Slow-release and organic fertilizers or compost keep plants and grass healthy by helping them absorb nutrients more efficiently.

Many gardeners kill beneficial insects because they mistake them for pests. When you lose beneficial insects, you lose one of the best nontoxic defenses to a healthy garden! For more information on these garden predators, go to www.ipm.ucdavis.edu/PMG/NE/index.html.

Plants that Attract Helpful Insects and Butterflies

- Aster (*Aster spp.*)
- Calendula (*Calendula spp.*)
- California poppy (*Eschscholzia californica*)
- California wild lilac (*Ceanothus spp.*)
- Chervil (*Anthriscus cerefolium*)
- Chrysanthemum (*Chrysanthemum spp.*)
- Coriander (*Coriander sativum*)
- Cosmos (*Cosmos spp.*)
- Coyote brush (*Baccharis pilularis*)
- Dill (*Anethum graveolens*)
- Elderberry (*Sambucus spp.*)
- Fleabane (*Erigeron spp.*)
- Pincushion flower (*Scabiosa columbaria*)
- Rosemary (*Rosmarinus officinalis*)
- Rudbeckia (*Rudbeckia spp.*)
- Sticky monkey flower (*Mimulus aurantiacus*)
- Sunflower (*Helianthus spp.*)
- Sweet alyssum (*Lobularia maritima*)
- Wild buckwheat (*Eriogonum spp.*)
- Yarrow (*Achillea millefolium*)
- Zinnia (*Zinnia spp.*)

Manage pests with **LESS TOXIC PRODUCTS!**

Watering your lawn or garden after applying pesticides or fertilizer can pollute water that runs off into storm drains and on to local creeks, lakes, bays, or the ocean. In fact, there are plenty of ways to manage pests, and many products that keep pests away and don't pollute.

Our Water Our World is a partnership between Home Depot stores and local government agencies working together to reduce water pollution caused by pesticides. The *Our Water Our World* literature stand has a wide selection of fact sheets that explain less toxic ways to manage common pests.

This pocket-guide highlights Home Depot products that are less toxic to people, pets, and the environment. For a longer list and more information, visit www.ourwaterourworld.org.



Appendix C

Home Depot On-Line Ordering Information for Beneficial Insects



Home Depot On-Line Ordering Information for Beneficial Insects

TO ATTRACT BENEFICIAL INSECTS: Nutritional yeast protein that attracts a variety of beneficial insects to the garden.

- Ladies in Red Biocontrol Honeydew Beneficial Insect Attractant (8 oz or 16 oz)

LADYBUGS: To manage aphids, whitefly, thrips, spider mites, scale and other soft-bodied insects.

- Ladies in Red Live Ladybugs (available in 1/3 cup, ½ pint, one pint, or 1 qt. of live insects)

BENEFICIAL NEMATODES: To manage flea larvae, grubs, ants, fungus gnat, cutworms, rootworms. Look for the nematodes that manage your customer's specific pest.

- Ladies in Red Beneficial Nematodes for Organic Pest Control
- Nema-globe Fungus Gnat Control Nematodes
- Nema-globe Grub Busters Natural Grub Eliminator
- Nema-globe Ant Attack Eliminator
- Nema-globe Pre-Calculated Nematode Sprayer

FLY PREDATOR: Kills fly larvae before they hatch.

- Ladies in Red Ready-to-Use Fly Parasites for Natural Fly Control

PRAYING MANTIS: To manage flies, mosquitoes, crane-flies, wasps and other garden pests.

- Ladies in Red Five Praying Mantis Egg Cases for Organic Control of Yard and Garden Pests
- Ladies in Red Ten Praying Mantis Egg Cases for Organic Control of Yard and Garden Pests
- Ladies in Red Twenty Praying Mantis Egg Cases for Organic Control of Yard and Garden Pests

Summary of tasks for Home Depot Regional Training

Because of the great response from the Home Depot Stores for the training of the Green Garden Specialists in 2014 as part of the enhanced pilot project, Home Depot's Sr. Manager of Environmental Innovation requested that additional Associates (Home Depot staff) experience the advanced training so more Associates would have that level of expertise. Associates from the original 10 stores were contacted, as were additional Associates from surrounding stores for the advanced regional training that would be held in two locations – Milpitas and Napa Home Depots.

Project Tasks

Task 1. Materials Development (see attachments)

- Developed and revised resource and handout materials, including county specific information for HHW, Mosquito and Vector Control, Pest of the Month Calendars with Home Depot updated products, 2015 Home Depot How Less Toxic Products Work, Home Depot Less Toxic Product List for 2015, New and Invasive Pests, Waterwise Gardening, Protecting Landscapes in a Drought, Local water rebate information, Plant It Right List, Waterwise Plants for the Greater San Francisco Bay Area, and an updated resource list
- Researched and created handouts on new pests of concern
- Created PowerPoint presentation for 2015
- Developed pre- and post-surveys for the trainings

Task 2. Regional trainings (see attached photos) – Stores were contacted, dates chosen, Associates registered, and training materials prepared or purchased, including resource binders, set of UC Landscape Pest ID Cards, hand lens with lanyard, Home Depot Pocket Guide, and Mac's Field Guides Good/Bad Bugs of California. Associates from twelve additional stores attended as did 5 Associates from the original stores (17 stores in the two trainings) – meeting the goal of Home Depot to reach out to additional stores and their Associates. Additional attendees in Santa Clara County included representatives from the City of Milpitas, the Santa Clara Valley Urban Runoff Pollution Prevention Program, and the Santa Clara County Storm Water Program

Task 3. Assessment and Reporting (see training evaluations)

- Collected and compiled pre- and post- training evaluations.
- Trained 15 Associates each at the Milpitas and Napa stores. Additional materials were given to stores to take back to key Associates who could not attend.
- Associates met with their IPM Advocates during the training breaks and set dates for in-store trainings for additional Associates, and dates for tabling events.
- Home Depot stated that the products promoted by the *Our Water, Our World* program have grown in unit sales by an average of 12% each year from Home Depot's fiscal year 2012 through FY 2014. Home Depot's fiscal year is March – February.



Our Water - Our World



Home Depot & Our Water Our World Store Partnership Program

Regional Associate's Training



Annie Joseph
Debi Tidd

Welcome to the Regional Associate's Training

Introductions Binder and Resources

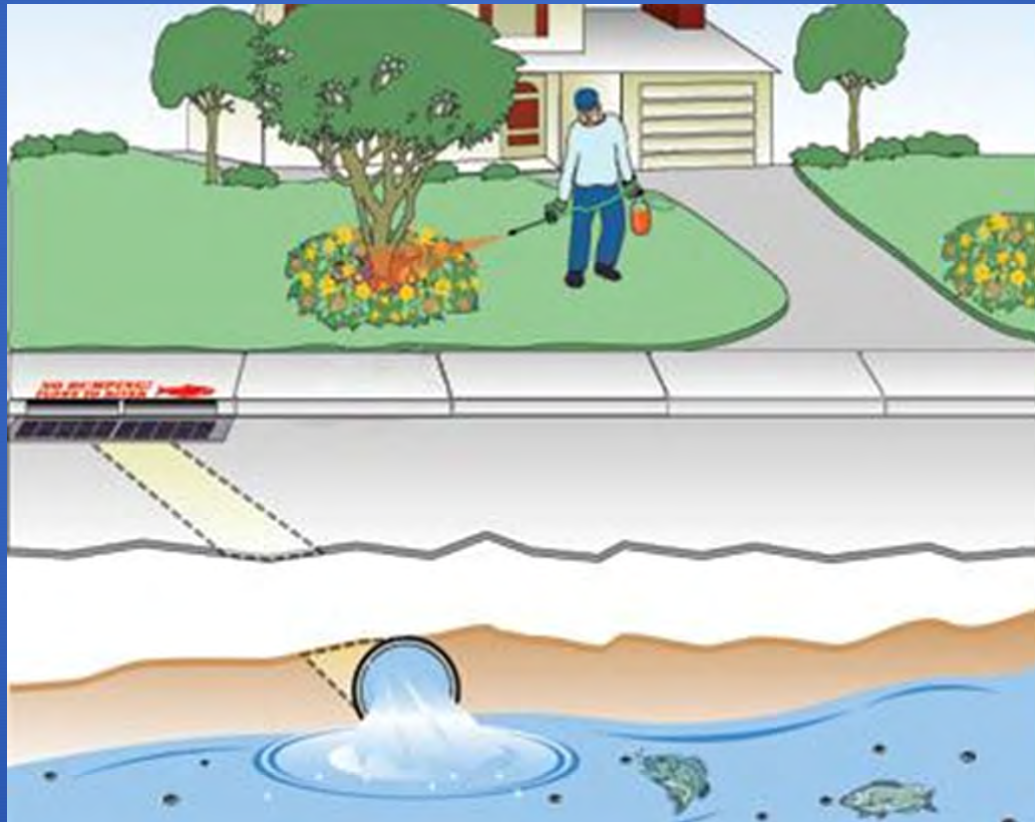


What is the number one source of water pollution in California?

- a. Sewage discharges
- b. Large industrial plants and factories
- c. Oil tanker spills
- d. Agriculture
- e. Runoff



Runoff from landscapes enters the storm drains



Is this water treated before it enters the creek?

The Sewer System



When water enters the sewer system from a house drain, are pesticides removed at the sewage treatment plant before the water enters the Bay?

The San Francisco Bay is one of the four most biologically productive areas in the world!



The Problem

- Most bodies of water in urban areas of California listed impaired by pesticide toxicity
- Current technology can't remove pollutants
- Clean Water Act & stormwater permits require local governments to reduce pesticide levels



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One Solution: OWOW Store Partnership

- Go to the 'point of purchase' where people buy pest control products
- Involve local businesses in solving the problem
- Help the public learn about less-toxic products and the connection between pesticide use and water quality



What is Our Water Our World?

- Partnership with water pollution prevention agencies and retail stores
- National Award Winning Program



Shelf talkers



Fact Sheets

Our Water Our World

- Promotes your store as having environmentally-friendly solutions
- Label end caps and recommend seasonal products
- Provides staff trainings
- Provides outreach for customers
- Offers on-going information and resources



300 Stores in 14 Counties

Working with the community to:

- Think about landscaping in new ways
- Provide expertise to troubleshoot pest problems
- Empower customers to solve problems



Why hold a Regional Associate's Training?

- To help Associates be more knowledgeable about less-toxic pest management strategies
- To partner with Associates that can help to train additional Associates working in the nursery area.



Integrated Pest Management (IPM)

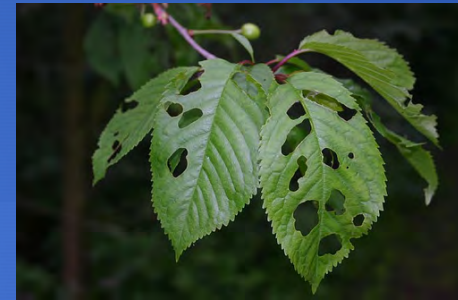
Use a variety of strategies for managing pest problems.

- **Cultural:** Creating healthy landscapes with organic fertilizers, compost, mulch, appropriate plants
- **Physical:** Using barriers & traps, caulk, screen, weed block, etc.
- **Biological:** Using beneficial organisms
- **Chemical:** Choosing least-toxic methods first and treating for the specific pest



Helping Customers Identify Pest Problems

- Do you see insects on the damaged plant?
- What kind of damage do you see?
- What plant do you see the damage on?
- Has the plant been fertilized recently?
- Is the plant situated in the right spot?
- Are beneficials present?



chewing damage



sucking damage

Resources for Pest Identification and Management



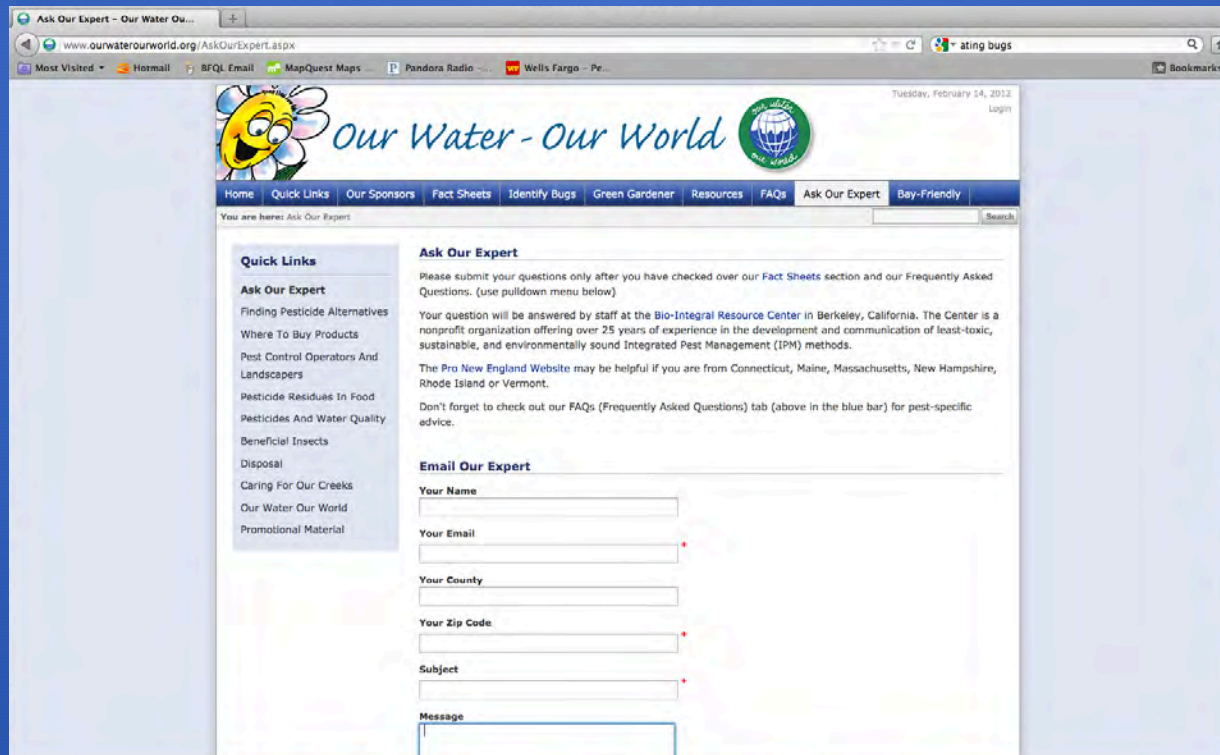
Resources for Pest Identification and Management



Sucking and Chewing Insect Damage

Insect	Plants	Symptoms
Asparagus beetles	asparagus	leaves are eaten, the epidermis is removed from stems causing the upper growth to dry and turn brown.
Black vine weevils	yews, rhododendrons, hydrangeas, euonymus, camellias, grapes, strawberries and fuchsias	notches appear in leaf margins, often near the ground from late spring to mid fall.
Caterpillars	many garden plants	leaves and occasionally flowers are eaten away from the edges inward
Colorado potato beetles	potatoes, tomatoes, eggplants, peppers	leaves are eaten, leaving only the main vein.
Earwigs	shrubs, perennials, annuals including dahlias, chrysanthemums, clematis, apricots and peaches	young leaves and petals are eaten in summer
Flea beetles	seedlings, leafy vegetables, radishes, wallflowers	holes and pits appear on upper surface of leaves; plants may die if attack is severe
Gypsy moths	many deciduous trees and shrubs, but especially apples, hawthorns, oaks, lindens and sometimes conifers such as spruce	leaves are eaten and plants may be defoliated. Repeated attacks will kill the plant.
Japanese beetles	various plants including grape, roses, and daylilies	flowers and leaves are eaten often in groups, leaving only the veins of the leaf visible.
Leaf-cutting bees	roses, some trees and shrubs	lozenge-shaped or circular pieces of uniform size are removed from the margins of the leave (outer edge)
Millipedes	seedlings and other soft growth plants including strawberry fruits and potato tubers	seedlings and soft growth are eaten, roots and stems may be eaten during dry periods; damage is rarely serious
Plant bugs	shrubs and perennials, especially chrysanthemums, asters, gladioli, zinnias, mint and dahlias, some annuals and fruits	leaves at shoot tips are distorted with small holes during the summer months
Sawfly larvae	trees, shrubs, perennials, bulbous plants and fruits; particularly	plants are defoliated

Resources for Pest Identification and Management



The screenshot shows a web browser window displaying the 'Ask Our Expert' page on the website www.ourwaterourworld.org. The page features a navigation menu with links for Home, Quick Links, Our Sponsors, Fact Sheets, Identify Bugs, Green Gardener, Resources, FAQs, Ask Our Expert, and Bay-Friendly. The 'Ask Our Expert' section includes a 'Quick Links' sidebar with categories like 'Finding Pesticide Alternatives' and 'Pest Control Operators And Landscapers'. The main content area contains instructions for submitting questions, a description of the Bio-Integral Resource Center, and a form titled 'Email Our Expert' with fields for Name, Email, County, Zip Code, Subject, and Message.

Ask Our Expert

Please submit your questions only after you have checked over our Fact Sheets section and our Frequently Asked Questions. (use pulldown menu below)

Your question will be answered by staff at the Bio-Integral Resource Center in Berkeley, California. The Center is a nonprofit organization offering over 25 years of experience in the development and communication of least-toxic, sustainable, and environmentally sound Integrated Pest Management (IPM) methods.

The Pro New England Website may be helpful if you are from Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island or Vermont.

Don't forget to check out our FAQs (Frequently Asked Questions) tab (above in the blue bar) for pest-specific advice.

Email Our Expert

Your Name

Your Email

Your County

Your Zip Code

Subject

Message

Our Water Our World “Ask the Expert” Feature

Identifying Pests: Using a Hand Lens

- Hold the lens right up to your eye and bring the object to be viewed up to the lens until it is in focus
- The higher the magnification, the closer you will hold the object (focal distance)



ID exercise



eucalyptus
redgum lerp psyllids



rose leaf
roseslug sawfly

IPM Techniques: Cultural Controls

Growing a Healthy Garden to Manage Pests Naturally

- Organic Fertilizers & Compost
- Mulch
- Waterwise & Native Plants
- Sanitation



Organic & Slow Release Fertilizers Compost

- Slowly releases nutrients over a long period of time
- Won't run-off into local waterways
- Prevents growth spurts that can attract pests
- Feeds/adds soil microbes



Bacteria and Fungi

Break down organic material, store nutrients in the soil,
break down toxins and pollutants, hold soil together



bacteria fixing nitrogen on
root of a plant



mycorrhizal fungi

Marvelous Mulch

A protective layer of material laid on surface of soil

- Adds nutrients to soil
- Feeds soil organisms
- Keeps weeds from sprouting and growing
- Conserves water, reduces evaporation
- Reduces soil compaction and erosion.
- Keeps soil cool in summer, warm in winter.

(Keep away from plant stems.)



Right Plant, Right Place

- Matching plants to the conditions of the site: sun, shade, soil type, etc.
- Choosing pest and disease resistant varieties
- Grouping plants with similar cultural needs together (hydrozoning)



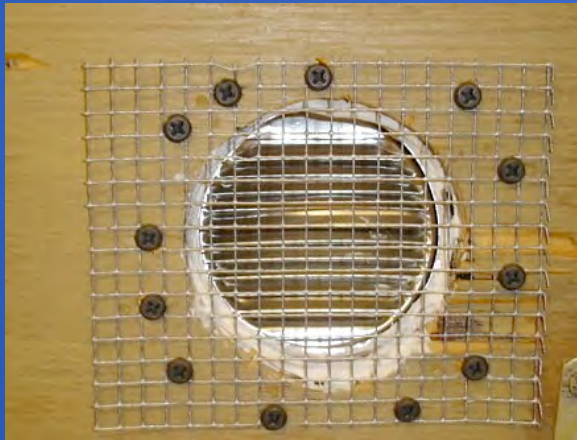
Sanitation

- Fallen fruit and nuts will attract pests like yellowjackets, rats and mice.
- Fungal spores can spread from diseased leaves and fruit.



IPM Techniques: Physical Controls

The Home Depot Advantage



screening



caulk



Hose nozzles

Physical controls



traps



row covers



weeding tools

IPM Techniques: Biological Control

Bring in the Beneficials



Less than 1% of insects are actually pests – the rest provide food, products like silk, wax & dyes, control pests and feed wildlife.

Parasitoids – insects that prey on pests



Is this a beneficial?



Spiders annually destroy 100 times
their number in pests.

Is this a Beneficial?



Beneficial Nematodes

Nematodes can control over 200 soil pests including grubs, fleas, caterpillars, cutworms, sod webworms fungus gnats, ticks leaf miners and termites

Managing Lawn Pests



Insectary Plants

Natives, Mediterranean, Water-Wise

Look for plants
with masses of
tiny flowers
or
flowers in the
sunflower family
to attract
beneficial
insects



Build a Good Bug Tub



Good Bugs? Yes, it is a bug-eat-bug world! Many “good bugs” can help manage pests that munch your prized plants. These *beneficial insects* are predators or parasites of other insects. If the beneficials stay around your garden, they can be powerful allies, helping to keep in check the three percent of insects that are pests. What does this mean for you? Fewer pests, less pesticides or none, and the foundation for an interdependent—and very interesting—garden ecology. If, on the other hand, you spray pesticides that kill many kinds of insects, the good bugs are killed, too. With their natural enemies gone, pest populations bounce back with a vengeance.

One way to encourage visiting beneficials to be permanent pest patrollers is to grow flowers that are good producers of nectar and pollen; with your help they’ll have food when pest populations decline. Even if your garden is as small as a few pots on a patio, a container of these *insectary plants* can help keep the good bugs around. In a larger garden, insectary plants can be planted among other plants.

Making a Good Bug Tub

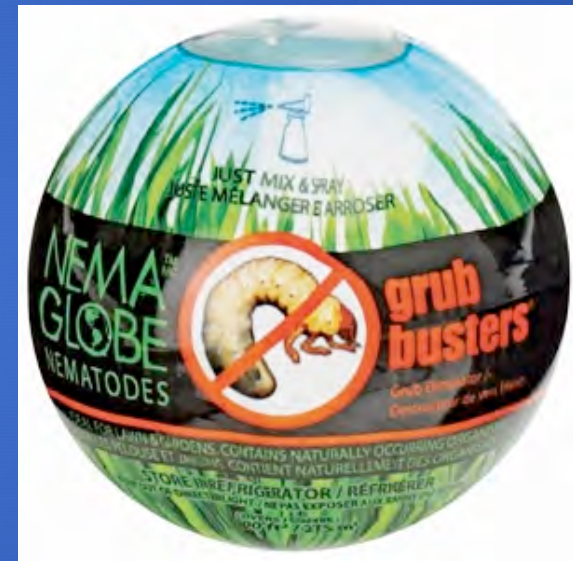
What kind of pot should I use? Ideally, you will want to have enough different plants for blooms throughout the year, but that could mean a big tub. Container size can also depend on weight limits on a balcony garden, the number and mature size of the plants you choose, and how often you want to water it. Perennials and shrubby plants need extra space. For shade-loving plants, a porous pot avoids moldy soil. Don’t forget drainage holes. To keep the pot out of water, set it on pebbles or other supports.

What kind of soil is best? A light, fast-draining soil is best for pots. Supplement commercial potting soil with compost and a bit of slow-release fertilizer (organic or pelleted). Fertilizer enhances plant strength and size, but too much fertilizer—especially for native plants—will favor leaves at the expense of flowers.

What’s special about container care? Group plants with like needs. Water pots more often and set them



Look Who's Coming to Dinner: Beneficials Available On-line at Home Depot



IPM Techniques: Chemical Controls

How Basic Less-Toxic Products Work



Soaps



Oils



Bio-Pesticides

Reading a Pesticide Label

“The Label is the Law”

- Active Ingredient/Inert Ingredient
- Signal Words
- Directions for Use (make sure specific pest and type of plant is listed)
- Storage and Disposal – what do you do with products you no longer want?



Some Great Choices

Here are a few products that will help your customers manage most common pest and disease problems.



Tips for Using Products

- Less-toxic products may take longer to work.
- Timing is important – know the pest's life cycle to apply the pesticide at the best time.
- Remember to spot treat.
- Apply soaps and oils in the early morning or early evening.
- If releasing beneficials, give them time to find the pests before applying any pesticides.



Putting it All Together: Managing Common Pests



Monthly Pest-at-a-Glance Calendar



Home Depot Monthly Pest-At-A Glance Calendar

Month	Pest/Disease	Notes	Resources	Products to Highlight
January	Dormant spray for diseases/over-wintering insects	remove/dispose of infected plant material	OWOW Dormant Spray handout	Bonide Copper Fungicide Bonide All-Seasons Oil
February	Rose Care	Mulch to prevent fungal diseases & conserve water	OWOW Rose Fact Sheet	Natria Neem Oil Bonide All Seasons Oil Nature's Care Insect Soap
March	Snail/Slug	Water early morning to prevent wet foliage at night	OWOW Snail & Slug Fact Sheet	Natria Slug & Snail Sluggo Nature's Care Slug and Snail
April	Aphids	Look for ladybugs & other beneficials that eat aphids	OWOW Aphid Fact Sheet	Nature's Care Insect Soap Bonide All Seasons Oil Organocide
May	Grubs	Buy beneficial nematodes on-line to manage young grubs	OWOW Grub Handout	Beneficial Nematodes
June	Mosquitoes	Check for standing water/screen windows	OWOW Mosquito Fact Sheet	Mosquito Dunks
July	Yellowjackets	Set traps at perimeter of yard, not near eating areas	OWOW Yellowjacket Fact Sheet	Yellowjacket traps/lures
August	Fleas & Flies	Flies: remove pet waste & fallen fruit Fleas: use nematodes in outside breeding areas	OWOW Flea Fact Sheet	Fly Traps, Fly Tape Fly predators (on-line) Flea Traps, Nematodes EcoSmart Flying Insect
September	Ants	Use caulk to seal entries/manage aphids to discourage ants	OWOW Ant Fact Sheet	Amdro & Terro ant baits EcoSmart Ant & Roach
October	Rats/Mice	Pick up fallen fruit/nuts Seal entries with foam	OWOW Rats and Mice Fact Sheet	Rat/Mouse Traps Great Stuff Foam
November	Dormant Spray	Use when roses and fruit trees have lost their leaves	OWOW Rose Fact Sheet	Bonide All Seasons Oil Bonide Copper Fungicide
December	Bed Bugs	Use a monitoring tool to detect bed bugs	Bed Bugs Quick Tips	Safer Ant and Crawling Insect Killer

Aphids

- Fertilizers attract them
- Hatch out in warm weather
- Females are pregnant at birth
- Ants protect them



Aphid Solutions

- Plants that attract beneficials
- Organic/slow-release fertilizers
- Don't over-prune
- Soaps
- Oils
- Manage ants



Ants

- Outside ants are decomposers, aerate soil, eat insect pests
- Will protect aphids and keep beneficials from doing their job



Ant Solutions

- Inside: kill scouts & clean up scent trails
- Ant baits
- Insecticidal 'dusts' – diatomaceous earth
- Manage aphids



Yellowjackets

- Colony dies end of summer, Queen overwinters
- Eat pests like katydids, tomato hornworms & flies



Yellowjacket Solutions

- Traps – careful placement
- Attractant
- Some local vector control districts will remove ground nests.



Snails and slugs

- Snails can live for 15 years!
- Were brought to this country to eat as escargot



Snail and Slug Solutions

- Hand pick
- Sluggo – Iron Phosphate
- Water early in morning
- ‘Chunky’ mulch
- Replace ‘snail hotels’ – agapanthus, ivy, lilies, hosta



Mosquitoes

- Larva is aquatic – don't leave any standing water
- Only female feeds on blood – the male is a pollinator



Mosquito Solutions

- Mosquito dunks
- Drain standing water
- Mosquito fish are usually available from your local Vector Control



Citrus Leaf Miner

- Larvae create shallow tunnels (mines) in young citrus leaves as they feed and leave a dark line of frass (feces)..
- The adult is a silver and white moth, less than 1/4" long.
- Generally, will not harm mature trees.



Larvae in mine



Adult moth

Citrus Leaf Miner Solutions

- Beneficial insects, like wasps will parasitize larvae.
- Avoid pruning that will encourage soft new growth. Do trim off suckers that harbor moths.
- Do not apply high nitrogen fertilizer summer and fall when populations are high.
- Broad spectrum pesticides are not generally effective and can harm beneficials. Oils may be useful in suffocating eggs.



Wasp attacking a leaf miner

Fungal Diseases



black spot



powdery mildew



rust

Fungal Disease Solutions

- Remove diseased foliage
- Water early in the day
- Mulch
- Syringe for powdery mildew
- Sulfur, copper soap
- Neem Oil



Watch for Dry Weather Pests

Some pests are especially attracted to dry, dusty conditions and may be more of a problem this Spring and Summer.



Spider mites

Spider Mites

- Like dry, dusty conditions
- May not be predators around



Spider Mite Solutions

- Change plant location/
increase air flow
- Wash off leaves
- Use soaps and oils



Whitefly

- Like dry, dusty conditions
- Can excrete sticky honeydew
- May not be predators around
- Group together on underside of leaf



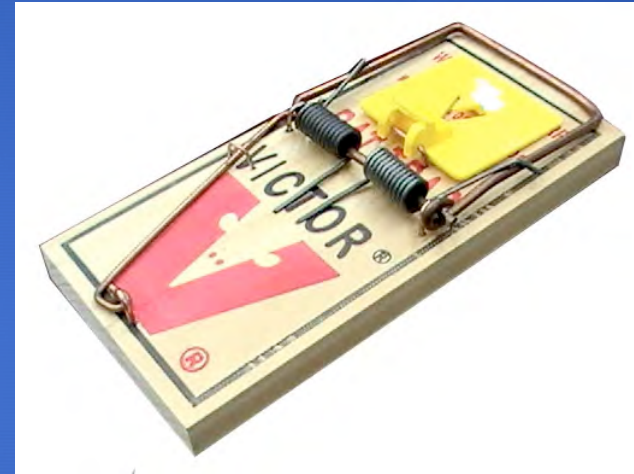
Whitefly Solutions

- Change plant location/
increase air flow
- Wash off leaves
- Use soaps and oils
- Use traps to monitor and
manage



Changes in Rodenticides

- EPA moving to ban most the most toxic rat/mouse products
- Direct customers to traps or tamper-resistant bait stations



The Problem with Pyrethroids

- They leave a residue that harms beneficials
- End up in our creeks
- So little does so much damage



Sampling sediments for pyrethroids

How do you dispose of leftover pesticides or pesticides you no longer want?



Take it to your local Household Hazardous Waste Collection Facility!

New and Invasive Pests

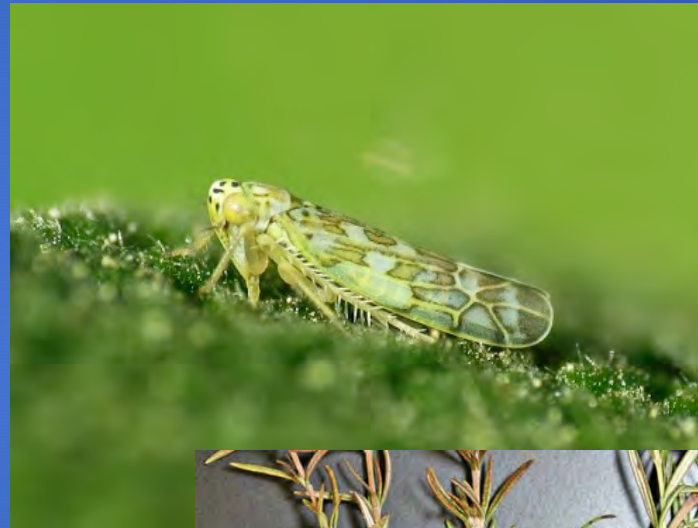
Giant Whitefly

- Remove infested leaves or replace
- Blast off leaves with water
- Pesticides aren't very effective – soaps and oils may help
- Avoid insecticides that will interfere with beneficials



Rosemary or Ligurian Leafhopper

- Stippling of leaves
- Can try hard pruning
- Can try soaps & oils to kill nymphs
- Tolerate some damage

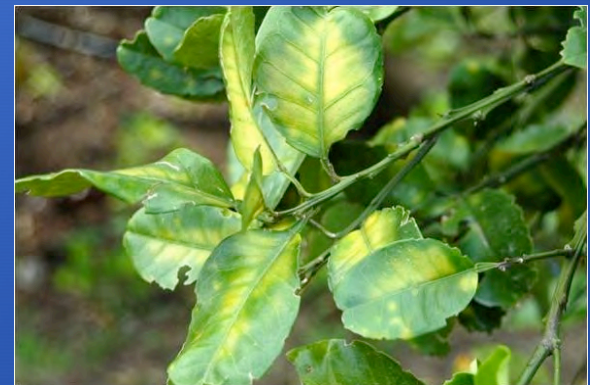


Asian Citrus Psyllid and Huanglongbing (HLB) Disease

- Feeding deforms leaves
- Transmits a bacteria that causes citrus greening disease
- If seen, contact:
California Dept of Food and Agriculture 1-800-491-1891
or your local county ag dept.



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Brown Marmorated Stink Bug

- Has been found in isolated spots on the West Coast
- Adults and nymphs suck juices from fruits & seeds
- Large numbers may congregate on walls or invade homes.
- If seen, contact your County Ag Dept. or local UC Cooperative Extension Office



Bagrada Bug

- This invasive stink bug is a pest of cole crops and other mustard family plants, including ornamentals like alyssum and candytuft.
- Use needle-like mouthparts to pierce and feed on plants and seeds.
- If seen, contact your County Ag Dept. or local UC Cooperative Extension Office



Water-Wise Gardens



Plant Choices

Natives, Mediterranean, Water-Wise



Salvias



Erigeron



Lavender

Smart Planet Plants



**SMART
PLANET™**

[Home](#) | [Plant List](#) | [Smart Mats](#) | [Contact Us](#)

Drought Tolerant Plants



As modern technology brings the far reaches of the planet closer together, we become more aware of the ecological threads that weave through the fabric of our earth. Smart Planet™ plants have been chosen as practical considerations to help conserve precious resources without sacrificing beautiful gardens.

- *Conserve water*
- *Low maintenance*
- *Reduce time and money spent on irrigation*
- *Year-round beauty*
- *Create a habitat for native wildlife*
- *Create an eco-friendly environment*

We've brought together the best flowering plants and grasses for our local climate. You can rest assured that the water needs of these plants are much less than traditional garden center plants, and you will also enjoy beautiful blooms and foliage.

Drought tolerant once established: Water regularly until plant is established in its new environment, and then reduce frequency until natural moisture/precipitation is sufficient, with perhaps an additional watering once or twice during the hottest months.



Smart Planet plants can be found exclusively at The Home Depot. Find your local store [here](#).



[Home](#) | [Plant List](#) | [Smart Mats](#) | [Contact Us](#)

Smart Planet™ plants are grown by Allman Plants and available exclusively at The Home Depot.

Smart Planet Plants

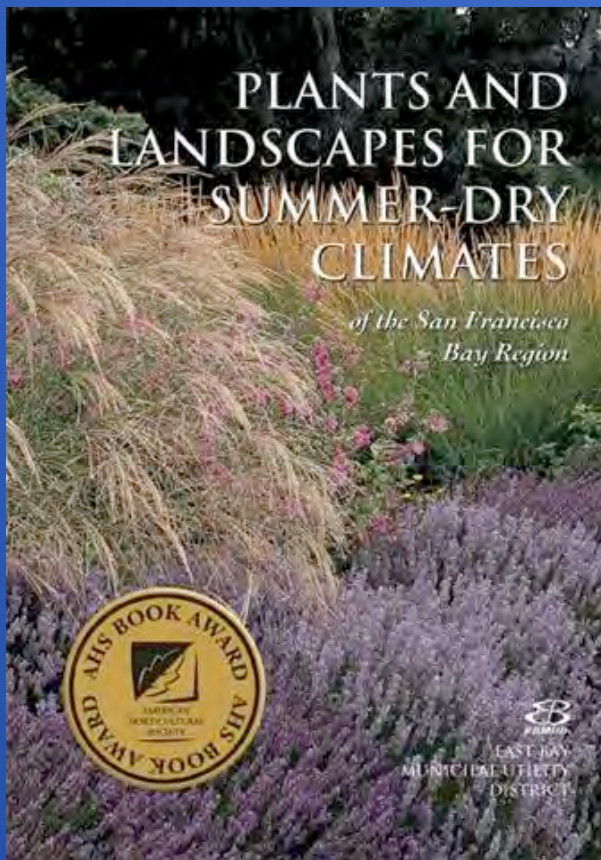


Smart Planet Plants



Smart Mats with sedums

Great Plant Resources



LOW-WATER ARBORETUM *All-Stars*

OF THE ONE HUNDRED ARBORETUM ALL-STARS, THIS LIST INCLUDES THOSE WITH THE LOWEST WATER NEEDS

Acacia boormanii
Snowy River wattle



Fragrant yellow flowers add color to the winter garden; very adaptable and hardy; grows best in well-drained soils; heat and drought tolerant.

Acca sellowiana
(*Feijoa sellowiana*)
pineapple guava



Attractive spring flowers are edible and sweet; large green leaves have a pineapple-like flavor; can be used as hedging or as a screen; attracts hummingbirds.

Arctostaphylos densiflora
'Howard McMini'
Vine Hill manzanita



California native plant; known for its smooth, wine-red bark; one of the few manzanitas that tolerates our clay-loam soils; attracts hummingbirds and beneficial insects.

Aristolochia californica
California pipevine



California native plant; leaves provide food for greeneye swallowtail butterfly larvae; versatile plant that can be used as a climbing vine or a groundcover.

Bulbine frutescens
Cape balsam



Small, evergreen perennial is a wonderful addition to dry perennial borders with its long-blooming spikes of delicate, star-shaped yellow flowers; fleshy, bright green foliage adds a sculptural element to the garden; tolerates drought and poor soils.

Callistemon 'Violaceus'
purple bottlebrush



Rosey-purple "bottlebrush" flowers bloom in early winter and spring, and sporadically year round; medium to large evergreen shrub that is tough and adaptable; grows best in full sun and tolerates nitrogen watering; attracts hummingbirds and beneficial insects.

Ceanothus maritimus
'Valley Violet'
valley violet maritime ceanothus



California native plant; has small ceanothus for Central Valley gardens; clusters of dark-violet flowers bloom in spring; attracts beneficial insects.

Cercis occidentalis
western redbud



California native plant; early spring bloom before leaves appear; attractive reddish seed pods in summer; new stems, cut in winter, are used to add color to Native American baskets; attracts beneficial insects.

For more information visit arboretum.ucdavis.edu



Invasive Plants



Many Ivy plants are rampant growers, can smother other plants and attract rats and snails.




Pampas Grass can produce over a million seeds per year and seeds can travel for 20 miles.

Information on Invasive Plants

Plant Right


California Invasive
Plant Council
(Ca-IPC)

PROMOTING NONINVASIVE PLANTS FOR CALIFORNIA



Plants by Region of California

For a list of garden plants that are invasive in your area, and what we recommend using in their place, click the region where you live on the map below. You can also browse our [complete list of invasive plants](#).



- Central Valley
- Desert
- North and Central Coast
- Sierra and Coastal Mountains
- South Coast

A plant's invasiveness is largely a matter of location and climate. California's regions are organized on this site according to Sunset® Western Gardening Zones. You can select your region using the map on the left, or by clicking on your zone below:

- Central Valley (Sunset Zones 7-9)
- Desert (Sunset Zones 10-13)
- North and Central Coast (Sunset Zones 14-17)
- Sierra and Coastal Mountains (Sunset Zones 1-3)
- South Coast (Sunset Zones 18-24)
- All California

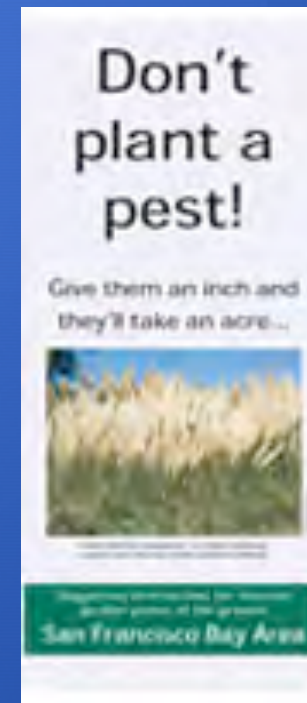
Why These Plants?
Read about how PlantRight created and updates its list.
View the [invasive plants retired](#) from PlantRight's list.

Printable list

You can [download a printable list](#) of PlantRight's 10 invasive garden plants and non-invasive alternatives in [PDF format](#).

Email:

Password: *



Tips for Water-Wise Gardening



More than 50% of residential water is used for landscaping.

Go With the Flow: Water Efficient Irrigation



Many cities and water districts offer rebates for installing high efficiency irrigation systems.



Irrigate Early in the Morning



Irrigate early in the morning to avoid wet foliage in the evening that attracts pests and fungal diseases.

Go Deep



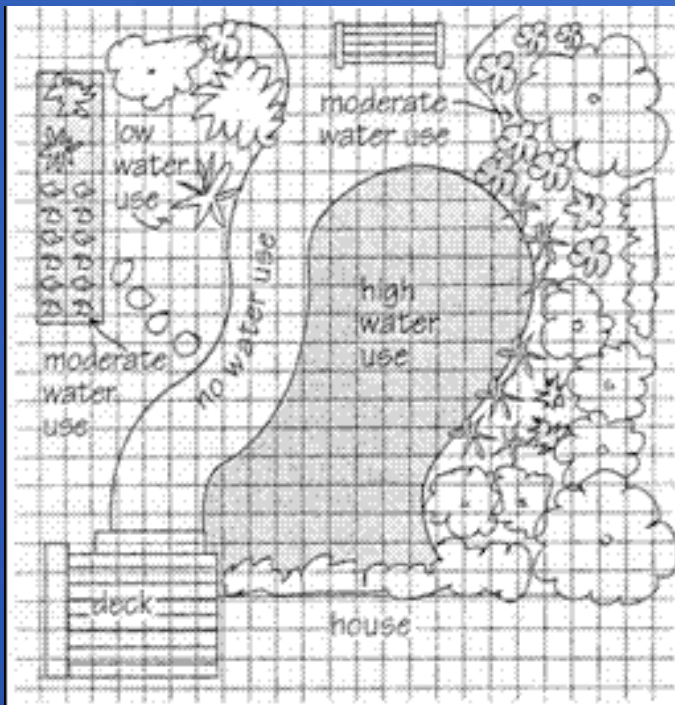
The best strategy is to water less often
and more deeply.

Some plants wilt in heat even when soil is moist.



Check the soil for moisture before over-watering!
These plants will perk up at night when
they can take up water.

Get in the Zone: The Hydrozone



Hydrozones

Source: Santa Clara Valley Water District,
"Rules of Thumb for Water-Wise Gardening"



Group plants with similar water needs together to make watering easier and more efficient.

Mulch Like Mad and Count on Compost

The average US. Household
generates 650 lbs. of compostable
materials each year.



Over 60 percent of what we put in our
landfills is organic waste, much of which
could be recycled by composting.

Fall into Planting

Fall is the best time to plant large projects



Prepping the Planting Site



Sheet mulching before Fall Planting

Lessen the Lawn

Turf is the Thirstiest Landscaping



'Urban Drool'

Many cities and water agencies offer cash incentives for removing lawns



Replace lawns with water-wise groundcovers and low-maintenance perennials.

Get Wise to Weeds



Weeds compete for water. Drip irrigation, mulch and landscape fabric will help manage weeds.

Tools to Cut Water Use



Spot watering with watering cans.



Get back to the broom! Outdoor clean-up with brooms instead of hoses.

Tools to Cut Water Use



Shade cloth to relieve stressed plants.



Cloud cover

Resources:

Our Water Our World: Ask the Expert

- Fact Sheets
- Lists of less-toxic Products
- 10 Most Wanted Bugs

Wednesday, February 11, 2015
Login

Our Water - Our World

Home | Our Sponsors | Fact Sheets | Identify Bugs | Green Gardener | Resources | FAQs | Ask Our Expert | Friendly Programs | UC IPM Online

You are here: Home

Our Water Our World
Find Less Toxic Pest Control Products
Now there's an app for that!
Available on the Google Play | Available on the App Store

Dig Into Less-Toxic Gardening With Our New App

Quick Links

Ask Our Expert
Finding Pesticide Alternatives
Where To Buy Products
Pest Control Operators And Landscapers
Pesticide Residues In Food
Pesticides And Water Quality
Beneficial Insects
Disposal
Caring For Our Creeks
Our Water Our World
Promotional Material

Our water-our world

This website has been developed to assist consumers in managing home and garden pests in a way that helps protect *Our Water - Our World*. Among other things, this site offers:

- assorted fact sheets/*forma informativas* on specific pests and methods to manage them without using hazardous materials.
- pocket guide to managing 10 common pests
- information on where to buy safer alternatives to pesticides, including fungicides and herbicides.
- an alphabetized list of some (not all) products that are considered safer alternatives to more conventional pesticides.
- a list of products sorted by the pest it targets.
- an Ask the Expert feature that allows you to ask a specific question and receive a personal reply.

Visit [NorCal IPM](#) for information to assist municipalities, pest control operators and landscapers.

For a 2 minute video on how the *Our Water - Our World* program helps customers in retail stores, click here (NOTE: Video starts at 00:35 second mark in recording). Video courtesy of KRON 4, San Francisco.

www.ourwaterourworld.org

UC Statewide IPM Program: www.ipm.ucdavis.edu/

The screenshot shows the homepage of the UC Statewide IPM Program website. The browser address bar displays www.ipm.ucdavis.edu. The page header includes the text "UNIVERSITY OF CALIFORNIA AGRICULTURE & NATURAL RESOURCES" and "UC IPM Online Statewide Integrated Pest Management Program". A navigation menu contains links for "What is IPM?", "Identify & Manage Pests", "Research", "Publications", "Training & Events", "Links", "About Us", "Contact Us", and "Subscribe".

The main content area is divided into several sections:

- Solve your pest problems with UC's best science**: A green banner at the top of the left sidebar.
- Announcements**: A section with a list of updates, including "2011 Highlights: Annual Report" and "Workshops in February: Pesticide safety, Landscapes and rights-of-way".
- What's New**: A section with a list of new content, including "Green Bulletin Newsletter: February 2012 issue", "Revised Pest Notes: Cottony Cushion Scale, Mushrooms and Other Nuisance Fungi in Lawns", and "Updates in Pest Management Guidelines: Asparagus".
- QUICK LINKS**: A section with links for "Newsletters", "Recursos en español", "Online training", and "Weather, models, & degree-days".
- Home, Garden, Turf & Landscape Pests**: A section featuring a photograph of a person walking on a path in a garden.
- Agricultural Pests**: A section featuring a photograph of a tractor in a vineyard.
- Natural Environment Pests**: A section featuring a photograph of a landscape with trees.
- Exotic & Invasive Pests**: A section featuring a close-up photograph of leaves with white spots.

Work with IPM Advocates in Your Stores



Receiving the IPM Innovators Award from the California State Department of Pesticide Regulation

What's Next?

- IPM Advocates will be working with your stores and with customers in-aisle
- Keep an eye on shelf talkers and fact sheet racks
- Get in touch with your IPM Advocate for help with questions





“When we try to pick out anything by itself, we find it hitched to everything else in the universe.”

John Muir

Photos of Regional Trainings



Summary of 2015 Home Depot Regional Training Pre-Training Survey

A total of 36 pre-training surveys were returned. Here are the results of those surveys.

Survey Question	Yes	No	Don't Know
When water runs into a storm drain in the street, is it treated before it reaches a stream or the Bay?		98%	2%
When water enters the sewer system from a house drain, are pesticides removed at the sewage treatment plant before the treated water enters the Bay?	39%	59%	2%
How do you dispose of leftover pesticides after you finish applying them, or when you no longer need the pesticides? <ul style="list-style-type: none"> • Household Hazardous Waste Sites: 25 • Don't know: 2 • Flush in garage sink: 1 • Call garbage for pick up: 2 • Take to recycle center: 1 • Use it up or give it away: 2 • Call local city for disposal site: 2 • Put in container in trash: 1 			
Do you know where your local Household Hazardous Waste facility is located? <div style="display: flex; justify-content: space-around; margin-top: 5px;"> YES: 30% NO: 70% </div>			

Did the information change your views about pesticides? Or, were you already recommending less-toxic products?

YES: 69%

ALREADY RECOMMENDING: 31%

NO: 0

What part of the training was most helpful?

- All: 7
- Insect ID: 13
- Product information: 7
- Pest calendar: 1
- New pests: 1
- Water-wise plants: 1
- Drought information: 1
- Handouts: 2

Is there anything that can be done to improve the training?

- No: 10
- More training: 2
- On-line training for Associates and customers: 2
- More water-wise plants: 1
- More on products/pest solutions: 2
- More people from stores in class: 1
- Apron cards – set of 10 cards on the basics of each part of training: 1
- More on bugs: 1

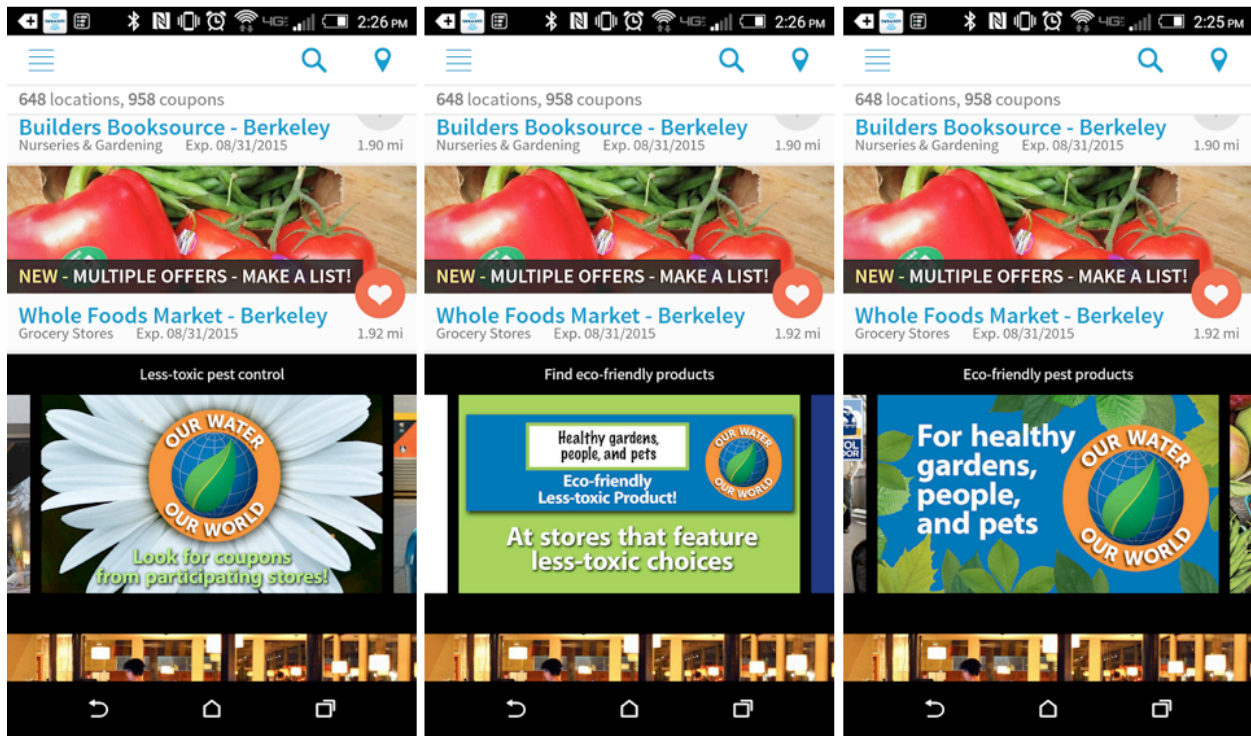
Comments:

- Very good training/it was perfect/learned a lot: 5
- I am more knowledgeable about organic insecticides and pests now.
- I now know the right pesticide to use for certain plants.
- Got to see a lot of pests, what they looked like.
- Learned more about organic pesticides.
- The more knowledgeable one is about these products, the easier it is to convince and sell to those worried customers in need.
- Something in every part of the training was informative.
- How less toxic products will benefit good bugs.

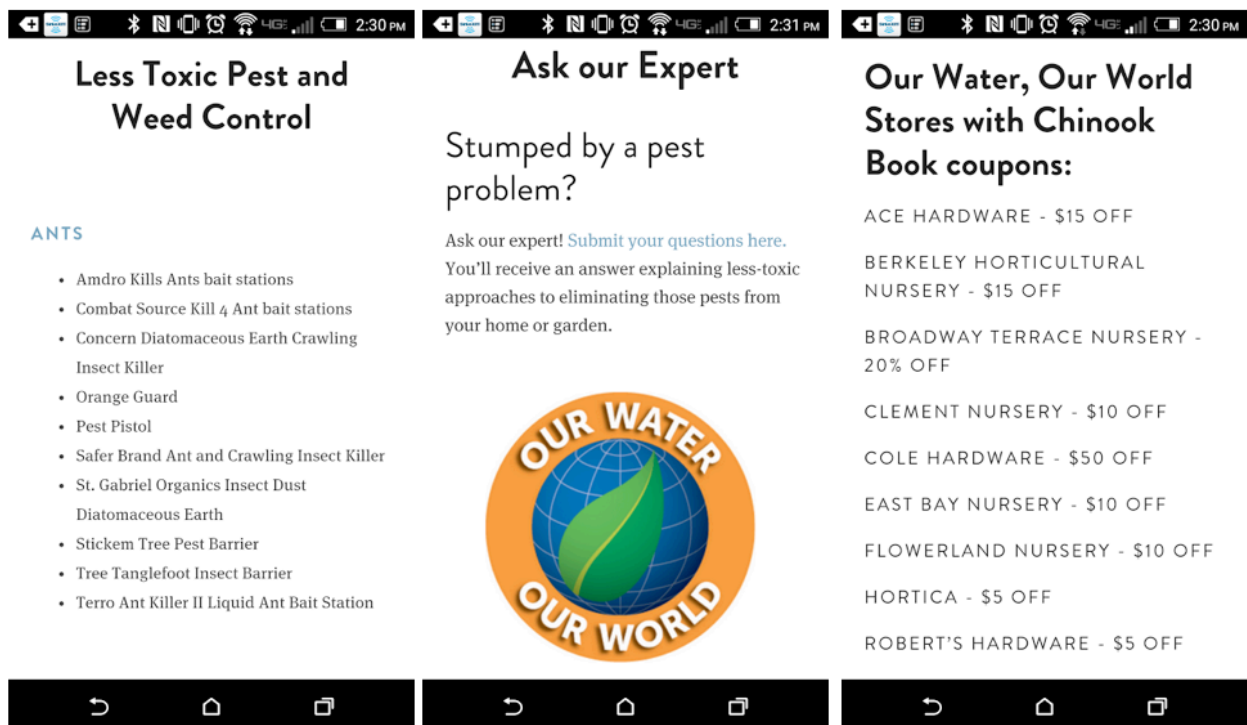
- I learned a lot that I didn't know and I hope I can share my knowledge.
- They took their time and explained in detail. The whole training was perfect.
- I've recommended both, but now I am planning on focusing on the less-toxic options.
- There are eco-friendly products I will recommend now.
- Learned a lot about good bugs and bad bugs.
- Made it easier to know there's more variety.
- The result of less-toxic products on the environment is so important.
- It was great – so much helpful info.
- I'll do my best to recommend less-toxic products.
- All of this training was great.
- I feel empowered with new knowledge of pesticides.
- I will recommend less-toxic products.
- Debi and Annie were so great and full of wisdom – great job.
- How damaging pesticides are in waterways.
- I enjoyed this so much. Thankful I was able to come.
- Already trending on less-toxic products due to customer purchasing habits.

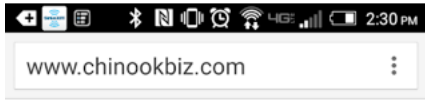
Screen shots of Mobile Inline Content in the Chinook Book App

Inline Ads:



Article Content (all these pages are linked together, but only showed the top content of each page here)






Find Less Toxic Products

Look for this shelf tag before you buy:



648 locations, 958 coupons


Builders Booksource - Berkeley
Nurseries & Gardening Exp. 08/31/2015 1.90 mi



NEW - MULTIPLE OFFERS - MAKE A LIST!


Whole Foods Market - Berkeley
Grocery Stores Exp. 08/31/2015 1.92 mi

Too many aphids?



Find eco-friendly solutions for aphid problems

Photo: Emily Morgan



About Our Water Our World



Our Water Our World is a publicly supported program that educates California residents



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

September 15, 2015

Bruce Wolfe, Executive Officer
California Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: FY 2014-15 Annual Report: MRP Provision C.9.e - 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.e (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 2014-15 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 2014-15 was another productive year for the Subcommittee. The CASQA Pesticides Subcommittee's annual report for FY 2014-15 (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.

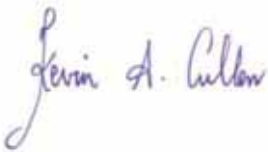
FY 2014-15 Annual Report: MRP Provision C.9.e - Track and Participate in Relevant Regulatory Processes



James Scanlin, Alameda Countywide Clean Water Program



Tom Dalziel, 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



Douglas Scott, Vallejo Sanitation and Flood Control District

Attachments

MRP Provision C.9.e

Pesticides Subcommittee Annual Report and Effectiveness Assessment 2014-2015; California Stormwater Quality Association; August 2015

MRP Provision C.9.e states:

C.9.e Track and Participate in Relevant Regulatory Processes (may be done jointly with other Permittees, such as through CASQA or BASMAA and/or the Urban Pesticide Pollution Prevention Project)

i. Task Description

- (1) The Permittees shall track USEPA pesticide evaluation and registration activities as they relate to surface water quality, and when necessary, encourage USEPA 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 California Department of Pesticide Regulation (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 water quality standards; and
- (4) As appropriate, the Permittees shall submit comment letters on USEPA 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 who participate in a regional effort to comply with C.9.e. may reference a regional report that summarizes regional participation efforts, information submitted, and how regulatory actions were affected. All other Permittees shall list their specific participation efforts, information submitted, and how regulatory actions were affected.

Pesticides Subcommittee Annual Report and Effectiveness Assessment 2014 - 2015

California Stormwater Quality Association



Final Report
August 2015

Pesticides Subcommittee Annual Report and Effectiveness Assessment
2014-2015

California Stormwater Quality Association

August 12, 2015

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, assisted by Jamie Hartshorn, under the direction of the CASQA Pesticides Subcommittee Co-Chairs Dave Tamayo and Delyn Ellison-Lloyd. The Co-Chairs, along with Dr. Kelly Moran of TDC Environmental, provided documents, guidance, and review.

Disclaimer

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All rights reserved. CASQA member organizations may include this report in their annual reports provided credit is provided to CASQA. Short sections of text, not to exceed three paragraphs, may be quoted without written permission provided that full attribution is given to the source.

Abbreviations Used in this Report

ACS – American Chemical Society

BMPs – Best Management Practices

CASQA – California Stormwater Quality Association

CVRWQCB – Central Valley Regional Water Quality Control Board

CWA – Clean Water Act

DPR – California Department of Pesticide Regulation

EPA – United States Environmental Protection Agency

FY – Fiscal Year (July 1 through June 30)

IUPAC – International Union of Pure and Applied Chemistry

MS4 – Municipal Separate Storm Sewer System

OPP – U.S. EPA Office of Pesticide Programs

OW – U.S. EPA Office of Water

PEAIP – Program Effectiveness Assessment and Improvement Plan

PPDC – Pesticide Program Dialogue Committee

PSC – CASQA Pesticides Subcommittee

RA – Risk assessment

SPCB – Structural Pest Control Board

SETAC – Society of Environmental Toxicology and Chemistry

SFBRWQCB – San Francisco Bay Regional Water Quality Control Board

SWAMP – California Water Boards Surface Water Ambient Monitoring 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
2014-2015

California Stormwater Quality Association

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Executive Summary

To address the problems caused by pesticides in urban waterways in California, CASQA has collaborated with the Water Boards in a coordinated statewide effort, which we refer 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 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 2014-15 activities and outcomes are described in Section 2. In terms of assessing program effectiveness in the near- and long-term, the year's highlights are as follows:

(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?

- 💧 Due, in part, to a significant effort by CASQA and the Water Boards to prevent registration of new water polluting pesticides, the manufacturer of cyantranilprole (a problematic replacement for pyrethroids and fipronil) withdrew its California building perimeter spray product registration application (*See Section 2.2.*)
- 💧 DPR has adopted regulations and triggered bifenthrin product label changes with additional restrictions and is monitoring effectiveness through its urban surface water monitoring and enforcement programs. (*See Section 2.2*)
- 💧 In direct response to continued communication from CASQA, DPR is addressing **fipronil** water pollution in urban areas. (*See Table 3.*)
- 💧 In direct response to continued communication from CASQA, DPR has agreed to route six pyrethroid registration applications (for momfluothrin and metofluthrin products) and all fipronil product registration applications to its surface water program for review.

(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?

- 💧 As a result of requests by CASQA and the Water Boards, DPR has enhanced collaboration with the Water Boards and devoted significant resources toward urban runoff model development and coordinated monitoring. (*See Section 2.4.*)
 - This collaboration was highlighted at a November 4, 2014 workshop at the State Water Board
 - DPR's registration procedures will now specifically address California urban environments

- DPR’s urban monitoring program now includes coordination of that urban monitoring with Water Board SWAMP, has been expanded to address sediments and toxicity, and incorporates an improved prioritization process that includes degradates.
- 💧 Via the Stormwater Strategic Initiative and an “immediate implementation” project, the State Water Board is poised to direct staff to develop a statewide Water Quality Control Plan for urban-use pesticides that would streamline pesticide monitoring data evaluation, establish consistent municipal permit requirements, and include a statewide coordinated monitoring approach.
- 💧 CASQA prepared comment letters for 5 pesticide reviews, provided the Water Boards information that triggered 8 letters on 5 pesticides reviews, wrote two letters to DPR on its registration processes and a letter to California Department of Food and Agriculture on its urban pesticides use practices, and participated in numerous meetings and conference calls, focused on priority pesticides and long-term regulatory structure improvements. *(See Tables, 3, 4, and 5.)*
- 💧 Due, in part, to continued communication from CASQA, DPR has proposed to deny registration to one storm drain biocide due to concerns about efficacy, worker safety, and downstream water pollution and has agreed to route another storm drain biocide registration application to its surface water program for review.
- 💧 CASQA/UP3 provided presentations to DPR, scientific meetings, and professional associations; served on EPA, DPR, and Water Board policy and science advisory committees; and prepared and delivered public testimony. *(See Table 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.)*

In 2015-16, CASQA will undertake numerous activities 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:

- 💧 The EPA OPP decision to prepare a joint risk assessment for 18-plus **pyrethroids** (anticipating public review in September 2016) covering indoor and outdoor urban as well as agricultural and mosquito abatement uses. CASQA and Partners need to be judicious in our engagement with EPA during the preparation of the risk assessment. The single risk assessment approach means that there is only one opportunity to engage and provide monitoring and toxicity data until the next review cycle (15 years later). *(See Section 2.2.)*
- 💧 Due to potential connection to bee colony collapse and new aquatic toxicity data, CASQA is tracking the neonicotinoid family of pesticides (particularly urban use of **imidacloprid** and **thiamethoxam**) that are relatively water soluble, mobile, and persistent compared to other common insecticides. *(See Section 2.1.)*

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 2014 through June 2015. The PSC works in collaboration with the California State and Regional Water Boards (Water Boards) 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.¹

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, when pesticides impact water bodies, local agencies may be held responsible for costly monitoring and mitigation efforts. To date, some California municipalities² have incurred substantial costs to comply with 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 used³ in order to proactively prevent pesticide pollution and avoid these costs.

Instead, pesticides are regulated by the EPA and DPR, which in some cases have not adequately protected urban water bodies from adverse effects. Indeed, in 2013, CASQA compiled water and sediment sampling data that bears this out: pollution from some of the newer pesticides – pyrethroids and fipronil – is now present in nearly every urbanized area in California at concentrations above the EPA chronic Aquatic Life Benchmarks for aquatic invertebrates in water.⁴

¹ The UP3 Partnership collaborations are generally through information sharing, coordination of 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*, which shared a common goal. The former UP3 Project was

² For example, Sacramento-area municipalities spent more than \$75,000 in the 2008-2013 permit term on pyrethroid pesticide monitoring alone; Riverside-area municipalities spent \$617,000 from 2007 to 2013 on pyrethroid pesticide chemical and toxicity monitoring.

³ Local agencies in California have authority over their own use of pesticides, but are pre-empted by state law from regulating pesticide use by consumers and businesses.

⁴ Ruby, Armand. 2013. Review of Pyrethroid, Fipronil and Toxicity Monitoring from California Urban Watersheds. Available at <https://www.casqa.org/LinkClick.aspx?fileticket=tl%2btwBGMxunc%3d&tabid=194&mid=995>.

Table 1. California TMDLs and Basin Plan Amendment Addressing Current-Use Pesticides in Urban Watersheds⁵

Water Board Region	Water Body	Pesticide	Status
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	In preparation
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	In preparation
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

For years, CASQA members have creatively tried to work around their lack of regulatory authority over pesticide use by pioneering award-winning public outreach and integrated pest management programs that encourage less-toxic alternatives. Local agencies also conduct collection events for banned pesticide products at their own cost. These “source control” efforts have established an extremely important and growing movement toward less-toxic alternatives; however, these activities fail to compensate sufficiently for the root problem: as currently implemented, pesticide regulatory actions at the state and federal levels do not adequately account for and mitigate potential water quality impacts from urban pesticide uses. With each new urban pesticide problem, local agencies face the potential of greater monitoring and source control requirements, neither of which promises to reduce pesticide-related toxicity locally or statewide.

Clearly, if we continue to conduct business as usual, more receiving waters will become impaired by urban pesticide use, and more local agencies will face increased monitoring, TMDLs, and permit requirements for pesticides. (Figure 1).

⁵ Excludes TMDLs for pesticides that are not currently used in meaningful quantities in California urban areas, such as organochlorine pesticides and diazinon and chlorpyrifos.



Figure 1. Our current pesticide regulatory system does not adequately protect urban waterways.⁶

⁶ Photos in Figures 1 and 4 of spraying pesticide along a garage was taken by Les Greenberg, UC Riverside.

1.2 CASQA's Goals and Application to PEAIIP Management Questions

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 Pesticides Subcommittee 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 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 MS4s' Program Effectiveness Assessment and Improvement Plans (PEAIIP)⁷. 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' PEAIPs:

⁷ The Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit Phase II (MS4 Permit) requires the development and implementation of a Program Effectiveness Assessment and Improvement Plan (PEAIIP). The first PEAIPs are to be submitted to the Regional Board with the Year 2 Annual Report in October 2015.

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 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. The 2014-2015 reporting year is the first time this report is intended for use as an element of PEAIPs and future effectiveness assessment annual reporting.

Section 2: Results of CASQA 2014-2015 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)

Given that at any given time there are dozens of pesticides with current or pending actions from the EPA or DPR, CASQA prioritizes regulatory tracking and communication efforts using the pesticide “Watch List” created by the PSC and the UP3 Partnership (Section 2.1). This prioritization 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 the 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, tracks new scientific information about pesticides water pollution. In 2010, the UP3 first published its Priority Pesticide List (also called the “Watch List”), which listed pesticides used in urban areas that are harming or threatening to harm surface water quality and provided a methodology to update this list. Based on this methodology, the PSC updates this list throughout the year, reviewing new scientific literature and monitoring studies as they are published. The latest Watch List, presented in Table 2, serves as a management tool to prioritize and track pesticides used outdoors in urban areas. Several pesticides in the “Neonicotinoid” (neonic) family were added to the Watch List due to new scientific information revealing their very high chronic toxicity to sensitive aquatic organisms (see right).



New Concerns about Urban Uses of Neonics

CASQA is closely tracking the neonicotinoid family of pesticides (“neonics”). Neonics are relatively water soluble, mobile, and persistent compared to other common insecticides. These pesticides have garnered public attention due to their potential connection to bee colony collapses. Recent scientific studies suggest that further research and regulatory action may be warranted in order to prevent further impacts to pollinators. From the urban runoff perspective, the neonics of greatest interest are **imidacloprid** and **thiamethoxam**, because these two pesticides include products that can be broadcast applied to outdoor impervious surfaces, e.g., a perimeter band around buildings to control ants.

Table 2. Pesticide Watch List developed by the PSC and the UP3 Partnership updated to reflect current regulatory concerns

Priority	Basis for Priority Assignment	Pesticides		
1	Monitoring data exceeding benchmarks; linked to toxicity in surface waters; urban 303(d) listings	Pyrethroids (20 chemicals ⁸) Fipronil		
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	Malathion 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 Tributyltin Trifluralin
4	High toxicity 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 DIDAC Dithiopyr Halohydantoin Hydramethylnon	Imidacloprid (neonic) Mancozeb MGK-264 Oxadiazon Oxyfluorfen Pendimethalin Phenoxy herbicides ⁹	Piperonyl butoxide Pyrethrins Spinosad/ Spinetoram Thiamethoxam (neonic) Thiophanate-methyl Triclopyr Triclosan
5	Frequent questions from members	Glyphosate Metaldehyde		
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	No tracking trigger	Most of the 1,000 existing pesticides		
Unknown	Lack of information. No systematic screening has ever been completed for urban pesticides.	Unknown		

⁸ Allethrin, Bifenthrin, Cyfluthrin, Cyhalothrin, Cypermethrin, Cyphenothrin, Deltamethrin, Esfenvalerate, Etofenprox, Flumethrin, Imiprothrin, Metofluthrin, Momfluothrin, Permethrin, Prallethrin, Resmethrin, Sumethrin [d-Phenothrin], Tau-Fluvalinate, Tetramethrin, Tralomethrin.

⁹ MCPA and salts, 2,4-D, 2,4-DP, MCPP, dicamba

In 2015, an additional category was added to the table—that of “New” for pesticides that may threaten water quality depending on the urban use patterns that are approved. Flupyradifurone was added to the “New” category because of its persistence, water solubility, invertebrate toxicity, and the EPA announcement of its registration for agricultural applications. Further, a pesticide that had been a Priority 2, Cyantraniliprole, was deleted from Priority 2 and moved into this “New” category, following the manufacturer’s withdrawal of the building perimeter spray product registration application (see Section 2.2).

2.2. Results of Efforts Addressing Near-Term Regulatory Concerns

CASQA seeks to ensure that the EPA and Water Boards work with DPR and the EPA’s Office of Pesticide Programs to manage problem pesticides that are creating near-term water quality impairments. These efforts address CASQA’s Goal 3 as well as PEAIIP Management Question 1 regarding observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff.

Immediate pesticide concerns may arise from regulatory processes undertaken at DPR or EPA. 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 2. 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. While EPA must consider water quality in all of its pesticide registration decisions, numerous pesticide registration applications are not routed by DPR for surface water review. In 2014-15, CASQA wrote one comment letter on a proposed DPR registration decision, requiring an estimated 20 hours of work. Further, CASQA and its members successfully requested that 3 products be routed by DPR for surface water review.



Figure 2. EPA’s New Pesticide Registration Process

Another regulatory process, “Registration Review,” depicted in Figure 3, 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.¹⁰ In 2014-2015, CASQA

¹⁰ See http://www.epa.gov/oppsrrd1/registration_review/schedule.htm for schedule information.

wrote comment letters for 2 registration reviews (requiring an estimated 20 hours of work) and provided information to the Water Boards, which used that information to write comment letters for 5 registration reviews.



Figure 3. EPA’s Registration Review – process to review registered pesticides at a minimum of every 15 years.

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 reviews of pyrethroids and fipronil in urban runoff have occurred in response to CASQA and Water Board requests. These have involved ongoing communication with CASQA and the UP3 Partnership.

Table 3 presents a summary of recent activities and their associated results to address near-term regulatory concerns. One significant outcome was that, following extensive CASQA and Water Board communications with DPR regarding cyantranilprole, the manufacturer withdrew its registration application for a building perimeter spray product (see right).



Manufacturer Withdraws Registration Application for Pyrethroid/Fipronil Replacement Pesticide

In June 2014, DPR proposed to approve the registration of a new insecticide—cyantranilprole. CASQA has been tracking this pesticide due to its potential to be a problematic replacement for the pyrethroids and fipronil. One product containing this highly toxic, mobile insecticide was proposed to have the same use pattern—perimeter sprays around buildings—that has been identified as the primary source of pyrethroids and fipronil water pollution.

In July, CASQA and the California Water Boards met with the DPR Director and followed up with detailed letters providing our scientific basis for objecting to the registration of the cyantranilprole building perimeter spray product without:

- (1) Specifically examining water quality risks from the perimeter spray use
- (2) Evaluating cumulative toxicity of cyantranilprole and its degradates
- (3) Identifying mitigation measures such reduced use on impervious surfaces.

August 1st, DPR announced that the manufacturer had withdrawn the application to register the building perimeter spray product. This is the first time that the CASQA/ Water Board UP3 Partnership has seen this occur.

The CASQA/Water Boards’ UP3 Partnership has invested significant efforts toward preventing registration of new water polluting pesticide products. We are optimistic that this event is a landmark on California’s journey towards a proactive pesticide regulatory system.

Table 3. Results of FY 2014-15 Efforts Communicating Near-Term Regulatory Concerns¹¹

Regulatory Action or Concern	CASQA Efforts			Partner Support	Outcomes and notes
	Letter(s)	Call(s)	Mtg(s)		
DPR					
Pyrethroids and bifenthrin label enforcement		✓	✓		Pending. DPR is actively working to obtain high compliance rates with its pyrethroids regulations. Actions include: —Working with pyrethroids manufacturers to improve their educational outreach tools. —Conducting a pilot project involving focused applicator training and inspections. —Considering increased and pyrethroids-focused compliance inspections for urban structural professional applicators. —Continuing pyrethroids monitoring through its own urban monitoring program and its partnership with the State Water Board SWAMP.
Fipronil water pollution			✓	SWRCB CVRWQCB SFBRWQCB	Pending; partial success to date. DPR decided that fipronil concentrations in California urban waterways are elevated and that action is warranted. For urban runoff, DPR determined that outdoor applications by professional structural pest control applicators on impervious surfaces are the main fipronil source. DPR has concluded that reduction strategies are available. DPR has initiated discussions with registrants of the two products used outdoors by professional applicators.
Momfluothrin products registration applications				Sacramento County	Success! DPR agreed to route these five registration applications to its surface water program for review.
New Metofluthrin product registration application	✓				Success! DPR agreed to route this registration application to its surface water program for review.
Cytraniliprole products proposed registration	✓	✓	✓	CVRWQCB SFBRWQCB	Success! Manufacturer withdrew its registration application. (Page 11)

¹¹ 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	Outcomes and notes
	Letter(s)	Call(s)	Mtg(s)		
Chlorpyrifos restricted material	✓				<p>Partial success. DPR finalized its regulations to make chlorpyrifos a “restricted material” in agricultural areas. This means that a permit will be required prior to any agricultural chlorpyrifos application. While this is good for water quality, the regulation is unusual in that it only covers chlorpyrifos use for production agriculture, omitting its urban uses. Remaining allowable urban use sites include non-residential structures, walkways, and patios; non-residential lawns and plants; wood; and golf courses.</p> <p>In response to CASQA comments, DPR explained its rationale for omitting urban chlorpyrifos uses from the regulations (no monitoring data indicating exceedances due to current very limited urban chlorpyrifos use), and committed to continuing chlorpyrifos monitoring in its urban surface water monitoring program.</p>
Storm drain biocide (PathShield Antimicrobial Filter Media ¹²) Registration Application	✓	✓			<p>Success! DPR has proposed to deny registration of the PathShield product based largely on the surface water review that was conducted at CASQA’s request. DPR’s surface water and other reviews indicated potential for downstream water pollution, efficacy questions, and storm drain worker safety concerns</p>
Storm drain biocide (Smart Sponge Plus ¹³) registration application	✓			Sacramento County	<p>Success! DPR agreed to route this registration application to its surface water program for review.</p>
Registration applications – all storm drain products – request automatic routing for surface water review	✓				<p>Pending</p>
DPR Registration Branch PRDMS project Stakeholder Advisory Committee	✓				<p>Limited success. While DPR will take public input, DPR will not have CASQA on advisory committee, which is only for pesticide registrants.</p>
Public notice and information access for DPR registration decisions	✓				<p>No success. Negative response from DPR to all requests.</p>

¹² Active ingredient is 3-(Trihydroxysilyl) propyl dimethyl octadecyl ammonium chloride.

¹³ Active ingredient is 1-Octadecanaminium,N,N,dimethyl-N-(3-(trimethoxysilyl) propyl)-chloride.

Regulatory Action or Concern	CASQA Efforts			Partner Support	Results and notes
	Letter(s)	Call(s)	Mtg(s)		
EPA					
Pyrethroids Registration Review and the updated process and approach		✓			Pending. In February, Water Board and CASQA representatives had a call with EPA to learn about and discuss OPP's special approach for its current pyrethroids review. Instead of completing 18 separate water quality risk assessments for 18 pyrethroids, OPP will prepare a joint risk assessment that it anticipates releasing for public review in September 2016. Between now and next summer, we anticipate opportunities to share information and insights with OPP to assist them with developing a scientifically sound, complete, straightforward risk assessment that provides a solid basis for identification of specific risk management measures. (See details on page 17.)
Metofluthrin Registration Review Proposed Decision to Terminate Review	✓	✓		SFBRWQCB	CASQA and the Water Boards provided input to OPP regarding their proposal to terminate their review. In September 2014 this action was finalized. Communication with OPP indicated that it seriously considered CASQA's comments in their decision process, but did not complete a fully scientific, quantitative review of the risks of the limited outdoor uses of this pyrethroid.
MCCP Registration Review Work Plan				CVRWQCB SFBRWQCB	Mixed. OPP did not require manufacturers to fill toxicity data gaps, instead relying on qualitative extrapolations from other species. OPP is trying to develop methods to assess cumulative risks of phenoxy herbicides in the context of its work on endangered species consultations.
Momfluorothrin Registration Application	✓			SFBRWQCB	Partial success. In Fall 2013, the UP3 Partnership identified this registration application, which caused CASQA and the SF Bay Water Board to send letters to OPP requesting a thorough review of the water quality risks of this new pyrethroid in light of the extensive pyrethroid water pollution in California. In response to these requests, OPP completed a more thorough review of the pesticide than has previously been conducted for some other new urban pesticides.
Creosote Registration Review				SFBRWQCB	Pending.
Zinc pyrithione Registration Review Work Plan		✓		LARWQCB SFBRWQCB	Mixed. OPP promised to look at copper/zinc pyrithione cumulative toxicity, but its work plan was not modified to include specific measures to conduct the evaluation, nor to require the data necessary for the requested evaluation (e.g., data on copper pyrithione formation and toxicity).

Regulatory Action or Concern	CASQA Efforts			Partner Support	Results and notes
	Letter(s)	Call(s)	Mtg(s)		
Copper sulfate antimicrobial registration application (2013/14 letter)	✓			SFBRWQCB	Unknown outcome. OPP does not make public its environmental risk assessments or decision documents on applications to allow new uses of existing pesticides. The product was approved in 2014. No information is available to assess whether CASQA and Water Board comments affected the OPP review or the approved uses of the product.
Silver/Zinc marine antifouling paint registration application (2013/14 letters)				State Board and multiple regions	Unknown outcome. Because OPP documents related to this registration decision have not been made public (see above), the effect of comments is cannot be determined.
Triclopyr Registration Review Work Plan	✓				Pending. Triclopyr is a persistent herbicide that is among the most commonly detected pesticides in urban watersheds and is a DPR urban monitoring priority. In recent DPR monitoring, triclopyr was detected in 40% (Sacramento County) to 80% (Orange County) of samples. The draft EPA work plan appeared to be unaware of available data from DPR. The CASQA letter drew attention to the available DPR data as well as the issue of persistent toxic degradates.
MCPA Registration Review Work Plan (2013/14 letter)				CVRWQCB	Partial success. Multiple phenoxy herbicides commonly occur in California watersheds. OPP does not have a method to assess these cumulative risks, but, due to endangered species consultation requirements, development of cumulative risk assessment methods is a priority.
Thiophanate methyl and Carbendazim Registration Review Work Plan (2013/14 letter)				CVRWQCB	Success! In final work plan, OPP maintained important, discretionary requirements for outdoor building material leaching and sediment toxicity tests.
PPDC Membership – Support for CASQA’s member	✓			SFBRWQCB	Negative outcome. No local water quality agency representative will be on the PPDC. Another opportunity for appointment applications will occur in 2017.
State Water Board					
Pyrethroids (and other pesticides) as part of the state “contaminants of emerging concern” (CEC) project			✓		Success! The State Water Board has been working on a special project to examine CECs in California urban discharges and surface waters. Until this past FY, the project considered pesticides as “CECs.” This designation was pursued without linkage to DPR and in a manner that was managerially and scientifically disconnected from the Water Board SWAMP/DPR monitoring collaboration. The State Water Board has since removed pesticides from the CEC project.

Regulatory Action or Concern	CASQA Efforts			Partner Support	Results and notes
	Letter(s)	Call(s)	Mtg(s)		
California Department of Food and Agriculture					
Invasive species control program Environmental Impact Report	✓			SFBRWQCB	Negative outcome. Although CDFA uses an integrated pest management (IPM) approach, its invasive species control programs apply many pesticides on the Watch List, such as pyrethroids (including bifenthrin), carbaryl, malathion, imidacloprid, and naled. CDFA was not positive or responsive to CASQA and Water Board comments. CDFA backed off of language indicating that it would not use aerial spraying in urban areas—this commitment was narrowed to residential areas. The EIR is currently in litigation by environmental organizations; water quality is one of the litigation topics.

The many 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. CASQA watches for 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. Note that 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 and collaborating with the State Board and DPR on the big picture (next section). Fewer letters were written than in past years, in part because the EPA review schedule did not include any public comment opportunities on the highest priority pesticides.

As can be seen in Table 3, CASQA has had considerable success in working with DPR and the Water Boards. Our mixed results with EPA indicate that there are opportunities for further communications and discussions. **A major challenge in the upcoming fiscal year will be that of supporting EPA’s OPP with their pyrethroid family risk assessment** (see details on the next page).

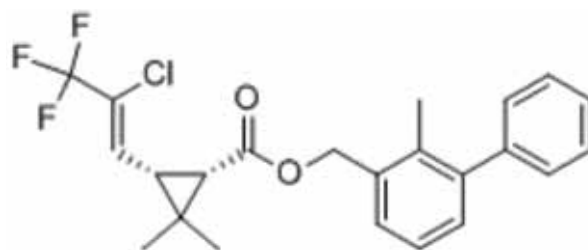
Eighteen-plus Pyrethroids to Be Combined into Single Water Quality Risk Assessment

The EPA OPP has decided to change the approach to their pyrethroids review. Instead of completing separate water quality risk assessments for each of 18-plus pyrethroids, OPP will prepare a joint risk assessment that it anticipates releasing for public review in September 2016.

There are opportunities and challenges to such an effort. On the one hand, OPP recognizes that pyrethroids are causing aquatic toxicity and that risk management measures must be implemented. The risk assessment will cover indoor and outdoor urban as well as agricultural and mosquito abatement uses. On the other hand, CASQA and Partners need to be judicious in our engagement with EPA during the preparation of the risk assessment. The single risk assessment approach means that there is only one opportunity to engage and provide monitoring and toxicity data until the next review cycle, approximately 15 years later.

Meanwhile, OPP does not want this process to be overly complex so they are seeking ways to simplify both the risk assessment and the negotiations with manufacturers on risk management measures. FIFRA is a risk-benefit law that requires OPP to consider more than water pollution when making its decisions. OPP is keenly aware that their regulations shift users to other pesticides. They signaled that they see pyrethroids as potentially “less bad” than most other insecticides.

Although DPR has adopted regulations that may end most urban pyrethroids water pollution, monitoring data have yet to demonstrate reductions. Because DPR’s authorities over non-professional (consumer) products are difficult to use, we need EPA to prepare to implement any measures necessary for consumer products. Further, special management measures are needed for bifenthrin, which has grown in the non-professional market and which is the main contributor to aquatic toxicity. Because EPA is not going to ban pyrethroids, effective and well-designed urban risk assessment methods and mitigation measures will be necessary.



Bifenthrin, among the 18-plus pyrethroids in the combined risk assessment, has grown in the marketplace and is the main contributor to aquatic toxicity.

2.3 Long-Term Change in the Pesticides Regulatory Structure

CASQA is actively working towards a future in which the pesticide regulatory structure is used proactively to restrict pesticide uses that have the potential to cause urban water quality problems (Figure 4). This section provides answers to PEAIIP Management Question 2: “Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?”

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 EPA and DPR staff on the problems with current approaches.

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. Table 4 presents a summary of 2014-15 major actions undertaken and outcomes achieved toward long-term changes in how pesticides are regulated.



Figure 4. CASQA is actively engaged with state and federal regulators in an effort to develop an effective regulatory system to identify whether urban uses of a pesticide pose a threat to water quality and then restrict or disallow those uses proactively so that water quality impacts are avoided.

Table 4. Latest Outcomes and Next Steps Regarding Long-Term Regulatory Change

Goal	Agency	Topics Influenced	Latest (2014/15) Outcomes	Remaining Issues to Achieve CASQA Goals
1 – Effective, Proactive Evaluations of Pesticide Risks	DPR	Pesticide registration application routing for surface water evaluations	DPR continued to route registration applications for surface water review in response to emailed or written requests by CASQA/UP3.	Surface water evaluation automatically conducted for all outdoor, uncontained pesticides. More transparent DPR registration notices. Aquatic toxicity and environmental fate data requirements sufficient to support quantitative evaluation of pesticides and degradates in water and sediment. Regulatory authority for outdoor pesticide-impregnated materials.
		Pesticide Registration Surface Water Evaluation	DPR added an urban module that explicitly addresses impervious surfaces and other unique features of California urban environments. ¹⁴	Methodology modifications to address stable, toxic degradates, model the full range of outdoor urban pesticide applications, and improve urban runoff modeling accuracy (see below).
		Urban Runoff Modeling	DPR published a California urban modeling scenario to use with existing EPA models and continued working on more detailed urban runoff modeling.	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 and degradates.
		Chemical analysis methods	DPR 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.
	EPA	Pesticide environmental fate & aquatic toxicity data requirements	OPP expanded sediment toxicity testing, used predictive methods to justify important new requirements for environmental fate and toxicity data for key degradates, and required salt water aquatic toxicity data more often.	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.

¹⁴ Luo, Y. (2014). *Methodology for Evaluating Pesticides for Surface Water Protection III. Module for Urban Scenarios*. Calif. Department of Pesticide Regulation, Sacramento CA.

Goal	Agency	Topics Influenced	Latest (2014/15) Outcomes	Remaining Issues to Achieve CASQA Goals
	EPA	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	OPP started to include sediments in risk assessments on a routine basis.	Use the criteria OW uses for identifying surface water impairment as significance standards in pesticide environmental risk assessments.
		Risk Management Decisions	No changes.	Make ensuring Clean Water Act compliance a fundamental goal of OPP risk management decisions. To support this approach, include water quality compliance costs in EPA's cost-benefit analyses.
2 – Coordination Between Pesticide Regulators and Water Quality Regulators	DPR & Water Boards	Effects assessment	DPR determined 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 Office of Water on criteria for identifying surface water impairment requiring mitigation by pesticides regulators.
		Pesticide Management requirements in Permits	Water Boards are poised to initiate development of a statewide Pesticides Plan that recognizes local agencies' limitations, and acknowledges DPR and EPA roles.	Adoption of a State Water Board Pesticides Plan and updated formal framework for DPR & Water Boards to work together on surface water pollution ("Management Agency Agreement") that recognize the need for DPR and EPA to take the lead in addressing pesticides water pollution and provide reasonable responsibilities for MS4s.
		Pesticide TMDLs.	Both adopted Santa Maria River pyrethroids TMDL and proposed Central Valley pyrethroids TMDL recognize that DPR and EPA should be lead in addressing pesticides.	Ensure that the Central Valley Pyrethroids TMDL and future urban pesticides 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 Office of Water-OPP Common Effects Assessment project remained stalled.	Complete and implement common effects assessment methodology, integrated into water quality criteria methodology modification process being initiated by OW. Modify OPP and OW procedures to provide for consistent time frames for water quality assessments.

Goal	Agency	Topics Influenced	Latest (2014/15) Outcomes	Remaining Issues to Achieve CASQA Goals
	EPA	Water Quality Data for Pesticide Reviews	DPR started forwarding data in response to OPP quarterly data requests.	OPP routinely obtains the latest scientific literature when scoping and conducting pesticides water quality risk assessments. Non-burdensome systems to ensure that California monitoring data gets into DPR and/or CEDEN databases in a timely manner.
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.	Increased enforcement and follow up actions as necessary to achieve water quality improvements and eventually end pyrethroids-caused toxicity in California urban watersheds.
		Fipronil	DPR has decided to take action to reduce fipronil in urban runoff.	Implementation of any mitigation actions necessary to reduce concentrations of fipronil and degradates below benchmarks / toxic concentrations in California urban watersheds.
	EPA	Pyrethroids and Fipronil Registration Reviews	EPA is initiating its single risk assessment for all pyrethroids	EPA implementation of actions to mitigate risks associated with products not readily regulated by DPR (consumer products, impregnated materials). Clear label language consistent with DPR regulations and DPR’s agreement with bifenthrin manufacturers for extra mitigation measures.
4 – Coordinated State Monitoring to Support Response to Emerging Problems	DPR & Water Boards	Coordinated Pesticides Monitoring in Urban Watersheds.	DPR clarified that its urban monitoring program is effectively permanent (subject to annual work plans). The State Water Board and DPR continued coordinated urban monitoring for pyrethroids and fipronil. The scope for the anticipated State Water Board Pesticides Plan includes coordinating pesticide/toxicity monitoring.	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 presents the communication, educational outreach, and advisory efforts of the past year. In the next year, CASQA will continue to educate diverse audiences on nexus of urban pesticide regulation and water quality and the key scientific issues involved in identifying, addressing, and preventing pesticides water pollution. (Typically, PSC has more than twice as many presentation invitations and opportunities than its resources allow it to accept.) Budget limitations have greatly limited in-person meetings with OPP.

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’s Pest Management Alliance Grants, for which the PMAC reviews proposals, continues to include urban IPM as an eligible category. In the 14/15 cycle, three of the nine full proposals were urban IPM projects; final funding decisions were not made by DPR by the end of 14/15. Presentations were made to PMAC for current funded urban projects nearing completion, entitled “Expanding IPM Education to Southern California Spanish-Speaking Landscapers” and “IPM Training Resources for California Pest Management Professionals Working in Early Care and Education Facilities.”
US EPA’s advisory committee, Pesticide Program Dialogue Committee (PPDC)	Promising. PSC attended PPDC in January 2015 (teleconference) and May 2014. Participation on PPDC and face-to-face meetings with OPP staff and management has helped increase OPP’s focus on urban pest management and water quality. PSC met with OPP staff to discuss progress in OW/OPP common effects methodology. PSC participated in Integrated Pest Management workgroup, which made significant progress in promoting school IPM. The prior PSC member of the PPDC was not reappointed for the remainder of 2015 due to term limits. Another PSC member has applied for appointment, but EPA has not yet announced its appointments to OPP’s sole external stakeholder advisory committee.
California Structural Pest Control Board (SPCB)	Success! A PSC member is an appointed member of the SPCB. The SPCB recognized the potential for excessive pesticide application to impact water quality. An appointed stakeholder committee developed recommendations to the full SPCB for promulgating regulation changes in continuing education requirements aimed at increasing IPM adoption and reducing water quality impacts by licensees. Full SPCB will consider recommendations during 15/16. If adopted, SPCB will commence rulemaking process.
University of California Statewide IPM (UCIPM)	Success! A PSC member was appointed to UCIPM’s Strategic Planning Committee. Resulting final draft strategic plan includes key actions to “expand efforts to reach urban IPM clientele.” PSC member was appointed to selection committee for new UCIPM Director. Next steps to include meeting with incoming UCIPM director and Urban Associate Director to ensure awareness of and continued attention to CASQA issues regarding urban pesticides and pest management issues.
ACS/IUPAC Conference (SF)	Presentation "Developing Aquatic Risk Mitigation Strategies for Urban Environments" (Aug. 11) Poster - "Sources of Pesticides in Urban Runoff and Wastewater Discharges", co-author, Patti TenBrook EPA Region 9 (Aug. 11)
CASQA	Presentation at conference to educate members: "Statewide Alternative Compliance Approach for Pesticides – Coming Soon to Your Permit?" (Sept. 17)
SWRCB	November 4 th workshop on urban pesticides water pollution and collaborations with DPR (see Section 2.4)
SETAC	Presentation and scientific poster: “Fipronil Water Pollution and Its Sources” (Nov. 10)
ACS and SETAC national meetings	Held informal meetings with EPA, DPR, and pesticide manufacturers, obtained scientific information and communicate CASQA priorities. (Aug. 10-14; Nov. 9-13)

As presented in Tables 4 and 5, CASQA has been actively involved in guiding 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 5. CASQA’s Assessment of Recent Progress and Remaining Gaps Relative to Ultimate Goals

CASQA’s Long-Term Goals	Progress Assessment	Assessment Basis
DPR and State Programs		
	<i>Maximum possible: 5 drops</i>	
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		This is a composite of considerable progress by DPR and somewhat less from the Water Boards. Some Water Boards have recognized in regulatory documents (TMDLs, permits) the need to coordinate with DPR on pesticide impacts.
3. Effective use of regulations and statutes		State Water Board staff has proposed in draft Stormwater Strategic Initiative that a statewide Pesticide Plan incorporate the principle of reliance on DPR and OPP authorities as the primary mechanisms of addressing pesticide impacts. 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. Some Water Board regulatory instruments beginning to allow for coordinated representative pesticide monitoring by permittees.
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
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		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.		

2.4 Highlight – Successful Collaborations Between Water Boards and DPR

The most significant changes in pesticide regulation have been with DPR and their coordination with the Water Boards, CASQA, and the UP3 Partnership. These changes have been so noteworthy that on November 4, 2014, the State Water Board held a workshop to review collaboration with DPR toward resolving and preventing adverse water quality impacts associated with urban-use pesticides. The workshop included presentations from the State Board staff, a CASQA representative, and the Director of DPR. An excerpt of the State Board Staff Report (at right) highlights the actions and progress collaborating with DPR in recent years.

Workshop Outcome

At the conclusion of the workshop, the State Water Board directed staff to work toward development of statewide Water Quality Control Plan for urban-use pesticides that would:

- 💧 streamline pesticide monitoring data evaluation and consistently respond to urban pesticide impairment listings throughout the state,
- 💧 establish consistent municipal permit requirements, and
- 💧 include a statewide coordinated monitoring approach.

Stormwater Strategic Initiative

Following the State Water Board direction, staff incorporated into the draft State Water Board

Success!



Below are excerpts from the State Board Staff Report for the November 4, 2014 meeting, highlighting collaborations with DPR:

“...the actions and progress at DPR are particularly noteworthy... C DPR promulgated regulations in 2012 to prevent surface water contamination by pyrethroid pesticides applied outdoors to structural, residential, industrial, and institutional sites. These regulations limit pesticide application methods on horizontal impervious surfaces to spot treatments, crack and crevice treatments, and pin stream treatments of one-inch wide or less, and prohibit exposed applications during precipitation events. The resulting reduced and mitigated applications should significantly reduce wash off of pyrethroids into urban water bodies. DPR has also recently improved its methodology and procedures for reviewing new pesticide product data submitted for registration to provide more focus on potential impacts of pesticide on surface water quality.

Our collaborative strategy also includes coordination of monitoring to determine presence and trends of toxicity and pesticides of concern. DPR’s Surface Water Protection Program monitors urban pesticide runoff at several long-term monitoring sites in northern and southern California, and our Stream Pollution Trends Program, part of our Surface Water Ambient Monitoring Program, monitors trends in sediment toxicity and pesticides in sediments in rivers and streams throughout the State. We also plan to include and account for pesticides monitoring by municipalities in our strategy. These coordinated monitoring programs will be used to assess the effectiveness of DPR’s new surface water protection regulations and to evaluate the need for other urban pesticides management actions to protect water quality.”

Stormwater Strategic Initiative an “immediate implementation” project, entitled “Urban Pesticide Reduction.” The project:

- provides for development of a framework for urban pesticides pollution control,
- recognizes that DPR and US EPA OPP are the lead responders to pesticide water pollution,
- provides for development of a standard approach for appropriate and reasonable pesticide control requirements for municipalities, and
- envisions a coordinated pesticides monitoring approach for California’s urban watersheds that would be more efficient and effective than today’s monitoring patchwork.

This project requires a commitment of Water Board staff time to see it through. The recommended resource allocation for this project (2 staffers for two years) appears appropriate. This project would generate a substantial net cost savings for the Water Boards by avoiding future 303(d) listings and TMDLs. This project is important because it will implement multiple urban pesticides TMDLs (both adopted and in development). It is *essential* for response to widespread aquatic toxicity associated with currently used pesticides that the Water Boards have found in California urban watersheds.¹⁵ Further, it provides an essential companion framework for the substantial investments made by DPR in urban pesticides monitoring, management, and prevention over the last few years.

¹⁵ Phillips BM, Anderson BS, Siegler K, Voorhees J, Tadesse D, Webber L, Breuer, R. 2014. *Trends in Chemical Contamination, Toxicity and Land Use in California Watersheds: Stream Pollution Trends (SPoT) Monitoring Program. Third Report - Five-Year Trends 2008-2012*. California State Water Resources Control Board, Sacramento, CA.

Section 3: CASQA’s Approach Looking Ahead

3.1 CASQA’s Fundamental Approach

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. The types of activities that CASQA and the UP3 Partnership engage in are presented Table 6. Many of these activities work to address both near-term concerns and the longer-term goal of systemic regulatory change.

Table 6. Types of Activities Undertaken to Address Immediate Pesticide Concerns and Long-term Regulatory Change

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 evaluations and decisions	Identify 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 4 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 2-3 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 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.

Activity	Purpose	Level of Effort
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 both EPA's and DPR's external advisory committees and has sporadic representation on water board panels related to pesticides.
Educational	Presentations to EPA, DPR, Water Board, CASQA members, pesticide manufacturers, water quality researchers, and other collaborators	Educate EPA, DPR, Water Board, and CASQA member staff about the problems with existing pesticide regulatory process, encourage change, report on achievements. Influence research and monitoring programs. Inform development of new pesticides by manufacturers and selection of pesticides by professional users.
	Developing and delivering public testimony	Educate Water Board members about the problems with existing pesticide regulatory process, encourage change, report on achievements.
Monitoring	Track urban runoff monitoring and pesticide-related research	Encourage coordination with Water Board/MS4 data needs and priorities; stimulate academic, government, or private development of analytical and toxicity identification methods to address anticipated MS4 needs; share information to improve decisions.
	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.

CASQA looks forward to working with our Partners to continue towards proactive management to protect water quality.

3.2 FY 2015 Priorities and Key Action Items

In the coming year, CASQA will undertake numerous activities to both address near-term pesticide concerns and seek long-term regulatory change. Based on our recent success with our 2013 and 2014 focus on DPR, the plan for 2015-16 is to focus more on US EPA Office of Pesticide Program (OPP), where we have actions we need to push forward (OPP/OW common effects assessment methodology, more accurate urban modeling, other process problems), and where we expect actions on our highest priority pesticides. Some of this work will take advantage of tools developed by DPR. A second focus for 2015-16 is Water Board statewide pesticides planning leading to an envisioned statewide Plan amendment, which we expect to ramp up as the year progresses.

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:

- ❑ Obtain DPR action on fipronil water pollution
- ❑ Ensure DPR enforces mitigation measures for pyrethroids and adopts additional measures if necessary
- ❑ Ensure the state conducts surveillance monitoring to evaluate pyrethroids (and fipronil) mitigation effectiveness
- ❑ Encourage EPA to develop capacity to implement pyrethroids and fipronil mitigation measures, in case necessary mitigation cannot be implemented entirely by DPR

(2) Seek long-term changes in the pesticide regulatory structure:

- ❑ Seek procedure changes such that EPA and DPR avoid approving new pesticides that cause urban water pollutions
- ❑ Encourage EPA to develop robust urban surface water risk assessment procedures for pesticide reviews
 - Focus on priority pesticides, particularly the pyrethroid family, fipronil, and imidacloprid, for which there will be public input opportunities



FY 2015 is shaping up to be a busy year for the assessment of high priority urban pesticides. In the next 12 to 18 months, Risk Assessments from OPP are anticipated for:

- ✓ 18+ pyrethroids
- ✓ fipronil
- ✓ imidacloprid

For each pesticide, all available toxicity and monitoring data need to be submitted to EPA prior to completion of the RA. Further, the comment periods for these key pollutants may overlap, requiring significant review resources.

Priorities for work the next year with OPP risk assessors will involve a coordinated effort to achieve accurate urban runoff risk assessments. Thus CASQA and Partners will need to:

- ❑ Obtain and share data (e.g., toxicity test results, urban use pattern details, monitoring data, our regulatory context).
- ❑ Ensure OPP has sufficiently accurate modeling scenarios to identify and model all use patterns that could cause water pollution.

- Focus on completing effort to improve OPP urban runoff modeling procedures and renew efforts regarding consistency with OW regarding effects assessment and risk assessment timeframes
- ▣ Work toward obtaining a statewide management approach for pesticides that is adopted by the State Water Board, and formally recognizes the need to rely on DPR and OPP authority as the primary means to prevent and mitigate water quality impacts by pesticides.
- ▣ Seek restructuring of California’s urban surface water pesticides monitoring to increase its effectiveness and improve coordination.

Table 7 presents upcoming regulatory action items that are likely to proceed in the coming year. Many items will require letters as well as other communications with EPA, DPR, and the Water Boards. 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. In addition to the action items in Table 7, CASQA will also continue the following activities in FY 2015:

- ▣ Education and information sharing with CASQA and Partner¹⁶ research and monitoring scientists about priority needs, integration, and data interpretation
- ▣ Track major relevant scientific studies; review relevant scientific literature, monitoring data, and government reports; and maintain database of key references
- ▣ Serve on EPA, DPR, and Water Board policy and scientific advisory panels
- ▣ Peer review EPA, DPR, and Partner work plans and reports
- ▣ Participate in and give presentations at meetings or conferences with high participation from pesticide regulatory, research, and manufacturing communities – the 2015-16 priority is SETAC (Salt Lake City)
- ▣ Educate and inform water quality community through presentations at CASQA and other California water quality meetings or conferences
- ▣ Update pesticide priority lists based on new scientific and regulatory information.
- ▣ Prepare monthly action plans and publish annual report

¹⁶ Partners: USGS NACWA (national monitoring); other states; Water Board SWAMP (Statewide and 9 regions); DPR; POTWs; urban runoff programs; university researchers; pesticide manufacturers.

Table 7. Action Items Anticipated to be Taken Up by CASQA and UP3 Partnership in 2015-2016

Action Items
EPA Pesticide Registration Review (15-year cycle)
<p>Upcoming Environmental Risk Assessments of Interest:</p> <ul style="list-style-type: none"> ❑ Information sharing with OPP to prepare for Pyrethroids, Fipronil, and Imidacloprid Risk Assessments to be published in mid-2016 ❑ Organophosphates: Malathion, Chlorpyrifos, Diazinon ❑ Others: Copper and its compounds; Dacthal (dioxins); DIDAC, Glyphosate, Polyoxin D Zinc Salt, Simazine, Spinosad/Spinetoram
<p>Upcoming Work Plans of Potential Interest:</p> <ul style="list-style-type: none"> ❑ Diuron, Dicamba, Chromated Arsenicals, Tributyltin, Ziram (zinc)
<p>Upcoming Registration Review Proposed Decisions</p> <ul style="list-style-type: none"> ❑ Chlorfenapyr
EPA Registration Applications
<p>Applications of interest:</p> <ul style="list-style-type: none"> ❑ Priority pesticides (Table 1) ❑ Pesticides proposed for urban, outdoor use with direct pathway for discharge to storm drains ❑ Pesticides with high aquatic toxicity ❑ Pesticides containing priority pollutants
Other EPA Action Items
<ul style="list-style-type: none"> ❑ U.S. EPA OPP/OW Common Effects Assessment Methodology – continue to press for completion and implementation; request that project address time periods and other discrepancies. ❑ U.S. EPA Nanoscale Materials Pesticides Policy and nanocopper regulation petition decision. ❑ U.S. EPA procedural development activities to support pesticides management, such as urban runoff model development, data requirements, scientific literature review, water quality data collection, and scientific data acceptance policies– seek to make urban runoff’s needs a priority; share information to inform decisions. ❑ Endangered species consultations/litigation (Nationwide methodologies could significantly modify urban pesticide evaluation methods; some California cases could affect California urban pesticide use). ❑ Continue to engage EPA Region 9 re CASQA’s preferred approach for pesticide monitoring and management in permits and TMDLs.
DPR Registration Applications
<p>Until procedures are modified to provide for surface water quality reviews of all priority pesticides from the urban runoff perspective, screen DPR product registration applications. Continue to screen proposed decisions and comment on activities that pose high risks or provide compelling examples of possible procedural deficiencies. Products of interest:</p> <ul style="list-style-type: none"> ❑ Products proposed for urban, outdoor use with direct pathway for discharge to storm drains ❑ Products with high aquatic toxicity

Action Items

- ❑ Products containing priority pesticides (Table 1)

Watch for Decisions:

- ❑ Momfluorothrin (new pyrethroid)
- ❑ Fipronil foam product
- ❑ Smart Sponge Plus (for use in storm drains)

Other DPR-related Action Items

- ❑ Pyrethroids – encourage increased education and enforcement efforts, continue to track implementation activities, obtain regular updates on effectiveness monitoring; review scientific studies, and encourage DPR to take additional actions if necessary for water quality protection.
- ❑ Bifenthrin professional products labels – request DPR evaluate enforceability and compliance rates; either start process to ensure that product labels are clarified or seek bifenthrin-specific regulations.
- ❑ Fipronil – continue to work with DPR on actions to protect water quality.
- ❑ Imidacloprid – share toxicity and monitoring data and initiate discussions with DPR.
- ❑ Urban runoff model development – track short-term and long-term efforts and share information to improve approach.
- ❑ Urban runoff monitoring and research – continue to encourage coordination with Water Board/MS4 data needs and priorities; encourage monitoring prioritization to better capture pesticides and degradates of interest; share information to improve decisions.
- ❑ Methodology for Evaluating Pesticide Registration Applications for Surface Water Protection – share information to encourage DPR to routinely review all classes of products linked to water pollution (e.g., automatically review all storm drain products, antimicrobials, and swimming pool additives), to address degradates in review methods, and to continue to improve accuracy of urban evaluations.

Water Boards Action Items

- ❑ Water Board Statewide Urban Pesticides Plan; participate in plan development, including creation of proposed standard NPDES permit requirements and statewide coordinated monitoring approach.
- ❑ Water Board Stormwater Strategic Plan – Support Pollution Prevention elements and resource allocation for Statewide Urban Pesticides Plan
- ❑ Current-use urban pesticides TMDLs and Basin Plan Amendments: continue tracking Central Valley Water Board pyrethroids and diuron and Central Coast Lower Salinas River Watershed pyrethroids / toxicity.
- ❑ State Water Board Policy for Toxicity Assessment and Control – track pesticide monitoring, toxicity testing & other pesticide-related provisions in NPDES Permits.
- ❑ TMDL implementation requirements for Phase II permittees – continue participating in development.
- ❑ Pesticide/toxicity 303(d) listings, NPDES Permit requirements, and TMDLs – continue tracking.

Other California Agency Action Items

- ❑ Adoption of Structural Pest Control Board regulations – increase licensee continuing education requirements for IPM and water quality protection.