Protecting Alameda County Creeks, Wetlands & the Bay

cleanwater PROGRAM

399 Elmhurst St.
Hayward, CA
94544
p. 510-670-5543

MEMBER AGENCIES:
Alameda
Albany
Berkeley
Dublin
Emeryville
Fremont
Hayward
Livermore
Newark
Oakland
Piedmont
Pleasanton
San Leandro
Union City
County of Alameda
Alameda County Flood Control and Water Conservation District
Zone 7 Water Agency

September 15, 2015

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

Dear Bruce:

SUBJECT: **SUBMITTAL OF FY 2014-2015 CLEAN WATER PROGRAM AND BASMAA REPORTS PURSUANT TO PROVISION C.16**

As you know, various submission and reporting provisions of the Municipal Regional Stormwater Permit (MRP) authorize Permittee implementation and compliance through coordination of the countywide stormwater program or in a regional collaborative effort. The member agency Permittees of the Alameda Countywide Clean Water Program (Clean Water Program) through their Management Committee, and in conformance with the Memorandum of Agreement signed by their governing bodies, have authorized and directed me to prepare and submit certain reports as part of their compliance with submission of their Annual Reports pursuant to Provision C.16.

Therefore with this letter, I am submitting this Clean Water Program Annual Report along with two Bay Area Stormwater Management Agencies Association regional collaborative reports attached as appendices on behalf of and for the benefit of the Clean Water Program member agency Permittees.

By signing this letter on behalf of the Clean Water Program, I certify under penalty of law that these documents and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine imprisonment of knowing violations. [40 CFR 122.22(d)].

Sincerely,

James Scanlin
Program Manager

Attachment: Clean Water Program FY 2014/15 Annual Report

ALAMEDA COUNTYWIDE CLEAN WATER PROGRAM FISCAL YEAR 2014/2015 ANNUAL REPORT

MEMBER AGENCIES:

Alameda

Albany

Berkeley

Dublin

Emeryville

Fremont

Hayward

Livermore

Newark

Oakland

Piedmont

Pleasanton

San Leandro

Union City

County of Alameda

Alameda County Flood Control and Water Conservation District

Zone 7 Water Agency

Credits

This report is being submitted by the participating agencies in the Alameda Countywide Clean Water Program.

City of Alameda
City of Berkeley
City of Emeryville
City of Hayward
City of Newark
City of Piedmont
City of San Leandro
Alameda County

City of Albany
City of Dublin
City of Fremont
City of Livermore
City of Oakland
City of Pleasanton
City of Union City

Alameda County Flood Control and Water Conservation District
Zone 7 Water Agency

Implementation of the Program coordinated by:

Alameda County Flood Control and Water Conservation District
399 Elmhurst Street, Hayward, California 94544

Report Prepared by:

Clean Water Program Staff
Jim Scanlin, Program Manager
Arleen Feng

and

EOA, Inc.
1410 Jackson Street
Oakland, California 94612

Table of Contents

Page

List of Tables and Figures vi

Glossary of Abbreviations and Acronyms vii

1 Executive Summary 1-1
Introduction 1-1
Summary of MRP Provision Implementation 1-1
Provision C.2 Municipal Operations 1-1
Provision C.3 New Development and Redevelopment 1-2
Provision C.4 Industrial and Commercial Site Controls 1-2
Provision C.5 Illicit Discharge Detection and Elimination 1-3
Provision C.6 Construction Site Control 1-3
Provision C.7 Public Information and Outreach 1-3
Provision C.8 Water Quality Monitoring 1-4
Regional Pollutants of Concern 1-5
Provision C.9 Pesticides Toxicity Control 1-5
Provision C.10 Trash Load Reduction 1-6
Provisions C.11, C.12 and C.13 Mercury, PCBs and Copper 1-6
Provision C.15 Exempted and Conditionally Exempted Discharges 1-7

2 Provision C.2 Municipal Operations 2-1
Introduction 2-1
Implementation 2-1
Innovations in Municipal Maintenance Workshop 2-1
Annual Maintenance Subcommittee Meeting 2-2
Future Actions 2-2

3 Provision C.3 New Development & Redevelopment 3-1
Introduction 3-1
Implementation 3-1
Provision C.3.a New Development & Redevelopment Performance Standard Implementation 3-2
Provision C.3.c Low Impact Development (LID) 3-2
Provision C.3.h Operation and Maintenance (O&M) 3-3
Future Actions 3-3

4 **Provision C.4 Industrial & Commercial Site Controls** 4-1
Introduction 4-1
Implementation 4-1
Facilitated Industrial & Illicit Discharge Control Subcommittee Meetings 4-2
Staff Training 4-2
Future Actions 4-3

5 **Provision C.5 Illicit Discharge Detection & Elimination** 5-1
Introduction 5-1
Implementation 5-1
Control of Mobile Sources 5-1
Tracking and Case Follow-Up 5-2
Future Actions 5-2

6 **Provision C.6 Construction Site Controls** 6-1
Introduction 6-1
Implementation 6-1
Future Actions 6-2

7 **Provision C.7 Public Information & Outreach** 7-1
Introduction 7-1
Implementation 7-2
Provision C.7.b Advertising Campaign 7-2
Provision C.7.c Media Relations 7-3
Provision C.7.d Stormwater Point of Contact 7-4
Provision C.7.e Public Outreach Efforts 7-4
Provision C.7.f Watershed Stewardship Collaborative Efforts 7-7
Provision C.7.g Citizen Involvement Events 7-7
Provision C.7.h School-Age Children Outreach 7-8
Future Actions 7-9

8 **Provision C.8 Water Quality Monitoring** 8-1
Introduction 8-1
Implementation 8-1
Provision C.8.a Compliance Options 8-1
Provision C.8.b San Francisco Estuary Receiving Water Monitoring 8-2
Provision C.8.c Creek Status Monitoring 8-2
Provision C.8.d Monitoring Projects 8-3
Provision C.8.e Pollutants of Concern Monitoring 8-4
Provision C.8.f Citizen Monitoring 8-5
Provision C.8.g Reporting 8-5
Provision C.8.h Monitoring Protocols and Data Quality 8-5
Future Actions 8-6
Creek Status Monitoring 8-6

Pollutants of Concern Monitoring 8-6

9 **Provision C.9 Pesticides Toxicity Control** 9-1
Introduction 9-1
Implementation 9-1
Provision C.9.e Track and Participate in Relevant Regulatory Processes 9-1
Provision C.9.h.i and ii Point-of-Purchase Outreach 9-1
Provision C.9.h.i and ii Public Outreach 9-2
Provision C.9.h.iii and iv Pest Control Contracting Outreach 9-2
Provision C.9.h.v and vi Outreach to Pest Control Operators 9-2
Future Actions 9-3

10 **Provision C.10 Trash Load Reduction** 10-1
Introduction 10-1
Implementation 10-1
Provision C.10.a.ii Baseline Trash Load and Trash Load Reduction Tracking Method 10-1
Provision C.10.d Summary of Trash Reduction Actions 10-1
Future Actions 10-3

11 **Provision C.11 Mercury Controls** 11-1
Introduction 11-1
Implementation 11-1
Future Actions 11-3

12 **Provision C.12 Polychlorinated Biphenyls (PCBs) Controls** 12-1
Introduction 12-1
Implementation 12-1
Provisions C.12.b. – C.12.i 12-1
Provision C.12.a. Incorporate PCB Identification into Industrial Inspections 12-5
Future Actions 12-5

13 **Provision C.13 Copper Controls** 13-1
Introduction 13-1
Implementation 13-1
Provision C.13.c. Vehicle Brake Pads 13-1
Provision C.13.e. Studies to Reduce Copper Pollutant Impact Uncertainties 13-7
Future Actions 13-8

14 **Provision C.15 Exempted & Conditionally Exempted Discharges** 14-1
Introduction 14-1
Implementation 14-1
Future Actions 14-1

Appendices

Appendix A Provision C.2 Municipal Operations

- Innovations in Municipal Maintenance Workshop October 29, 2014
    - Effectiveness and Evaluation Summary
    - Agenda
    - Attendance Sheets

Appendix B Provision C.3 New Development & Redevelopment

- Workshop on C.3.h Inspection of Operation and Maintenance, October 16, 2014
    - Agenda
    - Effectiveness and Evaluation Summary
    - Attendance Sheets
- Biotreatment Soil Mix Documents
    - Updated Vendor List
- BASMAA LID White Paper Executive Summary

Appendix C Provision C.4 Industrial & Commercial Site Controls

- Industrial & Illicit Discharge Control Subcommittee Meetings – Attendance List – FY 2014/15
- Stormwater Business Inspectors Workshop: Honing Your Inspection Skills June 3, 2015 Workshop
    - Agenda
    - Effectiveness Evaluation Summary
    - Evaluations Summary
    - Attendance

Appendix D Provision C.5 Illicit Discharge Detection & Elimination

- Fundraising Car Washes Flyer
- Tips for Carpet Cleaners Flyer
- Tips for Pet Care Providers Flyer

Appendix E Provision C.6 Construction Site Controls

- Workshop: Inspecting C.6 BMPs & Installation Demonstration, March 5, 2015
    - Agenda
    - Attendance Sheets
    - Effectiveness and Evaluation Summary

Appendix F **Public Information & Outreach**

- CWP Press Releases (three)
- OWOW Trainings and Survey Results
- Bringing Back the Natives Garden Tours Final Report
- Kids for the Bay – "Storm Drain Rangers" Program Final Report
- Caterpillar Puppets – "Mr. Froggy's Clean-up Club" Program Final Report
- ZeroLitter Internships - Earth Team Final Report
- BASMAA Regional Supplement for Training and Outreach FY 2014-2015 (including Be the Street Report, BASMAA Media Relations Campaign Final Report and IPM Advocates for Retail Stores Final Report)

Appendix G **Provision C.8** **Water Quality Monitoring**

- January 15, 2015 Transmittal Letter for the Electronic Creek Status Monitoring Data Report to the Water Board for Water Year 2014

Appendix H **Provision C.9** **Pesticides Toxicity Control**

- Pesticides Subcommittee Annual Report and Effectiveness Assessment - 2014-2015

List of Tables and Figures

Table 1-1 Clean Water Program Projects Completed, Training Events, Informational/ Educational/Promotional Products Produced During FY 2014/15..... 1-8

Table 1-2 General Program Work in Progress as of July 2015.....1-10

Table 1-3 Management Committee and Subcommittees' Participation.....1-12

Table 7-1 PIP Work Group Participation in FY 2014/15.....7-10

Table 7-2 Event Partnership Program FY 2014/15.....7-11

Table 7-3 Educational Services Programs FY 2014/15 7-12

Table 7-4 Community Stewardship Grants FY 2014/15.....7-14

Table 13-1 Implementation Timeline for SB 346 Regulation of Vehicle Brake Pads....13-2

Figure 7-1 The interactive photo mosaic #LuvTheBay..... 7-2

Figure 7-2 Program's booth at the 2015 Alameda County Fair..... 7-5

Figure 7-3 Employees of Home Depot, Emeryville, attending the OWOW Training..... 7-6

Figure 9-1 Program's booth at the Alameda County Fair..... 9-2

Figure 12-1 Flow Chart of Screening Process for PCBs Source Properties.....12-3

Figure 13-1 Leaf Mark Logo for Packaging to Certify Compliance with Washington Better Brakes Law 13-5

Glossary of Abbreviations and Acronyms

ACPWA	Alameda County Public Works Agency
BAHM	Bay Area Hydrology Model
BAMBI	Bay Area Macroinvertebrate Bioassessment Information
BASMAA	Bay Area Stormwater Management Agencies Association
BMP(s)	Best Management Practices
BOD	Board of Directors
C.3	Provision C.3 of MRP- New & Redevelopment
CASQA	California Stormwater Quality Association
CSG	Community Stewardship Grant
CW4CB	Clean Watersheds for a Clean Bay
CWP	Clean Water Program
DPR	California Department of Pesticide Regulation
EBMUD	East Bay Municipal Utility District
EOA	Eisenberg, Olivieri, & Associates
EPA	Environmental Protection Agency
FY	Fiscal year (July through June)
I&IDC	Industrial and Illicit Discharge Control
IMR	Integrated Monitoring Report
IPM	Integrated Pest Management
LID	Low Impact Development
MPC	BASMAA Monitoring and Pollutants of Concern Committee
MRP	Municipal Regional Stormwater Permit
NDS	New Development Subcommittee
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
OWOW	Our Water Our World
PBDE	Polybrominated Diphenyl Ethers
PIP	Public Information and Participation
POC	Pollutant of Concern
POTW	Publicly Owned Treatment Works
PSA	Public Service Announcement
RFP	Request for Proposal
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program for Water Quality in the San Francisco Estuary
SAGE	Sustainable Agriculture Education
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFEI	San Francisco Estuary Institute
SFEP	San Francisco Estuary Partnership
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
STLS	Small Tributaries Loading Strategy
SWAMP	Surface Water Ambient Monitoring Program

Glossary of Abbreviations and Acronyms

WAMS	Watershed Assessment and Monitoring/Special Studies
Water Board	San Francisco Bay Regional Water Quality Control Board

1

Executive Summary

Introduction

This report describes the Alameda Countywide Clean Water Program's (Clean Water Program) stormwater pollution prevention and control activities in FY 2014/15 and its activities conducted to assist the Clean Water Program's member agencies to comply with the municipal regional stormwater permit (MRP) adopted in October 2009.

Clean Water Program accomplishments are listed for each of the MRP's Provisions from Provision C.2 through C.15. Similar to previous years, a summary of the technical studies and informational, educational, and promotional products developed during FY 2014/15 is provided in Table 1-1. Table 1-2 briefly describes each component's work in progress. Lastly, Table 1-3 summarizes each agency's participation in the Management Committee and its subcommittees.

The Executive Summary is organized by MRP Provision from C.2 through C.10 and C.15; the Regional Pollutants of Concern section covers Provisions C.11 and C.12 as well as parts of Provisions C.9, C.10 and C.13.

Summary of MRP Provision Implementation

Provision C.2 Municipal Operations

Most MRP Provision C.2 tasks need to be implemented by each of the Clean Water Program's member agencies. The Clean Water Program helps member agency staff understand the MRP's requirements, and it develops various tools needed to effectively plan, implement, and report on the activities completed.

During this reporting period the Maintenance Subcommittee held the *Innovations in Municipal Maintenance Workshop* on October 29, 2014 at the San Leandro Marina

Community Center which included both classroom and hands-on, field components.

Provision C.3 New Development and Redevelopment

The Clean Water Program assists member agencies in complying with MRP Provision C.3, New Development and Redevelopment, via meetings and activities of its New Development Subcommittee. Bimonthly meetings of the Subcommittee provide opportunities for member agencies to communicate their needs to the Program and obtain information and tools they need for MRP compliance. The Subcommittee forms work groups for focused effort on specific work products and sponsors training sessions for municipal agency staff.

In FY 2014/15, the Program focused on assisting the member agencies in complying with various sections of the MRP related to Low Impact Development (LID). Accomplishments of the Program are summarized below:

- Held six Subcommittee meetings, and included a presentation by the City of Oakland on their Green Infrastructure project, per the request of the Subcommittee;
- Updated the list of biotreatment soil mix vendors and posted it on the Clean Water Program website;
- Completed an update to the Excel C.3 Sizing Worksheet;
- Completed an update to the C.3 Technical Guidance manual (now Version 4.1) to add information related to hydraulic sizing of treatment measures, and improved design details for treatment measures;
- Sponsored a C.3.h workshop entitled "Inspecting Permanent Stormwater Treatment Controls" on October 16, 2014 in Hayward that attracted 69 participants from member agencies.

Provision C.4 Industrial and Commercial Site Controls

This section of the report describes the countywide activities conducted to implement the MRP's Provision C.4 Industrial and Commercial Site Controls. Activities summarized in this section were implemented jointly for the benefit of the Clean Water Program's member agencies. The Clean Water Program's role is to help agency staff to develop and use various tools, templates, reporting forms, and other MRP compliance support materials and participate in countywide inspector training workshops.

During this reporting period, the following activities were completed with input and assistance from the Industrial & Illicit Discharge Control (I&IDC) Subcommittee.

- Facilitated regular I&IDC Subcommittee Meetings;

- Conducted a training workshop on June 3, 2015 that provided opportunities for classroom and field exercises in identifying appropriate, ineffective or missing best management practices (BMPs).

Provision C.5 Illicit Discharge Detection and Elimination

This section of the report describes the countywide activities conducted to help the Clean Water Program's member agencies to implement the MRP's Provision C.5 Illicit Discharge Detection and Elimination. The Clean Water Program's role is to help agency staff to develop and use MRP compliance support materials. This includes acting as a liaison with BASMAA on its continued development of a mobile business educational outreach program and enforcement strategy.

During this reporting period, the following materials and activities were completed with input and assistance from the I&IDC Subcommittee.

- Continued to track the progress of BASMAA's Maintenance Operations Committee's expansion of BASMAA's surface cleaner training and recognition program to include fleet washers and carpet cleaners.
- Shared information at I&IDC Subcommittee meetings about illicit discharge incidents.

Provision C.6 Construction Site Control

In FY 2014/15 the program continued to support the member agencies in meeting the requirements of Provision C.6, Construction Site Controls. The following summarizes the actions that were completed:

- The Program sponsored a C.6 workshop on March 5, 2015 entitled: "Inspecting C.6 BMPs & Installation Demonstration" with a total of 96 representatives from the member agencies attending the workshop.
- The program provided a forum at the New Development Subcommittee meetings for agency representatives from throughout the County to share information and discuss issues related to construction site compliance.

Provision C.7 Public Information and Outreach

Stormwater pollution results from the collective and incremental activities of each person within Alameda County. Thousands of routine, seemingly inconsequential decisions result in the unintended and unanticipated generation of stormwater pollutants. Public Information and Participation (PIP) is essential to minimizing stormwater pollution.

The Provision C.7 implementation actions performed by the Clean Water Program during FY 2014/15 are summarized below:

- Through the BASMAA Regional Media Relations project, conducted the following pitches – Ants/Pesticides, Not Burning Holiday Gift Wrap, Trash, and Car Washing PSAs. A pitch on Native Plants was also developed, but has not been distributed yet. In addition, BASMAA Media Relations developed social media presence for BASMAA on Facebook and Twitter. In all, the pitches resulted in 63 total media placements (stories and PSAs).
- Ordered the following outreach and promotional items for distribution at public outreach events in FY 2014/15:
  - 12,500 mood pencils
  - 3,500 seed packets
  - 6,750 CWP "Bagito" reusable bags
  - 8,000 labels featuring "less-toxic" pest control recipes for spray bottles
  - 6,000 Slappy and Quackers activity books
  - 7,000 Water and Wildlife activity books
- Hosted booths at the Alameda County Fair that was held from June 17, 2015 to July 5, 2015 in Pleasanton.
- Promoted Watershed Stewardship Collaborative Efforts by awarding funds totaling $2,500 to the Bringing Back the Natives Garden Tours through the Event Partnership program.
- Promoted Citizen Involvement Events by awarding grants to fund six projects in the amount of $25,800.
- Promoted outreach to school age children by providing $100,000 to four educational programs.

Provision C.8 Water Quality Monitoring

Provision C.8 of the MRP requires Permittees to conduct water quality monitoring and associated projects during the permit term. All water quality monitoring activities required by Provision C.8 are coordinated regionally through the Regional Monitoring Coalition (RMC), a collaborative effort of MRP Permittees under the auspices of the Bay Area Stormwater Management Agencies Association (BASMAA). In 2010 Clean Water Program member agencies notified the Water Board in writing of their agreement to participate in the RMC, and that water quality data collection conducted through the RMC would commence by October 2011. The RMC 's comprehensive monitoring plan and regional activities for its implementation were described in the BASMAA RMC Regional Monitoring Status Reports provided to the Water Board in March and September of 2011 and 2012.

As required by Provision C.8.g.v of the MRP, a comprehensive description of the Program's monitoring activities and results for the Water Year extending through

September 2014 were provided in the Program's Urban Creeks Monitoring Report (UCMR), which was submitted to the Water Board in March 2015. The Program's monitoring activities and results for the last three quarters of FY 2014/15 will be reported in the Urban Creeks Monitoring Report for Water Year 2015 as required in MRP Provision C.8.g.

In FY 2014/15, the Program continued Creek Status Monitoring in coordination with the RMC monitoring plan and guidance and submitted data electronically for the previous Water Year 2014 ending on September 30, 2014. The Program also continued Pollutants of Concern (POC) Loads Monitoring at the watershed station on San Leandro Creek, part of the ongoing Small Tributaries Loading Strategy (STLS) collaboration between the RMC and the Regional Monitoring Program for Water Quality in the San Francisco Estuary (RMP), but in view of the fulfillment of monitoring objectives for this station, a portion of POC monitoring resources were redirected to screening and sampling of older industrial areas to identify potential sources of PCBs.

The Program also continued active participation in the RMP and represented BASMAA in several RMP Work Groups. Additional General Program accomplishments achieved during this reporting period include:

- The Program produced progress reports for site-specific studies to support Stressor/Source Identification projects at three sites where Creek Status monitoring results from Water Year 2012 met one or more "trigger" conditions.
- Program staff participated in review of the initial results for a sediment sub-model component to the Regional Watershed Spreadsheet Model element of the STLS, as well as initial modeling results for regional PCB loads.

Regional Pollutants of Concern

MRP Provisions C.9 through C.14 address pollutants that have been identified as being of regulatory concern for San Francisco Bay and/or local waterbodies. Most of the reporting requirements for Provisions C.11 and C.12 were addressed in the Program's Integrated Monitoring Report (IMR) which was submitted by March 15, 2014. Portions of C.9 and C.13 are implemented on behalf of the Permittees through membership in BASMAA or California Stormwater Quality Association (CASQA). Reporting requirements for Provision C.14 were completed with the BASMAA Regional Pollutants of Concern Report for FY 2012/13 included in the previous year's Annual Report.

Provision C.9 Pesticides Toxicity Control

Provisions in C.9 reflect the implementation actions incorporated in the Basin Plan through the Total Maximum Daily Load and Water Quality Attainment Strategy for diazinon and pesticide–related toxicity in urban creeks throughout the Bay Area.

Program accomplishments in FY 2014/15 related to Provision C.9 include the following:

- The Program set up an exhibit at the Alameda County Fair that promoted integrated pest management, including: potential impacts of pesticides on water quality; less-toxic methods of pest control; and, information on the *Our Water Our World* program.
- The Clean Water Program's contractor, Annie Joseph Consulting, implemented the region-wide *Our Water Our World* (OWOW) Integrated Pest Management (IPM) Store Partnership Program in stores in Alameda County. There are now 36 stores participating in the OWOW Program **including all Home Depot stores within the County**.

Provision C.10 Trash Load Reduction

In FY 2014/15, the Program assisted the member agencies in complying with Provision C.10 of the MRP. This assistance included:

- Single-Use Carryout Bag Policy: The Program worked with StopWaste staff to pursue expanding the Bag Ban to all retail stores within the County. The Program's Management Committee also approved a contribution of $180,000 to support the expansion of the ban if the StopwWaste Board approves expanding the ban.
- Through participation in BASMAA, the Program supported the development of the final San Francisco Bay Area Stormwater Trash Generation Rates Technical Report (June 20, 2014). This report was submitted to the Water Board on July 9, 2014.

Provisions C.11, C.12, and C.13 Mercury, PCBs, and Copper

The following highlights accomplishments achieved during this reporting period with active participation by Clean Water Program staff:

- Program staff assisted the PCB Strategy Work Group with a screening process for identifying high priority areas for management actions to reduce PCB discharges to runoff. The first phase of screening focused on parcels in old industrial areas with a higher likelihood of releasing PCBs to streets and stormdrains, and generated recommendations for confirmatory sampling in adjacent streets and right-of-ways.
- Program staff participated in regional Project Management Team meetings of BASMAA's Clean Watersheds for a Clean Bay (CSW4CB) project to implement and monitor pilot projects for controlling mercury and PCB discharges to stormwater from a variety of sources (Provisions C.11/12.c,d,e,f and i).
- Program staff represented BASMAA at meetings of RMP Work Groups planning and conducting studies to address the requirements of Provisions C.11.h, C.12.h and C.13.e, and participated in review of a planned RMP study for conceptual modeling of PCBs in the margins of San Francisco Bay.

- Program staff worked with staff of the East Bay Municipal Utility District (EBMUD) and the Alameda County Public Works Agency to coordinate planning for a diversion conveyance from the Ettie Street Pump Station to EBMUD's treatment plant.
- Through membership in CASQA, the Program continued to track progress towards implementation of California's 2010 Brake Friction Material Law.

Provision C.15 Exempted and Conditionally Exempted Discharges

This section of the report describes the countywide activities conducted to help the Clean Water Program's member agencies to implement the requirements of the MRP's Provision C.15 Exempted and Conditionally Exempted Discharges. The Clean Water Program's role is to help agency staff to understand the MRP's requirements and to make available for their use various MRP compliance support materials.

The MRP describes a variety of different types of non-stormwater discharges that may be conditionally exempted. The most extensive tracking, monitoring, and reporting requirements are for planned and unplanned potable water discharges by water purveyors. The only Clean Water Program's member agencies that are water purveyors are the Cities of Hayward, Livermore, and Pleasanton and the Zone 7 Water Agency. Because there are so few water purveyors covered by the MRP, this MRP provision has had a low priority for countywide implementation.

Information about each agency's activities to comply with this MRP provision is contained in the agencies' reports.

TABLE 1-1. CLEAN WATER PROGRAM PROJECTS COMPLETED, TRAINING EVENTS, AND INFORMATIONAL/EDUCATIONAL/PROMOTIONAL PRODUCTS PRODUCED DURING FY 2014/15

Component	Product/Event	Intended Audience	Contact for Obtaining Additional Copies/ Items/Information
Provision C.2	*Innovations in Municipal Maintenance Workshop* on October 29, 2014 at the San Leandro Marina Community Center	Municipal Maintenance staff and supervisors	Appendix A
Provision C.3	October 16, 2014 New Development Workshop	Agency staff	Appendix B
Provision C.4	June 3, 2015 Annual I&IDC Training	Agency staff	Appendix C
Provision C.6	March 5, 2015 Inspector Training	Agency staff	Appendix E
Provision C.7	Promotional Items (pencils, erasers, seed packets, labels, and fact sheets)	Kids, General Public	Jim Scanlin, Clean Water Program Program Manager (510) 670-6548
	Awarded $100,000 in educational services contracts	Students K-12	Jim Scanlin, Clean Water Program Program Manager (510) 670-6548
	Funded six Community Stewardship projects for a total of $25,800	Educators, friends groups, and other community groups	Jim Scanlin, Clean Water Program Program Manager (510) 670-6548
	Awarded $2,500 for Event Partnerships	Educators, friends groups, and other community groups	Jim Scanlin, Clean Water Program Program Manager (510) 670-6548
Provision C.8 Monitoring	Urban Creeks Monitoring Report, 3/16/15. (posted on Water Board website).	Water Board staff, Agency monitoring staff, general public	Jim Scanlin, Clean Water Program Program Manager (510) 670-6548
	ACCWP Electronic Data Submittal, 1/15/15.	Water Board SWAMP staff, Agency watershed monitoring staff, general public	Arleen Feng ACPWA (510) 670-5575

Component	Product/Event	Intended Audience	Contact for Obtaining Additional Copies/ Items/Information
Provision C.9	IPM training workshops for store employees.	Employees of stores participating in the OWOW program.	Appendix F
	IPM tabling events held at garden centers in Alameda County.	Customers of stores participating in the OWOW program.	Appendix F

TABLE 1-2. GENERAL PROGRAM WORK IN PROGRESS AS OF JULY 2015

Component	Project Name	Status
Provision C.3	Support for Tentative Order of MRP 2.0	Working with New Development Subcommittee as needed
	Participate in BASMAA process to update the Biotreatment Soil Mix Specification	In progress
Provision C.4	Updates to the Tips for a Clean Bay – How Your Business Can Prevent Stormwater Pollution booklet, Heavy Equipment Rental tip sheet and Heavy Equipment Rental poster	Drafts were provided to graphic design consultant for final formatting. Will complete in FY 2015/16.
Provision C.7	Educational Services Program	Awarded $100,000 (through RFP process) to fund five educational services programs during FY 2013/14. The selected four organizations will conduct litter-focused school outreach programs from FY 2014/15 to FY 2017/18.
	Event Services Program	Approved awarding $2,500 to fund Bringing Back the Natives Garden Tours during FY 2014/15.
	Community Services Grants	Sent out RFP for FY 2015/16 CSGs. Contracts expected to be awarded in November 2015.
Provision C.8	Regional Monitoring Coalition	Will continue participating in coordination of ongoing monitoring activities and updates to standards and guidance for monitoring, tools for data management.
	Urban Creeks Monitoring Report	Will prepare report with results of WY 2015 monitoring data.
	Creek Status Monitoring	Will complete Year 4 Creek Status Monitoring using Regional Monitoring Coalition guidance and standards, and initiate site evaluation and sampling plans for Year 5 monitoring.
	Monitoring Projects	Will continue site-specific studies for three Stressor-Source Identification Projects to follow up on Creek Status trigger results from Water Year 2012.

Component	Project Name	Status
Provision C.8 (cont.)	Small Tributaries Loading Strategy	Will continue collaborating with RMP in planning and implementation of POC Monitoring, and interpretation of monitoring results.
	POC Loads Monitoring	Will continue limited operation of monitoring station in San Leandro Creek and conduct additional data collection to support identification of potential PCB sources in local watersheds.
Provision C.11/C.12 Regional Mercury and PCB projects	Clean Watersheds for a Clean Bay (C.11/12.c,d,e,i)	Will continue participating in BASMAA grant project, including planning and implementation of treatment retrofit and sediment removal pilot projects in the Ettie Street Pump Station.
	Pilot Diversion to POTWs (C.11/12.f)	Will continue discussions with EBMUD to implement pilot project at the Ettie Street Pump Station.
Provision C.11/C.12 Regional Mercury and PCB projects evaluation and reporting.	Integrated Monitoring Report Parts B and C	Will continue collaborating with other BASMAA agencies on updates to Integrated Monitoring Report and implementation planning for PCB reductions.

TABLE 1-3. MANAGEMENT COMMITTEE AND SUBCOMMITTEE PARTICIPATION[1]

Agency (No. of Meetings)	Management Committee (7)	Policy Level (8)	PIP (5)	Maintenance (1)	New Development (6)	I&IDC (3)
Alameda	7	8	4	1	4	2
Albany	7	8	0	0	0	0
Berkeley	7	8	3	1	6	3
Dublin	7	8	4	0	4	3
Emeryville	7	8	5	1	4	2
Fremont	4	4	2	1	6	1
Hayward	6	7	4	1	4	3
Livermore	6	7	5	0	5	0
Newark	6	8	5	0	2	2
Oakland	7	8	4	1	5	2
Piedmont	2	2	2	0	0	0
Pleasanton	4	4	4	1	5	2
San Leandro	7	8	1	0	5	3
Union City	7	8	4	0	5	2
Unincorporated Alameda County	7	8	5	1	5	3
Flood Control District	7	8	5	0	0	0
Zone 7	6	6	2	0	0	0

Notes:
[1]Total number of meetings for the Management Committee and each subcommittee is indicated in parentheses in the column headings.

Key:
PIP Public Information Participation
I&IDC Industrial & Illicit Discharge Control
WAMS Watershed Assessment and Monitoring/Special Studies

2

Provision C.2 Municipal Operations

Introduction

Most MRP-required maintenance tasks need to be implemented by each of the Program's member agencies. The Program helps municipal staff understand the MRP's requirements through Municipal Maintenance Subcommittee meetings and workshops, and develops various tools, such as templates, reporting forms, and other materials needed to effectively plan, implement, and report on the activities completed.

Implementation

The Maintenance Subcommittee activities for 2014-2015 included a Municipal Maintenance Workshop and the Annual Subcommittee Meeting. These activities are described in more detail below.

Innovations in Municipal Maintenance Workshop

The *Innovations in Municipal Maintenance Workshop* was held on October 29, 2014 at the San Leandro Marina Community Center and included both classroom and hands-on, field components. Training was provided for 72 maintenance staff and supervisors on the following topics:

- Hayward's Anti-Graffiti Program
- Water-Recycling Power Washing Equipment
- BigBelly Solar Waste Containers
- Street Sweeping and Tree Well Stormwater Treatment Pilot Studies

The post-workshop survey results indicated that the workshop was effective in communicating specific information to the target audience.

Annual Maintenance Subcommittee Meeting

A Maintenance Subcommittee Meeting was held on May 7, 2015, and a total of 16 people attended. Topics covered included the following:

- Proposed changes for MRP 2.0
- Revisions to the Annual Report Requirements
- Priorities for FY 2015/16

Future Actions

The Countywide Program's activities anticipated in FY 2015/16:

1. The Annual Municipal Maintenance Workshop.
2. The Annual Municipal Maintenance Subcommittee meeting.

3

Provision C.3 New Development & Redevelopment

Introduction

In FY 2014/15, the Program assisted the member agencies in complying with Provision C.3 of the MRP. This assistance has been provided through the New Development Subcommittee, which was chaired by Shannan Young, City of Fremont. Through this Subcommittee, the Program has conducted tasks such as: coordinating the review and comments on the new development related language in the draft MRP 2.0, providing training, coordinating communication between the BASMAA Development Committee and the member agencies, convening countywide discussion of compliance issues, and updating and preparing model documents and guidance for member agency use related to new development. This chapter describes the Provision C.3 implementation actions during FY 2014/15, as well as planned future actions.

Implementation

The primary accomplishments of the Program related to Provision C.3 implementation during the past fiscal year are listed below, according to applicable MRP provision numbers. These included Program staff's participation in BASMAA's Development Committee to work on regional tasks to assist the Program and its member agencies in meeting the specific requirements of Provision C.3 described below.

Provision C.3.a New Development & Redevelopment Performance Standard Implementation

C.3 Sizing Worksheet

The Program updated the guidance in the Excel-formatted hydraulic sizing worksheets for regulated project applicants and engineers to use in the design of stormwater treatment systems.

C.3 Technical Guidance Manual Update

The C.3 Technical Guidance Manual is another important tool to help member agencies meet the C.3.a.i.(2) requirement of having adequate development review and permitting procedures to implement Provision C.3. In FY 2014/15, the Program completed an update (Version 4.1) of the C.3 Technical Guidance manual to assist applicants and agency staff with implementing the new MRP requirements for small projects and improving implementation of current requirements. The following revisions were included in Version 4.1:

- Chapter 5–General Technical Guidance for Treatment Measures: Updated description of methodologies for hydraulic sizing of treatment measures
- Chapter 6–Technical Guidance for Specific Treatment Measures: Added technical guidance on systems and groundwater issues, and updated guidance for all other treatment measures related to infiltration rates and biotreatment soil mixes

The updated C.3 Technical Guidance was approved by the New Development Subcommittee and is available on the Clean Water Program's website at www.cleanwaterprogram.org.

Provision C.3.c Low Impact Development (LID)

Updates to Forms

The Clean Water Program maintains various forms intended to assist member agencies in complying with the requirement of having adequate development review and permitting procedures to implement Provision C.3. During FY 2014/15, the Program completed updates to the Biotreatment Soil Mix Vendor List. The forms are included in Appendix B of this report.

LID White Paper

In preparation for the reissuance of the MRP, the program 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 2.0 giving equal weight to biotreatment, infiltration and rainwater harvesting and removing the need for

unnecessary reporting on the feasibility of these practices. The Executive Summary is included in Appendix B of this report.

Provision C.3.h Operation and Maintenance (O&M)

The program sponsored a workshop on October 16, 2014, at Hayward City Hall. The workshop focused on C.3.h requirements and, in particular, inspections of LID BMPs. Two modules were presented to address inspections during construction, as well as ongoing inspections. The full workshop ran from 8:30 to noon. A total of 69 representatives from the member agencies attended the workshop, with most attending both modules. This workshop helped to fulfill training requirements for construction stormwater inspectors and business stormwater inspectors because in some jurisdictions, staff conducting business inspections are also responsible for ongoing inspections of LID devices. Module 1 provided training on what to look for during the construction phase inspections of the LID and hydromodification systems. The target audience for this module was staff conducting construction site inspections where LID BMPs are being installed. Module 2 provided training on what to look for during the post-construction verification inspections. The target audience for this module was staff conducting the ongoing operations and maintenance verification inspections of C.3 systems. Materials from the workshop were made available to member agencies on the Clean Water Program website for in-house training. The full report on the workshop is included in Appendix B.

Future Actions

The following C.3 implementation actions are anticipated in FY 2014/15:

1. The New Development Subcommittee will continue to meet on an approximately bimonthly basis and include special training topics on each agenda if possible. For example, the Program may use this forum to educate member agency staff on green infrastructure planning, design, construction and maintenance practices.
2. The Program plans to update the following forms and guidance:
    - Update the C.3 Technical Guidance to include an updated plant list and/or other updates as requested by the Subcommittee; and
    - Update forms and checklists as requested by the Subcommittee.
3. The Program will conduct at least one workshop for agency staff during FY 2015/16 (date(s) and topics to be determined).

4

Provision C.4 Industrial & Commercial Site Controls

Introduction

This section of the report describes the Clean Water Program's activities conducted to implement the MRP's Provision C.4 Industrial and Commercial Site Controls. Activities summarized in this section were implemented jointly for the benefit of the Clean Water Program's member agencies. The Clean Water Program's role is to help municipal staff to receive training and to develop and use various tools, templates, reporting forms, and other MRP compliance support materials and participate in countywide inspector training workshops.

Information about each agency's business inspection and educational outreach efforts is contained in the agencies' reports.

During this reporting period the following activities were completed with input and assistance from the Industrial & Illicit Discharge Control (I&IDC) Subcommittee:

- Facilitated regular I&IDC Subcommittee Meetings
- Conducted a training workshop that provided opportunities for classroom and field exercises in identifying appropriate, ineffective or missing best management practices (BMPs).

Implementation

The Clean Water Program's primary Provision C.4-related accomplishments during the past fiscal year include the following:

Facilitated Industrial & Illicit Discharge Control Subcommittee Meetings

The I&IDC Subcommittee assists municipalities to implement the MRP's Provision C.4 Industrial and Commercial Site Controls requirements. Martha Aja, with the City of Dublin, continued chairing the I&IDC Subcommittee.

Table 1-3 within Section 1 summarizes agencies' participation during FY 2014/15 in the I&IDC Subcommittee. Most agencies regularly attended I&IDC Subcommittee meetings. Representatives from the following 14 agencies attended the majority of the FY 2014/15 subcommittee meetings: Alameda, Berkeley, Dublin, Emeryville, Hayward, Newark, Oakland, Pleasanton, San Leandro, Union City, Alameda County unincorporated (Alameda County Environmental Health) and Union Sanitary District (see Appendix C).

The I&IDC Subcommittee meetings provide an opportunity for member agencies to share information useful to implementing the industrial and commercial requirements of the MRP. Highlights from the I&IDC Subcommittee meetings included the following:

- Subcommittee members shared information regarding guidance for trash enclosure design, ordinances and procedures for new trash enclosures and modified enclosures for redevelopment projects.
- Summary of the PCBs Screening Desktop Study.
- Update on the new State General Permit for Discharges from Utility Vaults and Underground Structures to Waters of the U.S. (Order 2014-0174-DWQ) and the new State General Permit for Drinking Water System Discharges to Waters of the U.S. (Order 2014-0194 DWQ).
- Discussion of the Administrative Draft Municipal Regional Stormwater Permit and the proposed changes to applicable provisions.

A Work Group was formed, with volunteers from the Cities of Alameda, Dublin, Hayward, Oakland, and Union City and the Clean Water Program, to work on updating and developing outreach materials identified by the Subcommittee. The Work Group provided Drafts for the Tips for a Clean Bay – How Your Business Can Prevent Stormwater Pollution booklet, Heavy Equipment Rental tip sheet and Heavy Equipment Rental poster to a graphic designer contractor for final formatting. The final outreach material will be available next FY.

Staff Training

In order to meet the MRP's requirements for annual training of municipal stormwater inspection staff, the I&IDC Subcommittee held an inspector training workshop on June 3, 2015 titled *Honing Your Inspection Skills* (see Appendix C). The trainers included knowledgeable local agency and consultant staff.

The training was attended by 60 staff and participants. The 49 staff that completed an evaluation reported that the workshop met their expectations. The training included presentations about using the CASQA Industrial/Commercial BMP Handbook, a review of MRP Provision C.4 requirements, an update on the Industrial Stormwater General Permit and a review of the Drinking Water System Discharge General Permit. In addition to the presentations there was a field exercise where groups of inspectors conducted an inspection at different activity areas of a large corporation yard.

Pre- and post-workshop surveys were conducted to provide insights into the knowledge of the participants before and after the workshop. The pre-workshop survey had a 57% correct response rating. The overall correct response improved to 74% in the post-workshop survey. The areas of significant improvement were related to knowledge of the General Permits.

Future Actions

The Clean Water Program's activities scheduled for FY 2015/16 include the following:

1. Facilitate the availability of training needed to comply with the MRP's requirements.
2. Develop and update outreach materials to facilitate education during routine inspections.
3. Participate through BASMAA's Municipal Operations Committee in collaborative activities.

5

Provision C.5 Illicit Discharge Detection & Elimination

Introduction

This section of the report describes the countywide activities conducted to help the Clean Water Program's member agencies to implement the MRP's Provision C.5 Illicit Discharge Detection and Elimination. The Clean Water Program's role is to help municipal staff to develop and use MRP compliance support materials. This includes acting as a liaison with BASMAA on its continued development of a mobile business educational outreach program and enforcement strategy.

Information about each agency's illicit discharge detection and elimination activities is contained in the agencies' reports. During this reporting period the following activities were completed with input and assistance from the I&IDC Subcommittee:

- Continued to track the progress of BASMAA's Maintenance Operations Committee's expansion of BASMAA's surface cleaner training and recognition program to include fleet washers and carpet cleaners.
- Shared information at I&IDC Subcommittee meetings about illicit discharge incidents.

Implementation

The primary Provision C.5-related accomplishments of the Clean Water Program during the past fiscal year include the following:

Control of Mobile Sources

The Clean Water Program continued to participate in BASMAA's Municipal Operations Committee and its work to expand the surface cleaner recognition program to include

fleet washers and carpet cleaners. In September 2014 the I&IDC Subcommittee reviewed the second draft BMPs and provided comments. A project update is provided in the BASMAA Training and Outreach for FY 2014/15 Regional Supplement included in Appendix F.

The Clean Water Program has a series of Best Practices for Mobile Businesses outreach pieces that have been available since FY 2011/12. These one page fact sheets include: Tips for Carpet Cleaners, Tips for Pet Care Providers, and Tips for Mobile Businesses (see Appendix D).

Tracking and Case Follow-up

The I&IDC Subcommittee continues to track information about illicit discharge cases that have broad applicability to the group. During this reporting period the subcommittee discussed fire sprinkler discharges.

Future Actions

The Countywide Program's activities scheduled for FY 2015/16 include the following:

1. Continue to work with BASMAA's Municipal Operations Committee on its mobile cleaners program. This will include providing input on the BMP outreach and other materials developed as part of the current phase of expansion of BASMAA's surface cleaner training and recognition program.
2. Facilitate the availability of illicit discharge detection and elimination training needed to comply with the MRP's requirements.

6

Provision C.6 Construction Site Controls

Introduction

During the past fiscal year, the New Development Subcommittee continued to support the member agencies in meeting the requirements of Provision C.6, Construction Site Controls. This Subcommittee also assists with implementing Provision C.3, New Development and Redevelopment. More information about the Subcommittee is provided in Chapter 3. The following sections describe the FY 2014/15 actions to assist the member agencies with Provision C.6 compliance and plans for future actions.

Implementation

The primary tasks of the Program in implementing Provision C.6 during FY 2014/15 were the following:

- To assist member agencies in complying with the Provision C.6.f requirement of providing staff training at least every other year on conducting construction stormwater inspections, the Program sponsored a C.6 workshop on March 5, 2015 entitled: "Inspecting C.6 BMPs & Installation Demonstration" with a total of 96 representatives from the member agencies attending the workshop. The workshop focused on C.6 and C.2 requirements and, in particular, on the BMPs used to prevent stormwater pollution during construction and maintenance activities. This field-focused workshop included a review of key inspection elements, including common problems and corrective actions, a field demonstration of installed erosion and sediment BMPs, and an opportunity to meet a manufacturer of proprietary erosion and sediment control BMPs. BMP demonstrations included a variety of erosion control practices (e.g., stray mulch, bonded fiber matrices, hydroseeding, erosion control blankets); sediment control practices (e.g., silt fences, a variety of fiber rolls, proprietary barriers and filters, and inlet protection); and run-on/runoff controls (e.g., dikes and swales). Presentation materials from the workshop were made available to member

agencies on the Clean Water Program website for in-house training. The full details of the training are included in Appendix E.

- The program also provided a forum at the New Development Subcommittee meetings for agency representatives from throughout the County to bring issues related to construction site compliance for information sharing, discussion, brainstorming and problem solving.

Future Actions

New Development Subcommittee meetings will continue to serve as an important countywide forum for information sharing and problem solving regarding Provision C.6 implementation. During FY 2015/16, the New Development Subcommittee will evaluate the needs for training given the available training budget.

7

Provision C.7 Public Information & Outreach

Introduction

Stormwater pollution results from the collective and incremental activities of each person within Alameda County. Thousands of routine, seemingly inconsequential decisions result in the unintended and unanticipated generation of stormwater pollutants. Public Information and Participation (PIP) is essential to minimizing stormwater pollution. The Program assists the members in complying with Provision C.7 through the PIP Subcommittee, which was chaired by Cynthia Butler, County of Alameda in FY 2014/15. The PIP Subcommittee met five times in FY 2014/15 (see Table 1-3 in Section 1 for attendance).

The Chair is responsible for running the Subcommittee's meetings and working with the PIP Coordinator to implement the Subcommittee's decisions. In addition, work groups, consisting of Subcommittee members, help to implement tasks for this provision.

To assist with the implementation of this provision's tasks, PIP Subcommittee members participated in the following work groups during FY 2014/15:

- Educational/Promotional Materials
- Community Stewardship Grants
- Alameda County Fair
- PIP Budget
- Litter Outreach

Table 7-1 at the end of this section provides a brief description of work group tasks and lists participating members.

This chapter describes Provision C.7 implementation actions during FY 2014/15, as well as planned future actions.

Implementation

Provision C.7.b Advertising Campaign

BASMAA Regional Advertising Campaign

From FY 2011/12 to FY 2013/14, the BASMAA Public Information / Participation (PI/P) Committee worked with SGA (consultants) to implement the "Be the Street" anti-litter Youth Outreach Campaign. Be the Street uses social media and innovate outreach to encourage youth to keep their community clean. The intent of the campaign is to make "no-littering" the norm among the target audience (youth between the ages of 14 and 24). The Final Be the Street Campaign Report was included in the Program's FY 2013/14 Annual Report.

In FY 2014/15, BASMAA funded the Be the Street Campaign from July – October 2014. The intent was to keep the Be the Street website active until requirements in MRP 2.0 became clearer. The Campaign is currently in hiatus and future activities will be decided after MRP 2.0 is adopted.

LUV The Bay: Multi-Touch Targeted Campaign

In April 2015, the Program began implementing the Luv the Bay campaign, which is a multi-touch targeted campaign focusing on litter prevention. The campaign includes a photo mural and a pledge component. Residents who take the pledge are asked to submit a picture showing them practicing a good behavior (e.g., holding up the pledge or a sign, picking up litter, etc.). The pictures are used to populate a photo mural posted the www.luvethebay.org website. Residents will be able to search for and share their pictures via social networking sites. The campaign is being promoted via events, media placements, community groups etc. The finished mural will be printed and displayed around Alameda County in late 2015. The Program has received 552 photo submissions so far for the mural.

Figure 7-1- The interactive photo mosaic #LuvTheBay lets residents pledge to eliminate litter by uploading a photo.

Online Advertising

The Program ran a 30-second video advertisement on YouTube & Google Display Network to increase residents' awareness about the Clean Water Program. The ad ran from December 8 – 21, 2014, and received 1,600 views.

The Program also ran advertisements on Facebook from April – June, 2015 to promote the Luv the Bay Campaign. The advertisements received 11,558 impressions and 173 post engagements.

Provision C.7.c Media Relations

Local Media Relations

The Program worked with outreach consultant, Gigantic Idea Studios (GIS), to conduct the following three pitches (news releases/stories) of local interest in FY 2014/15. The press releases were sent as an e-blast to the Program's contact database, and individual pitches were made to specific groups (e.g., creek groups, neighborhood groups and non-profits working on conservation/water issues), and local media outlets:

Volunteers Prepare for Coastal Cleanup Day, September 20, 2014 **-** This press release promoted local volunteer creek cleanup events organized by co-permittees and encouraged residents to sign-up. The pitch received coverage from multiple calendar editors and organizations including Berkeleyside (online news), Berkeley Times, Golden Gate Audubon Society, and Earth Team.

Clean Water Program Now Accepting Grant Applications, March 6, 2015 – This press release announced the availability of the 2015 Community Stewardship Grants, provided eligibility criteria and link to the online application. The release also summarized sample projects funded in the past.

Interactive Photo Mosaic Lets Alameda County Residents Show They "LuvTheBay"

April 16, 2015- The press release announced the Luv the Bay Campaign and encouraged residents to submit their pledges to show support for a clean Bay. It received coverage in the Patch, Fremont Bulletin, Tri-City Ecology newsletter, and the Alameda Creek Watershed Forum newsletter.

Copies of the press releases are included in Appendix F.

BASMAA Media Relations

In FY 2014/15, BASMAA Media Relations conducted pitches on the following topics:

- Ants/Pesticides - This pitch focused on ant invasions and less-toxic ways of controlling them.
- Not Burning Gift Wrap – This was a joint pitch between BASMAA and the Bay Area Air Quality Management Association focusing on proper gift wrap disposal.

- Car Washing - This pitch included PSAs and the development of a local use article template.
- Trash - The BASMAA Media Relations consultants 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. The other elements of the pitch included developing and sending PSAs to all regional radio stations.

A pitch focusing on the importance of native plants in time of drought is currently being finalized. In addition, BASMAA Media Relations developed social media presence for BASMAA on Facebook and Twitter.

In all, the pitches resulted in 63 total media placements (print and online stories, interviews and PSAs). Details are provided in the BASMAA Media Relations Annual Report (an attachment to the BASMAA Training and Outreach for FY 2014/15 Regional Supplement included in Appendix F).

Provision 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.

Program Website

The Program continued to maintain its website (www.cleanwaterprogram.org) in FY 2014/15. The website was promoted in online ads and also published on most promotional materials and giveaways (e.g., pencils, reusable totes, seed packets, etc.).

Social Networking

The Program's Facebook page launched in Sep 2012. Facebook offers a new avenue for the Program to share information with Alameda County residents. Typical posts include recognizing environmental programs, recognizing local pollution prevention events and photos about member agencies' Coastal Cleanup Day activities. The Facebook page currently has 951 fans.

Provision C.7.e Public Outreach Efforts

Outreach Materials

The Program ordered the following outreach and promotional items for distribution at public outreach events in FY 2014/15:

- 12,500 mood pencils
- 3,500 seed packets
- 6,750 CWP "Bagito" reusable bags

- 8,000 labels featuring "less-toxic" pest control recipes for spray bottles
- 6,000 Slappy and Quackers activity books
- 7,000 Water and Wildlife activity books

Alameda County Fair

The Program hosted a booth at the Alameda County Fair held from June 17, 2015 to July 5, 2015 in Pleasanton. Approximately 444,923 fairgoers attended the fair this year, which was a 6% decrease from last year. Event organizers attribute this slight decrease to high temperatures during the fair. Cynthia Butler from Alameda County was instrumental in making sure the booth was well maintained and well stocked with promotional and educational items.

The Program worked with Gigantic Ideas Studios to update the booth. The booth was developed as a walk-able board game that connected home maintenance practices with storm water pollution prevention.

The booth received the following prizes:

- Adherence to Theme Invitational Exhibit – 2nd Place
- Best of Class Invitational Exhibit – 2nd Place
- Appearance Invitational Exhibit – 2nd Place
- Use of Special Effects and Creativity - 2nd Place
- Educational Value Invitational Exhibit – 2nd Place

Several city representatives staffed the booth on Fridays and weekends and disseminated stormwater pollution prevention messages by interacting with booth visitors and distributing promotional items and educational materials such as IPM fact sheets, and other stormwater related educational materials.

The County Fair, with its large and diverse audience, continues to be an effective way for the Program to get its message across to a wide variety of people and not just those who are already savvy to environmental issues.

Figure 7-2- Program's booth at the 2015 Alameda County Fair

Our Water Our World Store Partnership Program

The Program is an active participant in the Regional Our Water Our World (OWOW) Store Partnership Program. Thirty six nurseries and retail stores in Alameda County participate in the OWOW Program. The Program provides less-toxic pest management fact sheets to

these stores for distributing to customers. In addition, store shelves are tagged with shelf tags that identity less-toxic pest control products.

In FY 2014/15, the Program continued to contract with Ms. Annie Joseph (IPM Consultant) to provide training to store employees on integrated pest management techniques and available less-toxic pest control products. Ms. Joseph conducted trainings for 202 employees representing 20 stores. The trainings included a pre-training survey to track employee awareness of stormwater issues. Highlights of survey results are below:

- 82% of respondents were aware that water flowing into storm drains is not treated.
- 44% of respondents were aware that water flowing into sewers in treated.
- 50% of respondents knew where the local household hazardous waste disposal facility is located.

A post-training evaluation was also conducted to obtain feedback on training content and usefulness. Highlights of feedback received are summarized below:

- 81% of respondents "strongly agreed" that the training workshop was well organized and interesting.
- 77% of respondents "strongly agreed" that the information provided would help them sell less-toxic products.
- 81% of respondents "strongly agreed" that they would recommend the training to co-workers.

Figure 7-3 - Employees of Home Depot, Emeryville, attending the OWOW Training

Additional information on these trainings, and survey results are included in Appendix F of the FY 2014/15 Annual Report.

Bus Stop Litter Outreach Pilot

In FY 2014/15, the Program began implementing a pilot project to determine if outreach intervention at bus stops would result in decreased litter. Based on feedback provided by co-permittees, bus stops/shelters located in the Cities of Hayward and Oakland and Unincorporated Alameda County were selected for participating in the pilot. GIS conducted observational research at these bus stops/shelters to understand littering patterns. The next step for the project is to place outreach messages at these locations. However, due to lack of clarity on the transit agencies' approval process for the placement of signage as PSAs at these bus stops/shelters, the project is currently on hold. The

Program's Litter Outreach Work Group will discuss next steps for implementation in FY 2015/16.

Provision C.7.f Watershed Stewardship Collaborative Efforts

Event Partnership Program

The Clean Water Program promoted Watershed Stewardship Collaborative Efforts by awarding funds for FY 2014/15 through its Event Partnership program. The Clean Water Program awarded grants in the amount of $2,500 to the Bringing Back the Natives Garden Tour held on May 3, 2015. The tour showcases pesticide-free, water-conserving gardens that reduce solid waste, provide habitat for wildlife and contain 50% or more native plants.

The Bringing Back the Natives Gardening Tours final report included in Appendix F contains an extensive effectiveness evaluation component. Some highlights of the tour are provided below:

- 38 gardens and nurseries were showcased on the Tour.
- 50 + talks and demonstrations were given.
- Estimated overall attendance at the event was 6,000 registrants.
- 12,724 garden visits were made on the day of the tour.
- Evaluations of registrants who had attended a previous tour showed that after attending a prior Bringing Back the Natives Garden Tour: 19% of respondents incorporated natives into their gardens (thereby reducing herbicide use and conserving water); 11% were encouraging wildlife with plant choices; 12% grouped plants by water needs and incorporated drought-resistant plants into their gardens; 14% increased the density of plantings to out-compete weeds (reducing herbicide use and conserving water); 14% were tolerating some insect damage; 9% had begun mulching; 5% had amended their soil; 7% had reduced the size of their lawn; 8% had reduced or eliminated pesticide use; 7% had installed efficient irrigation; 1% were grasscycling; 4% were composting; and 1% had reduced the amount of hardscape in their gardens.

Provision C.7.g Citizen Involvement Events

Community Stewardship Grant (CSG) Program

The FY 2014/15 Community Stewardship Grant Program chose six projects for funding in FY 2015/16 for a total of $25,800 in small grants. These projects are:

- EarthTeam for the "Ghost Creek Art Installation and Litter Assessments with San Lorenzo High School and the City of Hayward KHGC Task Force" project - $4,900.
- Friends of Sausal Creek for the "Cleaning up the Sausal Creek Watershed- a Watershed-Wide Effort!" project - $4,500.

- Golden Gate Audubon for the "Eco-Oakland Environmental Education Program"- $5,000.
- Manzanita SEED Elementary School for the "Watershed Leaders" project - $5,000.
- Thousand Oaks School for the "Blackberry Creek Interpretive Signage and Public Art" project -$4,600.
- Trybe, Inc. for the "Bella Vista Neighborhood Youth Zero Waste" project - $1,800.

The Clean Water Program has incorporated an evaluation component into all its funded programs. To be eligible for funding through the Community Stewardship Grant program, applicants have to demonstrate how they plan to evaluate the effectiveness of their project. Table 7-4 includes a summary of the projects funded in FY 2014/15. The final FY 2014/15 Community Stewardship Grant Program reports will be available in November 2015.

Provision C.7.h School-Age Children Outreach

Educational Services Program

One of the Clean Water Program's major accomplishments is the education of students and teachers about their local creeks, storm drain systems, and watersheds, as well as the encouragement of stormwater pollution prevention and watershed stewardship.

In FY 2013/14, the Program issued a RFP to select organizations for conducting school outreach programs from FY 2014/15 through 2017/18. The intent of the RFP was to select organizations that could implement litter-focused school programs. The following organizations were selected for funding:

- Caterpillar Puppets
- Earth Team
- Strom Drain Rangers
- Livermore Area Recreation and Park District

Table 7-3 at the end of this section provides a concise summary including brief program descriptions, targeted audience, and number students/teachers reached. In addition, copies of the final reports for the school outreach programs are included in Appendix F.

Highlights of the effectiveness evaluation conducted by these organizations are provided below.

- Joe and Ronna Leon of Caterpillar Puppets presented 62 classroom assemblies at 29 elementary schools in FY 2014/15. They received a total of 67 litter surveys (36 post-assembly surveys, and 31 end-of-year follow-up surveys) from teachers. They

also received comments from teachers and students They offered the following quotes from teachers and students:

- "Thank you for teaching us that only rain should go down the storm drain."
- "We need to do better about picking up Capri-Sun wrappers."
- "We really enjoyed this assembly and we appreciate you coming to our school. I had lots of teachers comment on how much their students enjoyed your visit.

- Earth Team reported that 37 student interns participated in their Alameda County Zerolitter Internships during the 2014-2015 school year. Lessons learned at Oakland High School campus in FY 2013/14 were replicated with peer-to-peer outreach activities at two other Alameda County campuses (San Lorenzo and American), increasing the overall impact of the project. The project included a total of approximately 83 afterschool meetings, 23 field trips, and 12 community events at 8 different locations.
- Eight schools participated in the Storm Drain Ranger (SDR) Program in FY 2014/15. A total of 458 students and 16 teachers became Storm Drain Rangers and led their schools in school-wide trash reduction efforts. Students in the SDR program picked up 17,840 pieces of trash this school year.

Future Actions

The following actions are anticipated in FY 2015/16:

1. Continue to hold PIP Subcommittee meetings;
2. Continue the Educational Services Grant Program;
3. Continue the Community Stewardship Grant Program; and
4. Continue to update and create new outreach and educational materials.

TABLE 7-1. PIP WORK GROUP PARTICIPATION IN FY 2014/15

Type of Work Group	Work Group Accomplishments	PIP Representatives	Agencies
Educational /Promotional Materials	Determined types and quantities of educational materials to order and distribute during the year. Assisted with the design and content of promotional and educational materials.	Kristin Hathaway	Oakland
		Martha Aja	Dublin
		Patrizia Guccione	Alameda
		Barbara Silva	Fremont
		Barbara Kusha	Zone 7 Water
Alameda County Fair	Worked with consultant to determine changes to the County Fair Booth.	Cynthia Butler	Alameda County
		Jim Scanlin	CWP
		Corinne Ferreyra	Hayward
		Martha Aja	Dublin
FY 2014/15 PIP budget	Developed FY 2014/15 PIP Budget.	Kristin Hathaway	Oakland
		Barbara Silva	Fremont
		Jim Scanlin	CWP
		Patrizia Guccione	Alameda
		Martha Aja	Dublin
Community Stewardship Grants	Selected five community projects for funding in FY 2015/16.	Kristin Hathaway	Oakland
		Martha Aja	Dublin
		Jim Scanlin	CWP
		Barbara Silva	Fremont
		Patrizia Guccione	Alameda
		Danile Akagi	Berkeley

Type of Work Group	Work Group Accomplishments	PIP Representatives	Agencies
Litter Outreach	Planned enhanced litter outreach activities for implementation in FY 2014/15.	Kristin Hathaway	Oakland
		Jim Scanlin	CWP
		Patrizia Guccione	Alameda
		Corinne Ferreyra	Hayward
		Martha Aja	Dublin
		Lynna Allen	Livermore

TABLE 7-2. EVENT PARTNERSHIP PROGRAM FY 2014/15

Name of Project Group	Name of Event	Brief Event Description	Participants
Kathy Kramer Consulting	Bringing Back the Natives Garden Tours	Showcase pesticide-free, water-conserving gardens that reduce solid waste, provide habitat for wildlife and contain 50% or more native plants. The tour included 19 gardens in Alameda County.	6,000 + registrants

TABLE 7-3. EDUCATIONAL SERVICES PROGRAMS FY 2014/15

Name of Program (*Name of Organization*)	Type of Program	Brief Program Description	Target Audience	Approximate Number of Students/Teachers[1]
ZeroLitter Internships *(Earth Team)*	In-Class Presentations and Field Trips	Work with student interns to implement on- campus activities and community events focused on litter reduction and watershed education. Student interns met weekly after school for the entire year to learn and acquire new skills and practice leadership opportunities. They design and participate in a number of action-oriented community events aimed at increasing awareness on litter issues and changing littering behaviors.	High School Students	A total of 37 student interns were directly involved with ZeroLitter activities, with outreach activities benefiting a total student population of approximately 5,000 students.
Storm Drain Rangers *(Kids for the Bay)*	In-Class Presentations	To educate Alameda County students about watersheds, stormwater pollution, and stormwater pollution prevention, the Storm Drain Rangers program consists of the following three lessons: 1) Our Watershed; 2) Taking Action for a Healthy Watershed; and 3) Becoming a Storm Drain Ranger.	Educators Grades 3-5	16 educators and 458 students.

[1] Numbers of students/teachers reached were taken from the final report provided by each individual educational program.

Name of Program (*Name of Organization*)	Type of Program	Brief Program Description	Target Audience	Approximate Number of Students/Teachers[1]
Watershed Education (*Livermore Area Recreation and Park District*)	In-Class Presentations	A series consisting of the following three watershed education programs for 4th and 5th grade students in Livermore, Pleasanton, and Dublin: 1) Water Flows: A look at Watersheds - Students learn about watersheds; 2) Stream Life I - A program to prepare students for a field trip to a local creek; and 3) Stream Life II - Students explore a local stream and get a hands-on experience assessing stream health by testing the water and catching and recording numbers of aquatic animals.	Grades 4-5	Not available at time of report
Mr Froggy's Clean-up Club *(Caterpillar Puppets)*	Assembly	Engaging puppet shows that introduces students to watersheds and stormwater pollution and ways they can help to prevent it.	Grades 1-3	6,157 students

TABLE 7-4. COMMUNITY STEWARDSHIP GRANTS FY 2014/15

Project Group/School	Project Title	Brief Project Description
Adams Point Neighborhood Group	Adams Point Mosaic Project	The Adams Point Neighborhood Group formed in 2006 and is comprised of residents, merchants, and other stakeholders who are committed to caring for the Adams Point Neighborhood, which is located at the north end of Lake Merritt in Oakland. For the grant project they plan to design, construct and install a tile mosaic on a trash container in their neighborhood near the lake's walkway, which will feature images of wildlife native to Lake Merritt and Glen Echo Creek. The mosaic designer will work with the Lake Merritt Institute to select the flora and fauna to be featured in the design. The group has already "adopted" the area through the City's Adopt a Spot program, and holds regular trash cleanups there. The purpose of the artfully decorated can is to entice pedestrians in the area to use the trash can instead of littering, and to improve the visual experience for them. The group plans to showcase the beautified trash can as a focal point in their annual Earth Day cleanups, and also on their Facebook site and in their many other outreach efforts and platforms. The can will be emptied and maintained by the group and the City of Oakland.
Alameda Creek Alliance	Lower Alameda Creek Stewardship Project	The Alameda Creek Alliance (ACA) is a non-profit community watershed group with the goal of protecting and restoring wildlife and native steelhead trout runs in the watershed. This CSG grant project includes enhanced outreach and education efforts to Fremont high schools to attract additional volunteers for riparian habitat enhancements, which include trash cleanups and invasive plant removal at ACA's adopted spots in the Alameda Creek watershed. ACA plans to develop closer relationships with teachers at Fremont's High Schools, an informational postcard, signage and a bookmark (handout for volunteers) which will describe the group's efforts to improve the health of Alameda Creek and give information on their stewardship workdays. The group plans at least eight workdays at their adopted spots located at Stonybrook Creek, and Alameda Creek at Niles Staging Area in Fremont. In addition, they will continue to table at local environment-focused festivals and events, and will utilize the printed materials as a way to widen their involvement in creek stewardship with the local community.

Project Group/School	Project Title	Brief Project Description
Alameda Boys and Girls Club (ABGC)	Bio-retention Garden and Community Clean-up Project	The project includes the installation of a bio-retention area which will treat runoff from the facility's parking lot in an area adjacent to and upslope of the facility's ¼ acre Community Garden. ABGC staff and youth will install approximately 400 linear feet of native plants in the bio-retention area, using a plan developed by a qualified landscape architecture firm. The project forms the core of an 8-week after-school program for middle and high school students that will introduce participants to all project elements, from soil and site considerations for bio-remediation, to plant selection and design, irrigation planning, and also a look at green job opportunities that draw on these types of skills. In addition to maintaining a litter-free garden and bio-retention area, AGBC youth will participate in two litter removal projects in the neighborhood, and learn about the impacts of litter via the ABGC's own storm drain. They will also coordinate with visiting classes of science students from a nearby charter school who plan on utilizing the bio-retention area for study. There will be youth-led tours of the bio-retention area and garden as part of the member orientations, and community tours of the completed project. The project will be featured on the AGBC website and in other media. Overall, the project is anticipated to reach 500 youth and their family members.
EarthTeam- in collaboration with San Lorenzo High School	San Lorenzo High School's Campus Beautification Project	This CSG project will begin with the development of an afterschool program at San Lorenzo High School with ten motivated students who will meet at least ten times to design and plan two campus-wide beautification events. Prior to the events, there will be widespread publicity led by the student group to a number of media outlets and to the wider student population. The student group will lead the two events at which native trees will be planted to shade classrooms and provide habitat, and a campus trash assessment and cleanup will be done. After the first beautification event, which will be filmed, the students will create a video explaining the reasons for the tree planting and litter cleanup efforts. The video will be shown to the entire student body in order to encourage attendance at the 2nd beautification event. Next, an evaluation will be done, based on student surveys, to see to what extent the video viewing and/or attendance at the 1st event affected student awareness of the project objectives. Students will also share the results of the campus trash assessments from both event days.

Project Group/School	Project Title	Brief Project Description
Friends of Leona Heights	Friends of Leona Heights and Laney Lagoon Pollution Abatement Project	This project will include the installation of additional steel trash cans along the graffiti wall, trail improvements to reduce erosion, native plant installation and bench, and trash cans next to existing benches, all in Leona Heights Park. Downstream at Laney Lagoon, at the west end of Lake Merritt near Laney College, an educational project will be done in conjunction with students from several different colleges, including Laney. A water quality scale will be developed in accordance with the EPA water quality index, and water testing will be done. Trash will be collected at the Lagoon every month and put into cans in a heavy steel mesh box with a roof that will be designed and fabricated by Laney engineering students. The projects will include many community volunteer hours and wide involvement of local college students. Grant funds will be utilized for project materials and water testing kits. Project publicity will primarily be through the group's Facebook site, QR codes on signage, as well as flyers and publicity for Creeks to Bay Day and Earth Day cleanup events.
Old Oakland Neighbors	Old Oakland Neighbors Litter Reduction and Trash Can Mosaics Project	Old Oakland Neighbors is a neighborhood group that includes a wide range of activities, including park and storm drain stewardship, community- building events, merchant organizing, public safety, Earth Day cleanups and anti- littering campaigns. The grant will provide funds to purchase three new trash cans and create tile mosaics on four trash cans in the Old Oakland neighborhood. The tile mosaics will be similar to the style of those created in the nearby Adams Point neighborhood. The group also plans to tackle the litter from nightclub postcards that are left on cars and dumped in bulk in the neighborhood. The mosaics project will be developed in coordination with the members of the Old Oakland Neighbors Group, and discussed at their bi-monthly meetings. The group will be a source of volunteers for project implementation. Key milestones in the project will be publicized through social media and at the National Night Out in August. Outreach efforts will include translating flyers and anti-littering information into Chinese, and making efforts to engage with the diverse communities in the area and other homeowners associations. Project evaluation will include an assessment of trash volumes on the sidewalks and gutters at selected spots before and after the cans are in place.

Project Group/School	Project Title	Brief Project Description
The Watershed Project	Green Champions: Pilot Program to Reduce Litter Generated at Sporting Fields	In previous years The Watershed Project has received CSG funding for its Riparian Lab program in the Chinatown area of Oakland. The 2014 project will address the issue of single use bottles and snack food wrappers which end up as litter at sporting fields in the Albany-Berkeley area. The Green Champions program will include three consecutive visits by TWP staff to the 2nd, 3rd and 4th grade classes at Ocean View Elementary School in Albany, during which lessons on storm drains, trash movement through watersheds to the ocean, trash components and decomposition timelines will be taught. The campaign will simultaneously target parents, sporting teams and leagues to discourage the use of single-use bottles and single serving packaged snacks, as a way for young athletes to be Green Champions. Students will make posters and postcards with the message that will be shared with the sports leagues. To reinforce the concepts in a novel way, students will also collect trash from sporting fields and create a "trash monster" that will be widely publicized and displayed at a sports field in Albany/Berkeley. As an evaluation component the number of juice boxes found in and around a sporting field will be counted, both pre- and post- program, to determine the program's effectiveness. The students will also sign pledges to reduce use of single serving and single use products.

8

Provision C.8 Water Quality Monitoring

Introduction

Provision C.8 of the MRP requires Permittees to conduct water quality monitoring and associated projects during the permit term. All water quality monitoring activities required by Provision C.8 are coordinated regionally through the Regional Monitoring Coalition (RMC), a collaborative effort of MRP Permittees under the auspices of the Bay Area Stormwater Management Agencies Association (BASMAA). Many of the tasks for compliance with provisions in C.8 are conducted as BASMAA Regional Projects, with scopes and budgets approved by the BASMAA Board of Directors (BOD) and implemented through the BASMAA Monitoring and Pollutants of Concern Committee (MPC) and RMC Work Group.

Implementation

As required by Provision C.8.g of the MRP, all monitoring efforts and results are to be documented in a separate report submitted March 15th of each year, which covers all data collected during the Water Year (WY) ending on September 30th of the previous year. The Program's monitoring results for the water year ending September 30, 2014 were reported in the Urban Creeks Monitoring Report (UCMR) which was submitted by March 15, 2015, and is available at:
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/Municipal/UCMR/UCMR%20WY2014%20-%20ACCWP.pdf.

Provision C.8.a Compliance Options

Provision C.8.a of the MRP allows Permittees to address monitoring requirements through a "regional collaborative effort". In a November 2, 2010 letter to Permittees, the Water Board's Assistant Executive Officer (Thomas Mumley) acknowledged that all MRP Permittees have opted to conduct monitoring required by the MRP through the RMC.

The letter noted that monitoring coordinated through the RMC must begin by October 2011.

In response to the Assistant Executive Officer's request, the BASMAA RMC provided BASMAA RMC Regional Monitoring Status Reports in March and September of 2011 and 2012 which described the RMC Work Plan and regional activities for its implementation, which were reported in subsequent Monitoring Reports by the respective programs. In FY 2014/15 representatives of the Clean Water Program and other programs continued to coordinate RMC activities through the RMC Work Group and the MPC.

Provision C.8.b San Francisco Estuary Receiving Water Monitoring

The Program fulfilled this provision by continuing its fair-share annual contributions to the Regional Monitoring Program for Water Quality in the San Francisco Estuary (RMP) in 2014 and 2015 (see Table 1 of the Urban Creeks Monitoring Report). The Program participated in stakeholder oversight of the RMP through BASMAA representation on the Steering and Technical Review Committees, and additional Strategy Teams for PCBs and dioxins. Program staff actively participated as a BASMAA representative to the following RMP work groups:

- Sources, Pathways and Loadings Work Group;
- Small Tributaries Loading Strategy; and
- Exposure and Effects Work Group.

Program staff also participated in a stakeholder interview and review of documents for a review and update of the RMP's organizational structure.

Provision C.8.c Creek Status Monitoring

The Program's active participation in RMC activities for this provision during the reporting period included:

- Program staff and consultants implemented Creek Status Monitoring in coordination with other RMC programs and according to the seasonal requirements in MRP Table 8.1. Since the Program sampled only 18 bioassessment sites in WY 2014 due to unusually early drying of creeks, 22 sites were sampled in WY2015 to maintain the average number of 20 sites per year as required in the MRP.
- Program staff participated in regular meetings of the RMC Work Group to discuss monitoring results and coordination issues.
- Program staff and consultants participated in periodic meetings and communications to coordinate screening and evaluation of candidate monitoring sites provided by the regional monitoring design and to promote consistent data

entry and management procedures using the database and quality assurance tools developed through the RMC.

Provision C.8.d Monitoring Projects

Provision C.8.d of the MRP requires three types of monitoring projects:

1) Stressor/Source Identification Projects (C.8.d.i);
2) BMP Effectiveness Investigations (C.8.d.ii); and,
3) Geomorphic Projects (C.8.d.iii).

For Stressor/Source Identification (SSID) projects MRP Provision C.8.d.i specifies the initial step in the stepwise process will be a site-specific evaluation to identify the cause(s) of the observed trigger; this step shall be initiated as soon as possible and must begin no later than the second fiscal year following the sampling event that triggered the project. The Program initiated sampling in late FY 2012/13 and the March 2014 Integrated Monitoring Report included progress reports for three SSID projects at Alameda County sites that were identified through a regional RMC review of results from the Water Year (WY) ending September 2012:

- 204CRW030 on Crow Creek was triggered by low dissolved oxygen during September 2012. In FY 2013/14 the Program deployed data loggers which recorded decreased levels of dissolved oxygen from July through September but there was little evidence that nutrient levels or diminished flow were responsible for the dissolved oxygen reductions. Due to equipment malfunction, additional deployments were done in FY 2014/15.
- 204R00084 on Dublin Creek was triggered by a combination of "very poor" biological community quality, as indicated by Index of Biological Integrity (IBI) scoring, and elevated sediment concentrations of multiple chemicals that could produce toxicity, although no significant toxicity was observed. In FY 2013/14 the Program collected additional sediment chemistry at sites with varying levels of urban influence in the watershed, and bioassessment data at two additional sites. Review of regional data supported the hypotheses that poor habitat quality of engineered channels was the main determinant of low scores for biological community metrics and that the MRP trigger criteria for sediment chemistry are overpredictive of potential toxicity in Bay Area streams.
- 204R00047 on Castro Valley Creek was also triggered by a combination of "very poor" IBI score and elevated sediment chemical concentrations. Program staff reviewed the results with stormwater staff for the Unincorporated Alameda County.

For BMP Effectiveness, the Program will fulfill the requirements of Provision C.8.d.ii by monitoring treatment sand filters installed at the Ettie Street Pump Station through the Clean Watersheds for a Clean Bay (CW4CB) grant, with additional laboratory analyses to

include the range of pollutants found in urban runoff at the POC monitoring stations. The Geomorphic Project requirement was fulfilled by a 2002 inventory of publicly owned locations within Alameda County in which decentralized, landscape-based stormwater retention units can be installed.

Provision C.8.e Pollutants of Concern Monitoring

In a regional collaboration with the RMP, the Program and other Permittees are pursuing an alternative approach to answering the information needs identified in MRP Provision C.8.e, as allowed by the MRP. Results of this monitoring were reported in Part A of the IMR. In FY 2014/15, the Program actively participated in this collaborative process in the following ways:

- Program staff participated in the Small Tributaries Loading Strategy (STLS) Team, in which BASMAA representatives, Water Board staff and scientists from San Francisco Estuary Institute (SFEI) coordinate an alternative monitoring approach to the locations and methods for POC Loads Monitoring described in Provision C.8.e, which effectively addresses the priority Management Questions that guide both the STLS and the MRP provision.
- The Program continued limited POC Loads Monitoring at a watershed station on San Leandro Creek, sampling one small-to-moderate size storm to check calibration of the continuous turbidity probe against PCB, mercury and SSC concentrations, following repair of the probe after a period of malfunction during the previous sampling season. A dry-weather sample was also collected for methylmercury and SSC to make up for a dry season sample that could not be collected due to rapid drying of the creek.
- Program staff participated in prioritization and review of refinements to the Regional Watershed Spreadsheet Model element of the STLS, which supports the larger STLS objectives of estimating regional loadings of sediment-associated POCs including PCBs and mercury.
- As part of its redirection of resources allocated for Provision C.8.e from monitoring at the San Leandro Creek station towards identifying sources of PCBs in older industrial areas, the Program drafted a Quality Assurance Project Plan and preliminary Sampling and Analysis Plan for sediment sampling in street right of ways and other conveyances, as part of a process to identify specific PCB source properties for referral to regulatory agencies for cleanup and abatement, and evaluation of opportunities to apply other control measures to reduce PCB loads to stormwater. The Program implemented preliminary desktop screening to assist member agencies in identification of priority sampling sites as described in the section of this report for Provision C.12.

Provision C.8.f Citizen Monitoring

In FY 2014/15, the Program's efforts to encourage citizen and stakeholder observations and reporting of waterbody conditions included:

- Program staff shared reports with the Friends of San Leandro Creek and the Friends of Sausal Creek that included data collected from their creeks.
- Program staff received telephone calls or emails in response to letters sent to homeowners and residents of creekside properties in advance of conducting the Unified Stream Assessment in aboveground sections of several Fremont creeks.

Provision C.8.g Reporting

The Program's FY 2014/15 reporting activities for C.8 included:

- The Program submitted its Electronic Status Monitoring Data Report to the Water Board for Water Year 2014 Creek Status data by January 15, 2015. As shown in Appendix G, the transmittal included data for the previous Water Year in SWAMP-comparable format and highlighted exceedances of Water Quality Objectives where they occurred within the data. By authorizing upload of these data by San Francisco Estuary Institute (SFEI) to the California Environmental Data Exchange Network (CEDEN), the Program also fulfilled the requirement in Provision C.8.g.vii for data accessibility through a regional data center.
- Program staff submitted the UCMR with monitoring results for Water Year 2014 as required by Provision C.8.g.v. In addition to a regionally prepared appendix that discussed results for monitoring parameters collected under the Small Tributaries Loading Strategy, Program staff coordinated with other BASMAA agencies on analyses of data for regionally-designed monitoring parameters.

Provision C.8.h Monitoring Protocols and Data Quality

Regional collaborations ensure SWAMP-comparable methods and procedures for Creek Status Monitoring and POC Loads Monitoring. Program FY 2014/15 activities related to this provision included:

- Program staff collaborated with staff of other BASMAA programs, SFEI and the Water Board to review previous electronic data submittals, correct minor details of formatting and associated project data, and develop guidelines for consistent future use.
- Program staff and contractors continued meetings and other communications to coordinate calibration of field crews and implement minor updates or clarifications to procedures for data management and quality assurance.

Future Actions

The Program will continue participation in RMC and RMP coordination of status monitoring in creeks and San Francisco Bay. Draft final reports for Stressor/Source ID Projects will be developed and additional chemical or data analyses will be conducted for the BMP Effectiveness monitoring project as described above.

Creek Status Monitoring

The Program will continue ongoing implementation of Creek Status Monitoring in accordance with the RMC guidance documents and data management system. Reissuance of the MRP is not expected to require significant changes in methods or sampling design.

Pollutants of Concern Monitoring

The Program will document revisions to the alternative approach for monitoring in WY 2015 in the March 2016 UCMR, as well as describing its strategy for further POC monitoring according to the provisions of the reissued MRP. Subject to the final adoption and content of the new permit, planned activities for FY 2015/16 include:

- **San Leandro Creek Loads Monitoring Station:** The Program will maintain a contingency budget for sampling a large, high intensity storm event, which is the main remaining information gap for this STLS monitoring station.
- **Other POC Stormwater Monitoring through STLS:** Program staff will continue working with the STLS Team to continue a RMP-funded stormwater characterization field study. The study was begun in WY 2015 to address new priorities among the STLS management questions, including identification of potential PCB Opportunity Areas as described below and filling gaps in stormwater and sediment data for refinement of the Regional Watershed Spreadsheet Model. This study involves sampling one or two storm events from a larger number of sites, and deploying sediment samplers. The Program will also work with other RMC and STLS participants to report WY 2014 data from all STLS monitoring stations.
- **STLS Stormwater Trends Strategy:** The STLS workplan for 2015 includes a project to develop a Trends Strategy to guide long-term planning for STLS-related work by the RMP and stormwater programs. Initially focused on PCB loads, the Trends Strategy will identify key indicators to monitor, confirm the amount of baseline information needed and recommend timelines and efforts for later trends monitoring. The STLS Team will also discuss priority information needs for other monitoring parameters that are expected to be required under the next MRP and possible trends indicators and approaches will be developed as needed.

- **Identification of Potential Opportunity Areas for PCB Load Reductions:** Part C of the Program's 2014 Integrated Monitoring Report proposed a multi-step PCB Implementation Planning process for identifying potential High Opportunity areas for PCB load reduction activities, as described in the C.12 section of this report. The Program and Permittees will continue gathering information to map priority PCB and mercury source areas for control actions, including additional sediment samples from streets and storm drains near properties that may be potential sources of PCBs to runoff.

9

Provision C.9 Pesticides Toxicity Control

Introduction

This section summarizes the Program's efforts to comply with Provision C.9, Pesticides Toxicity Control, to prevent the impairment of urban streams by pesticide-related toxicity. Provisions in C.9 reflect the implementation actions incorporated in the Basin Plan through the Total Maximum Daily Load and Water Quality Attainment Strategy for diazinon and pesticide–related toxicity in urban creeks throughout the Bay Area.

Implementation

Provision C.9.e Track and Participate in Relevant Regulatory Processes

Provision C.9.e is being implemented through the California Stormwater Quality Association (CASQA). Program staff also participated on the CASQA Pesticide Subcommittee. A report on the implementation of this provision entitled Pesticides Subcommittee Annual Report and Effectiveness Assessment - 2014-2015 is included in Appendix H.

Provision C.9.h.i and ii Point-of-Purchase Outreach

The Program continued contracting with Annie Joseph to implement the Our Water Our World program throughout Alameda County. There are now 36 stores participating in the OWOW Program **including all Home Depot stores within the County**. A summary of the FY 2014/15 effort is included in Section 7 and Appendix F.

BASMAA Activities: A report of BASMAA's activities and accomplishments for the regional *Our Water, Our World* program for FY 2014/15 is included in the *BASMAA Regional Supplement for Training and Outreach* (see Appendix F).

C.9.h.i. and ii. Public Outreach

C.9.h.i. (1) and (3): The Program continued contracting with Annie Joseph to implement the Our Water Our World program throughout Alameda County. A summary of the FY 2014/15 effort is included in Section 7 and Appendix F.

C.9.h.i. (1): The Program provided targeted outreach on proper pesticide use and disposal through its website, the OWOW program, and the County Fair exhibit.

C.9.h.iii. and iv. Pest Control Contracting Outreach

The Program set up an exhibit at the Alameda County Fair that promoted integrated pest management, including: potential impacts of pesticides on water quality; less-toxic methods of pest control; and, information on the *Our Water Our World* program. The total number of attendees at the Fair this year was over 444,000. The exhibit earned five second-place awards. Program staff also met with staff from Alameda County Waste Management Authority (StopWaste) to continue developing a program to conduct outreach to facilitate appropriate pesticide waste disposal.

Figure 9.1- Program's booth at the Alameda County Fair

C.9.h.v. and vi. Outreach to Pest Control Operators

Program staff communicated with the County Agricultural Commission regarding the activities of pest control operators. Commission staff indicated that they usually have about 1 to 3 incidents of improper application by a licensed applicator, usually reported by a neighbor of the resident contracting for service. Commission staff also reported that applicators have switched away from broadcast spraying to more spot treatments in response to new Department of Pesticide Regulation restrictions. Program staff participated in previous fiscal years in the San Francisco Estuary Partnership's *Got Ants?* grant outreach campaign. The campaign encouraged residents to contract with IPM-certified pest control companies.

Future Actions

The Program will continue its support of BASMAA and CASQA efforts to participate in regulatory processes. It also will continue to contract with Annie Joseph for implementation of the *Our Water Our World* Point of Purchase IPM outreach.

10

Provision C.10 Trash Load Reduction

Introduction

This chapter describes the Program's Provision C.10 implementation actions during FY 2014/15, as well as planned future actions.

Implementation

Provision C.10.a.ii Baseline Trash Load and Trash Load Reduction Tracking Method

Through participation in BASMAA the Program supported the development of the final San Francisco Bay Area Stormwater Trash Generation Rates Technical Report (June 20, 2014). This report was submitted to the Water Board on July 9, 2014.

Provision C.10.d Summary of Trash Reduction Actions

Single-Use Bag Ban
A Countywide Single-Use Bag Ban was adopted by Alameda County Waste Management Authority (StopWaste) and went into effect January 2013. As of January 1, 2013, grocery stores and other stores in Alameda County that sell alcohol or four items, milk, bread, packaged food and soda, can no longer provide single-use plastic carryout bags, nor can they distribute paper bags or reusable bags for free at checkout. StopWaste conducted an intensive outreach effort to inform the affected stores.

Assessment: The following methods were used to assess the effectiveness of the bag ban: (1) Inspection and Enforcement; (2) Parking lot survey; (3) Voluntary data reporting; and, (4) Characterization of single-use bags in storm drains. StopWaste has implemented an inspection and enforcement program. Nearly every store covered by the ban has been inspected. Compliance rates were very high. Approximately 85% of the stores were

fully compliant, and less than 10% of the stores were distributing single-use plastic bags. Enforcement actions were initiated against stores that were not fully compliant. These enforcement actions should increase the effectiveness of the ordinance over time. StopWaste also conducted a pre and post-ordinance survey of bag usage in the parking lots of 17 stores covered by the ordinance. Results of the survey indicated that there was a 95% reduction in the use of plastic bags at those stores following the implementation of the ordinance. Sixty-nine stores covered by the ordinance participated in a voluntary data reporting exercise. Participating stores provided data on the number of single-use plastic bags purchased before and after the start of the ban. Based on these results, StopWaste estimated that there was an 85% reduction in plastic bags purchased by the stores covered by the ban. This equates to approximately 150 million fewer bags purchased. The Program worked with StopWaste during FY 2013/14 to conduct a study to assess the reduction in the number of plastic bags found in storm drains after the implementation of the ordinance compared to what was found during the BASMAA baseline loading study conducted during FY 2011/12. This Alameda Countywide Storm Drain Trash Monitoring and Characterization Project (Characterization Project) found significantly fewer single-use plastic bags in the storm drain inlets throughout the County as compared to the BASMAA study. Initial results indicated an estimated 44% reduction. Based on the results of these assessment efforts and the previous characterization conducted by BASMAA, Program staff recommend that, in the absence of additional jurisdiction specific information, Permittees should estimate that the single-use bag ban reduced the discharge of single-use plastic bags by 50% which equates to an estimated 4% reduction in trash discharged to the their storm drain system. The Characterization Project report was included in Appendix G of the FY 2013/14 Program Annual Report.

Expanded Polystyrene Food Ware Bans

The following ten cities within the County have adopted expanded polystyrene (EPS) food ware bans: Alameda, Albany, Berkeley, Emeryville, Fremont, Hayward, Livermore, Oakland, Pleasanton, and San Leandro.

Assessment: One of the goals of the Characterization Project was to develop an estimate of the effectiveness of EPS food ware bans at reducing the amount of EPS food ware discharged to the storm drain system. As the City of San Leandro ban went into effect after the completion of the BASMAA baseline study and prior to the implementation of the Project, and twenty-five of the 47 Alameda County sites included in the BASMAA Baseline Study were located in San Leandro, the assessment of the effectiveness of EPS food ware bans focused on San Leandro. Initial results of the Project suggest an estimated 62% reduction in the amount of EPS food ware discharged to the storm drain system following the implementation of the ban. Based on the results of the Project and the previous characterization conducted by BASMAA, Program staff recommend that, in the absence of additional jurisdiction specific information, Permittees should estimate that an EPS food ware ban equates to an estimated 4%

reduction in trash discharged to the their storm drain system. The Characterization Project report was included in Appendix G of the 2013/14 Program Annual Report.

Public Outreach: Educations Services Program

The Program contracted with four environmental education programs to conduct classroom, field trip, and assembly stormwater education. There is an anti-litter component to all of the programs and for some (for example, the Storm Drain Ranger Program) there is a very intensive focus on preventing and picking up litter. (See Section 7 (Public Outreach) for a detailed description of the programs.) The Program released an RFP in January 2014 for new education service contracts that began implementation in FY 2014/15. The Program has selected and contracted with four programs. The programs focus on litter reduction, and each of the programs will assess associated reductions in litter at participating schools.

Future Actions

The Program will continue to assist with the implementation of trash reduction efforts including:

1. Work with the BASMAA Trash Committee and Program member agencies; and
2. Continue implementation of the new educational service contracts that will include a litter prevention emphasis.

11

Provision C.11 Mercury Controls

Introduction

Provisions in C.11 reflect the implementation plan incorporated in the Basin Plan through the Total Maximum Daily Load for mercury in San Francisco Bay. For mercury, polychlorinated biphenyls (PCBs) and other sediment-bound pollutants, the Water Board has proposed to implement control measures primarily as pilot projects that are intended to reduce uncertainties about the sources, occurrence or effectiveness of control measures for these Pollutants of Concern (POCs).

Implementation

As required in the MRP, findings and recommendations for the following provisions were reported in the Integrated Monitoring Report (IMR) which was submitted by March 15, 2014:

- C.11.b, Monitor Methylmercury;
- C.11.c, C.11.d, C.11.e, C.11.i (addressed as a group by BASMAA's Clean Watersheds for a Clean Bay (CW4CB) project);
- C.11.f, Diversion of Dry Weather and First Flush Flows to POTWs;
- C.11.g, Monitor Stormwater Pollutant Loads and Loads Reduced;
- C.11.h, Fate and Transport Study of Mercury in Urban Runoff; and
- C.11.j, Develop Allocation Sharing Scheme with Caltrans.

MRP Provisions C.11.c through Provision C.11.i for mercury are essentially identical to C.12.c through Provision C.12.i for PCBs. The MRP does not require reporting on the above provisions after the IMR; however many of the pilot projects are still in progress, and

BASMAA was granted an extension of the CW4CB grant to August 1, 2016[1]. In addition to participation in Regional Projects through BASMAA, the Program's direct activities included:

- For C.11.a, the member agencies participate in the collection and recycling of mercury containing devices and equipment through the Alameda County Household Hazardous Waste facilities. Use of these facilities is also promoted on the Program's website. The hours at the Household Hazardous Waste facilities were expanded this year. Through the four household hazardous waste facilities within the County (including Fremont), an estimated 95,058 pounds of mercury containing straight fluorescent lamps and compact fluorescent bulbs were recycled during FY 2014/15. This equates to 557,480 linear feet of straight fluorescent lamps and 126,856 compact fluorescent lamps[2]. Provision C.11.a.ii requires MRP Permittees to include an estimate of the mass of mercury collected. The estimated mass of mercury collected is based on the total amount of mercury-containing devices and equipment collected and calculated using the best available information from manufacturers and trade organizations regarding the amount of mercury in devices and equipment of interest. The estimated mass of mercury collected by Alameda County Household Hazardous Waste facilities during FY 2014/15 is 1.72 kilograms. This is an increase of approximately 30% over FY 2013/14.
- For C.11.b, Program consultants conducted methylmercury sampling at the San Leandro Creek monitoring station in conjunction with other Pollutants of Concern monitoring which was reported in the UCMR (see also section of this report for Provision C.8.e).
- Program staff participated in meetings of the Project Management Team and for the CW4CB project and oversaw design adjustments and implementation of monitoring elements for the project.
- Program staff continued working with Alameda County on construction procurement for the stormwater treatment retrofit pilot media filters to be installed at the Ettie Street Pump Station to address C.11/12.e through CW4CB Task 5, and budgeted future monitoring follow-up that complete the monitoring design prepared for CW4CB. Program staff worked with staff of the East Bay Municipal Utility District (EBMUD) and the Alameda County Public Works Agency to coordinate planning for a diversion conveyance from the Ettie Street Pump Station to EBMUD's treatment plant, (C.11/12.f).

[1] A follow-up request for extension to September 30, 2016 is being discussed with USEPA

[2] Since fluorescent light bulbs come in different sizes, quantities are reported in terms of the total pounds. The conversion factor used by Alameda County HHW facilities is: 1 linear foot equals .125 lbs and 1 CFL equals .20lbs.

Future Actions

The Program will continue its active participation and support for regional activities as described in BASMAA Work Plans, including development of progress and final reports for pilot projects through CW4CB. The Program will also continue coordination with EBMUD on diversion system planning and facilitate implementation by the Alameda County Flood Control and Water Conservation District of the pilot projects for enhanced desilting and retrofit treatment at the Ettie Street Pump Station.

12

Provision C.12 Polychlorinated Biphenyls (PCBs) Controls

Introduction

Provisions in C.12 reflect the implementation plan incorporated in the Basin Plan through the Total Maximum Daily Load for PCBs in San Francisco Bay, and their requirements and implementation approach are mostly identical with provisions in C.11 as described in the previous chapter.

Implementation

Provisions C.12.b. – C.12.i

As required in the MRP, findings and recommendations for the following provisions were reported in the Integrated Monitoring Report (IMR) which was submitted by March 15, 2014:

- C.12.b, Conduct Pilot Projects to Evaluate Managing PCB-Containing Materials and Wastes during Building Demolition and Renovation (e.g., Window Replacement) Activities;
- C.12.c, C.12.d, C.12.e, C.12.i (addressed as a group by BASMAA's Clean Watersheds for a Clean Bay (CW4CB) project);
- C.12.f, Diversion of Dry Weather and First Flush Flows to POTWs;
- C.12.g, Monitor Stormwater Pollutant Loads and Loads Reduced; and
- C.12.h, Fate and Transport Study of PCBs in Urban Runoff.

The MRP does not require reporting on the above provisions after the IMR; however many of the pilot projects are still in progress, and BASMAA was granted an extension of

the CW4CB grant to August 1, 2016[1]. In addition to participation in Regional Projects via BASMAA, the Program's direct activities for these provisions included:

- Program staff participated in meetings of the Project Management Team for the CW4CB project and oversaw design adjustments and implementation of the monitoring elements for the project.
- Program staff and consultants provided in-kind assistance to the City of Oakland in preparing documents for referring PCB source properties to regulatory agencies for clean-up in conjunction with CW4CB Task 3.
- Program staff and consultants provided in-kind assistance to the Alameda County Flood Control and Water Conservation District for clean-out and monitoring during enhanced desilting of the Ettie Street Pump Station wet wells, to support CW4CB Task 4 (C.12.d).
- Program staff continued working with Alameda County on construction procurement for the stormwater treatment retrofit pilot media filters to be installed at the Ettie Street Pump Station to address C12.e through CW4CB Task 5, and budgeted future monitoring follow-up that complete the monitoring design prepared for CW4CB.
- Program staff worked with staff of the East Bay Municipal Utility District (EBMUD) and the Alameda County Public Works Agency to coordinate planning for a diversion conveyance from the Ettie Street Pump Station to EBMUD's treatment plant, (C.12.f).
- The Program continued stormwater monitoring of PCBs and other Pollutants of Concern as described in the section for Provision C.8.e, to fulfill the requirements of C.12.g.
- Program staff reviewed materials developed for the RMP's PCB Strategy Team regarding conceptual modeling of the Bay Margins, which are a priority for understanding fate and transport of PCBs at the interface of local tributaries and the larger San Francisco Bay system (C.12.h).

Part C of the Integrated Monitoring Report outlined a multi-step PCB Implementation Planning process for identifying potential High Priority areas for PCB load reduction and appropriate management actions for these areas. The conceptual framework is based on three possible tiers of source areas based on different average PCB yields associated with existing land uses, with each tier likely to be addressed via different suites of load reduction strategies. Figure 12-1 outlines the portion of this process focusing on areas with high likelihood of being PCB sources to urban runoff. The Program staff and consultants assisted the PCB Strategy Work Group with the following steps in FY 2014/15:

[1] A follow-up request for extension to September 30, 2016 is being discussed with USEPA

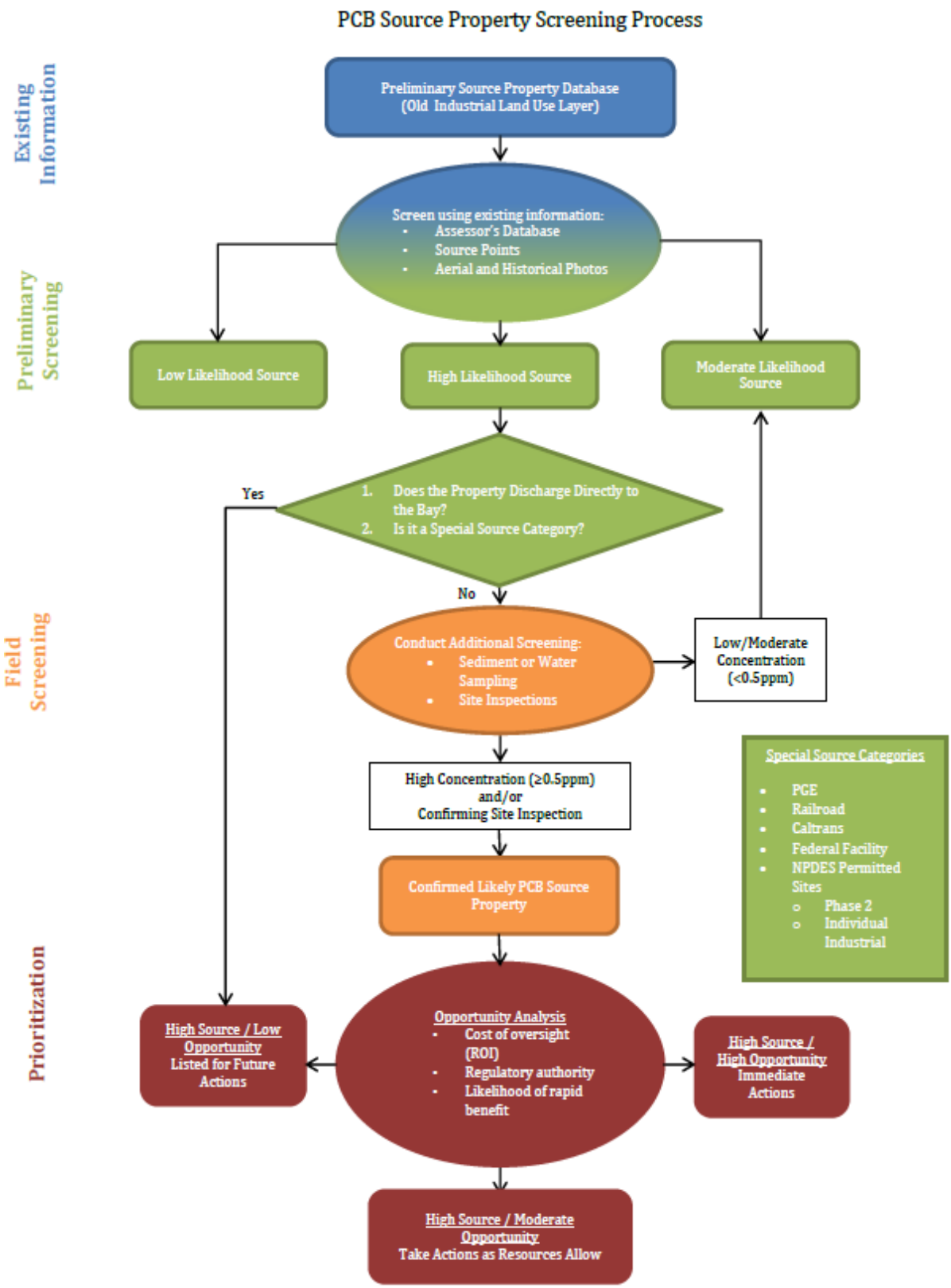


Figure 12-1. Flow Chart of Screening Process for PCB Source Properties

Identification of High Priority Areas

Preliminary maps of potential high source areas presented in the IMR were based on available data indicating the highest average PCB yields associated with industrial areas developed before 1980, and moderate levels associated with other pre-1980 urbanized areas. However the actual distribution of PCBs within these areas is heterogeneous, with individual parcels or groups of parcels either higher or lower than the average. In FY 2014/15 the Program began with its database of over 6,000 parcels in the Old Industrial land use areas mapped in the IMR; and conducted initial desktop analysis to eliminate recently redeveloped or misclassified sites, resulting in approximately 800 parcels still conservatively classified as High Likelihood Sources. Additional guidance or support was provided to Permittees on conducting windshield surveys to resolve characterization questions and identify potential sampling locations for sediment released from these parcels. An initial group of sediment sampling sites in adjacent streets and right-of-ways was identified for parts of Oakland and Hayward for sampling in early FY 2015/16, using planning documents described in the section of this report for provision C.8.e.

Identification of PCB Load Reduction Opportunities

This step includes identifying existing enhanced control measures that have been implemented since 2002, and working with relevant Permittees to select enhanced control measures for identified High Opportunity areas. In FY 2014/15 the Program assisted the City of Oakland in selecting early implementation enhanced control measures for high priority sites in the Ettie Street Pump Station pilot watershed. This will provide a template for similar selection processes in other High Opportunity areas newly identified through the screening process.

Assess Candidate Control Measures

In this step, the effectiveness, cost, ease of implementation, and other benefits for candidate enhanced control measures for High Opportunity source areas are evaluated, In FY 2014/15 Program consultants outlined a Focused Implementation Plan for the Ettie St. Pump Station watershed to document available information for early implementation enhanced control measures in this pilot watershed.

Compile Plan Identifying Control Measures and Schedule.

To prepare the implementation plans, the results of the previous steps will be combined, and a process or criteria for renewals and update will be established. Additional efforts included:

- Program staff and consultants began a review of several sites with previously completed PCB clean-ups, to improve the application to this type of site of the load reduction calculation methods drafted in the IMR.
- Program staff provided comments to the Bay Area Air Quality Management District on draft Emissions Minimization Plans prepared by an Oakland metal shredding facility, suggesting additional management measures to reduce PCB discharge from this and similar facilities in the Bay Area.

Provision C.12.a. Incorporate PCB Identification into Industrial Inspections

Program staff and consultants provided an update on PCB source identification at its annual training for Industrial Inspectors described in the section for Provision C.4.

Future Actions

The Program will continue participation in meetings and oversight of CW4CB projects and PCB studies sponsored by the RMP. Program staff will also facilitate construction and effectiveness monitoring of pilot treatment filters at the Ettie Street Pump Station, and support implementation of EBMUD's diversion project.

The Program and the Permittees will also continue TMDL implementation planning activities including:

- Continuing sediment sampling to confirm likely PCB source properties.
- Assisting Permittees with preparation of site referrals for abatement as appropriate.
- Completing the source property screening process to produce updated maps and lists of High Priority management areas, and evaluating opportunities for other control measures such as enhanced sediment management to minimize release of PCB-bearing sediment.
- Using a refinement of calculation approaches in the IMR to assess the aggregate PCB load reductions that may result from various control measures implemented during the permit term, or previously implemented but not accounted for in the IMR.
- Coordinating with municipal planning processes (e.g. Green Infrastructure planning) to identify potential PCB reduction opportunities in the Moderate Opportunity areas and where available funding opportunities may be leveraged for multiple-objective projects.
- Other special studies and regional projects as required by the reissued MRP.

13

Provision C.13 Copper Controls

Introduction

The requirements of Provision C.13 reflect the copper management strategy incorporated in the Basin Plan amendment for Site Specific Objectives for copper in San Francisco Bay.

Implementation

The following requirements are being implemented as a BASMAA Regional Project or through Permittees' membership in the Regional Monitoring Program:

- C.13.c, Vehicle Brake Pads; and
- C.13.e, Studies to Reduce Copper Pollutant Impact Uncertainties.

In addition to the above, the Clean Water Program's direct activities included:

- C.13.e. Program staff participated in the RMP Exposure and Effects Workgroup to oversee continuing or follow-up studies to address uncertainties in sources of toxicity to San Francisco Bay benthos and the olfactory systems of salmonids in varying conditions of salinity.

Provision C.13.c Vehicle Brake Pads[1]

This MRP provision requires Permittees to engage in efforts to reduce the copper discharged from automobile brake pads to surface waters via urban runoff. 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

[1] Text provided by BASMAA Executive Director Geoff Brosseu

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)[2]. 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 13-1. Implementation Timeline for SB 346 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.
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:

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

- 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 respects[3]. CASQA's engagement 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,

[3] 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 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

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 delivering 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 Law[4], as well as reviewed and submitted comments on the revised draft informal regulations[5]. 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[6] 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 is required by January 2015 in Washington.
- 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.

[4] Comments on Draft Informal Regulations for Brake Friction Material Law, CASQA, September 2, 2014.
[5] CASQA Response to 15-day Comment Period on the Revised Informal Draft Regulations for the California Brake Pad Law, CASQA, December 5, 2014
[6] https://fortress.wa.gov/ecy/publications/publications/1304011.pdf

Figure 13-1. Leaf Mark Logo for Packaging to Certify Compliance with Washington Better Brakes Law

Certification

An independent certification organization, NSF, certifies pads for compliance with the toxic metals, asbestos, and copper standards[7].

DTSC has assigned enforcement staff to this new program and they have been involved in discussions with the 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. A summary of the data is available on the Department of Ecology website[8]. Progress in reducing these constituents in brake friction materials may now be tracked at http://www.ecy.wa.gov/programs/hwtr/laws_rules/BBtracking.html

Education

Both states have developed websites (California[9] and Washington[10]) 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.

[7]See the certification website at http://www.nsf.org/services/by-industry/automotive/friction-material/ and certified product list at http://info.nsf.org/Certified/autorp/listings.asp?standard=SAEJ2975

[8] http://www.ecy.wa.gov/programs/hwtr/laws_rules/baseline.html

[9] http://www.dtsc.ca.gov/PollutionPrevention/BrakePads.cfm

[10] http://www.ecy.wa.gov/programs/hwtr/betterbrakes.html

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 letter[11]. 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 2014/15, 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*

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

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.

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 metric.*
>
> *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."*

Provision C.13.e Studies to Reduce Copper Pollutant Impact Uncertainties

In FY 2014/15 the RMP completed two studies addressing uncertainties about potential copper effects in San Francisco Bay:

- A follow up study[12] 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

[12] http://www.sfei.org/documents/impact-dissolved-copper-olfactory-system-juvenile-salmon-phase-ii-effect-estuarine

salmon from toxicity under water conditions likely to be present in various segments of San Francisco Bay.

- Another study[13] 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 estuaries (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

The Program will continue its participation and support for regional activities as described in BASMAA Work Plans and through the RMP.

[13] http://www.sfei.org/documents/effects-kaolin-clay-amphipod-eohaustorius-estuarius

14

Provision C.15 Exempted & Conditionally Exempted Discharges

Introduction

This section of the report describes the countywide activities conducted to help the Clean Water Program's member agencies to implement the requirements of the MRP's Provision C.15 Exempted and Conditionally Exempted Discharges. The Clean Water Program'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 MRP describes a variety of different types of non-stormwater discharges that may be conditionally exempted. The most extensive tracking, monitoring, and reporting requirements are for planned and unplanned potable water discharges by water purveyors. The only Clean Water Program's member agencies that are water purveyors are the Cities of Hayward, Livermore, and Pleasanton and the Zone 7 Water Agency. Because there are so few water purveyors covered by the MRP, this MRP provision has had a low priority for countywide implementation.

Implementation

Information about each agency's activities to comply with this MRP provision is contained in the agencies' reports.

Future Actions

The Clean Water Program will work with BASMAA's Municipal Operations Committee to identify any conditionally exempted discharge requirements that may be implemented more efficiently on a regional basis.

Appendix A

Provision C.2 Municipal Operations

- Innovations in Municipal Maintenance Workshop October 29, 2014
    - Effectiveness and Evaluation Summary
    - Agenda
    - Attendance Sheets

Post-Workshop Report: Innovations in Municipal Maintenance Workshop

The workshop was held on October 29, 2014, at San Leandro Marina Community Center (Titan Auditorium). The workshop ran from 8:00 a.m. to 12:00 p.m. A total of 72 representatives from 14 local agencies attended the workshop. The workshop focused on *Innovations in Municipal Maintenance*. Presentations included an overview of BigBelly solar waste containers; custom power washing equipment utilizing water recycling, an anti-graffiti mural program, and pilot studies on street sweeping and tree wells. During the break, a field demonstration of the power-washing equipment was provided.

WORKSHOP EVALUATION

A total of 56 (78%) of the 72 participants completed evaluations. The overall average rating of the workshop was 3.34, out of a maximum of 4.0. Overall, the participants stated they found the information valuable, especially the *Anti-Graffiti/Mural Program* presentation (18 mentions), the *Update on Stormwater Treatment Pilot Studies for Street Sweeping and Tree Wells* presentation (9 mentions), and the *BigBelly Solar Waste Containers* presentation (7 mentions). Others stated that the opportunity to learn about other agencies' innovative programs was valuable (7 mentions).

Evaluation Item	**Average Rating (out of 4)[1]**
The presentations were clear and easy to follow.	3.34
Overall, the order/progression of the presentations was appropriate.	3.41
Overall, the workshop topics were informative and relevant to me.	3.32
I will use the information learned in the workshop today on the job.	3.04
The presenter(s) were knowledgeable in the subject matter.	3.50
The presenter(s) encouraged questions.	3.56
Presentations addressed current issues and concerns of the participants.	3.19
Overall Rating	**3.34**

Note:
1 = Strongly Disagree, 4 = Strongly Agree

Future workshop needs/topics identified by the respondents included, but were not limited to:

- More Hands-On Activities
- Upcoming Regulatory Requirements
- Trash Capture Devices and Studies
- Bioswales

Attachments:

- Workshop Agenda
- Evaluation Results
- Sign-in Sheets

Wednesday, October 29, 2014
8:00 AM – 12:00 PM
San Leandro Marina Community Center
Titan Auditorium
15301 Wicks Blvd.
San Leandro, CA 94579

Innovations in Municipal Maintenance Workshop

Agenda

Check-in and Refreshments		**8:00-8:30**
Introductions	Patrizia Guccione, City of Alameda	8:30-8:45
BigBelly Solar Waste Containers	Jeffrey Van Eck, City of Oakland	8:45-9:15
Custom Power Washing Equipment Utilizing Water Recycling	Robert Newman, City of Oakland	9:15-9:45
Break and Field Demonstrations	Robert Newman, City of Oakland Howie Ditkof, J & S Equipment	**9:45-10:30**
Anti-Graffiti/Mural Program	Stacey Bristow, City of Hayward	10:30-11:00
Update on Stormwater Treatment Pilot Studies for Tree Wells and Street Sweeping	Rebecca Tuden, City of Oakland	11:00-11:30
Closing Remarks and Questions	Patrizia Guccione, City of Alameda	11:30-11:45
Complete Evaluations and Receive Certificates	All	11:45-12:00

Summary of "Innovations in Municipal Maintenance" Completed Workshop Evaluation Forms - October 29, 2014

Total Number of Agencies	What is your primary job function?	The presentations were clear and easy to follow.	Overall, the order/progression of the presentations was appropriate.	Overall, the workshop topics were informative and relevant to me.	I will use the information learned in the workshop today on the job.	The presenter(s) were knowledgeable in the subject matter.	The presenter(s) encouraged questions.	Presentations addressed current issues and concerns of the participants.	Overall Rating	Total Number of Surveys	Total Number of Attendees	Evaluation Return Rate
14	N/A	3.34	3.41	3.32	3.04	3.50	3.56	3.19	3.34	56	72	78%

Agency	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	What was most valuable about today's training?	What was least valuable about today's training?	Do you have any suggestions for improvement?	What subjects would you like to see in future workshops?	Other Comments
City of Hayward	Other: Street Maint.	3	3	3	3	3	3		Big Belly Containers	Food			
City of Fremont	Stormwater Program Staff/Manager	3	3	4	3	4	4	3	Power washer recycling	Tree wells	Everything was very informative	Bioswales	N/A
City of Fremont	Park Maint.	3	4	3	4	3	4	3	Mural Arts program, because it takes away graffiti.	No water bottles	I think before we had hands on training. They should bring all parts to train.		Turn on the microphone or speak louder. It was okay, my first time.
City of Newark	Stormwater Program Staff/Manager	2	3	2	2	3	3	1	Hayward's Mural Art Program	Oakland's pressure washer	PA System was terrible. Presenters need to be more prepared.	People dumping sewage in DI's	N/A
City of Newark	Stormwater Program Staff/Manager	2	2	2	2	2	2	2					
City of Hayward	Stormwater Program Staff/Manager	3	3	3	4	4	4	4	Learning new strategies	N/A	Learn more about different style trash collectors and better way to maintenance the drains.	More of different opinions how different cities work.	Better sound quality
City of Oakland	Other: Supervisor	4	4	4	4	4	4	4	All	N/A	None		
City of Fremont	Stormwater Program Staff/Manager	4	4	4	4	4	4		We're all in this together. Learning about new equipment/techniques and taking another look a few years later- lessons learned.		Include contact info for presenters	Show me the numbers! Is the program working? Education and public support.	Thank you! Well worth my time and that of the Fremont Team.
County of Alameda	Other	3	3	2	2	4	4	3					
City of Pleasanton	Stormwater Program Staff/Manager	4	4	3	2	3	4	3	PCB study and trash capture				
Public Works		2	1	1	1	1	2	1		the "demonstration"	Talk with the workers to see what works	Finding cheaper ways to build	
City of Berkeley	Stormwater Program Staff/Manager	3	3	3	3	3	3	2	Reduce the trash burden	Not being able to see how the pressure washer & vaccum actually worked	Bring the items that are needed for demos.	More info on trash captures studies	No
County of Alameda	Other: Labor	3	3	4	3	4	4						
City of Emeryville	Stormwater Program Staff/Manager	4	4	4	4	4	4	4	I loved the practical, boots-on-the-ground info.		It might be good to add a lunch element and recruit agency staff to discuss other programs or equipment they're using at various lunch tables.	Roadway Stormwater Capture strategies. Trash Capture devices- types & maintenance experience.	Thanks
County of Alameda	Other: Clean Storm Drains	3	4	4	3	4	4						
	Stormwater Program Staff/Manager	3	3	3	3	3	3	3					
M.C.E. Dublin	Other: Maint. Crew Lead	4	4	4	4	4	4	3	Future & updated progression of city maint. Innovations	All good vital information in some way. Future of street & park maint.	More demonstrations: trash compactors, graffiti/mural	Park Maint., More future ideas to improve city/park maint.	Good presentations. Thank you!
M.C.E. Dublin	Other: Crew Leader, Maint.	4	4	3	3	4	4	4	The presentation and information given	Nothing was least valuable. All the information given was very informative.	No, it was very informative.	Air safety	No. Thank you for all of the information given.
City of Oakland	Stormwater Program Staff/Manager	4	3	3	3	3	3	3					
County of Alameda	Other	4	4	3	3	4	4	4					
County of Alameda	Other	4	4	4	3	3	4	4	Clean water recycling water- City of Oakland, Mural Arts Program - City of Hayward, Tree wells & street sweeping - City of Oakland				
County of Alameda	Other: County	4	4	4	4	4	4	4				Big Belly Solar Containers	
City of Union City	Stormwater Program Staff/Manager	3	3	3	2	3	3	3	CDS Units/street sweeping, power washer demo		More street sweeping issues	Sweeper maintenance to improve sweeping performance.	
County of Alameda	Stormwater Program Staff/Manager	3	3	3	3	2	3	3	Stormwater treatment	Graffiti		More hands on	
City of Alameda	Other	3	4	4	2	3	4	3	Stormwater pilot studies	N/A	No	N/A	Good workshop
City of Piedmont	Other: Street sewers	4	4	3	3	4	4	4	Big Belly Containers			Creek & watershed cleaning	None
City of Alameda	Other	4	4	4	4	4	4	4	New, solar, meeting other city workers and sharing info., tree wells, graffiti	None- very good	No- I enjoyed and it was very informative	Sidewalk repair	I would go again, thank you.
City of Newark	Stormwater Program Staff/Manager	3	3	3	2	3	3	3	Learning about Hayward Art program	Oakland's tree well program	The sound system was of poor quality. I could hear better when they spoke w/o the mic. The speaker sounded like they were mumbling when using the mic - worked so much better once they turned on the mic.		
City of Union City	Other	3	3	3	3	3	3	3					
City of Berkeley	Other: Public Works Supervisor	4	4	4	3	3	4		Anti-graffiti	Tree wells		Homeless encampments and what to store.	
City of Berkeley	Engineer	4	3	4	2	4	4	3					
City of Emeryville		3	3	3	3	3	3	2					
City of Berkeley	Other: Sewer PWS	3	3	3	3	3	3	3	Mural Arts, Power washing				
City of Berkeley	Stormwater Program Staff/Manager	3	3	3	2	3	3	3	Mural Art to combat graffiti	Big Belly		Leaf removal plan/program	
City of Oakland	Stormwater Program Staff/Manager	3	3	3	2	3	3	3					
	Stormwater Program Staff/Manager	3	3	4	3	4	3	3	Big Belly Solar	Anti-graffiti program			

Innovations in Municipal Maintenance
October 29, 2014

Last Name	First Name	Agency	Signature
Beyene	Melese	Alameda County Public Works Agency	
Filppi	Dennis	Alameda County Public Works Agency	
Gosselin	Sharon	Alameda County Public Works Agency	
Leonard	Greg	Alameda County Public Works Agency	
Luera	David	Alameda County Public Works Agency	
McCoy	Chris	Alameda County Public Works Agency	
Persons	Joe	Alameda County Public Works Agency	
Real	Amanda	Alameda County Public Works Agency	
Rodgers	Tristan	Alameda County Public Works Agency	
Tsurui	Jeff	Alameda County Public Works Agency	
Urista	Andy	Alameda County Public Works Agency	
Verdile	Anthony	Alameda County Public Works Agency	
Wentsel	Jason	Alameda County Public Works Agency	
Scanlin	Jim	Alameda Countywide Clean Water Program	
Castro	Teresa	City of Alameda	
Edmunds	Joe	City of Alameda	

Innovations in Municipal Maintenance

October 29, 2014

Last Name	First Name	Agency	Signature
Guccione	Patrizia	City of Alameda	Patrizia Guccione
Payopay	Pat	City of Alameda	
Akagi	Danny	City of Berkeley	
Danielson	George	City of Berkeley	
Navarro	Ricky	City of Berkeley	
Ross	Kerk	City of Berkeley	
Valencia	Jaime	City of Berkeley	
Davies	Chris	City of Dublin (MCE)	
Wright	Albert	City of Dublin (MCE)	
Hudson	Jamall	City of Emeryville	
Humphrey	Nancy	City of Emeryville	
Burnet	Rich	City of Fremont	
Daquioag	Anthony	City of Fremont	
Fisher	Derick	City of Fremont	
~~Heredia~~ Fernandez	~~Rafael~~ Ray	City of Fremont	emoreira@fremont.gov
~~McDaniel~~ Booth	~~Shaun~~ Savannah	City of Fremont	

email Stacey's contact:
bmann925@yahoo.com
msisto@mce-corp.om

Innovations in Municipal Maintenance
October 29, 2014

Last Name	First Name	Agency	Signature
~~Nava~~ moreira	~~Frank~~ Ernie	City of Fremont	emoreira@fremont.gov
Price	Roland	City of Fremont	
Ruelas	Joel	City of Fremont	
Shonk	Kathleen	City of Fremont	
Wheeler	Robert	City of Fremont	
Affonso	Rod	City of Hayward	
Bourasa	Craig	City of Hayward	
~~Mitchell~~ chavez	~~Robert~~ alvaro	~~City of Hayward~~ city of Hayward	
Quintero	Armando	City of Hayward	
Rullman	Todd	City of Hayward	
Sanders	John	City of Hayward	
~~Schilling~~ Ramos	~~Jerry~~ Sam	~~City of Hayward~~ city of Hayward	
Wilfong	Elisa	City of Hayward	
Bristow	Stacey	City of Hayward	
Browning	Jonathan	City of Livermore	
Franklin	Kris	City of Livermore	

Innovations in Municipal Maintenance
October 29, 2014

Last Name	First Name	Agency	Signature
Wells	Mike	City of Livermore	
Carey	Sue	City of Newark	
Costa	Robert	City of Newark	
Gordon	Brandon	City of Newark	
Marino	Steve	City of Newark	
Mattos	John	City of Newark	
Mulhearn	Mike	City of Newark	
Newman	Robert	City of Oakland	
Van Eck	Jeffrey	City of Oakland	
Lonestar	David	City of Oakland	
Johnson	Billy	City of Oakland	
Nervis	Gerald	City of Oakland	
Rayford	Ken	City of Oakland	
Satterfield	Lemar	City of Oakland	
Tuden	Rebecca	City of Oakland, Public Works Dept.	
Espinosa	Angelo	City of Piedmont	

Innovations in Municipal Maintenance
October 29, 2014

Last Name	First Name	Agency	Signature
Lopez	Leo	City of Pleasanton	
Walker	Scott	City of Pleasanton	
Lemmo	Frank	City of San Leandro	
Mendoza	Luis	City of San Leandro	
O'Connor	Don	City of San Leandro	
Orta	Rick	City of San Leandro	
Ramos	Joel	City of San Leandro	
Duran	Albert	City of Union City	
Espinoza	Alex	City of Union City	
Fitch	Ray	City of Union City	
Landers	Anthony	City of Union City	
Lenoci	John	City of Union City	
Medrano	Edward	City of Union City	
Moscoso	James	City of Union City	
Munoz	Max	City of Union City	
Munoz	Javier	City of Union City	

Innovations in Municipal Maintenance
October 29, 2014

Last Name	First Name	Agency	Signature
Roman	Paul	City of Union City	
Vinson	Shawn	City of Union City	
Watson	Ric	City of Union City	Ric Watson
Bonilla	Jason	City of Fremont	Jbonilla@fremont.gov
Lopez	Ernesto	City of Fremont	

Appendix B

Provision C.3 New Development & Redevelopment

- Workshop on C.3.h Inspection of Operation and Maintenance, October 16, 2014
    - Agenda
    - Attendance Sheets
    - Effectiveness and Evaluation Summary
- Biotreatment Soil Mix Documents
    - Updated Vendor List
- BASMAA LID White Paper Executive Summary

Post-Workshop Report: NDS Training Workshops for Fiscal Year 2014-2015

The Clean Water Program New Development Subcommittee (NDS) sponsored two training workshops in Fiscal Year 2014-2015. A specialty workshop on the *Inspection of Low Impact Development (LID) Best Management Practices (BMPs)* was held on October 16, 2014, and a workshop on *Inspecting Erosion and Sediment Control BMPs* was held on March 5, 2015.

The 2014-2015 Training Workgroup was responsible for planning the two workshops. Workgroup members are identified below.

Shannan Young	City of Fremont (Subcommittee Chair)
Abbas Masjedi	City of Pleasanton
Justin Laurence	Alameda County
David Swartz	City of Fremont
Jim Scanlin	Clean Water Program
Peter Schultze-Allen	EOA
Sandy Mathews	Larry Walker Associates

C.3 SPECIALTY WORKSHOP

The workshop was held on October 16, 2014, at Hayward City Hall. The workshop focused on C.3 requirements and, in particular, inspections of LID BMPs. Two modules were presented to address inspections during construction, as well as ongoing inspections. The full workshop ran from 8:30 to noon. A total of 69 representatives from the member agencies attended the workshop, with most attending both modules. This workshop helped to fulfill training requirements in both C.3 and C.4 because, in some jurisdictions, staff conducting business inspections are also responsible for ongoing inspections of LID devices.

Module 1 provided training on what to look for during the construction phase inspections of the LID and hydromodification systems. The target audience for this module was staff conducting construction site inspections where LID BMPs are being installed. Module 2 provided training on what to look for during the post-construction verification inspections. The target audience for this module was staff conducting the ongoing operations and maintenance verification inspections of C.3 systems. Materials from the workshop were made available to member agencies on the Clean Water Program website for in-house training.

Effectiveness Assessment and Workshop Evaluation

Given the specialty nature of this workshop, an effectiveness assessment was not conducted, but a course evaluation was completed by the participants.

A total of 47 (68%) of the 69 participants completed evaluations. The overall average rating of the workshop was 3.37 out of a maximum of 4.0. Attendees identified they found the examples and experience of the presenter (a former City of Fremont inspector) very valuable.

Evaluation Item	Average Rating (out of 4)[1]
The presentations were clear and easy to follow.	3.35
Overall, the order/progression of the presentations was appropriate.	3.47
Overall, the workshop materials and handouts were informative and useful.	2.96
I will use the skills learned in the workshop today on the job.	3.19
The presenter(s) were knowledgeable in the subject matter.	3.64
The presenter(s) encouraged questions.	3.61
Overall Rating	**3.37**

Note: 1 = Strongly Disagree, 4 = Strongly Agree

Future needs identified by the respondents included the following:

- Glossary of terms for newer staff
- Field inspections of installed devices
- Detailed review of device design submittals (open this up to local design firms)
- Managing inspection data
- Integration of BMP design with other building standards (e.g., ADA)
- Principles of LID BMP operation – how they work
- Case studies of installed devices

Attachments:

October 16, 2014 Workshop
Evaluation Results
Workshop Agenda
Sign-in Sheet

Inspecting Permanent Stormwater Treatment Controls

October 16, 2014

Hayward City Hall
777 B Street, Hayward CA
Council Chambers, 2nd Floor

Topic	Speaker	Time
Check in //Refreshments		
1. Welcome	Shannan Young, City of Fremont	8:45-9:00
2. Module 1 Installation Inspections • *Inspecting Installation of Treatment Measures* • *Inspections of Hydromodification Measures* • *Final Approval* • *Q & A*	Tim Berger Stormwater Consultant	9:00-10:30
Break Between Modules		
3. Module 2 O&M Verification Inspections • *O&M Inspections* • *Q & A*	Tim Berger Stormwater Consultant	11-Noon
4. Wrap up *Complete post-workshop evaluation and pickup completion certificate*	Shannan Young, City of Fremont	

INSPECTING PERMANENT STORMWATER TREATMENT CONTROLS
OCTOBER 16, 2014

Last Name	First Name	Agency	Signature
Chan	Barney	Alameda County Environmental Health	
Orduna	Rodrigo	Alameda County Planning Department	
Laurence	Justin	Alameda County Public Works Agency	
Scanlin	James	Alameda Countywide Clean Water Program	
Shankel	Erin	AMEC	
Jim ~~Suribhatla~~	~~Raghu~~	AMEC	
Swann	Micah	AMEC	
Brathwaite	Sam	APCWA/Ground Zone	
Jones	Tony	APCWA/Ground Zone	
Aikenhead	Diana	City of Berkeley	
Akagi	Danny	City of Berkeley	
Andreetta	Colleen	City of Berkeley	
Irby	Don	City of Berkeley	
Lancelot	Taylor	City of Berkeley	
Merry	Adrian	City of Berkeley	
Ranada	Ron	City of Berkeley	

INSPECTING PERMANENT STORMWATER TREATMENT CONTROLS
OCTOBER 16, 2014

Last Name	First Name	Agency	Signature
Roshal	Mike	City of Berkeley	
Rushing	Roger	City of Berkeley	
Valencia	Jaime	City of Berkeley	
Humphrey	Nancy	City of Emeryville	
Javier	Maria	City of Fremont	
Madrigal	Jesus	City of Fremont	
Matlock	Daniel	City of Fremont	
Rego	David	City of Fremont	
Rott	Tim	City of Fremont	
Shih	Ken	City of Fremont	
Swartz	David	City of Fremont	
Travis	Lyle	City of Fremont	
Young	Shannan	City of Fremont	

INSPECTING PERMANENT STORMWATER TREATMENT CONTROLS
OCTOBER 16, 2014

Last Name	First Name	Agency	Signature
Del Rio	Miguel	City of Hayward	
LEUTERIO	ADRIAN		
~~Fanuncio~~	~~Jim~~	City of Hayward	
Freeman	Will	City of Hayward	
Lear	James	City of Hayward	
Perez	Alejandro	City of Hayward	
Pulu	Paulo	City of Hayward	
Rosenberg	Jaime	City of Hayward	
Sarwary	Bashir	City of Hayward	
Taha	Mustafa	City of Hayward	
Titus	Geoff	City of Hayward	
Torres	Dave	City of Hayward	
Whipple	Jason	City of Hayward	
Wilfong	Elisa	City of Hayward	
Follenfant	Bob	City of Livermore	
Inthavong	Hamm	City of Livermore	

INSPECTING PERMANENT STORMWATER TREATMENT CONTROLS
OCTOBER 16, 2014

Last Name	First Name	Agency	Signature
Tingley	Bob	City of Livermore	
Bola	Raminder	City of Newark	
Carmen	Michael	City of Newark	
Fajeau	Soren	City of Newark	
Campos	Rafael	City of Oakland	
Hathaway	Kristin	City of Oakland	
Nowacki	Andrew	City of Oakland	
Geigle	Rob	City of Pleasanton	
Lopez	Leo	City of Pleasanton	
Masjedi	Abbas	City of Pleasanton	
Maxwell	Ken	City of Pleasanton	
Messa	Mark	City of Pleasanton	
Walker	Scott	City of Pleasanton	
Williams	Bob	City of Pleasanton	
Camp	John	City of San Leandro	
Denis	David	City of San Leandro	
Guiterrez	Daniel	City of San Leandro	

INSPECTING PERMANENT STORMWATER TREATMENT CONTROLS
OCTOBER 16, 2014

Treece	Tiffany	City of San Leandro	
Guiterrez	Jose	City of San Leandro	
Schaffer	Mike	City of San Leandro	
Toste	Phillip	City of San Leandro	
Azim	Farooq	City of Union City	
Fitch	Ray	City of Union City	
Flood	John	City of Union City	
Hobbs	Johnny	City of Union City	
Roman	Paul	City of Union City	
Vinson	Shawn	City of Union City	
Schultze-Allen	Peter	EOA	
Johnson	Marcus	West Coast Code Consultants, Inc. (w/City of Emeryville)	
Rose	Chris	West Coast Code Consultants, Inc. (w/City of Emeryville)	
Schneiderjohn	Eric	West Coast Code Consultants, Inc. (w/City of Emeryville)	
Moshier	Emily	Zone 7 Water Agency	
mod 1 JAHAN	ISHRAT	CITY OF OAKLAND	
mod 1 Sem	Sophea	City of Oakland	
Young	Haely	AMEC	
Lau	Danny	City of Oakland	

cleanwater PROGRAM

INSPECTING PERMANENT STORMWATER TREATMENT CONTROLS

OCTOBER 16, 2014

ROSSI	BALE	CITY OF ALBANY	JIM ROSS
MACH	RANDY	City of OAKLAND	

Summary of C.3.h Inspections Workshop Evaluation Form - October 16, 2014

What is your primary job function?	The presentations were clear and easy to follow	Overall the order/progression of the presentations was appropriate	Overall, the workshop materials and handouts were informative and useful	I will use the skills learned in the workshop today on the job	The presenter(s) were knowledgeable in the subject matter	The presenter(s) encouraged questions	Total number of surveys
	3.35	3.47	2.96	3.19	3.64	3.61	47

Note ratings are on a scale of 1-4; with 1 being the lowest and 4 being the highest.

Q1	Q2	Q3	Q4	Q5	Q6	Q7	What was most valuable about today's training?	What was least valuable about today's training?	Do you have any suggestions for improvement?	What subjects would you like to see in future workshops?	Other Comments
Inspector	3	3	3	2	3	3	Types of Bio-Retention		Better Accoustics	Some problems	
Inspector	3	3	3	3	3	3					
Engineer	4	4	3	4	4	4					
Inspector	4	3	3	3	4	4					
Inspector	3	3	3	3	4	4	Visuals	Forms		Compliance-Integration w/other building standards. ie: ADA	
Inspector	3	3	2	2	3	3					
Engineer	3	4	3	4	4	3					
Inspector	3	4	3	3	4	4			Have the printed copies of the presentation more legible, bigger size.		
Engineer/Inspector	4	3	3	4	3	3					
Inspector	3	3	3	3	3	4	Review of real world conditions		No laser pointer used to review on screen. Handouts too small to review later, should be one sheet per page.	C3 Guideline handouts	
Planner	3	3	3	3	4	4	Slides	Indoor training session; need for real-life at the site presentations.	On-site field trip to see these installations live.	Plan-checking Stormwater	
Inspector	3	3	2	3	4	4					
Stormwater Program Staff/Manager	4	4	4	4	4	4	The pictures! More pictures next time please!	Not enough time spent on the O/M inspection and enforcement section. Case studies would be nice!	Not enough time spent on the O/M inspection and enforcement section. Case studies would be nice!	How to enforce O/M agreement violations	Need a yearly training like this!
Inspector	4	4	4	4	4	4					
Engineer	4	4	2	4	4	3	Great slides		Handouts too small to read and would be nice if they were in color.		Please provide presenter w/pointer.
Plan Reviewer/Inspector/Stormwater Program Staff/Manager	3	4	3	4	4	4	Process of review & Inspections	n/a	Keep photos! Provide speaker w/ a pointer.	How to work w/paperwork & forms, Who to hold responsible	
Engineer	3	4	3	4	4	4					
Scientist	3	3	2	3	4	4	The explanation on the photos included that were related to problems with design and explanation of fixes. Also the Q&A.	Handout slides were hard to read or unable to be read.	Use slides that are easier to read		
Stormwater Program Staff/Manager	4	4	2	2	4	4	Trainer's experience shared	n/a	Follow-up field visit for actual/real-time inspection.		none
	4	4	3	4	4	4	O/M inspection items	did not see any	no	Rain detaining train/models/information	
Other: Facilities & Maint. Mgr	4	4	3	4	4	4	Photo examples	Cannot read some of handout because it is too small.	Pointer for presentation. Hard to follow without it. Do not put up 2 photos of something- Not necessary & kept thinking they are before & after.		
Stormwater Program Staff/Manager	4	4	4	4	4	4					
Inspector	1	1	1	1	1	1	All of the information presented was useful.				
Inspector	4	4	4	4	4	4	The instructor's experience & the format of presentation	n/a	More time, examples & work exercises in smaller groups.	Data management & reporting process	n/a
Engineer	3	4	4	1	4	4	The speaker's knowledge hands-on.	It felt a bit rushed given his many examples he had for sharing.	Make it about one hour longer.		Very informative and helpful. Very thankful for this opportunity to attend!
Engineer	1	1	1	1	1	2					
Inspector	4	4	3	3	4	3	All		More photos in the slides		Tim did a great job/ a lot of information
Inspector	4	4	4	4	4	4					
Plan Reviewer/Inspector/Stormwater Program Staff/Manager	4	4	3	3	4	4	Learning how local jurisdictions operate.	The presentation on the sub grade retention systems.		The standards that drive these programs- What are the governing standards.	None- thanks for the class
Plan Reviewer/Inspector/Stormwater Program Staff/Manager	4	4	3	4	4	4	Overview of Bio Swels		Get a little more in-depth on each system.		
Inspector	2.5	3	2.5	3	3	3			Pictures in handout & projector too hard to see. A white board would have added.	A general assumption was made that everyone had seen the various stormwater devices before.	Sound system is muddled- hard to hear.
	3	3	3	2	4	4					

Summary of C.3.h Inspections Workshop Evaluation Form - October 16, 2014

What is your primary job function?	The presentations were clear and easy to follow	Overall the order/progression of the presentations was appropriate	Overall, the workshop materials and handouts were informative and useful	I will use the skills learned in the workshop today on the job	The presenter(s) were knowledgeable in the subject matter	The presenter(s) encouraged questions	Total number of surveys
	3.35	3.47	2.96	3.19	3.64	3.61	47

Note ratings are on a scale of 1-4; with 1 being the lowest and 4 being the highest.

Q1	Q2	Q3	Q4	Q5	Q6	Q7	What was most valuable about today's training?	What was least valuable about today's training?	Do you have any suggestions for improvement?	What subjects would you like to see in future workshops?	Other Comments
Inspector	4	4	4	4	4	4	Refreshments			I would like a module that explains how different treatment measures work.	Great job Tim!
Inspector	4	4	4	4	4	4					
Engineer	3	4	3	4	4	4	Examples of proper & improper installations		Photographs & examples need to be clearer. Difficult to see problems in photographs of problem installations.		
Inspector	3	3	3	3	3	3	The information provided.			Field inspection for crews that need to service.	
Engineer/Inspector	4	4	4	4	4	4	Examples, Q & A				
Inspector	3	3	2	4	4	4	Reinforce knowledge of C.3 installation	All good.	Make visual aids and handouts easier to read.	More C.6 training w/ multiple dates.	Visual aids & handouts difficult to see.
Stormwater Program Staff/Manager	3	3	3	3	4	3	Photos of installations	The documents in the presentations aren't readable. If they were the size of the entire slide it might be better.	photos, and finished photos of different types of installations would be very useful.	On-site O&M inspections	Thanks
Engineer	4	4	3	4	4	4	As an engineer, it was good to see the installation/inspection side of the treatment measures.	Nothing, lots of good information.	n/a	Design & review of treatment measures in more specifics, maybe opened up to local professionals as well as local agencies.	
Stormwater Program Staff/Manager	2.5	3	2.5	2	3.5	3.5	All good information, good info from P.S. Allen provided. Good info from questions.		Make all slides visible & legible.	A glossary of terms for us novices.	Speaker could speak slower & enunciate. Please have a laser pointer available.
Inspector	3	3	2	3	3	3		Some of the slides were hard to see & understand what is taking place.	Presenter needs a laser pointer to help him when describing slides.		
Inspector	4	4	2	4	4	4			biotreatment checklist sheets & attachments so you are able to read them. Also, larger cross section drawings so you can see the details better.		
Inspector	3	3	1	3	4	3			Handouts were too small to read.		
Engineer	3	4	3	2	4	4	Pictures of what to look for during inspections	Slides of forms.	Arrows on slides pointing to discussion points on photos.		Thank you!
Stormwater Program Staff	4	4	3	4	4	4	Real world examples- walking us through "what went wrong" issues. Pointing out key points to keep in mind during inspections.	Some of "sample forms" included in the presentation were hard to read/see didn't add to the training.	Some of the diagrams in the presentation were too small to see, would be helpful to have handouts in the packet.		

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: ACCWP 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 ACCWP 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 supplier 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 ACCWP website for the “Biotreatment Soil Mix Verification Checklist” and “Biotreatment Soil Mix Supplier Verification Statement” for assistance in reviewing and approving soil mix submittals.

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.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ES-1

EXECUTIVE SUMMARY 1

1 · INTRODUCTION 1
1.1 Background 1
1.2 Context: The Bay Area Approach 2

2 · REGULATED PROJECT THRESHOLDS AND APPLICABILITY 6
2.1 Current Provisions Related to Thresholds and Applicability 6
2.2 Proposed Changes to Regulated Project Threshold 7
2.3 Potential Benefits and Costs of a Reduced Threshold 7
2.4 C.3 Applicability to Roads Projects 10

3 · ALTERNATIVE COMPLIANCE 12
3.1 Implementation of Alternative Compliance to Date 12
3.2 Barriers to Implementation of Alternative Compliance 13
3.3 Recommendations for the Alternative Compliance Provision 15
3.4 Special Projects 16

4 · LOW IMPACT DEVELOPMENT 24
4.1 Site Design Measures and Runoff Reduction 24
4.2 Feasibility of Infiltration and Harvesting/Use 27
4.3 Design Criteria for Bioretention Facilities 38
4.4 Summary of Recommendations for Low Impact Development 42

5 · HYDROMODIFICATION MANAGEMENT 43
5.1 Background 43
5.2 Experience with Implementation of HM Standards 48
5.3 Recent Studies on Criteria and Facility Size Relationships 52
5.4 Recommendations for HM Criteria 55

6 · OPERATION AND MAINTENANCE 56
6.1 Current Requirements 56
6.2 Experience with Implementation 57
6.3 Recommendations 59

7 · REFERENCES 61

TABLES

Table ES-1 Summary of Key Issues and Recommendations ... ES-16

Table 2-1 Impervious Surface Analysis 2006-2010 8

Table 2-2 Impervious Area Analysis for FY 09/10 - FY 12/13 9

Table 3-1 Analysis of Regulated Project and Special Project Impervious Area Data from FY 12-13 and FY 13-14 Permittee Annual Reports 18

Table 4-1 Percent Load Reduction Achieved By Bioretention.....34
Table 4-2 SFEI San Pablo Avenue Rain Gardens Data 36
Table 5-1 Computed Bioretention Sizing Factors for Type D Soils 53

FIGURES

Figure 4-1 Bioretention Inflows and Outflows 33
Figure 4-2 On-Site Retention and Load Reduction 35
Figure 5-1 Example Flow Duration Curves from Continuous Simulation Modeling.....45

APPENDIX A: SPECIAL PROJECTS CATEGORIES, CRITERIA, AND LID TREATMENT REDUCTION CREDIT

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, pro-active 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 Ep Control standard, or a flow duration curve matching criterion that more closely approximates an Ep 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
C.3.b. - Regulated Project Size Thresholds Current requirement: 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. Issue: Water Board staff has suggested threshold for all projects be lowered to 5,000 SF impervious area created/replaced.	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	• Maintain current Regulated Project thresholds. • Maintain current exemption for road reconstruction projects.
C.3.e. - Alternative Compliance Current requirement: 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. Issue: 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.	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.	• 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: o Allow the alternative project location to be anywhere within the municipal jurisdiction, and for regional projects, anywhere within the countywide-program area; and o 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
C.3.e. – Special Projects Current requirement: 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. Current reporting requirement: 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. Issues: 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. Current reporting and feasibility analysis are burdensome and non-productive. 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).	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. 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. 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.	Maintain Special Projects provisions, 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.
C.3.c – Feasibility of Infiltration and Harvesting/Use Current requirement: 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. Issue: Current permit does not describe how site design measures can be used to reduce the amount of impervious area needing treatment.	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.	Site Design Requirements: • 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
Current permit contains design specifications (e.g., for biotreatment soil) that cannot be changed. 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.	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. 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.	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.
C.3.g. Hydromodification Management Current requirement: 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. Issue: Low flow threshold for compliance, "goodness of fit" criteria, exemptions, and acceptable sizing tools vary among Permittees.	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.	• 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
C.3.h. – O&M Verification Current requirement: 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. Issues: Water Board staff have suggested increasing requirements for O&M and inspections of pervious pavement and other site design features. Number of facilities and inspections is increasing, and reporting is burdensome.	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. 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.	• 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.

Appendix C

Provision C.4 Industrial & Commercial Site Controls

- Industrial & Illicit Discharge Control Subcommittee Meetings – Attendance List – FY 2014/15
- Stormwater Business Inspectors Workshop: Honing Your Inspection Skills June 3, 2015 Workshop Report
    - Agenda
    - Effectiveness Evaluation Summary
    - Evaluations Summary
    - Attendance

Industrial & Illicit Discharge Control Subcommittee - FY 2014/15

Name (e-mail)	Agency	10-Jul	11-Sep	9-Apr
Jim Barse	Alameda	x		
Patrizia Guccione	Alameda			x
James Jorgensen	Albany			
Geoff Fiedler	Berkeley	x	x	
Meridith Lear	Berkeley			x
Martha Aja	Dublin	x	x	x
Marcy Greenhut	Emeryville	x		x
Nancy Humphrey	Emeryville		x	x
Maria Javier	Fremont			x
Alejandro Perez	Hayward	x	x	x
Lynna Allen	Livermore			
Steve Aguiar	Livermore			
Blaine Drewes	Livermore			
Michael Carmen	Newark	x		x
Craig Pon	Oakland	x		x
Cesar Avila OFD	Oakland	x		
Mark Feldkamp	Piedmont			
Leo Lopez	Pleasanton		x	
Scott Walker	Pleasanton		x	x
John Camp	San Leandro	x	x	x
Art Diosdado	Union City	x		
Faroce Azim	Union City		x	
Barney Chan	Alameda County	x	x	x
Aileen Mendoza	Alameda County			x
Jim Scanlin	ACCWP	x	x	x
Lori Pettegrew	EOA	x	x	
Kristin Kerr	EOA			x
Jose Soto	USD	x	x	x
Alex Paredes	USD		x	
Chandra Johannesson	EBMUD		x	
Sandy Mathews	LWA		x	x

Post-Workshop Report: IIDC Training Workshop for Fiscal Year 2014-2015

The Clean Water Program's Industrial and Illicit Discharge Subcommittee (IIDC) sponsored a field inspection training workshop on June 3, 2015. The workshop was hosted by the City of Fremont at their Municipal Service Center. The 2014-2015 Training Workgroup responsible for planning the workshop are identified below.

Martha Aja	City of Dublin (Subcommittee Chair)
Alejandro Perez	City of Hayward
Jose Soto	Union Sanitary District
Kate Shonk	City of Fremont, Facility Liaison
Jim Scanlin	Clean Water Program
Sandy Mathews	Larry Walker Associates

The workshop focused on enhancing inspection skills and featured a field mock inspection exercise. Morning presentations provided: an overview of C.4 requirements and terminology; an update on the Industrial General Permit; lessons learned from the PCBs screening; an update on the statewide drinking water system general permit; and BMPs for industrial and commercial facilities. In the afternoon, teams of attendees conducted inspections at five staged stations in the corporation yard (fueling and wash pad; hazardous materials and bulk materials storage; excess equipment storage; equipment repair shop; and stormwater treatment devices). Presentation materials from the workshop were made available to Clean Water Program member agencies.

Effectiveness Assessment

Pre- and post-workshop surveys provided insights into the knowledge of the participants before and after the workshop. The pre-workshop survey had an overall correct response rating of 57% that improved to 74% in the post-workshop survey.

Question		Pre-workshop % Correct	Post-workshop % Correct	Difference
Q1	A goal of an Enforcement Response Plan is to:	93%	96%	3%
Q2	Provision C.4 of the Municipal Regional Permit requires a municipality to inspect?	51%	62%	11%
Q3	One significant change in the upcoming reissuance of the State's Industrial General Permit is that:	65%	79%	13%
Q4	Key BMPs for drinking water system planned discharges include?	73%	79%	6%
Q5	The Statewide Drinking Water System Discharge NPDES Permit requires discharges to notify municipalities of what types of discharges?	4%	55%	52%
Q6	Minimum BMPS required for facilities covered by the Industrial General Permit include?	27%	55%	28%

Question		Pre-workshop % Correct	Post-workshop % Correct	Difference
Totals				
	Respondent Percentage Correct	57%	74%	17%
	Number of 50% or above	71%	87%	16%
	Number of 49% or below	29%	13%	-16%
	Number of Surveys Completed	55	47	-8

Workshop Evaluation

A total of 49 (81%) of the 60 participants completed evaluations. The overall average rating of the workshop was 3.43, out of a maximum of 4.0. Attendees identified that the mock inspection, and the presentations on the regulations and BMPs were valuable.

Evaluation Item	Average Rating (out of 4)[1]
The presentations were clear and easy to follow.	3.43
Overall, the order/progression of the presentations was appropriate.	3.39
Overall, the workshop materials and handouts were informative and useful.	3.37
I will use the skills learned in the workshop today on the job.	3.33
The presenter(s) were knowledgeable in the subject matter.	3.58
The presenter(s) encouraged questions.	3.46
Overall Rating	**3.43**

Note: 1 = Strongly Disagree, 4 = Strongly Agree

Future needs identified by the respondents included:

- Examples – photos of BMPs used to prevention pollution;
- Restaurant stormwater BMPs;
- C.4 Inspections at IGP facilities;
- Violation and enforcement cases, and ERP;
- Copper BMPs;
- New BMP technologies;
- Illicit discharge scenarios; and
- Field inspection at CUPA facility or restaurant.

Attachments:

Workshop Agenda
Sign-in Sheet
Evaluation Results

Stormwater Business Inspectors Workshop
Honing Your Inspection Skills

Wednesday June 3, 2015
Registration & Coffee at 8:30

City of Fremont Corporation Yard
42551 Osgood Road
Fremont, CA 94539

Topic	Speaker	Length
Check in / Knowledge Survey	-	8:30-9:00
Welcome	Martha Aja, Subcommitee Chair City of Dublin	9:00-9:10
MRP C.4 overview and brush up on terminology	Jim Barse, City of Alameda	9:10-9:40
IGP Update	Sandy Mathews, Larry Walker Associates	9:40-10:00
Facility sources of PCBs – What we learned from PCBs screening	Jim Scanlin, Clean Water Program	10:00-10:20
Break		10:20-10:35
Drinking Water System Discharge Permit	Kristin Kerr, EOA Greg Buncab, East Bay Municipal Utility District	10:35-11:05
The CASQA Industrial/Commercial BMP Handbook: ***Its use and application for understanding general and business specific BMPs***	Alejandro Perez, City of Hayward, and Jose Soto, Union Sanitary District	11:05-11:45
Lunch		11:45-12:30
Field Inspection – Prep	Sandy Mathews Larry Walker Associates	12:30-12:45
Field Inspection in groups	All	12:45-1:55
Report out on inspection findings	Group Captains	1:55-2:15
Wrap up Questions & Answers ***Complete knowledge surveys, evaluations, pick up certificates***	All	2:15-2:30

cleanwater PROGRAM

Stormwater Business Inspectors Workshop: Honing Your Inspection Skills
June 3, 2015

	Last Name	First Name	Agency	Signature
4	Gosselin	Sharon	Alameda County	
1	Scanlin	Jim	Alameda County Clean Water Program	
2	Chan	Barney	Alameda County Dept. of Environmental Health	
3	Hildreth	Timothy	Alameda County Dept. of Environmental Health	
4	Lowe	Corinne	Alameda County Dept. of Environmental Health	
5	Mendoza	Aileen	Alameda County Dept. of Environmental Health	
1	Gonzalez	Marian	Alameda County Water District	
1	Berberihill	Darryl	AMEC Foster Wheeler Inc.	
2	Buffa	Coleman	AMEC Foster Wheeler Inc.	
3	Honniball	Jim	AMEC Foster Wheeler Inc.	
4	Shankel	Erin	AMEC Foster Wheeler Inc.	
5	Sportsman	Emily	AMEC Foster Wheeler Inc.	
1	Barse	Jim	City of Alameda Public Works Department	
2	Akagi	Danny	City of Berkeley	
3	Busche	Karl	City of Berkeley	
4	Estadt	Carrie	City of Berkeley	

cleanwater PROGRAM

Stormwater Business Inspectors Workshop: Honing Your Inspection Skills
June 3, 2015

	Last Name	First Name	Agency	Signature
5	Lear	Meridith	City of Berkeley	
1	Perng	Alan	City of Berkeley	
2	Valencia	Jamie	City of Berkeley	
3	Der	Kristine	City of Berkeley Environmental Health	
4	Stetzenmeyer	Antoinette	City of Berkeley Environmental Health	
5	Villareal	Rolando	City of Berkeley Environmental Health	
0	Aja	Martha	City of Dublin	
3	Humphrey	Nancy	City of Emeryville	
0	Shonk	Kathleen	City of Fremont	
1	Urenda	Luis	City of Fremont	
2			City of Fremont	
3	Burnett	Rich	City of Fremont	
4	Shih	Kenneth	City of Fremont – Environmental Services	
1	Swartz	David	City of Fremont – Environmental Services	
5	Freeman	William	City of Hayward	
0	Perez	Alejandro	City of Hayward	

cleanwater PROGRAM

Stormwater Business Inspectors Workshop: Honing Your Inspection Skills
June 3, 2015

	Last Name	First Name	Agency	Signature
1	Rosenberg	Jaime	City of Hayward	
2	Sarwary	Bashir	City of Hayward	
2	Wilfong	Elisa	City of Hayward	
3	Christensen	Braden	City of Livermore – Water Resources	
4	Roberts	John	City of Livermore – Water Resources	
5	Avery	Jason	City of Newark	
1	Bola	Raminder	City of Newark	
2	Carmen	Michael	City of Newark	
3	Delappe	Mark	City of Newark	
4	Kelly	Laura	City of Newark	Laura Kelly
5	Kreutzer	Karl	City of Newark	
1	Mattos	John	City of Newark	
2	Chen	Yung	City of Oakland	
3	Chibueze	Austin	City of Oakland	
4	Loeser	Fred	City of Oakland	
5	Avila	Cesar	City of Oakland Fire Department	

cleanwater PROGRAM

Stormwater Business Inspectors Workshop: Honing Your Inspection Skills

June 3, 2015

	Last Name	First Name	Agency	Signature
1	Skillern	Sheryl	City of Oakland Fire Department	
2	Flores	Geronimo	City of Pleasanton	
3	Camp	John	City of San Leandro	
4	Denis	Dave	City of San Leandro	
5	Maffei	Lisa	City of San Leandro	
1	Treece	Tiffany	City of San Leandro	
3	Fitch	Ray	City of Union City	
4	Flood	John	City of Union City	
5	Hobbs	John	City of Union City	
1	Hoe	Emily	City of Union City	
2	Buncab	Greg	East Bay MUD	
0	Kerr	Kristin	EOA, Inc.	
0	Mathews	Sandy	Larry Walker Associates	
3	Dattawalker	Doug	Union Sanitary District	
4	Dunning	Michael	Union Sanitary District	
5	Marasigan	Edda	Union Sanitary District	

cleanwater PROGRAM

Stormwater Business Inspectors Workshop: Honing Your Inspection Skills

June 3, 2015

	Last Name	First Name	Agency	Signature
5	Mendoza	Joseph	Union Sanitary District	
1	Padilla	Victor	Union Sanitary District	
2	Paredes	Alex	Union Sanitary District	
3	Robles	Aaron	Union Sanitary District	
0	Soto	Jose	Union Sanitary District	
4	Yeates	Jason	Union Sanitary District	
5	Briones	Gene	Zone 7 Water Agency	
1	RIVERS	CHARIS	CITY OF ALBANY FIRE DEPT	
2	GEOFF	FIEDLER	CITY OF BERKELEY	GFIEDLER@CITYOFBERKELEY.INFO
3				
4				
5				
1				
2				
3				
4				

Stormwater Business Inspectors Workshop -
Summary of Honing You Inspection Skills Workshop Evaluation Forms - June 3, 2015

Overall Average	What is your primary job function?	The presentations were clear and easy to follow	Overall the order/progression of the presentations was appropriate	Overall, the workshop materials and handouts were informative and useful	I will use the skills learned in the workshop today on the job	The presenter(s) were knowledgeable in the subject matter	The presenter(s) encouraged questions	Total number of surveys
3.43		3.43	3.39	3.37	3.33	3.58	3.46	49

	Organization	Function	Q1	Q2	Q3	Q4	Q5	Q6	What was most valuable about today's training?	What was least valuable about today's training?	What subjects would you like to see in future workshops?	Do you have any other comments?
1	ACCWP	Stormwater Inspector	4	4	4	4	4	4				
2	ACDEH	Stormwater Inspector	3	3	3	3	3	3	BMP	Materials: Missing a handout. One is not so readable	Examples of Inspections	Good w/ time. Thanks !
3	Amec Foster Wheeler	Stormwater Inspector	4	4	4	4	4	4	As someone new to inspections, going over terms and the regulatory structure was the most valuable.	BMP catalogue review was useful, but went on too long.	More examples of what is what is actually done to prevent pollution. More site photos.	
4	Amec Foster Wheeler	Stormwater Inspector	4	4	4	4	4	4	Learning about the adjustments to the IGP			Overall, very informative for those who are new to the field.
5	Amec Foster Wheeler	Stormwater Inspector	4	3	3	3	3.5	4	Enable those not familiar with inspections & NPDES program to have general knowledge			
6	Alameda Co. Dept Env. Health	Stormwater Inspector	3	3	3	3	3	3	The field inspection exercise and the info on the CASQA handbook	Nothing	Enforcement	Overall great workshop
7	Alameda Co. Dept Env. Health	Stormwater Inspector	3	3	3	3	3	4	CASQA BMP Handbook presentation. Very useful.	PCB's - some photos too small to see details	Violations and Enforcement cases	Very good training
8	Alameda	Stormwater Inspector	4	4	4	4	4	4	Facility walk-through. EBMUD presentation		Identifying IGP Facilities	
9	City of Albany, Fire Dept.	Stormwater Inspector	3	3	3	4	3	3	The Field Training was the most valuable training to me.	None	Any subjects would work for me.	None
10	City of Berkeley		4	4	4	4	4	4	Field inspection even though it does not relate to my field. (I am restaurant inspector and interested in stormwater inspection & BMPs for restaurants). - still good learning experience	All was valuable	Restaurant stormwater inspections and BMPS - enforcement power	
11	City of Berkeley	Stormwater Inspector	4	4	4	4	4	4	Business BMPS's from CASQA	All topics interesting	* Food Facilities (local / small businesses)	Focus on small businesses such as Food Facilities (trash, discharge)
12	City of Berkeley	Stormwater Inspector	4	3	4	4	4	4	Interactive inspection		Examples of enforcement and escalation	
13	City of Berkeley	Stormwater Inspector	4	4	4	4	4	4	New Provisions and Implications for the MRP	PCB Information. Unclear how it relates to inspections (but it was informative and interesting)	Inspection and Enforcement Policies Frequency- Violation Response- Enforcement strategies for repeat violators. Expectations for C.4 inspections at NOI facilities	Comfortable - nice lunch and snack choices. Good recycling policy.
14	City of Berkeley, Toxics	Stormwater Inspector	1	1	2	1	1	1				
15	City of Berkeley Env. Health	Stormwater Inspector	4	4	3	3	4	4	Field inspection	All info was very valuable	Field inspection of businesses ie restaurants, CUPA, mobile buildings	More topics on BMP's examples construction, restaurants, other business under IGP
16	Dublin	Stormwater Inspector	4	4	4	3	4	4	I thought the field component was very helpful. Also thought the BMP presentation was very valuable.	N/A		Good job (happy face). Thank you LWA for all of your help coordinating the training.
17	East Bay Municipal Utility District	Stormwater Inspector	4	4	4	4	4	4		All valuable information		The workshop was well organized and very informative. Thank you for this information and networking opportunity.
18	City of Emeryville	Stormwater Inspector	4	4	4	3	4	4	It was comprehensive & well targeted.	For me, the drinking water section, but that's a small squabble.		Another great job. Thanks.
19	Environmental Consulting Firm	Stormwater Inspector	3	2	4	4	4	4			Additional discussion of actual site BMP application	

	Organization	Function	Q1	Q2	Q3	Q4	Q5	Q6	What was most valuable about today's training?	What was least valuable about today's training?	What subjects would you like to see in future workshops?	Do you have any other comments?
20	City of Hayward	Stormwater Inspector	1	1	1	1	1	1				
21	City of Hayward	Stormwater Inspector	4	4	4	4	4	4	The field exercises, the Q & A session.	Nothing	Update on MRP 2.0	The bald bearded guy that presented on the CASQA handbook was extremely informative, eloquent, descriptive, professional and very good-looking to boot. Keep him around!
22	City of Hayward	Stormwater Inspector	4	4	4	4	4	4	The field exercise and PCB update (also MRP 2.0 updates and IGP review)	C.4 101 (only because I know it - no reflection on the presentation)	MRP 2.0 tips - ERP and citation strategies. Also - new field trips (typical places to inspect BMPs)	none - good workshop
23	City of Hayward	Stormwater Inspector	4	4	4	4	4	4				
24	City of Livermore	Stormwater Inspector	3	3	3	3	4	4	Updates on changed policy / permit specifics			
25	City of Livermore	Stormwater Inspector	4	4	3	4	4	4				
26	City of Newark	Stormwater Inspector	3	3	2	3	4	4				
27	City of Newark	Stormwater Inspector	3	3	3	2	3	2				
28	City of Newark	Stormwater Inspector	4	4	3	2	4	4	Field time	Presenters repeated some material		
29	City of Newark	Stormwater Inspector	2	3	3	2	4	2	Handouts	Hard to remember all agencies	Same - more field	Nice class !
30	City of Newark	Stormwater Inspector	4	4	4	3	4	4	Reinforced information I already knew. Format changes.	Chairs were brutally uncomfortable	Roll off area	
31	City of Newark	Stormwater Inspector	4	4	4	4	4	4				
32	Oakland Fire Dept	Stormwater Inspector	4	4	4	4	4	4	The hands on exercise in the afternoon	n/a	Information on copper sources and BMP recommendation for reducing this pollutant.	Good training.
33	City of Pleasanton	Stormwater Inspector	1	1	1	1	1	1				
34	City of San Leandro	Stormwater Inspector	4	4	4	4	4	4	The handouts	The walk-around	Better handouts	
35	City of Union City	Stormwater Inspector	2	2	2	2	2	2	Very good workshop (on front side)			
36	City of Union City	Stormwater Inspector	3	3	3	3	3	3				
37	City of Union City	Stormwater Inspector	3	4	3	4	4	3	IGP update and field inspection presentations were great.	PCB screening presentation was not as useful as the others. The Report Out after the field inspections was very long. Some figs / diagrams were very hard to read both in the handouts and projected.	New technologies or innovate BMPs	Most presentations did not have time for adequate questions / discussion at the end.
38	City of Union City Sanitary District	Stormwater Inspector	4	4	4	4	4	3	The CASQA BMP handbook	If I have to make a choice, drinking water system discharge permit	Examples of illicit discharges scenarios.	During the report out session, it would be nice to have a picture of the area that is being reported. It would help us visualize better. Forget this they started to show the pictures !
39	City of Union City Sanitary District	Stormwater Inspector	4	3	3	3	4	3	Discussion about new IGP and the general facts to share with new permittees	None	More practical exercises is always good.	None
40	City of Union City Sanitary District	Stormwater Inspector	4	4	4	4	4	4	BMPs & site inspection		Possible industrial site inspection	good presentations
41	City of Union City Sanitary District	Stormwater Inspector	4	4	4	4	4	4	Interactive portion	N/A	ERP	set up violations scenarios & have ppt work through enforcement
42	City of Union City Sanitary District	Stormwater Inspector	4	3	4	3	4	4	Emphasis on what responsibilities fall b/w NOI permit inspection requirements vs municipal permits			

	Organization	Function	Q1	Q2	Q3	Q4	Q5	Q6	What was most valuable about today's training?	What was least valuable about today's training?	What subjects would you like to see in future workshops?	Do you have any other comments?
43	City of Union City Sanitary District	Stormwater Inspector	4	4	4	4	4	2	As always the on-hands inspection	BMP seemed to go a little long or I was really hungry.	Regional / Board state of the state address	I am glad we were able to do this.
44	Zone 7 Water Agency	Stormwater Inspector	3	4	3	4	4	4				
45	Sharon Gosselin	Stormwater Inspector	3	3	4	4	4	4	Field inspection			Presentations on powerpoint should not include small font. Handout on same slides even too small to see.
46	None Listed	Stormwater Inspector	3	3	3	3	3					
47	None Listed	Stormwater Inspector	4	4	3	4	4	4	BMP / CASQA			Great networking.
48	None Listed	Stormwater Inspector	2	2	3	2	2	2				
49	None Listed	Stormwater Inspector	4	4	3	4	4	4	Meeting regulators - networking. Actual inspections were good hands-on	all great !	Specifics on what is enforceable versus what we just don't like to see. Hands-on with specific enforceable concerns - Note what we can't or shouldn't try to address	

Appendix D

Provision C.5 Illicit Discharge Detection & Elimination

- Fundraising Car Washes Flyer
- Tips for Carpet Cleaners Flyer
- Tips for Pet Care Providers Flyer

PROPER DISPOSAL OF WASTEWATER

Fundraising Car Washes

Car washes have long been a favorite fundraiser for scout troops, schools and other non-profit groups. But in the last few years we have become aware of the negative impact car washes have on the environment. Dirty water containing soaps, detergent, residue from exhaust fumes, gasoline and motor oil washes off the cars and directly into the storm drain, and then into the Bay. Collectively, car wash events can account for some serious pollution.

Choosing a site

It is important to choose a site for your car wash where wastewater can be disposed of properly. Some popular sites, such as service stations and parking lots, usually do not have the necessary connections to the ***sanitary sewer system***.

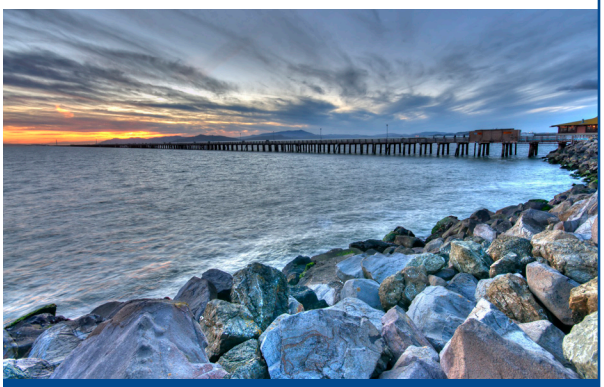
Here are some options:

- Find a sponsor for your car wash that uses a closed-loop washing system — one that recycles its water.
- Ask a local commercial car wash to donate part of their day's receipts or see if they will allow you to sell a special wash ticket.
- Hold your car wash at an industrial or commercial site that has a designated vehicle wash area.
- Rent a mobile washing system that can contain the water on the site. The collected water must be disposed of properly into the sanitary sewer, and not into a ***stormdrain***.
- Contact your city's local clean water program to see how you can set up an area to drain wash water to the sewer.

Keep car wash water OUT of storm drains.

Pouring cleaning fluids or soapy wash water from auto activities into the gutters or storm drains will damage sensitive habitats and kill wildlife. Water flowing into storm drains travels directly to local creeks and then to San Francisco Bay. It does not go to a water treatment plant first.

Learn more about preventing water pollution and the Clean Water Program at www.cleanwaterprogram.org.



cleanwater PROGRAM

Protecting Alameda County Creeks, Wetlands & the Bay

cleanwaterprogram.org

What about biodegradable and non-toxic cleaning products?

These guidelines apply even to cleaning products labeled *"non-toxic"* and *"biodegradable."*

- *"Non-toxic"* means the product is not toxic to the user.
- *"Biodegradable"* means the product will eventually break down. Biodegradable products can still harm aquatic wildlife since they need time to break down before they are safe. When biodegradable products enter a creek, they are generally still toxic and can harm wildlife and plants.

What about leftover or unwanted cleaning products?

Leftover cleaning products should be properly disposed of. Contact the Hazardous Waste agency for your area for more information. See phone numbers at right.

KEY DEFINITIONS

The ***Storm Drain System*** was built to collect and transport rain to prevent flooding in urban areas. Anything that flows or is discharged into the storm drain system goes directly into local creeks or San Francisco Bay without any treatment.

The ***Sanitary Sewer System*** collects and transports sanitary wastes from interior building plumbing systems to the wastewater treatment plant where the wastewater is treated.

cleanwater PROGRAM

cleanwaterprogram.org

Having clean and healthy waterways is important to our daily lives. That's why the Clean Water Program helps residents and businesses better understand what role each one of us plays in protecting local creeks, wetlands and the Bay. The Program fosters an appreciation of the local environment, inspiring people to do their part to prevent water pollution during everyday activities. The Program's free publications and friendly, knowledgeable staff make doing the right thing easy and rewarding.

Learn more about preventing water pollution and the **Clean Water Program** at www.cleanwaterprogram.org.

For More Help

For advice and approval on wastewater disposal to the sanitary sewer system, contact:

Cities of Alameda, Albany, Berkeley, Emeryville, Oakland or Piedmont
East Bay Municipal Utility District (EBMUD)..... (510) 287-1651

Castro Valley
Castro Valley Sanitary District .. (510) 537-0757

Cities of Dublin or Pleasanton
Dublin-San Ramon Services District..... (925) 828-0515

Cities of Fremont, Newark or Union City
Union Sanitary District ..... (510) 477-7500

City of Hayward
City of Hayward ..... (510) 881-7900

City of Livermore
City of Livermore ..... (925) 960-8100

Cities of San Lorenzo, unincorporated portions of San Leandro and Hayward
Oro Loma Sanitary District ..... (510) 481-6971

City of San Leandro
City of San Leandro..... (510) 577-3401

Local Stormwater Agencies

For advice on avoiding disposal to the storm drain system, contact:

Alameda.....(510) 747-7930
Albany .....(510) 528-5770
Berkeley.....(510) 981-7460
Dublin .....(925) 833-6650
Emeryville .....(510) 596-3728
Fremont .....(510) 494-4570
Hayward .....(510) 881-7900
Livermore .....(925) 960-8100
Newark .....(510) 578-4286
Oakland .....(510) 238-6544
Piedmont.....(510) 420-3050
Pleasanton .....(925) 931-5511
San Leandro.....(510) 577-3401
Unincorporated Alameda County.....(510) 567-6700
Union City.....(510) 675-5301
Clean Water Program.....(510) 670-5543

Local Hazardous Waste Agencies

Alameda County Environmental Health .....(510) 567-6780
(Serves Alameda, Albany, Castro Valley, Dublin, Emeryville, Newark, Piedmont, San Lorenzo, and Sunol.)
Berkeley Toxics .....(510) 981-7460
Fremont Fire .....(510) 494-4213
Hayward Fire .....(510) 583-4910
Livermore-Pleasanton Fire .....(925) 454-2362
Oakland Fire .....(510) 238-3927
San Leandro.....(510) 577-3401
Union City.....(510) 675-5358

Mar 2012

PROPER DISPOSAL OF WASTEWATER

Tips for Carpet Cleaners

The Clean Water Program's friendly and knowledgeable staff support companies like yours in preventing water pollution. The fact that you are reading this fact sheet probably means you have already decided to take steps to do the right thing with the wastewater from your business. Thank you for helping to keep our water safe and healthy.

Step 1: Filter

First, you should filter the wash water before discharging to the sewer. Fibers and other debris in the water can cause sewer blockages and overflows. The filtered material can go in the garbage, provided the carpet was not contaminated with hazardous materials. See page two for information on how to properly dispose of hazardous materials.

Step 2: Discharge properly

Next, it's important that wash water and rinse water from carpet cleaning be discharged into a ***cleanout***, sink, toilet or other drain connected to the ***sanitary sewer system***, and never into a street, gutter, parking lot or ***storm drain***.

Allowing any material (liquid or solid) to be dumped into the storm drain, hosed off the pavement into a storm drain or placed where it can be carried to the storm drain by rainwater is an illegal discharge, and the individual could face civil and criminal prosecution for each violation.

KEY DEFINITIONS

The ***Storm Drain System*** was built to collect and transport rain to prevent flooding in urban areas. Anything that flows or is discharged into the storm drain system goes directly into local creeks or San Francisco Bay without any treatment.

Keep carpet cleaning wash water OUT of storm drains.

Pouring cleaning fluids or soapy wash water from carpet cleaning activities into the gutters or storm drains will damage sensitive habitats and kill wildlife. Water flowing into storm drains travels directly to local creeks and then to San Francisco Bay. It does not go to a water treatment plant first.

Learn more about preventing water pollution and the Clean Water Program at www.cleanwaterprogram.org.

cleanwater PROGRAM

Protecting Alameda County Creeks, Wetlands & the Bay

cleanwaterprogram.org

Proper Procedures for Disposal

- Arrange with your customer to discharge into a toilet or utility sink on their premises, after receiving approval from the local wastewater treatment authority. OR
- Empty your spent cleaning fluid into a utility sink or other indoor sewer connection at your home base after receiving approval from your local wastewater treatment authority.

What about biodegradable and non-toxic cleaning products?

These guidelines apply even to cleaning products labeled "non-toxic" and "biodegradable."

- "Non-toxic" means the product is not toxic to the human user.
- "Biodegradable" means the product will eventually break down. Biodegradable products can still harm aquatic wildlife since they need time to break down before they are safe. When biodegradable products enter a creek, they are generally still toxic and can harm wildlife and plants.

What if you've cleaned carpets contaminated with hazardous materials?

Hazardous materials, such as mercury and some solvents and spot removers, cannot be discharged to the sanitary sewer or disposed of as garbage. All hazardous waste must be properly managed and disposed.

For Help with Hazardous Waste Disposal

Alameda County Household & Small Business Hazardous Waste Program, www.acgov.org/aceh/household

California Department of Toxic Substances Control, www.dtsc.ca.gov/HazardousWaste

KEY DEFINITIONS

A ***Cleanout*** is a pipe fitting with a removable plug for inspecting and cleaning out sewer drain pipes.

The ***Sanitary Sewer System*** collects and transports sanitary wastes from interior building plumbing systems to the wastewater treatment plant where the wastewater is treated.

cleanwater PROGRAM

cleanwaterprogram.org

CLEAN WATER PROGRAM

Simple changes to your operations and maintenance can help you comply with local regulations. The Clean Water Program makes it easy.

Learn more about preventing water pollution and the Clean Water Program at www.cleanwaterprogram.org.

For More Help

For advice and approval on wastewater disposal to the sanitary sewer system, contact:

Cities of Alameda, Albany, Berkeley, Emeryville, Oakland or Piedmont
East Bay Municipal Utility District (EBMUD)..... (510) 287-1651

Castro Valley
Castro Valley Sanitary District .. (510) 537-0757

Cities of Dublin or Pleasanton
Dublin-San Ramon Services District..... (925) 828-0515

Cities of Fremont, Newark or Union City
Union Sanitary District ..... (510) 477-7500

City of Hayward
City of Hayward ..... (510) 881-7900

City of Livermore
City of Livermore ..... (925) 960-8100

Cities of San Lorenzo, unincorporated portions of San Leandro and Hayward
Oro Loma Sanitary District ..... (510) 481-6971

City of San Leandro
City of San Leandro..... (510) 577-3401

Local Stormwater Agencies

For advice on avoiding disposal to the storm drain system, contact:

Alameda.....(510) 747-7930
Albany .....(510) 528-5770
Berkeley.....(510) 981-7460
Dublin .....(925) 833-6650
Emeryville .....(510) 596-3728
Fremont .....(510) 494-4570
Hayward .....(510) 881-7900
Livermore .....(925) 960-8100
Newark .....(510) 578-4286
Oakland .....(510) 238-6544
Piedmont.....(510) 420-3050
Pleasanton .....(925) 931-5511
San Leandro.....(510) 577-3401
Unincorporated Alameda County.....(510) 567-6700
Union City.....(510) 675-5301
Clean Water Program.....(510) 670-5543

Local Hazardous Waste Agencies

Alameda County Environmental Health .....(510) 567-6780
(Serves Alameda, Albany, Castro Valley, Dublin, Emeryville, Newark, Piedmont, San Lorenzo, and Sunol.)
Berkeley Toxics .....(510) 981-7460
Fremont Fire .....(510) 494-4213
Hayward Fire .....(510) 583-4910
Livermore-Pleasanton Fire .....(925) 454-2362
Oakland Fire .....(510) 238-3927
San Leandro.....(510) 577-3401
Union City.....(510) 675-5358

Mar 2012

PROPER DISPOSAL OF WASTEWATER

Tips For Pet Care Providers

The Clean Water Program's friendly and knowledgeable staff support companies like yours in preventing water pollution. The fact that you're reading this fact sheet probably means you have already decided to take steps to do the right thing with the wastewater from your business. Thank you for helping to keep our water safe and healthy.

Step 1: Filter

Filter the wash water before discharging to the sanitary sewer. Fur and other solids in the wash water can cause blockages in the sewer system. Dispose of filtered material in the garbage.

Step 2: Discharge Properly

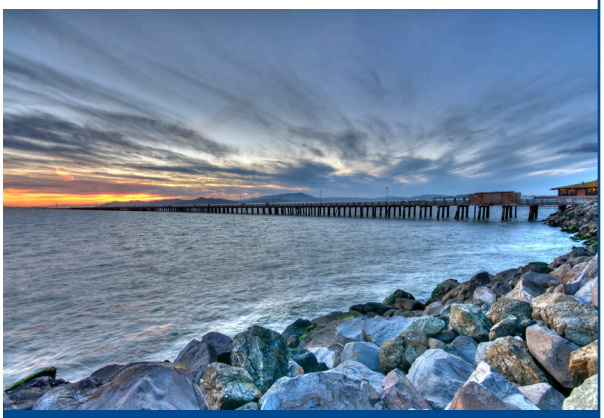
It is important that wash water from pet care activities shampoos be discharged into a ***cleanout***, sink, toilet or other drain connected to the ***sanitary sewer system*** — never into a street, gutter, parking lot or ***storm drain***. There are two options for disposing of water with pest control chemicals:

- Arrange with your customer to discharge the wash water from their pet into a toilet or utility sink on their premises, after receiving approval from you local wastewater treatment authority. OR
- Empty the wash water into a utility sink or other indoor sewer connection at your home base, after receiving approval from your local wastewater treatment authority.

Keep wash waters, pest control fluids and animal hair OUT of storm drains.

Pouring wash water from pet care activities into the gutters or storm drains will damage sensitive habitats and kill wildlife. Water flowing into storm drains travels directly to local creeks and then to San Francisco Bay. It does not go to a water treatment plant first.

Learn more about preventing water pollution and the Clean Water Program at www.cleanwaterprogram.org.



cleanwater PROGRAM

Protecting Alameda County Creeks, Wetlands & the Bay

cleanwaterprogram.org

What about biodegradable and non-toxic cleaning products?

These guidelines apply even to cleaning products labeled *"non-toxic"* and *"biodegradable."*

- *"Non-toxic"* means the product is not toxic to the user.
- *"Biodegradable"* means the product will eventually break down. Biodegradable products can still harm aquatic wildlife since they need time to break down before they are safe. When biodegradable products enter a creek, they are generally still toxic and can harm wildlife and plants.

What about leftover or unwanted pet shampoos and other pet grooming products?

Unwanted pet care products may contain pesticides or other chemicals that should not be poured down the drain, flushed down a toilet, or put in the trash. Contact the Hazardous Waste agency for your area for more information on proper disposal.

KEY DEFINITIONS

A ***Cleanout*** is a pipe fitting with a removable plug for inspecting and cleaning out sewer drain pipes.

The ***Storm Drain System*** was built to collect and transport rain to prevent flooding in urban areas. Anything that flows or is discharged into the storm drain system goes directly into local creeks or San Francisco Bay without any treatment.

The ***Sanitary Sewer System*** collects and transports sanitary wastes from interior building plumbing systems to the wastewater treatment plant where the wastewater is treated.

cleanwater PROGRAM

cleanwaterprogram.org

CLEAN WATER PROGRAM

Simple changes to your operations and maintenance can help you comply with local regulations. The Clean Water Program makes it easy.

Learn more about preventing water pollution and the Clean Water Program at www.cleanwaterprogram.org.

For More Help

For advice and approval on wastewater disposal to the sanitary sewer system, contact:

Cities of Alameda, Albany, Berkeley, Emeryville, Oakland or Piedmont
East Bay Municipal Utility District (EBMUD)..... (510) 287-1651

Castro Valley
Castro Valley Sanitary District .. (510) 537-0757

Cities of Dublin or Pleasanton
Dublin-San Ramon Services District..... (925) 828-0515

Cities of Fremont, Newark or Union City
Union Sanitary District ..... (510) 477-7500

City of Hayward
City of Hayward ..... (510) 881-7900

City of Livermore
City of Livermore ..... (925) 960-8100

Cities of San Lorenzo, unincorporated portions of San Leandro and Hayward
Oro Loma Sanitary District ..... (510) 481-6971

City of San Leandro
City of San Leandro..... (510) 577-3401

Local Stormwater Agencies

For advice on avoiding disposal to the storm drain system, contact:

Alameda.....(510) 747-7930
Albany .....(510) 528-5770
Berkeley.....(510) 981-7460
Dublin .....(925) 833-6650
Emeryville .....(510) 596-3728
Fremont .....(510) 494-4570
Hayward .....(510) 881-7900
Livermore .....(925) 960-8100
Newark .....(510) 578-4286
Oakland .....(510) 238-6544
Piedmont.....(510) 420-3050
Pleasanton .....(925) 931-5511
San Leandro.....(510) 577-3401
Unincorporated Alameda County.....(510) 567-6700
Union City.....(510) 675-5301
Clean Water Program.....(510) 670-5543

Local Hazardous Waste Agencies

Alameda County Environmental Health .....(510) 567-6780
(Serves Alameda, Albany, Castro Valley, Dublin, Emeryville, Newark, Piedmont, San Lorenzo, and Sunol.)
Berkeley Toxics .....(510) 981-7460
Fremont Fire .....(510) 494-4213
Hayward Fire .....(510) 583-4910
Livermore-Pleasanton Fire .....(925) 454-2362
Oakland Fire .....(510) 238-3927
San Leandro.....(510) 577-3401
Union City.....(510) 675-5358

Mar 2012

Appendix E

Provision C.6 Construction Site Controls

- Workshop: Inspecting C.6 BMPs & Installation Demonstration, March 5, 2015
    - Agenda
    - Attendance Sheets
    - Effectiveness and Evaluation Summary

Post-Workshop Report: NDS Training Workshops for Fiscal Year 2014-2015

The Clean Water Program New Development Subcommittee (NDS) sponsored two training workshops in Fiscal Year 2014-2015. A specialty workshop on the *Inspection of Low Impact Development (LID) Best Management Practices (BMPs)* was held on October 16, 2014, and a workshop on *Inspecting Erosion and Sediment Control BMPs* was held on March 5, 2015.

The 2014-2015 Training Workgroup was responsible for planning the two workshops. Workgroup members are identified below.

Shannan Young	City of Fremont (Subcommittee Chair)
Abbas Masjedi	City of Pleasanton
Justin Laurence	Alameda County
David Swartz	City of Fremont
Jim Scanlin	Clean Water Program
Peter Schultze-Allen	EOA
Sandy Mathews	Larry Walker Associates

C.6 BMP WORKSHOP

The workshop was held on March 5, 2015, at the Alameda County Turner Court Office. This workshop had originally been scheduled for December but was cancelled due to a major storm. The workshop ran from 8:30 to 11:00. A total of 96 representatives from the member agencies attended the workshop.

The workshop focused on C.6 and C.2 requirements and, in particular, on the BMPs used to prevent stormwater pollution during construction and maintenance activities. This field-focused workshop included a review of key inspection elements, including common problems and corrective actions, a field demonstration of installed erosion and sediment BMPs, and an opportunity to meet a manufacturer of proprietary erosion and sediment control BMPs. BMP demonstrations included a variety of erosion control practices (e.g., stray mulch, bonded fiber matrices, hydroseeding, erosion control blankets); sediment control practices (e.g., silt fences, a variety of fiber rolls, proprietary barriers and filters, and inlet protection); and run-on/runoff controls (e.g., dikes and swales). Presentation materials from the workshop were made available to member agencies on the Clean Water Program website for in-house training.

Effectiveness Assessment

Pre- and post-workshop surveys provided insights into the knowledge of the participants before and after the workshop. The pre-workshop survey had an overall correct response rating of 60% that improved to 72% in the post-workshop survey.

Question		Pre-workshop % Correct	Post-workshop % Correct	Difference
Q1	The purpose of erosion control BMPs is to?	36%	59%	23%
Q2	Which of the following methods would not be considered a sediment control BMP?	20%	44%	23%
Q3	Water from areas outside the property under construction that runs onto the construction site is not the responsibility of the construction site operator.	95%	97%	2%
Q4	Silt fences remove sediment by what primary mechanism?	42%	67%	25%
Q5	What is the most appropriate method to deal with rinse water collected after patinating a copper roof feature?	64%	71%	7%
Q6	The most effective long term erosion control BMP is	92%	88%	-4%
Q7	Field fits of BMPs	69%	81%	12%
Totals				
	Respondent Percentage Correct	60%	72%	12%
	Number of 50% or above	34%	79%	45%
	Number of 49% or below	20%	21%	1%
	Number of Surveys Completed	83	73	-10

Workshop Evaluation

A total of 66 (69%) of the 96 participants completed evaluations. The overall average rating of the workshop was 3.52, out of a maximum of 4.0. Attendees identified that they found the field demonstrations of properly installed BMPs and the discussion of specific BMPs, including questions and answers, to be valuable.

Evaluation Item	Average Rating (out of 4)[1]
The presentations were clear and easy to follow.	3.55
Overall, the order/progression of the presentations was appropriate.	3.52
Overall, the workshop materials and handouts were informative and useful.	3.48
I will use the skills learned in the workshop today on the job.	3.35
The presenter(s) were knowledgeable in the subject matter.	3.64
The presenter(s) encouraged questions.	3.58
Overall Rating	**3.52**

Note: 1 = Strongly Disagree, 4 = Strongly Agree

Future needs identified by the respondents included the following:

- Examples – photos of common BMP failures
- BMP costs
- Non-stormwater management
- Enforcement and citation procedures

- CGP related topics – risk level, QSP training
- Responding to BMP failure
- Specific BMPs for creek diversion, utility construction, drain clean out, concentrated flows, sweeping, spill clean up

Attachments:

March 5, 2015 Workshop
Evaluation Results
Workshop Agenda
Sign-in Sheet

Inspecting C.6 BMPs & Installation Demonstration

March 5, 2015

Turner Court Offices
951 Turner Court, Hayward CA
Conference Room 2330

Topic	Speaker	Time
Check in / Knowledge Survey/Refreshments		8:30-8:45
1. Welcome	Shannan Young, City of Fremont	8:45-9:00
2. Inspecting C.6 BMPs: What to look for	Sandy Mathews, LWA	9:00-9:45
3. Field Demonstration & Visit with BMP Vendors	Beth Smiley TME et al.	9:45-10:45
4. Wrap up *Complete post-workshop survey, evaluation, and pickup completion certificate*		10:45-11:00

davidr1@acpwa.org

cleanwater PROGRAM

Inspecting C.6 BMPs & Installation
Demonstration Workshop
March 5, 2015

Last Name	First Name	Agency	Signature
Gosselin	Sharon	Alameda County	
Scanlin	Jim	Alameda County Clean Water Program	
Bonde	~~Brian~~ DAVE	Alameda County Public Works	* email certificate
Finch	~~Brian~~ Steve	Alameda County Public Works	* email certificate
Grimm	Chris	Alameda County Public Works	
Laurence	Justin	Alameda County Public Works	
Raney	Ray	Alameda County Public Works	
Guccione	Patrizia	City of Alameda	Patrizia Guccione
~~Hughes~~	~~Gene~~	~~City of Alameda~~	
Henderson	David	City of Albany	
Akagi	Danny	City of Berkeley	
Cevasco	John	City of Berkeley- Building & Safety	
Emmons	Patrick	City of Berkeley- Building & Safety	
Hall	Robert	City of Berkeley- Building & Safety	
Merry	Adrian	City of Berkeley	
Messinger	Steve	City of Berkeley- Building & Safety	

Inspecting C.6 BMPs & Installation Demonstration Workshop
March 5, 2015

Last Name	First Name	Agency	Signature
Aja	Martha	City of Dublin	
Barreras	Roehl	City of Dublin	
Imai	Jayson	City of Dublin	
Osalbo	Jun	City of Dublin	
Wood	Steve	City of Dublin	Steve Wood
Humphrey	Nancy	City of Emeryville	N Humphrey
Roberts	Mike	City of Emeryville	
Anderson	Gregory	City of Fremont	
Fong	Thomas	City of Fremont	
Lanferman	Alex	City of Fremont	
Madrigal	Jesus	City of Fremont	
Ochoa	Mario	City of Fremont	
Otis	Stephen	City of Fremont	
Rego	David	City of Fremont	
Rott	Tim	City of Fremont	
Shah	Deval	City of Fremont	

Inspecting C.6 BMPs & Installation
Demonstration Workshop
March 5, 2015

Last Name	First Name	Agency	Signature
Shonk	Kathleen	City of Fremont	
Travis	Kyle	City of Fremont	
Travis	Lyle	City of Fremont	
Wu	Johnny	City of Fremont	
Javier	Maria	City of Fremont- Environmental Services	
Shih	Kenneth	City of Fremont- Environmental Services	
Swartz	David	City of Fremont- Environmental Services	
Gerena	Robert	City of Hayward	
Lockhart	Daryl	City of Hayward	
Perez	Alex	City of Hayward	
Weiss	Bert	City of Hayward	
Wilfong	Elisa	City of Hayward	
Del Rio	Miguel	City of Hayward- Public Works: Engineering & Transportation	* email presentation
Pulu	Paulo	City of Hayward-Public Works: Engineering & Transportation	
Taha	Mustafa	City of Hayward- Public Works: Engineering & Transportation	
Titus	Geoff	City of Hayward- Public Works: Engineering & Transportation	

Inspecting C.6 BMPs & Installation Demonstration Workshop
March 5, 2015

Last Name	First Name	Agency	Signature
Torres	Dave	City of Hayward- Public Works: Engineering & Transportation	
Whipple	Jason	City of Hayward- Public Works: Engineering & Transportation	
Drewes	Blaine	City of Livermore	B Drewes
Follenfant	Bob	City of Livermore	
Kuderca	Joe	City of Livermore	
Manning	Mike	City of Livermore	
Stamm	Mike	City of Livermore	
Tingley	Robert	City of Livermore	
Philpott	Roger	Livermore Area Rec & Park District	R. Philpott rphilpott@LARPD.ORG
Purcell	Tom	Livermore Area Rec & Park District	
Fermanian	Joseph	City of Oakland	
Jahan	Ishrat	City of Oakland	
Kwan	Shirley	City of Oakland	
Montoya	Moises	City of Oakland	
Nowacki	Andrew	City of Oakland	
Sem	Sophea	City of Oakland	

cleanwater PROGRAM

Inspecting C.6 BMPs & Installation Demonstration Workshop
March 5, 2015

Last Name	First Name	Agency	Signature
Bhatt	Kaushik	City of Pleasanton	
Flores	Geronimo	City of Pleasanton	
King	Lorenzo	City of Pleasanton	
Lopez	Leo	City of Pleasanton	
Sequeira	Dan	City of Pleasanton	
Walker	Scott	City of Pleasanton	
Bola	Raminder	City of Newark	
Carmen	Michael	City of Newark	
Emmett	George	City of Newark	
Fajeau	Soren	City of Newark	
Kelly	Laura	City of Newark	
Kreutzer	Karl	City of Newark	
Tran	Trang	City of Newark	
Espinosa	Angelo	City of Piedmont	* email certificate dfrankel@ci.piedmont.ca.us
Frankel	Dave	City of Piedmont	
Duran	Albert	City of Union City	

cleanwater PROGRAM

Inspecting C.6 BMPs & Installation Demonstration Workshop
March 5, 2015

Last Name	First Name	Agency	Signature	
Espinoza	Alex	City of Union City		
Fitch	Ray	City of Union City		
Lenoci	Jon	City of Union City		
Landers	Anthony	City of Union City		
Munoz	Javier	City of Union City		
Moscoso	James	City of Union City		
Roman	Paul	City of Union City		
Vinson	Shawn	City of Union City		
Watson	Richard	City of Union City		
Moshier	Emily	Zone 7 Water Agency		
Jaimes	Marcus	county of Alameda		Marcus@acpwa.org
SALES	ROB	ALAMEDA COUNTY		robs@acpwa.org
TSUJUI	JEFF	ALAMEDA COUNTY		jmtojii@comcast.net
O'HARA	KEVIN	ALA Co. P.W.		KEVINO@ACPWA.ORG
BUCHTER	SCOTT	"		Flatliners@comcast.net
Real	Amanda	Alameda County		amanda@acpwa.org

cleanwater PROGRAM

Inspecting C.6 BMPs & Installation Demonstration Workshop
March 5, 2015

Last Name	First Name	Agency		Signature
Hobbs	Johnny	City of Union City	JHobbs@unioncity.org	Johnny Hobbs
MORRIS	VINCE	ERTEC	vmorris@ertecsystems.com	
Flood	John	Union City	JFlood@ci.union-city.ca.us	
Bui	Dan	" "	danbui70@gmail.com	
BRAINERD	INTA	ACPWA	intab@acpwa.org	
Brown	Chuffon	ACPWA	chuffb@acpwa.org	CB
Rivelas	Joel	City of Fremont	jbonilla@fremont.gov	
Bonilla	Jason	COF	jbonilla@fremont.gov	
Ochoa	Isaiah	COF	IOchoa1393@gmail.com	
~~Daguioag Anthony~~		COF	ADaguioag@fremont.gov	Daguioag, Anthony
Brathwaite	SAM	ACPWA	SBRATHWAITE@GroundZones.com	
Jones	Tony	ACPWA	tjones@groundzones.com	
Schultze-Allen	Peter	EOA	pschultzeallen@eoainc.com	

Summary of C.6 Inspections Workshop Evaluation Form - March 5th, 2015

What is your primary job function?	The presentations were clear and easy to follow	Overall the order/progression of the presentations was appropriate	Overall, the workshop materials and handouts were informative and useful	I will use the skills learned in the workshop today on the job	The presenter(s) were knowledgeable in the subject matter	The presenter(s) encouraged questions	Total number of surveys
	3.55	3.52	3.48	3.35	3.64	3.58	66

Q1	Q2	Q3	Q4	Q5	Q6	Q7	What was most valuable about today's training?	What was least valuable about today's training?	Do you have any suggestions for improvement?	What subjects would you like to see in future workshops?	Other Comments
Stormwater Program Staff/Manager	4	4	4	3	4	4	Having the demos - Beth was very knowledgeable.	Everything was valuable but if I have to choose something- drain inlet protection demo because it's something we should all be familiar with.	I'm curious on what can we enforce. We can't enforce installation to CASQA or Caltrans spec because that isn't in the MRP?	What is proper management for non-stormwater discharges?	
Inspector	1	1	1	1	1	1	I thought it was almost all very useful	The ERTEC portion of the demonstration segment	More discussion of interplay between construction general permit and municipal regional permits. A final session in front of the whole group to field questions and convey any valuable information shared during breakout groups would be great.	I think periodic reinforcement/expansion/update of these topics would be useful. Training on reviewing/reading SWPPPs/erosion control plans could be helpful for much of the audience.	
Stormwater Program Staff/Manager	4	4	4	3	4	4	Field Demonstration			Show photos of common BMP failures	
Stormwater Program Staff/Manager	4	4	4	4	4	4	Examples of BMPs to view	Nothing- Presentation & field exercise all good	Love 1/2 day. I would encourage that	C.3 - O&M Maintenance training	
Inspector	4	4	4	4	4	4	Seeing new or unfamiliar products				
Inspector	4	3	4	4	4	4					
Inspector	4	4	4	4	4	4	Knowledge	None	No	It is fine	
Field/Maintenance Staff	4	4	4	4	4	4	Control erosions & DI's protections	All are helpful	Discussion in depth of C.2 & C.6	BMP risk level, citation procedures	
Stormwater Program Staff/Manager	4	4	4	3	4	4					
Inspector	4	4	4	4	4	4	The BMP examples	That it didn't include other MRP sections	None	C.3, 4, 5	
Inspector	4	4	4	4	4	4	The different type of protection devices that are currently being used. The proper installation of the product- what to look for as inspectors.		Organizing the room with tables so it is easier to take notes	Information on how to become a Q.S.P. or classes that you may attend for preparation for the Q.S.P.	
Stormwater Program Staff/Manager	3	3	3	3	4	3					
Inspector	4	4	3	3	4	4	Comparison of erosion control				
Other: Engineering Tech	3	3	3	3	3	3	Learning about effective BMPs	Didn't cover all topics as stated in beginning	Have an all day class that covers all topics/key points		
Inspector	1	1	1	1	1	1					
Inspector	4	4	4	4	4	3	All		More slides or video		
Other: Engineering Tech	4	3	3	1	4	3	It was my first time getting acquainted w/BMPs	I won't apply it any time soon	No	When I get more experience I know I will have more quesitons	
Stormwater Program Staff/Manager	4	3	4	3	4	4	Field exhibitions/demo installations	Most of today's material was valuable. I found very little wasted time.			
Inspector	4	4	4	4	4	4	Importance of protecting soil		More vendor demonstrations	Addressing site failure	
Inspector	4	4	4	4	4	4	Visual outdoor demonstrations & examples				Very informative & useful
Inspector	4	4	3	3	4	3	Compost mulch & wind screen	None	No	Creek diversion & notice of violations	
Stormwater Program Staff/Manager	4	4	4	4	4	4	Examples of the control measures and Q & A sessions.	Wish it was longer to cover more topics	Wish it was longer to cover more topics		
Other: District Representative	3	3	3	3	4	4	Necessity of water/erosion control				
Other: Construction Management	3	3	3	3	3	3	Learned different method of BMPs	No comments	Satisfactory	Roadway utility construction projects	
Inspector	3	3	3	2	2	3					
Supervisor	4	4	4	4	4	4	All aspects	N/A	No. Lunch?	Creek protection	
Field/Maintenance Staff	4	3	3	4	4	4	The BMPs demonstration	Station 1 outside demo	Maybe some videos with BMPs implementation		
Supervisor	4	4	4	4	4	4	Exposure to the different products on the market		More photos of job sites		Sandy did a great job presenting
Inspector	1	2	1	3	1	1	Installation of products	Slopes		Clean out of drains	
Stormwater Program Staff/Manager	3	4	3	4	4	3	Discussing cases and options with other agencies	It was all good. Thank you!	Use a microphone. Have group leaders hold a sign up to help participants find their group faster.	Interactive role playing enforcing requirements. Plan check and spec review for BMP.	
Supervisor	3	3	3	2	4	3			More handouts about materials used for erosion & sediment controls - Can't remember all outside demo information.		
Field/Maintenance Staff	3	3	3	4	3	4	Learning about BMPs.	Not too many. Q & A	Suggestions/situations from group on some NOT BMPs not being used.	Pricing for BMPs	
Field/Maintenance Staff	3	3	3	2	4	3	Learning other options				

Summary of C.6 Inspections Workshop Evaluation Form - March 5th, 2015

What is your primary job function?	The presentations were clear and easy to follow	Overall the order/progression of the presentations was appropriate	Overall, the workshop materials and handouts were informative and useful	I will use the skills learned in the workshop today on the job	The presenter(s) were knowledgeable in the subject matter	The presenter(s) encouraged questions	Total number of surveys
	3.55	3.52	3.48	3.35	3.64	3.58	66

Q1	Q2	Q3	Q4	Q5	Q6	Q7	What was most valuable about today's training?	What was least valuable about today's training?	Do you have any suggestions for improvement?	What subjects would you like to see in future workshops?	Other Comments
Inspector	4	4	4	4	4	4	How silt fences & straw wattles are installed properly.	N/A - Everything was valuable today.	No	Not sure	
Field/Maintenance Staff	4	4	4	4	4	4					
Field/Maintenance Staff	4	4	4	4	4	4					
Inspector	4	4	4	4	3	3	Hands-on demo	Slideshow	Less sales more practical application	Concentrated flow applications	
Field/Maintenance Staff	4	4	4	4	4	4					
Field/Maintenance Staff	4	4	4	4	4	4					
Inspector	4	4	4	4	4	4	Application/installation (properly)	Sales pitch	No		
Field/Maintenance Staff	3	3	3	4	3	3	What products are out there	Nothing	More about trap devices	Vac-on equipment	
Other: Design	4	4	4	4	4	4					
Field/Maintenance Staff	3	3	3	2	3	4					
Inspector	3	3	4	4	3	4					
Stormwater Program Staff/Manager	4	4	4	4	4	4					
Inspector	3	3	4	3	3	4	The indoor & outdoor presentation	Being in different groups was kind of confusing.	More structured time for outdoor presentation	Perhaps video presentation	
Inspector	4	4	4	3	4	4					
Inspector	4	4	4	4	4	4	Demo	None	No	None	
Supervisor	4	4	4	4	4	4	Installing the correct product for the application			Hazardous material clean-up or control (oils/fluids)	
Inspector	4	4	4	3	4	4	Where information can be found. Exposure methods & products used	All good	Pictures of failed BMP	Small sites w/creek abutment	
Stormwater Program Staff/Manager	4	4	4	2	4	4	The field demonstration was very helpful & valuable	Everything was valuable			
Inspector	4	4	4	4	4	4	Demos	MRP overview	Videos of applications for methods not demo'ed	identifying acceptable vs. unacceptable levels of sed-laden water	
Field/Maintenance Staff	3	3	2	2	4	2	Live demonstration	Nothing	More visuals & definitions of terms	Process- beginning to end	
Supervisor	3	3	3	3	4	4	Knowledge of BMPs	Nothing	Great Job!	All covered	
Field/Maintenance Staff	4	4	4	4	4	4	New products introduced				
Field/Maintenance Staff	3	3	3	3	3	3					
Inspector	4	4	4	4	4	4					
Inspector	4	4	4	3	4	4	Hands-on visual				
None listed	3	3	2	3	3	3			Good pictures to good BMPs. Bad way to show installation.		
Supervisor	3	3	3	3	3	3	Demos		Lunch	Street sweeping	
Inspector	3	3	3	3	3	4	Demonstration	N/A	N/A	N/A	
Inspector	4	4	4	4	4	4					
Supervisor	4	4	4	4	4	4	Field Demonstration	All good			
Inspector	4	4	4	4	4	4	Physically checking out wide variety of items				
Inspector	3	3	3	3	4	3					
Inspector	3	3	3	3	3	3					

Appendix F

Provision C.7 Public Information & Outreach

- CWP Press Releases (three)
- OWOW Trainings and Survey Results
- Bringing Back the Natives Garden Tours Final Report
- Kids for the Bay – "Storm Drain Rangers" Program Final Report
- Caterpillar Puppets – "Mr. Froggy's Clean-up Club" Program Final Report
- ZeroLitter Internships - Earth Team Final Report
- BASMAA Regional Supplement for Training and Outreach FY 2014-2015 (including Be the Street Report, BASMAA Media Relations Campaign Final Report and IPM Advocates for Retail Stores Final Report)

03 September 2014

Volunteers Prepare for Coastal Cleanup Day on September 20

FOR IMMEDIATE RELEASE
September 4, 2014

Event Calendar for Alameda County Now Available

*Every year, thousands of Alameda County residents participate in Coastal Cleanup Day events, like these young volunteers at a 2013 creek cleanup in Dublin, CA.*Alameda County, CA—Citizens throughout Alameda County are gearing up to join volunteers worldwide for the 29th annual Coastal Cleanup Day on Saturday, September 20. Last year the international event drew close to 650,000 participants in 92 countries, who picked up more than 12.3 million pounds of trash, according to the Ocean Conservancy. To help Alameda County residents find an event near them, the Clean Water Program Alameda County has compiled a list of local creek and shoreline cleanup events organized by its member cities and agencies. Visit **www.cleanwaterprogram.org/residents/volunteer.**

"Coastal Cleanup Day is a key date for the health of our creeks, wetlands and the Bay," noted Clean Water Program Manager Jim Scanlin. "The cleanup activities won't reverse pollution from litter and debris, but they help bring attention to the issues and give local residents opportunities to contribute directly to the health of their local waterways."

In most of California, including Alameda County, stormwater does not pass through a water treatment plant. That means that litter and pollutants carried into the storm drain system by wind and water flow directly into creeks and the Bay, where they harm fish, marine mammals and birds. The vast majority of marine debris—up to 80%—originates inland. Plastic bags and other lightweight plastic litter items are particularly hazardous because they float, entangling and poisoning marine wildlife that mistakes the items for food.

Coastal Cleanup Day volunteers not only prevent litter from entering the ocean, but they also help gather valuable data on types of litter and its distribution. According to a 2013 report by the California Coastal Commission, cigarette butts and plastic litter, such as fast food wrappers and plastic bags, are the most commonly littered items. An estimated 20 million tons of plastic litter

enter the ocean every year and has been known to impact more than 600 species of marine life. Recent EPA estimates put the cost of marine litter to California's economy in the range of $500 million a year—an average cost of over $13 per person per year.

Click here to view the calendar of Coastal Cleanup Day events in Alameda County.

CONTACT
Jim Scanlin
Clean Water Program
(510) 670-6548

06 March 2015

Clean Water Program Now Accepting Grant Applications

Funding for Projects that Reduce Litter in Local Waterways

FOR IMMEDIATE RELEASE
March 9, 2015

Contact:
Jim Scanlin, Tel. (510) 670-6548

Alameda County, CA—The Clean Water Program is inviting applications for its 2015 Community Stewardship Grants, designed to facilitate community-based actions that enhance and protect the health of local waterways. Proposed projects must be aimed at storm water pollution prevention in Alameda County and contain a community or public outreach element. This year's grant cycle focuses on litter reduction projects in particular.

Funding requests between $1,000 and $5,000 per project will be considered, for a total available budget of $25,000. Eligible applicants include teacher and student groups, youth organizations, homeowners associations, community groups, environmental groups and other non-profit organizations. **Deadline for submissions is April 13, 2015. The application packet can be downloaded here.**

"Litter is posing a serious threat to the health of our creeks, wetlands and the Bay. With the help of our annual community stewardship grants, we can tap into the expertise and creativity of groups right here in Alameda County to help us protect our local waterways," explained Clean Water Program Manager Jim Scanlin.

Since the late 1990s, the annual grants program has funded over 100 grassroots projects. Activities aimed at litter reduction range from creek and beach cleanups, trash can installations and beautification efforts, to youth empowerment, community outreach and education. Outreach methods include art projects, events, trainings, videos and printed materials, among others.

Sample projects funded in recent years:

- Earth Team worked with students in San Lorenzo to plan and conduct a trash assessment, litter cleanup and beautification event on campus, then petition the manufacturer of the most littered item to rethink their product.
- The Watershed Project trained elementary students in Albany as "Green Champions" to reach out to parents, teams and leagues at sporting fields about litter from single-use bottles and snack food wrappers.

- Park Day School in Oakland installed a rainwater garden and cistern, developed educational signage and organized tours of the garden and catchment system.

For more information about the Clean Water Program Community Stewardship Grants and projects funded in the past, and to download an application packet, please click here.

Community stewardship grants fund creative litter-prevention projects like this display on disposable packaging at an event encouraging the use of reusable containers. Other grant funded projects include community cleanups, public trash can installations and more

15 April 2015

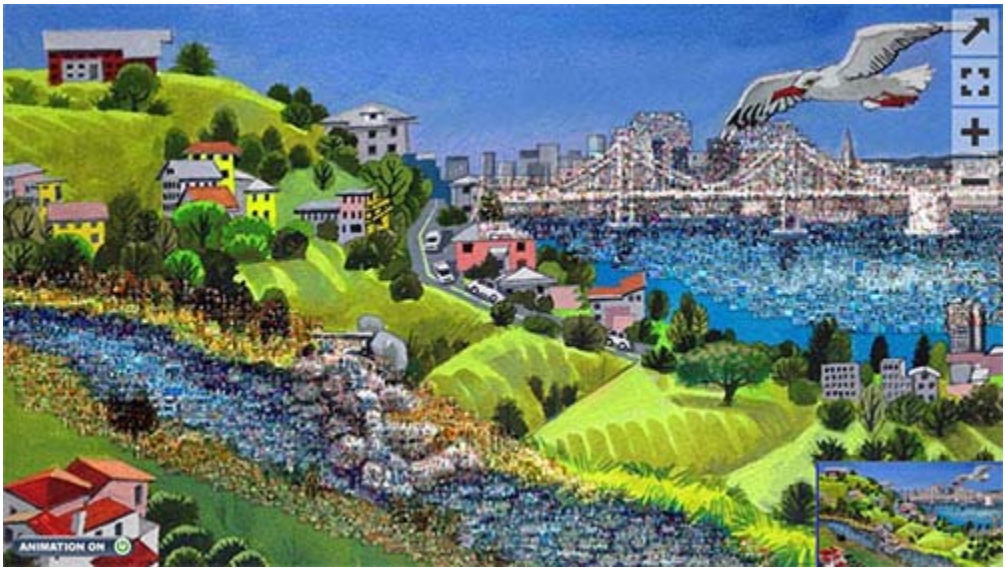
Interactive Photo Mosaic Lets Alameda County Residents Show They “LuvTheBay”

Pledge to Keep Litter Off Streets, Creeks and the Bay at www.LuvTheBay.org

FOR IMMEDIATE RELEASE
April 16, 2015

Contact:
Jim Scanlin, Tel. (510) 670-6548

Alameda County, CA— A photo mosaic project launches today with the goal of encouraging people in Alameda County to pledge to eliminate littering. Litter leads to water pollution, even when found in communities located far from the Bay. Clean Water Program Alameda County’s LuvTheBay Mosaic project asks residents to submit a photo of themselves as a pledge to LuvTheBay at www.LuvTheBay.org. On the site, people will be able to search the mosaic and share and vote for their favorite photos.



The finished mural will be printed and displayed around Alameda County in late 2015. The image for the mural was created by Berkeley-based artist Christopher Peterson.

“California’s drought has heightened public awareness of the importance of water,” noted Clean Water Program Manager Jim Scanlin. “We felt it was a good time to encourage folks to keep the water we do have clean and litter-free.” The LuvTheBay Mosaic will visually demonstrate the public’s commitment to keeping their neighborhoods, creeks, and the Bay free

of litter. Each person submitting a photo to the LuvtheBay Mosaic pledges to always use recycling or garbage cans.

Litter is a big problem for Alameda County waterways. Commonly littered items, such as fast-food packaging, plastic wrappers and cigarette butts, degrade slowly, are toxic to wildlife and harm water quality. Alameda County jurisdictions spend approximately $24 million every year on litter and storm drain cleanup. Litter also reduces quality of life and attracts more litter if left on streets and sidewalks.

How to Submit to the #LuvtheBay Mosaic

To submit a photo to the LuvTheBay mosaic, visit www.LuvTheBay.org or post a photo to Twitter or Instagram with the hashtag #LuvTheBay. The submission period runs through September 30, 2015 – after local Coastal Clean Up Day events conclude.

The interactive photo mosaic #LuvTheBay lets citizens pledge to eliminate litter by uploading a photo of themselves.

Alameda Countywide Clean Water Program
OWOW Stores Employees Training Final Report
July 2015

Annie Joseph

This report summarizes the implementation of the Our Water Our World Program in the Alameda Countywide Clean Water Program area in FY 14-15.

This year we added two new stores, Cole Hardware in Oakland and Home Depot San Leandro. Now we have all nine of the Home Depots in Alameda County participating in the OWOW Program.

This year SummerWinds Fremont closed as did Thomsen's Garden Center in Alameda.

We now have 36 stores participating in the OWOW Program

I worked with IPM Advocates Suzanne Bontempo, Lisa Graves, Debi Tidd, Steven Griffin, and added another outreach expert Patrice Hanlon.

Store Employee Trainings

We conducted 22 trainings at 20 stores, and trained 202 employees. This is an increase from last year when we conducted 15 trainings and trained 120 employees trained. The Home Depot Stores in Oakland and Hayward requested repeat trainings to get additional employees trained.

We conducted pre-training awareness surveys and post-training feedback surveys at all trainings, except the round robin style training conducted at Pete's Hardware in Castro Valley.

New this year: We focused on the drought and Debi Tidd (IPM Advocate and instructor) created a piece called 'Protecting Landscapes in a Drought". This gave us a guideline to help stores identify drought stress and prevent pest problems with proper watering, fertilizing, selection of waterwise plants, IPM techniques to reduce pest populations, and the less toxic products that each store carries. We also discussed the pesticides of concern the pyrethoids and how little is needed to contaminate the streams. Debi also created a standard power point for OSH stores for 2015 and a standard one for Home Depots 2015 for all the Advocates. These power points also featured the less toxic products that Home Depot and OSH carry. She also made Pest of the Month Calendars for the Home Depots and OSH and a standard one for other stores. The Home Depot and OSH Stores received a less toxic product list for 2015 broken out by pest and active ingredient. These were all included in their training folders. We also covered information on the plant labeling that Home Depot was doing to inform their customers about the use of neonicotinoids from certain growers. Also new this year was adding in the HHW sheet

from Stop Waste into the literature racks and into the training folders. These were put out in the stores in the fall and were very well received as a handy resource on local HHW information. Some stores also put them in their paint departments because of the frequent questions they receive from customers about where to dispose of old paint.

Through our Home Depot Pilot Program we created a Home Depot-specific version of the “Pests Bugging You” Guide. The Guides were distributed to Home Depot Associates and to the customers during outreach events.

We continue to encourage the stores to go through the two online training modules from UCIPM. We cater the store training in the independent stores to what concerns they would like covered so this year it was: pests during drought, honey bee sensitivity to pesticides, citrus leaf miner, spider mite infestations, effective alternatives to neonicotinoids, rat and mice infestations, use of gray water in the landscape, effects of pesticides on beneficial insects.

List of Stores that Received the Trainings in FY 14-15:

1 .Home Depot Hayward 11 staff 10/06/14

2 .Cole Hardware 14 staff 1/07/15

3. Pete’s Ace Hardware 15 staff 3/03/15 round robin style 15 minute trainings no surveys

4. East Bay Nursery 16 staff 3/04/15

5. Broadway Terrace Nursery 4 staff 3/15/15

6. OSH Livermore 5 staff 3/21/15

7. Evergreen Nursery 5 staff 4/06/15

8. Grand Lake Ace Nursery 6 staff 4/09/15

9. OSH Dublin 5 staff 4/11/15

10 Home Depot Oakland 9 staff 4/23/15

11 .OSH Fremont 6 staff 5/04/15

12 OSH San Leandro 7 staff 5/05/15

13. Home Depot Livermore 7 staff 5/06/15

14. Home Depot Hayward 19 staff 5/13/15

15. Flowerland Nursery 9 staff 5/22/15

16. Home Depot Pleasanton 10 staff 5/28/15

17. Summerwinds Albany 3 staff 5/29/15

18. Home Depot Oakland 11 staff 6/04/15

19. Home Depot Livermore 6 staff 6/05/15

20. Home Depot Fremont 10 staff 6/09/15

21. Home Depot San Leandro 17 staff 6/10/15

22. Dale Ace Hardware 7 staff 6/24/15

In addition to the above, Home Depot Regional Trainings funded by the EPA were held in Milpitas and Napa. This training was requested by Krissa Glasgow, Sr.Manager Environmental Innovations in Atlanta. They were pleased with the results of the Home Depot Pilot Program that they wanted more Associates to have an advanced training. Home Depot stores in Alameda County were well represented. Eight of our nine stores attended, making up 24% of all participants. Each attendee received a binder of resources, a hand lens and lanyard, a landscape Pest identification card, Pest of the Month Calendar, Home Depot Less Toxic Product List, How Home Depot Less Toxic Products Work sheet, and the Home Depot Pocket Guide 2015.

Summary of Training Feedback

The trainings were received very well by the employees and they valued the updated information we gave them this year. Overall, responses continue to be favorable. A summary of responses received is below**:**

Questions asked:

1. The training workshop was well organized and interesting - 81% strongly agreed, 18% agreed, 1% neutral. 0% strongly disagreed.

2. My training manual will be a useful resource in the future - 79% agreed strongly, 16% agreed, 4% neutral 1% disagreed.

3. The information will help me recommend and sell less toxic products - 77% Agreed strongly, 19% agreed, 4% neutral 0% strongly disagreed.

4. The instructor was responsive to questions - 87% agreed strongly, 11% agreed, 1% neutral, 1% disagreed.

5. The level of detail was appropriate - 71% agreed strongly, 26% agreed, and 3% neutral, 0% strongly disagreed.

6. Visual Aides were effective - 72% strongly agreed, 23% agreed, and 5% neutral, 0% strongly disagree

7. Written materials were effective - 78% strongly agreed, 19% agreed, 3 % neutral, 0% strongly disagree

8. I would recommend this training to coworkers - 81% strongly agreed, 16% agreed, 3% neutral

9. I would like to learn more about IPM and IPM certification - 58% strongly agreed, 21% agreed, 18% neutral, 2% disagreed, and 1% strongly disagreed.

Free response answers to questions below are in attachment in the attached post-training response compilation report:

J. What part of the training was most helpful?
K. What part of the training was least useful?
L. Did the information change your ideas about Pesticides? If so, How?
M. When this training is held again, what changes would you suggest?
N. Please include additional comments.

*Biggest improvement on free response questions were on question L. “Did the information change your mind about Pesticides? If so, How?”
Out of 157 respondents 127(80%) said yes ; 17 (11%) were already eco -friendly and were concerned about using them; and 13(8%) said no with no explanation.

The comparison in differences from last year’s multiple choice questions is below:

#1. The training workshop was interesting and well organized.
81% strongly agreed compared to 77% last year
18% agreed compared to 17% last year
1% neutral compared to 5% last year
0% strongly disagreed compared to 1% last year

#2.My training manual will be a useful resource in the future
This year 79% strongly agreed compared to 79% last year
This year 16% agreed compared to19 % last year
This year 4 % were neutral compared to 2 % last year

#3. The information will help me recommend and sell less toxic pesticides
This year 77% strongly agreed compared to 83% last year
This year 19% agreed compared to 18% last year

This year 4% neutral compared to 4% last year
This year 0% strongly disagreed compared to 1% last year

#4. The instructor was responsive to questions
This year 87% strongly agreed compared to 89% last year
This year 11% agreed compared to 10% last year
This year 1% neutral compared to 1% last year
This year 1% disagree compared to last year 1%

#5. The level of detail was appropriate
This year71% strongly agreed compared to 73% last year
This year 26% agreed compared to 23% last year
This year3% neutral compared to 4% last year
This year 0% strongly disagreed compared to 0% last year

#6. Visual aides were effective
This year 72% strongly agreed compared to 76% last year
This year 23% agreed compared to 17% last year
This year 5% were neutral compared to 7% last year
This year 0% strongly disagreed compared to 0% last year

#7. Written materials were effective
This year 78% strongly agreed compared to 75% last year
This year 19 % agreed compared to 20% last year
This year 5% neutral compared to 5% last year
This year 0% strongly disagreed compared to 0% last year

#8. I would recommend this training to coworkers
This year 81% strongly agreed compared to 82% last year
This year 16% agreed compared to 12% last year
This year 3% were neutral compared to 6% last year
This year 0% strongly disagreed compared to 1% last year

#9. I would like to learn more about IPM and IPM certification
This year 58% strongly agreed compared to 53% last year
This year 21% agreed compared to 19% last year
This year 18% neutral compared to 26% last year
This year 2% disagree compared to 1% last year
This year 1% strongly disagreed compared to 1% last year

Conclusions on trainings
All results were very positive and the “strongly agreed” category was up overall again this year in favor of the trainings.

The trainings were harder to schedule this year because of the lack of employee hours due to the drought and the poor spring weather. With persistence they got scheduled and

even though attendance was lighter, the results were very positive. These trainings helped to grow our relationship with the stores and engaged the employees in a more committed fashion with the OWOW program.

IPM Outreach events

We staffed 18 outreach events, and interacted with approximately 869 individuals. At these events, the Advocates actively help customers in the aisles troubleshoot pest questions. They are not just sitting at a table handing out fact sheets. They are making changes in store selection of less toxic products and educating customers on effective alternative choices to pesticides that pollute. They are also actively helping customers in the stores when they are doing store visits.

The list of events is below:

Regan Nursery Rose event – Annie	9/16/15	48 contacts
Home Depot Fremont Children's Event – Patrice	10/04/15	50 contacts
Alden Lane Invitation to Inspiration Day – Annie	2/14/15	60 contacts
Cole Hardware Grand Opening tabling – Suzanne	2/21/15	50 contacts
OSH Berkeley Grand Re-opening tabling –Lisa	3/01/15	100 contacts
OSH San Leandro no tax Day tabling – Suzanne	3/07/15	31 contacts
Home Depot Livermore water event with zone 7 - Suzanne	3/07/15	43 contacts
OSH Livermore no tax day - Steven	3/21/15	60 contacts
OSH Fremont no tax day -- Suzanne	3/21/15	31 contacts
Grand Lake Ace Oakland tabling- Suzanne	3/22/15	35 contacts
Summerwinds Albany tabling – Annie	3/28/15	35 contacts
Home Depot Emeryville tabling – Suzanne	3/29/15	38 contacts
Home Depot Pleasanton zone 7 water event – Annie	4/11/15	40 contacts
Osh Dublin no tax day tabling - Steven	4/11/15	70 contacts
Westbrae Nursery drought talk - Suzanne	4/19/15	23 contacts
Evergreen Nursery Beneficial Insect talk - Suzanne	5/02/15	18 contacts

Home Depot Emeryville tabling – Suzanne	5/15/15	37 contacts
Dale Ace Hardware drought talk - Patrice	6/20/15	100 contacts

New this year for events:
We were invited by Home Depot to participate with the Zone 7 Water Agency in two events in Alameda County: one in Livermore on March 7, 2015, and one in Dublin on April 11, 2015. This was a real plus and gave us visibility with Home Depot Corporate.

Pesticide Reduction and increase in sales and shelfspace of less toxic products:

Grand Lake Ace Oakland continues to be a major partner in spreading the less toxic message. Tom Nelson, the manager, said that almost all of the products they sell are less toxic. They interact with all their customers and ask them to put back toxic products and give them less toxic replace.

West brae Nursery this year discontinued selling systemic pesticides and has no toxic insecticides for sale currently. They are working on phasing out most herbicides.

Berkeley Horticultural Nursery continues to label their plants that are grown without bee harming pesticides.

The Home Depots had additional wing stack and endcap promotions of the new Scott's Miracle Gro Natures Care products this season. It was very encouraging this year to have the sales reps from that company partnering with us in the stores.

Home Depot Emeryville had a 17% increase in the sales of their less toxic products that were on an endcap through fall of 2014 under the Home Depot Pilot program.

OSH dedicated an endcap for nine months of the Dr Earth organic products this year.

Miracle Gro Company had a 50% growth in pesticides due to the new less toxic products in Northern California. I spoke with their regional manager and he was extremely appreciative of all our help that we gave them.

Challenges:

Additional challenges are the staff hours needed to keep up with Home Depot demands. These stores demand three to four times the attention that a normal OWOW store needs. I would advise addition of staff hours for work with Home Depots in the budget for 2015/2016. Sometimes you have to make two to three visits to reach the people you need to complete a task. Having tenacity does pay off but the hours involved are far more than they were anticipated to be and take hours away from other stores in the program.

Recommendations for 2015/2016

I would like to purchase the Landscape Pest ID cards for each of our stores this year. It is from UCIPM and is a deck of cards bolted together like a fan. I have given out a few but would like each store to have one. They cost about $20.00 per pack. I have given out a few this year along with posters of beneficial insects, but would like funding for more if possible.

I would like to continue the use of the services from the IPM Advocates. They have done a great job and helped to meet the needs of our stores this past year in Alameda County.

Thank you so much for the opportunity to work with your stores! I really appreciate it.

Alameda Countywide Clean Water Program
Our Water Our World Store Employee Trainings
Summary of Pre-Training Surveys
June 2015

Number of Trainees: 196
Number of respondents: 175

***** NOT ALL TRAINEES TURNED IN SURVEYS, AND NOT ALL THOSE WHO TURNED IN SURVEYS ANSWERED ALL QUESTIONS. *****

A. The training workshop was well organized and interesting
   Strongly disagree - Disagree - Neutral - 2/174 = 1%
   Agree – 32/174 = 18% Strongly agree – 140/174 = 81%

B. My training folder will be a useful resource in the future
   Strongly disagree - Disagree - 2/174 = 1% Neutral – 7/174 = 4%
   Agree – 27/174 = 16% Strongly agree – 138/174 = 79%

C. The information will help me recommend and sell less toxic pesticides
   Strongly disagree - Disagree - Neutral - 7/174 = 4%
   Agree - 33/174 = 19% Strongly agree – 134/174 = 77%

D. The instructor was responsive to questions
   Strongly disagree - Disagree – 1/173 = 1% Neutral – 1/173 = 1%
   Agree – 20/173 = 11% Strongly agree – 151/173 = 87%

E. The level of detail was appropriate:
   Strongly disagree - Disagree - Neutral - 6/173 = 3%
   Agree - 45/173 = 26% Strongly agree – 122/173 = 71%

F. Visual materials were effective:
   Strongly disagree - Disagree - Neutral – 8/151 = 5%
   Agree – 40/171 = 23% Strongly agree – 123/171 = 72%

G. Written materials were effective:
   Strongly disagree - Disagree - Neutral - 5/172 = 3%
   Agree - 33/172 = 19% Strongly agree - 134/172 = 78%

H. I would recommend the training to co-workers:
   Strongly disagree - Disagree - Neutral - 5/174 = 3%
   Agree – 28/174 = 16% Strongly agree - 141/174 = 81%

I. I would like to learn more about IPM methods and IPM certification

Strongly disagree – 1/170 = 1% Disagree - 4/170 = 2% Neutral – 31/170 = 18%
Agree - 36/170 = 21% Strongly agree - 98/170 = 58%

J. What part of the training was most useful?

- Drought tolerant plants (x 3)
- Beneficial bugs/ good v. bad bugs (x 13)
- All of it! (x 26)
- Drought information/impact (x 5)
- Pest control/ pest info (x 2)
- Knowing the pesticides and product information (x 15)
- Irrigation/watering (x 2)
- Info on/benefits of less toxic and organics (x 8)
- What product for what problem (x 5)
- Handouts/training packet (x 7)
- Visual aids (x 4)
- New/updated information (x 2)
- Info on current events/issues (x 2)
- Grey water (x 2)
- Q and A/ instructor's ability to answer all questions! (x 4)
- We can use certain Jack's for leaf miner
- The literature for clients
- Everything was useful perfect timing
- IPM
- Rat trap
- Drip line info/rats
- Moving to the aisles to see product
- Rodent control
- Citrus/pest
- Overall knowledge
- The website set up for disease recognition
- The more uncommon pests like spider mites
- What treatments to use on plants
- Household hazardous waste
- Learning about what chemicals to use
- Material and product knowledge
- Good pests and watering
- Waste disposal
- Fast acting fertilizers can attract more pests
- Seeing the pesticides that were most pet friendly/ beneficial insect-friendly was helpful
- Yellow Jacket and mosquito

- Learning about snails
- Lots of useful knowledge
- The most part of the training
- Powerpoint
- Plant and animal safe products
- The area concerning where I live
- The whole class
- Ant control
- Mostly everything
- Product P/K and slide show
- Nature Care
- The whole training was useful
- Chemicals to use on plants
- The Nature's Care information
- Everything, but how watering works answered most my Q's
- The Free drop off for household chemicals
- The information
- All of it. I learned about things I didn't know
- Marvelous mulch; sanitation
- Where to take my Hazmat
- The Facts
- The part about information to keep honeybees and butterflies alive and safe
- Treating thrips and citrus leaf miner
- Beneficials and disadvantages of each product
- How Neem actually kills the bugs
- Preventative alternatives to toxic
- Different products and how to help customers choose the right products for need
- The point about drought and stressed plants not being able to produce oils that protect it against pests
- Bug suppressants, when to spray
- Presentation
- Impact of pesticides on bees
- Inspiration to learn more
- Hard to say… lots of info!
- Bed bug info
- Identify bugs and specific pest traces
- Product and ingredient specific education of what we have in stock
- Pesticide and miracle grow
- Learning about the effects of pesticides. I now know the pest effect

K. What part of the training was least useful?

- N/A (x 21)
- None (x 29)
- Nothing (x 7)
- It was all good! (x 8)
- It was all useful! (x 21)
- Not enough time (x 2)
- It was all very informative (x 2)
- The bugs!
- I probably asked too many questions
- Basic info already known (but refresher doesn't hurt)
- Large Pamphlets
- Water saving
- Pictures
- Home Depot's inability to support the DS in getting proper training to the staff
- The packet of paper
- The Whole class
- What product to use for plant growth
- None, all interesting
- All information was useful – different kinds of pesticide use
- All information was VERY useful. I would NOT take anything out
- Most of the plant and pest talk for me. I garden regularly
- I don't know
- None! Super informative
- Identical products/different brands
- What's the best product to use for home?
- Used all info
- Time frame (too short on slides)
- See above
- I ate to much pizza

L. Did the information change your views about pesticides? How?

- Yes (x 20)
- No (x 12)
- Only which ones are most effective in certain situations
- No not really; go organic
- N/A
- More informed about Spinosad
- Better understanding (visual
- Yes – more likely to use

- Yes – beneficial insects
- Yes, how to use pesticides
- Yes, the new information
- Use more natural methods
- Eco safe awareness
- I am an organic gardener
- I think it would be helpful
- More aware of good products
- Yes that there are many that don't work
- Yes – taking preventative actions first instead of poison
- Yes: look for source of problem
- I know which products to recommend
- More interested
- No, I already use organic type products
- Learn more about pesticides
- Pesticides accordingly
- Yes it let me know about the different ones that are out there
- Did not know how many organics we carried
- Yes
- Yes, knowing how the organics work convinced me
- The variety of organic and other products
- Yes, them surviving sewer treatment makes me change my opinion
- Yes – different types
- Yes because I have more info
- Yes, I learned organic is a lot better
- Yes on safe and useful pest control
- Yes, showed what things do what
- Yes, it help our nature
- Yes. Don't use so much
- Yes, know some insects are helpful
- Its better to use organic in the long run
- Yes. Will use organics
- I didn't know that sewer water once treated still has pesticides in it
- Yes, I learned about what different pesticides do
- Yes, will use less toxic and use more natural products
- No, I'm an environmental science major, but it was good to be reminded
- Yes, didn't realize how many bad bugs there were
- Yes to read labels and use organic
- It's more important for saving your garden
- Yes, to be mindful what plants to plant that attract good bugs
- Yes being more on the lookout
- Benefits of organics

- Yes, I now understand good/bad bugs
- Pesticides are bad for the environment
- Already knew
- Yes, use the right ones
- I already don't like pesticides
- Never like them
- Yes, more aware of disadvantages
- What to use and when
- Just knowing there are more natural and safer products available
- Yes, more educated
- Yes, Organic is more defined
- Yes, I'm a home owner
- Use more natural control
- Information to give to customers and in my home
- it did somewhat. Gathered more information. Very helpful
- Yes, more aware about affects
- Yes, using organic for pet owners
- No. More informed
- Yes – differences
- Yes, know how to care our nature and biodegradable and ecological products
- What to use for the different bugs
- Somewhat more knowledgeable
- Yes, how many pesticides are out there
- Very much, yes!!
- Yes how to use them
- No because I knew pesticides are bad
- No
- Now I know more
- Yes, I learned how to properly apply
- Yes, learned that having a garden or plants is a lot of responsibility
- Yes I know more
- Yes, because my mom likes to garden I can inform her
- Yes. No water treatment?
- No. I know they are bad
- Yes! More mindful
- Fact that so many end up in streams
- Yes more aware
- I still don't like to use them
- Yes b/c it helped me to be able to plant properly
- Not all pesticides are good
- Re-introduced our views
- Yes – alternatives to Spinosad

- Use sparingly
- Yes, understand more about products I was not familiar with
- I already was anti pesticide
- No – I had IPM training
- Yes. Critical thinking about effects of pesticides on beneficial insects
- No. I already didn't like them
- Pesticides aren't the only tool and like that it was very elaborated
- Enlightened
- No, but provided me with better info
- Already have some knowledge about IPM but helps to go over products to recommend to customers
- About when to apply Captain Jacks
- Learning about how they contaminate water supplies
- Yes. Use them as a last resort
- A little
- No, I always have used the least toxic pesticides if I have to use anything
- Yes, there are benefits to not using pesticides that kill all.
- Yes, safer is better
- No… I already support specialized topics
- No – it re-enforced
- More aware of how hazardous they are
- Yes. "green options"
- Read carefully, harmful mix
- Use more organic!
- how to dispose
- learned
- Yes, Go Natural
- I already knew that chemical pesticides were less desirable than natural/organic pesticides, but now I know to what degree!
- Yes I will not use anything but neem! Or other gentles

M. When this training is held again, what changes do you suggest?

- N/A (x 11)
- None (x 37)
- More time/ make it longer (x 8)
- Nothing (x 13)
- More detail about products/ how to use products (x 4)
- More about water use in Bay Area homes
- Keep in mind some trainees have absolutely zero knowledge or experience with gardening when using lingo and vocab ☺
- Keep concise and time management

- Narrow focus as per time allotted
- Help more often
- Yes
- None at this time
- Soda
- Can’t think of anything
- 90 minutes instead of 60 minutes
- More time for ?’s
- More info about chloranine and mychoryziae
- Nothing, great info
- Please schedule this NOT in the spring
- Just more “watering” info for drought
- Time
- All info was perfect
- More pizza/sodas. JK.
- Open
- Nothing. Very detailed and informative
- Slow down on info in our folders, go over each one
- Keep it the same!
- Longer and more often
- More details about bad and good bugs
- No
- More types of info on insects and how to kill them
- No packet
- None! Just Perfect. Everything was so helpful I am going to take this class online. I’m really glad I was able to take this class
- More visual examples
- Little more condensed
- Not much
- Nothing, it was great
- Add more information about plants and flowers
- More on rats/insects
- None, more time
- More visual aids
- Not much
- Longer, more people/associates
- I could benefit from reviewing the pesticide products that were the same, once more
- Schedule it more in advance
- Nothing it was a great training
- None – it was great!
- Show what they all look like
- Training was fine

- Schedule more garden shop clerks to be there
- Are they good to kill the insects
- Can’t think of anything
- More detail for the slides
- Open it to our customers

N. Please include additional comments.
   - Very useful
   - More elaborate trainings
   - Many customers depends upon better associates to buy pesticides (?)
   - Need more training classes
   - More education on product on the floor
   - Excellent thank you!!

Bringing Back the Natives Garden Tour
1718 Hillcrest Road
San Pablo CA 94806
(510) 236-9558

mailto:Kathy@KathyKramerConsulting.net

http://www.BringingBackTheNatives.net

2015 Final Report

A nine-year study of water use, green waste generation, maintenance hours, and maintenance labor costs between a traditional garden and a California native plant garden was conducted by the City of Santa Monica between 2004 and 2013. The results of this study showed that the native garden uses 83% less water; generates 56% less green waste, and requires 68% less maintenance than the traditional garden.

from City of Santa Monica garden/garden

Why a Native Plant Garden Tour?
The spring 2015 Bringing Back the Natives Garden Tour was held in order to showcase pesticide-free, water-conserving gardens that provide habitat for wildlife, reduce solid waste, and contain 60% or more native plants.

The tour enlists local residents to demonstrate by example that seasoned and novice gardeners can garden with good results without the use of synthetic chemicals, and with minimal supplemental water, while providing food, shelter, and nesting areas for wildlife. The gardens on this tour show that it is possible to implement sustainable garden practices and still have beautiful places for people to relax in and enjoy. The goals of the Bringing Back the Natives Garden Tour are to motivate attendees to eliminate pesticide use, reduce water use, generate less solid waste, and provide habitat for wildlife in their own gardens.

Why California natives? Once established in the garden setting, California native plants need little or no summer water, as they survive naturally with only fall-to-spring rainfall. In addition to being water-conserving, California natives are hardy, and they do not require the use of pesticides and fertilizers, as many non-natives do. Native plants need less pruning than many non-natives, such as lawn, ivy, or cotoneaster, thus generating less green waste. As this terrific article demonstrates, native plants also provide the best habitat for birds, butterflies, beneficial insects, and other forms of wildlife.

A nine-year study of water use, green waste generation, maintenance hours, and maintenance labor costs between a traditional garden and a California native plant garden was conducted by the City of Santa Monica between 2004 and 2013. ***The results of this study showed that the native garden uses 83% less water;***

generates 56% less green waste, and requires 68% less maintenance than the traditional garden.

Bringing Back the Natives Garden Tour gardens contain minimal or no lawn. This is of particular value since the majority of the chemicals purchased by homeowners support lawn care, and the majority of water used in home gardens is applied to lawns. According to the U.S. Fish and Wildlife Service in their, "Homeowner's Guide to Protecting Frogs—Lawn and Garden Care," homeowners use up to ten times more chemical pesticides per acre on their lawns than farmers use on crops. In addition, half of the water used by the average household is applied to the landscape—with most of that water being applied to keep turf green.

2015 Bringing Back the Natives Garden Tour events: Tour; Native Plant Sale Extravaganzas; and Workshops

The Bringing Back the Natives Garden Tour has now expanded its offerings to include not only the spring Tour and Native Plant Sale Extravaganza, but also a Fall Native Plant Sale Extravaganza, and a Valentines Day Native Plant Sale, and a series of workshops that are offered in both the fall and spring. These are described below.

The Eleventh Annual Bringing Back the Natives Garden Tour, which took place on Sunday, May 3, 2015, showcased thirty eight gardens and nurseries located in eighteen cities and unincorporated areas in Alameda and Contra Costa counties (Berkeley, Castro Valley, Concord, El Cerrito, El Sobrante, Hayward, Kensington, Lafayette, Livermore, Moraga, Oakland, Orinda, Pleasant Hill, Pleasanton, Richmond, San Lorenzo, Union City, and Walnut Creek).

A variety of gardens were featured on the tour. The gardens ranged from Al Kyte's forty year old wildlife habitat to a number of gardens that had been recently installed, and from large lots in the hills to small front gardens in the flats. Tour gardens contained everything from local native plants to the horticulturally available suite of natives from throughout California. Twelve of the gardens were designed and installed by owners, and the rest were designed and installed by professionals. All of the gardens were landscaped with between 70% and 100% native plants.

The tour received overwhelming interest from the public; this year there were nearly 6,000 registrants. On the day of the tour walk-in registrants were accommodated at nine same-day walk-in registration sites, which were set up in Berkeley, Castro Valley, El Cerrito, Livermore, Moraga, Oakland, Pleasanton, Union City, and Walnut Creek.

This year 12,724 garden visits were made on the day of the tour. See the end of this report for a list of the number of visitors counted at each garden.

More than 150 volunteers either worked at gardens for a half-day shift on the day of the tour, or helped with tour preparation and clean-up, contributing more than

600 hours of time to the tour. The 41 hosts put in countless hours preparing for the tour, and nearly 300 hours on the day of the event.

More than $13,000 worth of native plants were sold in the spring Native Plant Sale Extravaganza, which took place on May 2 and 3, 2015. Nearly $19,000 worth of native plants were sold in the October, 2014 Native Plant Sale Extravaganza, and more than $12,000 worth of natives were sold during the Spring 2015 Valentines Day sale. The total of native plants sold in these three sales was $44,000.

Garden Talks
More than 50 garden talks and demonstrations on a plethora of topics were given throughout the week-end of the Tour. Talk topics included how to: retain stormwater on-site; remove a lawn; design and install a drip irrigation system; select and care for native plants; design and install native plant garden; attract wildlife; choose appropriate natives; create a low-maintenance native plant garden; maintain a native plant garden; garden on hillsides; and how to receive rebates from water districts for removing lawns, among other topics.

The website
The website contains numerous photographs of all of the gardens that have ever been on the tour (information on prior tours remains accessible on the website for future reference), extensive garden descriptions, plant lists for each garden, and some garden-specific bird, butterfly, mammal, reptile, and amphibian lists, as well as resource information on how to garden with California natives. The resource information includes contact information for landscaper designers with gardens on the tour, a list of Easy-to-Grow East Bay Natives, lists of nurseries that carry native plants, lists of reference books, "How I got started gardening with native plants" essays by a number of the host gardeners, and more.

In order to attract hosts and volunteers, and to thank them for their time, two Garden Soirees—free, private tours of native plant gardens—were held in 2015. Garden Soirees offer host gardeners and volunteers the opportunity to see tour gardens that they would otherwise miss. They also create a feeling of camaraderie between hosts and volunteers, and provide a venue for people who are both knowledgeable and passionate about gardening with natives to meet and exchange information.

Select Tours
In the fall of 2014 and the spring of 2015 a series of workshops were coordinated. These included hands-on sheet-mulching workshops; a how to install drip irrigation workshop; and a tour of a large organic garden that stores 10,000 gallons of rainwater on-site, has chickens, and contains extensive native and edible gardened areas.

This year all of the sheetmulching workshops filled, with thirty people each; the last sheetmulching workshop of the season filled five weeks ahead of time. The how to install drip irrigation workshop filled with thirty people six weeks ahead of time.

Tour Partnerships
The Bringing Back the Natives Garden Tour created partnerships with a variety of organizations that share common values—that chemical-free and water conserving gardening preserves water quality and quantity, and creates wildlife habitat. The list of major sponsors and supporters of this year's tour includes a flood control district, two county stormwater programs, three water districts, four cities, an unincorporated area, and a private foundation. The list of tour sponsors is provided below.

Sponsors of the 2014 tour

$15,000
Alameda County Flood Control and Water Conservation District

$10,000
Contra Costa Clean Water Program

$7,800
Jiji Foundation

$4,000
Contra Costa Water District

$2,500
County Clean Water Program (Alameda)

$2,000
East Bay Municipal Utility District

$1,600
California Native Plant Society (East Bay Chapter)

$1,500
City of El Cerrito

$1,000
Bay Area Water Supply and Conservation Agency
City of Antioch
City of Walnut Creek
Zone 7 Water Agency

$500
Alameda County Water Agency

Host Gardeners
The gardens selected to take part in the tour are chemical-free and water-conserving landscapes that provide habitat for wildlife. Hosts were chosen because of their willingness to be on site on the day of the tour to talk with

visitors about their gardens, and their enthusiasm for, and commitment to, educating others about how to garden in environmentally sensitive ways.

Host gardener recruitment began in the spring of 2014 for the 2015 tour. Potential candidates completed an application, and applicants who met the criteria received a site visit. Host criteria were as follows:

- Gardener must reside in Alameda or Contra Costa County.
- Gardener must use organic and/or natural techniques for pest control rather than synthetic pesticides.
- Garden must demonstrate water conservation techniques. Examples include mulches, groundcover plants, drip or soaker hose irrigation, and the use of plants that do not require excessive watering during the dry part of the growing season.
- Gardener must be a good ambassador for chemical-free, water-conserving gardening: enjoy educating the public; and have the knowledge base to employ natural gardening techniques and share this information with the public.
- Garden must provide food, shelter and nesting areas for wildlife.
- Garden must contain 60% or more California native plants.
- No invasive plants are found in the garden.

Host's gardening experience ranged from native plant novices to professional landscape designers. All of the host gardeners were good ambassadors for natural gardening techniques.

Host Comments from the 2015 evaluations:

- Over 500 people visited my garden. They listened and took notes and bought plants to get started on their own native gardens, with no pesticides and less water.
- There were many people new to native plant gardening this year.
- There were so many questions about reducing water and pesticide use!
- I had so many questions related to maintenance, especially given the size of our property. I could tell people that maintenance has gone way down since focusing on planting natives and drought tolerant plants. Mulch is my new best friend. And native grasses outcompete most weeds, so we're able control what weeds to make it by just hand-weeding. More importantly, I've found that my own attitude towards gardening has changed from cultivating pretty flowerbeds to considering the total environment. We aim to create a sense of place that is consistent with our location, attract wildlife, and consider the entire ecological chain.
- Folks asked tons of good questions, and said they wanted to give native plant gardening a go.
- Many people asked about how much water we saved.

- The overwhelming majority of the visitors were very interested in changing their landscaping to be drought resistant and include native plants.
- A number of people indicated to me that our garden has inspired them to do more with native plant gardening. One knowledgeable volunteer said that our charts and handouts also provided a lot of educational material for interested people.
- My conversations with people on the tour were frequently about water savings. People could hardly grasp how little water this garden used!

Volunteer Comments from the 2015 evaluations:

- There was a lot of discussion from the visitors about conserving water.
- A lot of people asked how often the garden is watered.
- Everyone was thinking about water this year and was amazed what would grow without much water.
- I think that this tour will influence many more people to ask for natives at all nurseries, and if people who plant them wisely lower water bills and save time and effort, neighbors may get educated as well.
- All comments from tour goers were extremely positive, and most were actively seeking ideas to implement in their own gardens.
- I liked being able to talk to people one-on-one and answer their questions.
- I think visitors found seeing what the plants look like in a garden, even if it was recently planted, was a really plus.

Pledges

This year, for the first time, during the registration process tour participants had the opportunity to pledge to undertake one or more environmental action. Research has shown that people who pledge to take an action are very likely to follow up and do it. The text on the website read:

> Might you be willing to take a healthy lawn and garden pledge?
>
> Garden chemicals can be harmful to humans, pets, wildlife, creeks, and the Bay. The good news is there are many surprisingly easy ways to care for your lawn and garden that avoid putting your family, pets, and neighbors at risk.
>
> All of the beautiful Bringing Back the Natives Garden Tour gardens are managed without the use of pesticides. If these hosts can garden without the use of pesticides, you can, too!
>
> Are you ready to join Bringing Back the Natives Garden Tour hosts in pledging to restore the Earth one garden at a time? Your family, pets, neighbors, and the birds and bees will thank you.
>
> If a pledge to eliminate pesticide use is too big a step to take right away, you can pledge to reduce your pesticide use instead.

❑ I pledge to reduce or eliminate pesticides like "weed and feed" on my lawn. *(Weed and feed products are persistent, bioaccumulative toxic substances linked to cancers and to reproductive, immunological, and neurological problems. Some of the herbicides in chemical weed and feeds—especially 2, 4-D—have been linked to increased rates of cancer in people and animals.)*

❑ I pledge to reduce or eliminate the use of rodenticides. *(Anticoagulant mouse and rat poison also kills dogs and cats, hawks and owls, and many other species of wildlife.)*

❑ I pledge not to use insecticides. *(A garden and lawn ecosystem in balance is home to birds, native plants, and insect life, which support each other and keep one another in check. Lawns and gardens free of synthetic chemicals provide much-needed habitat for wildlife, and they are much safer for you, your family, and your pets.)*

❑ I pledge to remove part or all of my lawn, eliminate pesticide and herbicide use, and create a wildlife habitat in part of my garden.

"I pledge to" results:

reduce or eliminate pesticide use	65%
reduce or eliminate the use of rodenticides	65%
not to use insecticides	61%
remove part or all of my lawn, eliminate pesticide and herbicide use, and create a wildlife habitat in part of my garden	55%

Tour Survey and Evaluation

Two surveys were offered to the tour's pre-registered participants. The first was available as part of the registration process. Below are some statistics taken from this survey.

The 2015 tour attendees were highly motivated to learn new gardening techniques. When asked what they would like to learn from the tour the majority of respondents (71%) wanted to learn how to select native plants; 62% wanted to learn how to conserve water; 46% wanted to learn how to garden for wildlife; 25% wanted to learn how to reduce pesticide use; 33% percent wanted to learn how to replace a lawn with a garden; and 17% wished to learn about composting.

What do you want to learn from the tour?	**2012 Responses**	**2013 Responses**	**2014 Responses**	**2015 Responses**
How to select native plants	72%	83%	69%	71%

How to reduce water use	51%	58%	57%	62%
How to garden for wildlife	51%	56%	45%	46%
How to reduce or eliminate pesticide use	30%	33%	25%	25%
How to replace a lawn with a garden	30%	33%	30%	33%
How to compost	19%	23%	18%	17%

Evaluations
There was a return of 344 registrant evaluations, with 97% of those filling out the evaluations rated the tour "Excellent" or "Good."

This year 62% of the registrants were repeat visitors, and 38% were attending the tour for the first time.

Motivation and Behavior Change

When asked if the Tour inspired people about how to garden without pesticides, while using less water, tour participants provided these comments:

- The California Native Bee Garden in Berkeley in particular is a powerful reminder not to use pesticides.
- I didn't know native plants could be beautiful, as well as water-friendly.
- I learned a great deal about native plants and am excited to make improvements in my garden.
- I already try to avoid pesticides and use less water, but the beauty of some of the gardens inspired and reinforced my dedication to those principles.
- I took a friend who lives in a gated community. She will propose to the Association to plant natives in their front yards and get rid of the grass.
- I am starting to convert my yard based on prior tours, using a landscaper whose work I had seen.
- It was great talking with the people there, both homeowners and the volunteers, about plants, sun vs. shade, amounts of water etc. Gardening without pesticides is a big part of that too!
- It's great having so many knowledgeable people right there to talk to.
- Very informative, well organized, and in this time of drought, utterly necessary!
- We were looking for, and found, information about sheet mulching, plant advice, and more.
- The Tour shows you gardens that have been able to thrive without pesticides and how beautiful native plants are.
- It was wonderful to have the homeowners and landscapers on site to answer questions. They are all so enthusiastic. It's contagious.

- The gardens were beautiful and inspiring. The designers were very knowledgeable and helpful, and the owners extremely gracious. Outstanding Tour; I learned a ton!

The registrant evaluations were split up into two groups—those who had attended the tour before, and those who had not. The data for repeat registrants and first-time Registrants was tabulated separately. Both of these categories are discussed below.

Repeat Registrants
84% of registrants who had attended a previous Bringing Back the Natives Garden Tour, and who filled out the evaluation form, said they had changed their gardening practices because of their participation in the Bringing Back the Natives Garden Tour.

The first column below shows the percentages of the repeat registrants who changed their gardening behaviors after attending the Bringing Back the Natives Garden Tour. The second column shows the percentage of repeat registrants who plan to change their gardening behaviors.

Evaluations of repeat registrants from the 2015 tour showed that after attending a prior Bringing Back the Natives Garden Tour:
19% of respondents had incorporated natives into their gardens (thereby reducing herbicide use and conserving water);
15% had incorporated drought-resistant plants into their gardens;
14% had increased the density of plantings to out-compete weeds;
12% had grouped plants of similar water needs:
11% were tolerating some insect damage;
11% were encouraging wildlife with plant choices;
9% had begun mulching;
8% had reduced or eliminated pesticide use;
7% had reduced the size of their lawn;
7% had installed efficient irrigation;
5% had amended their soil;
4% were composting;
1% were grasscycling and
1% had reduced the amount of hardscape in their gardens.

Repeat visitors were highly motivated to make changes in their gardens. When asked what they planned to do: 33% planned to increase the density of plantings to out-compete weeds; 31% to group plants of similar water needs; 24% to install efficient irrigation; 21% to reduce the size of their lawn, and to incorporate native plants into their gardens; 20% to encourage wildlife; 16% to amend their soil with compost; 13% to mulch; 11% to compost; 9% to minimize hardscapes; 8% to tolerate some insect damage to plants; 6% to grasscycle; and 5% to reduce or eliminate pesticide use.

How do you manage your garden? (This information was taken from evaluations filled out by repeat registrants.)

ITEM	Began after participation in a previous BBTN Tour	Plan to do this
1. Reduce/eliminate insecticide/ herbicide use.	8%	5%
2. Increase the density of plantings to out-compete weeds.	14%	33%
3. Encourage birds, butterflies, etc. with plant choices, food, shelter, and water.	11%	20%
4. Tolerate some insect damage to plants.	11%	8%
5. Incorporate native plants into our garden.	19%	21%
6. Group plants of similar water needs.	12%	31%
7. Incorporate drought-resistant plants into our garden.	15%	16%
8. Install efficient irrigation (such as drip, timers, soaker hoses).	7%	24%
9. Grasscycle (leave grass clippings on the lawn).	1%	6%
10. Reduce the size of our lawn.	7%	21%
11. Mulch with leaves, grass, wood chips, etc.	9%	13%
12. Amend soil with compost.	5%	16%
13. Minimize hardscapes (patios, decks).	1%	9%
14. Compost yard waste and kitchen scraps at home.	4%	11%

First-time registrants
The tour was highly motivating to the first time registrants who completed the evaluation. 57% of first time registrants planned to group plants by water needs; 52% of first-time registrants responded that they planned to increase the density of plants, thus helping to out-compete weeds and reduce water use; 51% planned to incorporate native plants into their gardens; 45% planned to install efficient

irrigation and encourage wildlife; 43% planned to incorporate drought-resistant plants into their gardens; 39% planned to reduce the size of their lawns; 30% planned to tolerate some insect damage to plants; 28% planned to mulch; 26% to amend their soils and 25% to reduce or eliminate pesticide use; 15% planned to reduce the amount of hardscape in their gardens; 14% to grasscycle; and 10% to compost kitchen scraps and yard waste.

How do you manage your garden? (These are responses from first-time registrants.)

ITEM	Plan to
1. Reduce/eliminate insecticide/herbicide use.	25
2. Increase the density of plantings to out-compete weeds.	52
3. Encourage birds, butterflies, etc. with plant choices, food, shelter, and water.	45
4. Tolerate some insect damage to plants.	30
5. Incorporate native plants into our garden.	51
6. Group plants of similar water needs.	57
7. Incorporate drought-resistant plants into our garden.	43
8. Install efficient irrigation (such as drip, timers, soaker hoses).	45
9. Grasscycle (leave grass clippings on the lawn).	14
10. Reduce the size of our lawn.	39
11. Mulch with leaves, grass, wood chips, etc.	28
12. Amend soil with compost.	26
13. Minimize hardscapes (patios, decks).	15
14. Compost yard waste and kitchen scraps at home.	10

Number of visits made to each garden

BAYSIDE CITIES

Berkeley

California Native Bee Garden	402
Joel Ginsberg	478
Steve and Judy Lipson	648
Mardi and Jeff Mertens	503
Glen Schneider	400

Castro Valley

Sharon Horgan	230
Randal and Azalea Ong	160

El Cerrito

Nalani and Anna Heath-Delaney	535
Michael Graf	356

El Sobrante

Karen Andersen	182

Hayward

Natalie Forrest and Douglas Sprague	184

Kensington

Seibi Lee and Joel Schoolnik	321

Oakland

Peg Farrell	289
Sandy Jaeger	287
Frannie Lewis and Mark Seaborn	277
Holly and Joe Maffei	505
Susan Weber	376

San Lorenzo

San Lorenzo High School	260

Union City

Louise Waters	73

INLAND CITIES

Lafayette

Richard and Sandy Brehmer	608

Livermore

Cindy Angers	251

Moraga

Al and Barbara Kyte	630
Megan McNealy	517

Orinda	
Barbara and Phil Leitner	496
Alma Raymond	158
Pat Rudebusch	654
Bob and Stephanie Sorenson	595
Pleasant Hill	
Jing Zhang and David Cooney	441
Pleasanton	
Melinda and Steve Ballard	196
Ward and Pat Belding	472
Janis and Chris Bufkin	194
Clark Family	472
Walnut Creek	
Trina and Jeff Horner	574
	12724

When planning for a year, plant corn. When planning for a decade, plant trees.

When planning for life, train and educate people.
(Chinese proverb)

Below are comments from garden tour attendees, either taken from registrant evaluation forms, or received via e-mail.

- It was superb! What a fantastic guidebook-- so well thought out, so helpful with all the maps and way of cross-indexing the gardens. Brilliant! Excellent! Thank you! And amazing that it was free!
- I didn't know native plants could be beautiful as well as water friendly.
- I learned a great deal about native plants and am excited to make improvements in my garden
- It's great having so many knowledgeable people right there to talk to.
- Very informative, well organized, and in this time of drought, utterly necessary!
- We were looking for, and found, information about sheet mulching, plant advice, and more.
- The gardens were beautiful and inspiring. The designers were very knowledgeable and helpful, and the owners extremely gracious.

Outstanding- I learned a ton! I also got tips from other people who were touring.

- Seeing others create native gardens is inspirational and encouraging.
- Great service to the community
- Great tour! The booklet was extremely helpful and complete.
- The hosts were very gracious and available. Also, their volunteers and designers were helpful.
- I enjoyed viewing the gardens and getting some great ideas for bringing natives to our landscape.
- Loved it! Will attend next year!
- Thank you for offering this educational and enjoyable tour for the cost of a donation!
- Thanks, we learned so much!
- Wonderful learning experience and encouraging for my own garden efforts.
- I would like to thank all of the people who worked so hard and volunteered their time to make this tour possible! You have been ahead of your time for so long, but hopefully the rest of us will catch up somewhat. 1 Everyone was friendly and helpful. I really enjoyed it and appreciate that the tour is funded by some tax dollars! Very good use of tax money!
- Big, Big compliments. As a neighbor who had attended in past years noted, this event is INSPIRING. That's important when lots of new learning, dollars, and long term work are required. Specifically: 1. Very helpful brochure introduction for new participants to plan their visits, also great gardens, and it helped seeing the gardens grouped in map blocks for easier viewing. 2. Lots of information and examples on gardening for beneficial insects 3. Garden talks added learning opportunities 4. Diversity of gardens in size and setting 5. It was great to see such a turnout of interest. THANK YOU!
- I want to commend whoever organized the tour, along with whoever put together the booklet. It was all very well thought out and easy to follow! And the homeowners who welcomed us all!
- The tour book was awesome; it was beautifully done, well organized, easy to use (even for a beginner!), and it was packed full of useful info.
- We loved it. It was so inspiring. We are re-doing our garden and learned so much that will help us and the environment. Please keep the diversity of styles and budgets. We appreciated that the tour was not a bunch of show-off gardens but rather reflected real gardens of varying sizes and grandness.
- This was the best organized garden tour I have done. And the depth of information made available was excellent. Having the plant lists for each garden was brilliant.
- Every garden helped me understand better how to garden with less water.
- I am starting to convert my yard based on prior tours, using a landscaper whose work I had seen.
- So many ideas! New lawn solutions, sheet mulching, drought tolerant plants!
- Very inspiring!

- I took a friend who lives in a gated community. She is going to propose that the Association plant natives in the front yards and get rid of the grass.
- Just excellent and great directions. A+!
- KUDOS for existing features: Geographic maps, excellent descriptions, hints of terrain challenges, and different kinds of gardens in different stages of maturity.
- The booklet with all the details of the tour is just marvelous. Excellently presented, clear, precise, a pleasure to read and easy to use.
- It is always a pleasure to anticipate and view the lovely website, as well as the brochure.
- Can't possibly thank you enough for this tour! And for the wonder resources online.
- Excellent guide book and website.
- Extremely well organized. Hats off!
- Great event every year; it's inspirational.
- Great event, and a great booklet and website.
- The tour is a great asset to our gardening community. I always urge more friends to attend.
- Lots of fun and inspiring.
- Thank you for making this great educational opportunity available to the public.
- Thanks for all the hard work! Wonderful tour!
- The gardens were wonderful, as usual. Everyone was very helpful, answering my questions.
- The yards were all unique and lovely. The owners were very enthusiastic about their yards.
- Very well organized. Beautiful tour book.
- Volunteers are great; love the informative talks. Very well planned and orchestrated.
- I REALLY enjoyed the variety of "bugs" I saw at different gardens: spiders,caterpillars, different bees, butterflies, lady bugs, flitting critters too small to ID. These gardens are truly gifts to us and our fellow travelers.;-)
- As always, this tour is equal parts inspiration and delightful beauty. I love seeing how others have created beautiful plantings and how they incorporate art into the garden. I like seeing old familiar flowers mixed in with flowers I am just "meeting" for the first time. Every year I learn something new from the tour. Thank you for organizing this wonderful event!
- Your organization of the tour is a masterpiece in nearly every way. The booklet and website are outstanding. I'm deeply impressed by your attention to detail. I have much gratitude for all you do in helping raise consciousness about the use of natives and other ecological gardening practices.
- Thank you to the organizers and to the people who shared their gardens and experiences with native plants!
- Great preparation, great website. I like that I can view gardens ahead of time to determine which ones I want to view

- The booklet is excellent. The T-shirts for the owners and volunteers are helpful for finding someone to ask questions of. It was nice to have the Bee book for sale.

A Project of **Earth Island Institute**

1771 Alcatraz Avenue, Berkeley, CA 94703
Tel: (510) 985-1602 • Fax: (510) 547-4259
info@kidsforthebay.org • www.kidsforthebay.org

Mandi Billinge, Executive Director/Founder

July 15, 2015

Jim Scanlin, Program Manager
Alameda Countywide Clean Water Program
399 Elmhurst St.
Hayward, CA 94544

Dear Jim,

Please find enclosed KIDS for the BAY's Final 2014-2015 Progress Report for our work in Alameda County delivering the Storm Drain Rangers (SDR) School-Wide Trash Reduction Program. The following are also enclosed for your review:

- Storm Drain Rangers Program Invoice
- Storm Drain Rangers Photo Documents (Please note these pictures are for internal use only, as some families have requested their child's picture not be released to the general public)
- Thank You Letters from Storm Drain Rangers

KIDS for the BAY (KftB) has delivered the SDR Program at eight schools throughout Alameda County this school year. Students and teachers have learned a lot about preventing marine debris from reaching our watersheds through storm drains. Rhonda Spencer, fourth grade teacher from McKinley Elementary School shared,

> **"I have always been an environmentalist, but this program has changed the way I look at trash. I used to pick up only the large pieces; now I notice all the tiny pieces too and realize how important it is to pick them up as well."**

This school year **458 students and 16 teachers** became Storm Drain Rangers! Student and teacher environmentalists across Alameda County participating in the SDR Program picked up **17,840** pieces of garbage. This program's storm drain pollution prevention message has reached many more students this year thanks to the addition of the school-wide assembly. It has been a great success in eight schools and we look forward to delivering the program again next year!

Thank you for supporting our work!

Sincerely,

Mandi J. Billinge

Mandi Billinge
Executive Director/Founder

EDUCATIONAL SERVICES Final REPORT FORM Fiscal Year 2014/15

A) PROGRAM INFORMATION

Organization Name: KIDS for the BAY

Mailing Address: 1771 Alcatraz Avenue (Street) | Berkeley (City) | CA (State) | 94703 (Zip Code)

Program Director: Mandi Billinge

Phone: 510-985-1602 **E-mail:** mandi@kidsforthebay.org

Name of Person Completing the Report: Kimberly Aguilar

Phone: 510-985-1602 **E-mail:** kimberly@kidsforthebay.org

Date of Report: July 15, 2015 **Reporting Period:** **From** Dec. 15, 2014 **to** July. 15, 2015

Program Scope:

The Storm Drain Rangers School Wide Trash Reduction (SDR) Program is designed to engage and educate elementary school students in Alameda County about storm water pollution reduction. A grade level team of students learns about watersheds, storm water pollution and pollution prevention strategies. Students perform a school campus clean-up and record data on how many pieces of litter they have collected. Students then deliver a school wide assembly inspiring their entire school to participate in a school wide clean-up effort of their school and community. A final clean-up assesses the program's impact on the school by comparing and contrasting the findings from the final clean-up to the findings from the first clean-up. The following is a list of the lessons delivered to each participating class:

1. Our Watershed
2. Taking Action For a Healthy Watershed
3. Assembly Rehearsal
4. School-Wide Assembly
5. Becoming a Storm Drain Ranger

(** For a more detailed description of the lesson activities and objectives, please refer to the SDR Program Lessons Overview included in this report.)

Eight schools participated in the SDR Program this year. A total of **458 students and 16 teachers** became Storm Drain Rangers this year and led their schools in school-wide trash reduction efforts overall. Students in the SDR program picked up **17,840 pieces** of trash this school year.

The following are highlights from the SDR Programs this school year:

Tom Kitayama Elementary School, Union City

Partner teachers Mr. Eduardo Muñoz and Ms. Karen Lance and their students were very excited for the assembly. Student posters about reducing litter decorated the partitions that surrounded the stage. As classes came in to be seated for the assembly students read the informative posters made by the SDR students about reducing and preventing litter at their school. During the play Halayna did an especially excellent job at perfectly memorizing her lines as a Storm Drain Ranger. She shared that she had practiced her lines all week for the assembly because she wanted everyone at her school to learn about the importance of not littering. The audience used the KIDS for the BAY trigger words throughout the assembly. The trigger words are words that kept the audience listening to what was being said on stage. Parents were also present during the performance and were proudly filming the performance. Afterward, several parents approached the KIDS for the BAY staff to share feedback. One parent shared, "That was wonderful, very educational, and interesting information. Great work!" Mr. Munoz and Ms. Lance both shared how much their students really loved the program and were very excited to be a part of the performance. An after school program instructor shared that she really enjoyed the assembly and that it was a perfect introduction to a reusable container discussion she wants to have with the after school program students.

Students at Tom Kitayama Elementary School were excited to participate in the Storm Drain Rangers Program one last time in May! KIDS for the BAY Instructor Kimberly Aguilar asked students if they knew of anyone that had seen the assembly and if they knew what that person thought of the assembly. One student shared, "My Dad watched the assembly and learned about zero-waste lunches. He now packs me lunch in reusable containers instead of plastic bags." Another student shared, "My friend said that they would not litter again because it was sad what they had learned was happening to the animals." Another student in the class shared that they had been inspired to clean the area around their neighborhood's storm drain several times.

During the last lesson students also learned about the 5 Gyres and the small pieces of plastic that are found in our oceans. Ms. Lance shared with her class, "I know a lot about the 4R's and putting your trash in the right place but I have never heard of the 5 Gyres before. Even I am learning with KIDS for the BAY!"

John Green Elementary School, Dublin:

Fourth grade teachers, Ms. Jenna Krier and Ms. Susie Krier were extremely dedicated to the SDR program this school year. There are six fourth grade classes at John Green Elementary School and KIDS for the BAY was able to teach two of those classes. However, both Ms. Jenna Krier and Ms. Susie Krier went above and beyond and taught the remaining four fourth grade classes with equipment borrowed from KIDS for the BAY. KIDS for the BAY, the teachers, and several students from each fourth grade class delivered three assemblies in order to reach the entire school! Thanks to these dedicated teachers the entire fourth grade team of students, an additional 196 students, became Storm Drain Rangers this year! This spring both teachers received the KIDS for the BAY Guardian Award for their commitment to environmental education.

Together both classes picked up more trash in the spring compared to the fall. Ms. Susie Krier's class picked up 416 pieces of trash in December then 657 pieces of trash this May. Ms. Jenna Krier's class picked up 500 pieces of trash in December, then 569 pieces of trash this May. After the clean-up both classes had debriefing conversations to hypothesize why they were finding more trash later in the year after the assembly and the school wide clean-ups that had been occurring. Students were finding significantly smaller pieces of trash than before, and they concluded that this was because all of the large pieces had already been picked up by the students and classes that were borrowing the clean up kits all year. The smaller pieces were left over, and during

the clean-up students were able to focus on those smaller pieces, which increased the quantity of the count and the quality of the clean-up effort.

Markham Elementary School, Oakland:
Students were so excited to be a part of a school-wide assembly! One student shared, "We get to teach our school! Yes!" Students were thrilled to have roles and responsibilities for their school-wide assembly performance. KIDS for the BAY Instructor Kimberly Aguilar reminded the students that this was their opportunity to be Storm Drain Ranger leaders at their school. The day of the assembly students were very excited! Students found their teachers' performances to be hysterical! They loved seeing their teachers on stage as leaders against storm drain pollution dressed up as a whale and turtle that were injured by marine debris!

When the pictures of the animals hurt by marine debris were presented on stage the crowd of students at Markham Elementary School was overcome with empathy. The crowd unanimously, "awwwwwed" in sadness for the hurt animals. While the KIDS for the BAY Instructors packed up the equipment and were on their way out of the school many first graders high fived them on their way out and made promises never to litter. First graders shared that they were sad to learn that trash hurts animals.

Students were surprised to find fewer pieces of trash during their second clean-up of the year. Students hypothesized that it could be because the assembly had recently occurred and there was more awareness about the dangers of littering amongst the students. KIDS for the BAY Instructor Kimberly Aguilar ended the program by having the students chant with her. Ms. Aguilar chanted, "Storm Drain Rangers!" "YES WE ARE!" students excitedly replied!

Allendale Elementary School, Oakland:
A student in Ms. Janet Jackson's fourth and fifth grade combo class shared, "My favorite part of the play was inspiring other students to take care of the environment." During the last lesson's school clean-up a kindergarten class was watching the students through the school fence. The kindergartners were really interested in what the bigger kids were doing and really wanted to participate. After this experience Ms. Janet Jackson and her students partnered with the younger grades and helped them get started with their school clean-ups. Ms. Jackson's students agreed to help record data while the younger students used the tongs. This was an excellent example of inspired Storm Drain Rangers being leaders in their school community!

A topic that KIDS for the BAY Instructor, Aislinn Sterling found left a lasting impact on students and the teachers was the conserving water component of the first lesson. During the last lesson students shared the following pledges they had made because of the Strom Drain Rangers Program:

"I pledge to turn on the water only if I need to." –Veronica
"I pledge to tell my friends to not litter because it's going to hurt our animals!" –Jeremiah
"I pledge to conserve water by taking shorter showers." –Angela
"I pledge to help animals by not throwing trash [on] the ground." –Wendy
"I pledge to help the environment be a better place and not be a trash environment." –Antoneyo
"I pledge to not fill my cup all the way up if I'm not going drink it. Also I will tell my friends and family to help stop polluting and not to waste water and I won't litter." –Mya

Both Allendale classes devoted the last three weeks of school to help other classes perform school clean-ups. Teachers also shared that the program fits perfectly with their curriculum having to do with climate change and the 4R's.

Anna Yates Elementary School, Emeryville:
Students at Anna Yates Elementary School shared that their favorite part of the assembly was being in front of their peers; they loved being leaders! After the assembly both fourth grade teachers Ms. Holly Coombs and Tiffany Johnson worked hard to encourage the entire school to sign up and perform a clean-up. A system was created that the Storm Drain Rangers students led and ran. A set of students presented on marine debris and storm drains to other classrooms and another set of students monitored the supplies and the litter chart. This system put in place by the teachers ran throughout the year since last November's assembly. The teacher's also shared that they went to the landfill as a field trip where students were making connections between the field trip and the Storm Drain Ranger's program.

McKinley Elementary School, San Leandro:
At the end of the year Ms. Ball's class cleaned up the streets in front of the school and Ms. Spencer's class cleaned up the campus playground and snack area. After the clean-up students discussed the many factors that may have affected the amount of trash they collected in late May versus their first clean-up in early February. Students shared that finding less litter may indicate that the school has been littering less after what they learned from the assembly. Students also determined that if they found more trash it did not necessarily mean the assembly had not been effective. Much of the trash Ms. Ball's class picked up probably did not even come from students who had been at the assembly but from the general public. Students shared that sometimes teenagers or adults come to hangout on campus after school and they may leave trash too.

During the last lesson KIDS for the BAY Instructor Aislinn Sterling walked around each class and showed the students a marine debris sample collected by the organization 5 Gyres. In the vial, you can see all kinds of ocean debris, natural and artificial—mostly plastics. Ms. Sterling explained that this is what storm drain pollution can become. Ms. Sterling reviewed that first trash is littered; then it goes from the storm drains to the bay and ocean. Ms. Sterling explained that in the ocean, plastic floats around for years and years, breaking down into smaller and smaller pieces but never biodegrading. Ms. Sterling explained that the reason she wanted the class to see this sample was to reinforce that it is much more effective to clean up our trash before it reaches the bay or ocean than to try to clean up an ocean filled with trillions of tiny pieces of trash. During the lesson Ms. Spencer shared, "I have always been an environmentalist, but this program has changed the way I look at trash. I used to pick up only the large pieces; now I notice all the tiny pieces too and realize how important it is to pick them up as well."

Furthermore, many students shared that because of the Storm Drain Rangers Program they were paying much closer attention to their water use and making a conscious effort to only use what they need and conserve water whenever possible. Students also shared that they were making sure not to litter.

Hirsch Elementary School, Fremont
Hirsch Elementary School students thoroughly enjoyed the Storm Drain Rangers Program. KIDS for the BAY Instructor John Greiling really stressed the importance of conserving water with the classes. Roland shared, "Because of the program, now I don't use as much water. I take five minute showers now and don't let the water flow when I brush my teeth. The person I interviewed, my sister, now takes less time to shower as well." Ivy also shared, "I talked to my sister because she was wasting too much water and she now takes faster showers like me." Ivy also shared, "My mom has stopped littering. She used to just throw trash on the floor, but when I told her about storm drain pollution she stopped polluting the environment." Maria shared, "I know one person who stopped littering because of the Storm Drain Rangers program. That person is me!" Bryan shared, "My friends at Chinese school stopped littering because I told them about the Storm Drain Rangers Program." Satvika shared, "My friend in fourth grade told me she stopped littering because she saw the assembly."

Oceanview Elementary School, Albany

Two fourth grade teachers at Oceanview Elementary School participated in the Storm Drain Rangers Program, Ms. Merilyn Merlino and Mr. Ryan Kochevar. These teachers borrowed a Storm Drain Rangers equipment kit and helped the other two remaining teachers deliver the program to the remaining two fourth grade classes at the school. All fourth grade students were very excited to participate in the program. They were especially excited during the assembly. Many students shared how nervous they were to be in front of the entire school. KIDs for the BAY Instructor Alicia Thompson reminded them that what they were doing was important; they would be leading the school in helping prevent storm drain pollution from hurting animals. The assembly was a huge success. The kindergarten teacher shared that her English Language Learners understood the message of the assembly because of all the added visuals and that the kindergartners were still talking about the assembly hours later! Classes school-wide participated in their own clean-ups which continued until the end of the school year.

Quotes:

"I learned the difference between storm drains and sewer systems. Also, I learned that a little oil spill can travel a long way and kill a lot of marine animals. Finally, I learned that the Bay Area is in the shape of a mermaid." – Ria, Fourth Grader, John Green Elementary School, Dublin

"I didn't know littering was this bad for the environment!"
Reyna, Fourth Grader, John Green Elementary School, Dublin

"I have noticed on two different occasions, kids either picking up someone else's litter, or dropping something and then retrieving it."
Janet Jackson, Fourth and Fifth Grade Teacher, Allendale Elementary School, Oakland

"What do I think of the Storm Drain Rangers Program? It is inspiring and helpful to the environment!"
Thurain, Fifth Grader, Hirsch Elementary School, Fremont

B) PROGRAM UPDATE

1. List the school programs completed during this reporting period into table provided below (sorted by city):

City	School	Teachers/Grade	Lessons	Dates	Pieces of trash
Emeryville	Anna Yates Elementary School	Tiffany Johnson and Holly Coombs/ 4th grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	10/6/14 10/20/14 10/27/14 11/20/14 5/11/15	1,902 pieces 1,675 pieces
Fremont	Hirsch Elementary School	Ginger Nesbitt and Becky Landre/ 5th grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	10/7/14 10/21/14 1/23/15 1/30/15 5/13/15	2,000 pieces 1,498 pieces
Oakland	Allendale Elementary School	Janet Jackson and Cody Marshall/ 4th/5th combo and 4th grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	11/3/14 11/10/14 1/9/15 2/6/15 5/4/15	615 pieces 1,556 pieces
Union City	Tom Kitayama Elementary School	Eduardo Muñoz and Karen Lance/ 4th grade and 3rd grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	11/6/14 11/13/14 1/8/15 1/15/15 5/28/15	1,173 pieces 1,153 pieces
Dublin	John Green Elementary School	Jenna Krier and Susie Krier/ 4th grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	11/21/14 12/4/14 12/11/14 12/18/14 5/4/15	916 pieces 1,226 pieces
Oakland	Markham Elementary School	Nikita Gibbs and Venus Cole/ 3rd grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	12/1/14 1/12/15 4/28/15 5/1/15 5/26/15	605 pieces 454 pieces
Albany	Ocean View Elementary School	Merilyn Merlino and Ryan Kochevar/ 4th grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	12/5/14 12/12/14 1/20/15 1/27/15 5/26/15	426 pieces 659 pieces
San Leandro	McKinley Elementary School	Rhonda Spencer and Karla Ball/ 4th grade	Lesson 1 Lesson 2 Lesson 3 Assembly Lesson 4	1/26/15 2/2/15 3/12/15 3/30/15 5/26/15	867 pieces 1,115 pieces

*If your program consists of multiple class lessons/activities, please list the name of the lesson(s) and/or activity(ies) implemented for **each class** during the reporting period.

2. Estimated percent of program completed:

100% of SDR program completed

3. Were all the planned lessons/activities implemented by the end of the 2014-15? school year? Yes

If no, please explain:

C) PROGRAM EVALUATION

1. Evaluation data will be collected by June 2015 and will be included in the final report to be submitted in July 2015.

D) BUDGET UPDATE

1. **Funds awarded (as per agreement):** $50,000.00 ($625.00 x 80 lessons)
2. **Costs invoiced during this reporting period:** $28,750.00
3. **Costs invoiced to date:** $21,250.00
4. **Funds remaining:** $0.00

E) PUBLICATIONS

1. Attach copies of any press releases, newsletters, articles, and/or other program marketing materials produced during this reporting period.

Please email an **electronic copy** of this report to Jim Scanlin (jims@acpwa.org) and Vishakha Atre (vatre@eoainc.com).

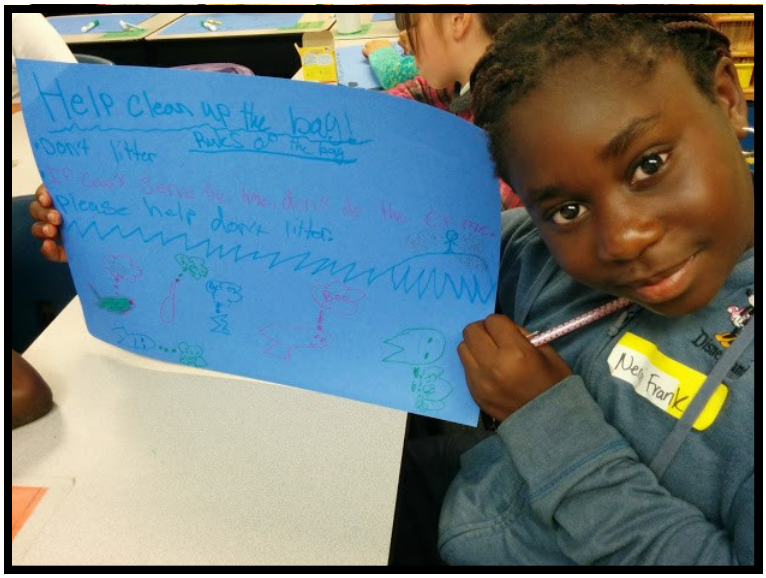
Signature of Program Director
Mandi Billinge

Date

Storm Drain Rangers

KIDS for the BAY
Alameda County Wide Clean Water Program
Storm Drain Rangers Program Highlights
Spring 2015

Preparing for the Assembly!



Third graders prepared for their assembly by making informational posters that were hung around their auditorium on the day of their performance. Many students were proud to see their work displayed and helping to spread awareness.

Third Grade teacher Ms. Nikita Gibbs practiced her lines with the KIDS for the BAY staff in preparation for the assembly.

Students in Dublin excitedly rehearsed for their school-wide performance.

The School-Wide Assembly

Students at John Green Elementary School attentively watched as the KIDS for the BAY Instructor described a picture of a park bench surrounded by litter.

Entire schools chanted, "STORM DRAIN RANGERS YES WE ARE!"

KIDS for the BAY Instructor John Greiling led a lunch scene during the Anna Yates Elementary School-Wide Assembly where students learned that littering can be a problem.

Students held up a map of the San Francisco Bay area as KIDS for the BAY Instructor Alicia Thompson describes the path a chip bag might take down the storm drain into a creek to the bay and out toward the ocean.

End of the Year Litter Assessment!

A Tom Kitayama Elementary School third grader helped clean the nearby field of litter.

A Mckinley Elementary School fourth grader proudly picked up a candy wrapper.

Only Rain Down the Storm Drain!

Storm Drain Rangers worked hard to pick up even the tiniest pieces of garbage during their school clean-ups.

A Project of **Earth Island Institute**

1771 Alcatraz Avenue, Berkeley, CA 94703
Tel: (510) 985-1602 • Fax: (510) 547-4259
info@kidsforthebay.org • www.kidsforthebay.org

Mandi Billinge, Executive Director/Founder

INVOICE DATE: July 15, 2015
INVOICE NUMBER: 2 of 2
INOVICE TO: Alameda Countywide Clean Water Program
Attn: Jim Scanlin

P.O	Program	Work Order	Activity Code
#5978	50201	F15W81	E05

PLEASE REMIT TO: Earth Island Institute/KftB
1771 Alcatraz Avenue
Berkeley, CA 94703
Tax ID# 942889684
(510)985-1602

INOVICE FOR: Storm Drain Rangers Program Work Completed 12/15/2014-7/15/2015
Implementing Storm Drain Rangers lessons
Reporting

Costs:	**Rate per class**	**# of classes**	**Total**
Classes	$625.00	46	$28,750.00
Total			**$28,750.00**

Current Charges **$28,750.00**

FINAL SUMMARY OF RETURNED SURVEYS AND COMMENTS FOR MR FROGGY'S CLEAN-UP CLUB 2014-2015

62 shows where given at 29 Alameda County Schools.
36 1st Surveys were returned from 17 different schools
6 Principals responded to a reminder about the survey with comments
31 Follow-Up End-of-Year Surveys were returned including from three previously unresponsive to first survey schools. Two did not indicated the school they came from
All 25 responding Schools reported an increase in awareness of their students about the problems of school litter in the Follow-Up Survey
Four schools did not respond to the surveys: three in Berkeley, one in Pleasanton
Below are the individual school served and info on their teacher contact, surveys returned, comments and contacts

ALAMEDA 13 shows
Bay Farm School 4x 8:30, 9:15, 10:00, 10:45 450 students 200
Aughinbaugh, Alameda Contact: Bonnie Nelson-Duffey
TEACHER CONTACT: Ms.Lee-Chin.
Ist Survey returned "Little Litter Everywhere"

Alameda Christian School 1x 9:15 50 students
226 Pacific Ave. Alameda, 94501 Contact: Ron Postma, Principal
TEACHER CONTACT: Ms. Le-Jesma, Ms. Postma, Ms. Rowton
3 1st surveys returned "almost litter free"
1 Follow-Up Survey "Litter free"
Teacher Comment: "Love the program."

Lum School 3x 8:30, 9:15 and 10:00 300 students
1801 Sandcreek Way Contact: Lawrence Gotanco, Principal
TEACHER CONTACT: Butler, Hare, Railto, Wold
4 Follow-Up Surveys Returned. "Little Litter Everywhere"
Principal e-Mail Comment " The show was great. It was hilarious. Thanks for coming out and teaching the kids"

St Philip Neri 1x 9:30 90 students
1335 High St. Alameda, 94501 Contact: Myra Keast, school secretary
TEACHER CONTACT: Hillenbrand
1 First Survey Returned. "Almost litter free"

Chinese Christian 1x 10:00 67 students
1801 North Loop Rd, Alameda, 94502 Contact: Julie Draper
TEACHER CONTACTS: Warek, Wong, Schumaker, Jeong
4 First Survey Returned "A little litter everywhere"
1 Follow-Up Survey "Almost litter free"
Comments. Thank you letters from 3 classes. Sample comment "I learned that bags look like jellyfish" Teacher Comment We just finished the recycling unit and the students are more aware

Ruby Bridges School 3x 1:00 2nd day1:00 & 1:50 320 students
351 Jack London Ave, Alameda Contact: Teresa Barerra (cont.)

TEACHER CONTACT: Cine
1 1st Survey Returned. “Little litter Everywhere”
Principal e-mail comment: “A wonderful assembly”

ALBANY 3 shows

Ocean View Elementary 3x 9:00, 9:45 &10:30 300 students
1000 Jackson St., Albany Contact: Terryl Georgeson
TEACHER CONTACT: Choen
Student and Teacher Letters, Sample Comment “ Thank you for teaching us that only rain should go down the storm drain. When we walked around our school we found 268 pieces of trash. This made me feel angry because everyone is not clean our school. I am going to try to protect our environment by leading by example and not littering”

BERKELEY 4 shows

Shu Ren International School 1x 11:30 75 students
1333 University Ave, Berkeley Contact: Simon Clark

Escole Bilingue 2x 1:15 & 2:30 200 students
1009 Heinz Ave. Berkeley Contact: Mirza Kopelman

Walden School 1x 1:15 60 students
2446 McKinley Ave Berkeley, Contact: Pamela Meredith

EMERYVILLE 2 shows

Anna Yates Elementary 2x 9:15& 9;45 240 Students
1070 41st. Emeryville, Contact: Mary McGruder
TEACHER CONTACT: Connie Bi
1 First Survey Returned. “Almost Free of Litter”
Student Letter sample Comment “I learned about garbage and water”

FREMONT 8 shows

James Leitch Elementary 5X 8:30, 9:15, 10:20, 12:40, 1:40 650 students 47100 Fernald St, Fremont 94539 Contact: Ms. Mary Lee, Principal
TEACHER CONTACTS: LLorem, Blenis
2 First Surveys Returned. “A Little Litter is Everywhere”
Teacher Note Comment “Thank you for your puppet show. The children enjoyed it a lot. I liked how you included what is happening to the sea turtles. It was an important lesson.
Student (Scout) Comment. “We can’t believe our scouts found 35 pieces of paper litter. In total of all the litter we …found…we have 172 pieces of litter!”

Millard Elementary 3x 8:45,9:25, 10:05 300 students
5200 Valpey Park Dr, Fremont Contact: Mark Persek
TEACHER CONTACTS: Plant, Poe
2 Follow-Up Surveys “Almost litter Free” (cont.)

(Millard comment cont.) Principal Comment at Litter Survey Reminder. “Not yet Litter Free” Thank you so much for getting back to me. We thoroughly enjoyed your puppet show and I am sorry to hear that none of the surveys got returned. Unfortunately Millard School is not yet a litter-free school, but we are working on it. I would say that it would take some time for more than one of two students to pick it all up. Some of the litter is ours and some happens after school and on the weekends by groups that are either using our school for sporting events, or just stopping by to play. We will continue our work in this area, and appreciate programs like yours that help to remind our students of how they can help in this area. We look forward to your return next year.

HAYWARD 4 shows

Bidwell School 2x 10:40, 11:10 150 students
175 Fairway St Hayward 94544 contact: Donna Marshall
TEACHER CONTACT: Krell
1 First Survey returned “ A lot of litter everywhere”

Treeview School 2x 9:00, 9:55 150 students
30565 Treeview St. Hayward 94544 Contact: Cherrie Kihara
TEACHER CONTACT: Oskal and 2nd grade
3 Follow-Up Surveys returned “Almost litter free”
Teacher Note Comment “ The students have been picking up litter and telling me about it.

LIVERMORE 1 show

Our Savior Lutheran Elementary 1x 10:00 60 students
1385 s. Livermore, CA 94550 Contact: eanwyl@oslm.net
TEACHER CONTACT: Poppe
1 First Survey Returned “ Little Litter Everywhere”
Student letters and drawings.

NEWARK 4 shows

Milani Elementary 2x 8:30 and 9:15 225 students
37490 Birch, Newark Contact: Michelle Leipert
TEACHER CONTACTS: Leipert
1 First Survey Returned “A Litter Litter is Everywhere”
1 Follow-Up Survey Returned “A Little Litter is Everywhere”
Teacher Comment: “We need to do better about picking up Capri-Sun wrappers.”

Kennedy School 2x 8:30 and 9:15 210 students
35430 Blackburn Dr. Newark 94560 Contact: Tammy Lobato
TEACHER CONTACT: Chavez
1 First Survey Returned “A Litter Litter is Everywhere”
1 Follow-Up Survey Returned “A Little Litter is Everywhere”

OAKLAND 4 shows
St Martin De Pores 1x 11:00 75 students
675 41st street, Oakland 94609 Contact: Nubia Giles

St Martin De Pores (cont.)
TEACHER CONTACT: Kimberley
1 First Survey Returned “A Lot of Litter Everywhere”
Teacher Comment: We found too much to count. We held a k-5 clean up. K-5 is now on board.
Principal Comment: “Almost litter free” We regularly send classes out to clean up a certain area. We also put different tops on our garbage cans to dissuade the black birds, Not litter free yet.

Park Day School 2x 12:55 and 1:30 150 students
360 42nd St, Oakland Contact: Karen Colerick
TEACHER CONTACTS:Karen Colerick
Teacher Comment: You’ll be happy to know this continues to be a present as a topic on our campus…We plan to have students select an area of our campus that needs attention, in terms of litter pick up and well beyond that, in general stewardship. They are going to then do a needs assessment,design a care plan, and monitor…..

East Oakland Leadership Academy 1x 10:00 65 students
2614 Seminary Ave, Oakland Contact: Jeralyn
TEACHER CONTACT: Jeralyn
1 Follow-Up Survey Returned “Almost litter Free”

PIEDMONT 1 Show

Corpus Christi Elementary 1x 1:00 120 students
1 Estates Dr. Piedmont 94611 Contact: Delia Neyra
TEACHER CONTACTS: Madden, Whitney-Downs, Giusti
3 First Survey Returned “Almost litter free”
2 Follow-Up Surveys “Almost litter Free.”

PLEASANTON 3

Stratford Elementary 2x 19:30 and 10:30: 145 students
4576 Willow Rd. Contact: Sanny Figueroa, Principal
TEACHER CONTACT: Chazbek
1 First Survey Returned “Almost Litter Free”

Hacienda School 1x 10:00 60 students
3800 Stoneridge Dr., Pleasanton Contact: Miss Compton
Performed in late May, last show of year, no time for replies or reminders.

SAN LEANDRO 8

Dayton School 4x 9:00, 9:40, 10:30, 2:30 360 students
1500 Dayton Ave., San Leandro Contact: Wendy
TEACHER CONTACTS: Levin
1 First Survey Returned. “A little litter is everywhere”
1 Follow-Up Survey “ a little litter is everywhere”

Dayton School Cont.
Teacher Comment: We gathered more than 50 pieces of trash." The wind these past weeks has blown a lot of trash around".

Hillside Elementary 4x 8:15, 8:45, 9:30, 10:15 500 students
15980 Marcella St, San Leandro Contact: Ms. Cynthia Flemister
TEACHER CONTACTS: Richards, Villegas, Granstrom,Debrill
1 First Survey Returned "Almost Free of Litter."
5 Follow-Up Surveys Returned Range from Almost Free to Litter Everywhere.

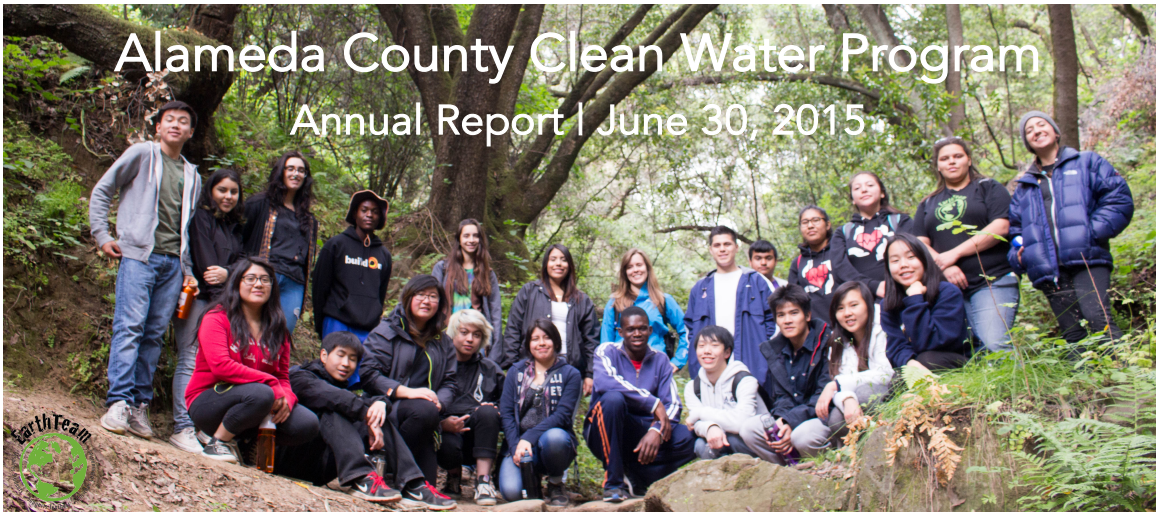
UNION CITY 4 Shows

Pioneer School 3x 8:00, 8:45 and 9:30 340 students
32737 Bel Aire St, Union City 94587 Contact: Cheri Benafield
TEACHER CONTACT: Schoon
1 Follow-Up Survey Returned "Almost Litter Free"
Principal E-mail Comment " We really enjoyed this assembly and we appreciate you coming to our school. I had lots of teachers comment on how much their students enjoyed your visit.

Northstar School 1x 10:30 55 students
725 Whipple Rd. Union City 94587 Contact Sheryl Rassmussen-Lazkani

CASTRO VALLEY, SAN LORENZO, SUNOL ZONE 7 3

Nov. 18 Strobridge School 3x 9:15, !0:15,2:00 390 students
21400 Bedford Dr., Castro Valley Contact: Wendy Sagi
TEACHER CONTACTS: Melecon, Tasle, Saulsbury, Lum-Jones, Smith, C Shay, Estes, Nielson
8 First Survey Returned "A Little Litter is Everywhere"
5 Follow-Up Surveys Returned "Litter Free" to Lots of litter." See comments.
Teacher Comments: "We got a trash grabber and that helped a lot" "We have a breakfast program at recess ad the litter is awful." "We walk outside…and notice the storm drains with the poem and warning …everything ends up in the bay. Watching the kids faces about the reaction to the drains makes it more real. After about a week kids come and share how many storm drains were on their way home. It was wonderful. Thank you."



Executive Summary

37 student interns participated in Earth Team's Alameda County **Zerolitter Internships** during the 2014-2015 school year. On campus activities and community events focused on litter reduction and watershed education. Student-interns met weekly after school for the entire year to learn and acquire new skills and practice leadership opportunities. They designed and participated in a number of action-oriented community events aimed at increasing litter reduction awareness and changing littering behaviors. Lessons learned at Oakland High School campus were replicated with peer-to-peer outreach activities at 2 other Alameda County campuses (San Lorenzo and American), increasing the over all impact of the project. A total of 37 student-interns were directly involved with Zerolitter activities, with outreach activities benefiting a total student population of near 5,000 students. A total of near 83 afterschool meetings (151 hours) were conducted, with 23 field trips (49 hours) and 12 community events at 8 different locations. Over 12,000 pieces of litter were mapped, classified and removed from sites. Cost per student-intern was $1,713 for the year, and cost per hour was $25, below the national average of $32 for afterschool programs.

Several student-led Service Learning Projects with specific litter reduction and public engagement activities, included Lake Merrit Cigarette Blitz, Bottle Trash, Apple&Eve Juice Box, or Clean Hayward. In Oakland, after documenting litter issues in selected locations, students worked with the community and a local business, Coffee with a Beat, to install ashtrays and reduce cigarette butts. In Fremont they designed a system to collect and sell lunch-time plastic bottles, working with school staff to install hydration stations on campus. And in San Lorenzo they collected litter data on campus and launched a petition with over 7,000 signatures to Apple&Eve for the company to change their packaging, found to be one of the biggest sources of litter. Students engaged City of Hayward staff on a litter-awareness activity that included mayor Barbara Halliday. Video and social media was used to document and disseminate project results and public participation. Project activities were well documented via school-specific blog sites such as the Oakland High School ZeroLitter Project.

Expected Outcomes

The project activities successfully addressed the project outcomes for the year:

- Growth in positive attitudes and knowledge about watersheds and their connection with the protection of our water resources.
- Reduction of litter and in littering behaviors in school campuses, considered high trashing areas.
- Increase level of student engagement in outdoor activities.
- Increase student communication skills to be used at public education events.
- Effective use of science and technology tools to address and communicate effectively the litter problem and its possible solutions.

All recruited interns completed the internship and reported an increase in confidence, public speaking, and leadership skills and felt better prepared to educate their peers about watershed and litter related issues. They learned to work together to complete three separate service learning projects of their interest that would help with project outcomes on campus as well as on visible community sites, such as Lake Merritt. They presented on their findings during the internship as well as through webinars with other EarthTeam Interns and at the annual LEAF conference in May 2015.

Activities

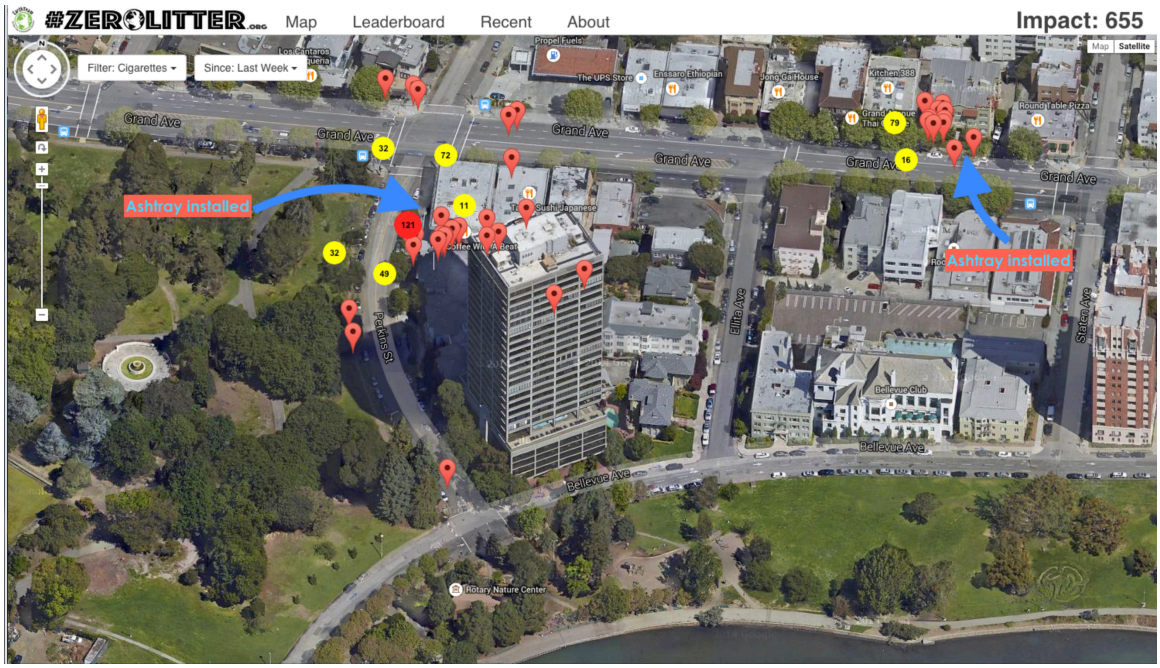
Main activities included:

1. Three yearlong Zerolitter Internships with up to 15 students each in 3 campuses as an afterschool program that provided deeper knowledge, hands-on experience, practical monitoring skills and leadership opportunities.
2. 83 class presentations, 23 field events at 3 East Bay campuses and several community locations.
3. Implementation of several research-based service learning projects, using science and technology to plan and conduct litter reduction and education actions.
4. Projects engaged local organizations, businesses and their staff in student-led litter and watershed education opportunities.

Enrolled ET Interns	Total Class Visits	Total Class Hours	Total Field/Public Visits	Total Field Hours	Total Contact Hours	Cost per Student	Cost per Impression Hour	Project No.
AMERICAN								
12	30	49.75	7	14.5	64.25	$1,666.67	$25.94	10061
Grand Totals (1 record)								
avg 12		49.75		14.5	64.25	avg $1,666.	avg $25.94	
SAN LORENZO								
16	24	46.67	6	16.5	63.17	$1,250.00	$19.79	10195
Grand Totals (1 record)								
avg 16		46.67		16.5	63.17	avg $1,250.	avg $19.79	
OAKLAND								
9	29	54.83	10	18.5	73.33	$2,222.22	$30.30	10062
Grand Totals (1 record)								
avg 9		54.83		18.5	73.33	avg $2,222.	avg $30.30	
37	**83**	**151.25**	**23**	**49.5**	**200.75**	**$1,713**	**$25.34**	

Table 1: Activities and costs by the numbers

Each internship was anchored on two-hour weekly after school meetings and 23 weekday or weekend outings totaling over 150 contact hours with EarthTeam staff and community and field partners. Projects focused on litter reduction on campus as well as in the surrounding community to directly and indirectly support watershed health through litter removal and, community outreach, education, and engagement. Initial activities in the first semester emphasized data collection and designing data-driven solutions to encourage community involvement and student leadership. Activities included watershed education lessons, litter surveys, posting on the project blog, hosting community events, hosting webinars, presenting in classes and at conferences and negotiating with custodians, waste haulers, students, teachers and school administration to help move waste reduction goals forward. Each group of students was able to take a leadership role in creating and implementing litter and waste reduction solutions on their campus throughout the year.



Interns used the Fall Social, Lake Merritt Zero Litter Blitz, America Recycles Day, webinars, and other field events to practice their public speaking outside of the internship space. In addition to field outings, interns learned from guest speakers about how to interpret data they have collected (Katrina Parker from ClifBar), collaborated with local community members on litter reduction efforts (Andrew Jones from uptown and Downtown and Dr. Bailey from Lake Merritt Institute), and partnered with Skyline High School to complete a macro and microplastics analysis of Crown Beach (with Connor Dibble from UC Davis).

ACTIVITY	DATE	OUTCOMES
25 After School meetings	Weekly	Training, Education, Data Collection, Skills Development, Outreach
Bay Trees Community Restoration Event	January 24th 2015	Restoration, planting natives, watershed education, field experience
Litter Surveys (zerolitter.org project page)	Weekly	Over 4,000 pcs of litter data collected, advocacy, scientific research, campus education
Keep Hayward Clean & Green	March 28th 2015	Students lead litter surveys w/key Hayward politicians
Campus Beautification Day #1	May 3rd 2015	Students helped visitors select and buy native plants. Another group of students tabled on the Zero Litter Project and tested various community engagement activities.
Campus Beautification Day #2	May 16th 2015	Students planted native plants on campus
Leadership & Environmental	May 30-31st 2015	Students presented the results of their petition

Action Forum		campaign and taught attendees on how to make a successful campaign.
Waste Audit & Education Project	June 18-25th 2015	Student interns gain job experience working at Clif Bar on professional audit and education campaign
Project Webinars (x2)	April 2015	Students collaborate w/other students to share project successes
Change.org Campaign	February 24th 2015	Students create campaign to reduce #1 source of waste on campus, reach over 7,000 people worldwide
Student Camping Trip	May 24-25 2015	Students collaborate with other students, present their work and expand their network of young professionals

Table 2: Summary of project activities

	San Lorenzo	Oakland	American	Oakland Tech
1. **Year Long Internship**	X	X	X	Short Term 8 week project
2. **Presentations**	Zero Litter Project	Zero Litter Project	Food Scraps Photo Study	Waste Action Project
3. **Service Learning Project**	Zero Litter	Year Long Cafeteria Bin Monitoring Zero Litter	#BottleTrash Study and Hydration Stations	Cafeteria Bin Monitoring
4. **Community Engagement**	Change.org Campaign Project Webinars	3 Zero Litter Community Events Earth Expo Fall Social, Bridging the Bay Conference, American Recycles Day	Survey and lunchtime activities,	Earth Day event
5. **Leadership opportunities**	LEAF 2 Campus Beautification Day events	LEAF, Zero Litter Blitzes, Bin Monitoring	LEAF, Principal mtg.	Cafeteria Bin Monitoring

Table 3: Anti-litter service learning projects

#Cigarette Butts Blitz

an anti-litter Service Learning Project at Oakland High School

Interns worked on various small group projects throughout the year. The first set of projects was determining litter hotspots in school hallways to get interns used to using Instagram and Google Maps to document litter they observed on campus. Interns divided into groups of 2-3 and selected hallways to collect data on for a 2 week period. After completing data collection, interns presented on their findings with posters in an internship meeting.

An Example of an ash tray adopted by a local business and installed!

Bin Monitoring was a continuous part of the internship. Interns helped separate litter into appropriate recycling bins and educated their peers about the three stream system during lunch. Andrew Bautista, a returning Earth Team intern, was elected to be a bin monitor coordinator and helped to rally all of Environmental Sciences Academy (ESA) to support in bin monitoring. He created a volunteer system and with the help of ESA rewards for service, was able to successfully sign up all ESA students to support the system for the rest of the year. In addition, interns presented on their work at Oakland Tech and San Lorenzo High, resulting in Oakland High adopting recommendations from Oakland High. The second set of projects began in the second semester. Interns took on a more action-oriented, in-depth approach to connect their school and community and used skills obtained in semester one to carry it out. Actions addressed both watershed health and litter: **Litter in Storm Drains**, **Littering Behaviors** and **Attitudes on Campus and Lake** Merritt Litter Profile.

The **Littering Behaviors and Attitudes group** worked on getting baseline data on campus to determine why individuals litter in order to determine possible solutions to the issue. Interns created a survey and went around the campus to get a sample size for their project. After surveying 124 of their peers on campus for their project, interns decided to use this information for their bin monitoring work to engage the whole school in reducing litter.

The **Storm Drain group** adopted drains around their homes and around Oakland High school to determine if there was a difference in litter type ending up in the drains. Interns discovered that there was more litter found in storm drains near campus compared to near their homes. Interns completed research and discovered

what watershed their storm drains lead into and what preventative measures, if any were taken by the City of Oakland to reduce litter ending up in the bay via storm drains. Interns created a Powerpoint presentation and made recommendations on how to reduce urban runoff and made plans to present in their Environmental Science classes.

After just 30 minutes, One intern filled a glove with cigarette butts while collecting data at a Litter Blitz

Interns completing work on litter at Lake Merritt helped engage community members by hosting **Zero Litter Blitzes** at the Lake on three separate occasions to educate community members about the litter issue at the Lake.

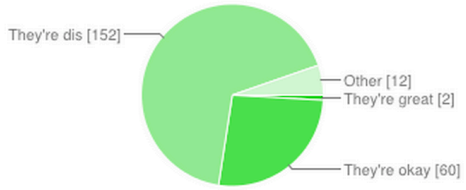
After the first Litter Blitz, interns focused on cigarette litter around Lake Merritt. Working with Lake Merritt Institute and local businesses such as Coffee with a Beat, interns installed cigarette butt containers in high foot traffic areas to help reduce the amount of cigarette litter finding its way into the Lake Merritt Estuary.

#BottleTrash

an anti-litter Service Learning Project at American High School

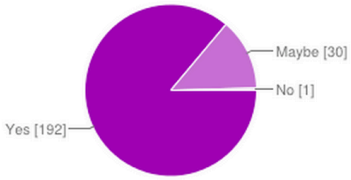
- EarthTeam Interns collected over 1000 data points of litter.
- The most common source of litter was from disposable water bottles.
- Interns then surveyed 226 of their peers about the water fountain.

What is your opinion of the water fountains at our school?



They're great	2	0.9%
They're okay	60	26.5%
They're disgusting	152	67.3%
Other	12	5.3%

If there was a hydration station(seen above) with cold filtered water, would you use it to re-fill a water bottle?



Yes	192	85%
Maybe	30	13.3%
No	1	0.4%

- Students will now present their findings to the school administration.
- With hydration stations installed, interns expect litter from water bottles to decrease dramatically.

#Apple and Eve

an anti-litter Service Learning Project at San Lorenzo High School

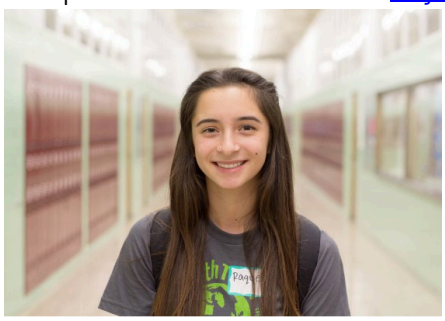
(this portion written by a student-intern)

Working with Earth Team, its been our job as interns to analyze causes of litter on campus, educate others on the effects of litter, and try to make a positive change toward a cleaner campus. After noticing that much of our litter collection came from soft plastic straw wrappers, I was reminded of the relatively recent plastic bag ban in Alameda County and how successful its efforts have been in changing people's lifestyles and getting us to reuse and reduce waste. This is our chance to get others involved in a movement against non-recyclable plastics.

Using change.org, a public petition website, my peers and I created a proposition to alter the packaging of our school beverage provider's packaging to eliminate straws and straw wrappers and thus, reducing the amount of litter on campus. After I planted the idea seedling, we began by drafting the petition and with the help of our supervisor, Madeline, made it live and have started to advertise the cause.

My personal goal for this project is to get the support of our principal and school district to boycott the juice company and buy from an alternative, sustainable, company until they decide to change their packaging. It would also be great to push legislation for a county-wide straw wrapper ban, but this petition and the awareness it brings about sustainable consumption of goods on a large scale is a wonderful start.

The petition can be found at tinyurl.com/cleanslz



-Raquel Crites

What our research screamed

(this portion written by a student-intern)

We finally got to conduct our first zero litter research project with EarthTeam . My group chose to find out if the litter on campus was things bought from the school's cafe or food that's coming from outside the campus. I was so sure that at least 80% of the litter was from the school's cafe but I came to find out that that is not quite true. More than half the litter on SLZ is brought from outside sources. This saddened me because only upper class men (juniors and seniors) can go off campus to buy lunch.

My class is a part of the litter problem on Slz. I can't wait to start figuring out how to solve this so we as upper classmen can be role models to the under class men. We are supposed to be the mature ones of the school but yet throw our sandwich wrappers on the grass. I have hope that this can change though. The hard part is, how. How do we tell our fellow peers that littering is horrible without being/sounding like robo cops. Referring back to my ap lit class: Ethos (credibility) Pathos (emotions) Logos (logic, statistics). I believe if we use ethos, to state the problem on our campus, we will definitely be taken seriously, because it's like "HEY WE ARE INTERNS WITH EARTH TEAM, EXPERTS ON LITTER, TRUST US". And we can really utilize Logos. Our research gave us numbers, scary ones.

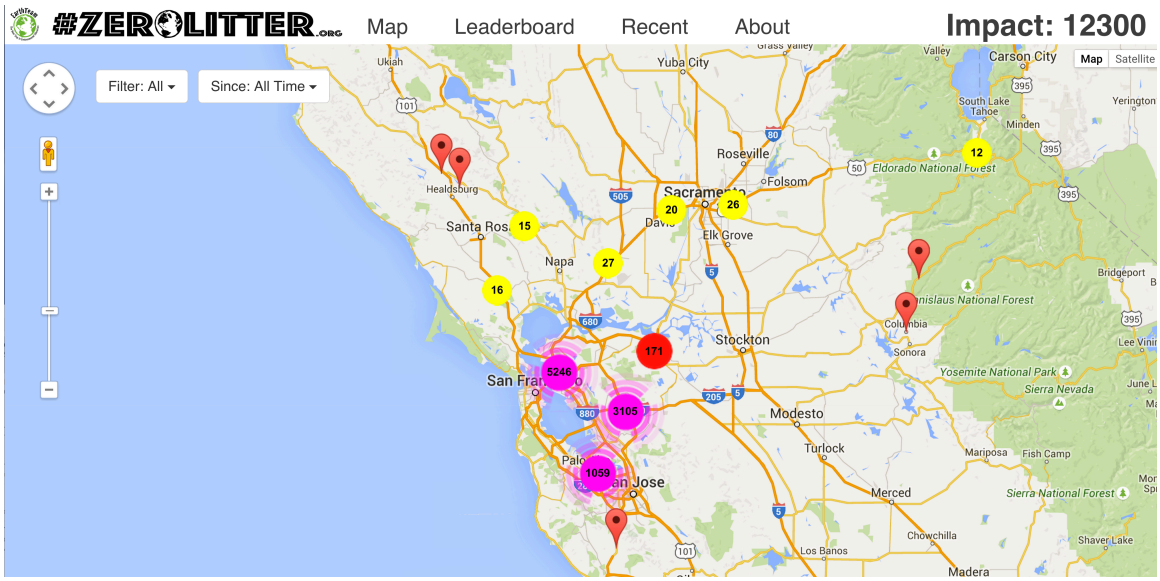
I'm really excited to bring this issue to light. I think Earth Team will have a huge impact on our campus. We will solve this litter problem!!! It is a process but I can't wait to see the results.

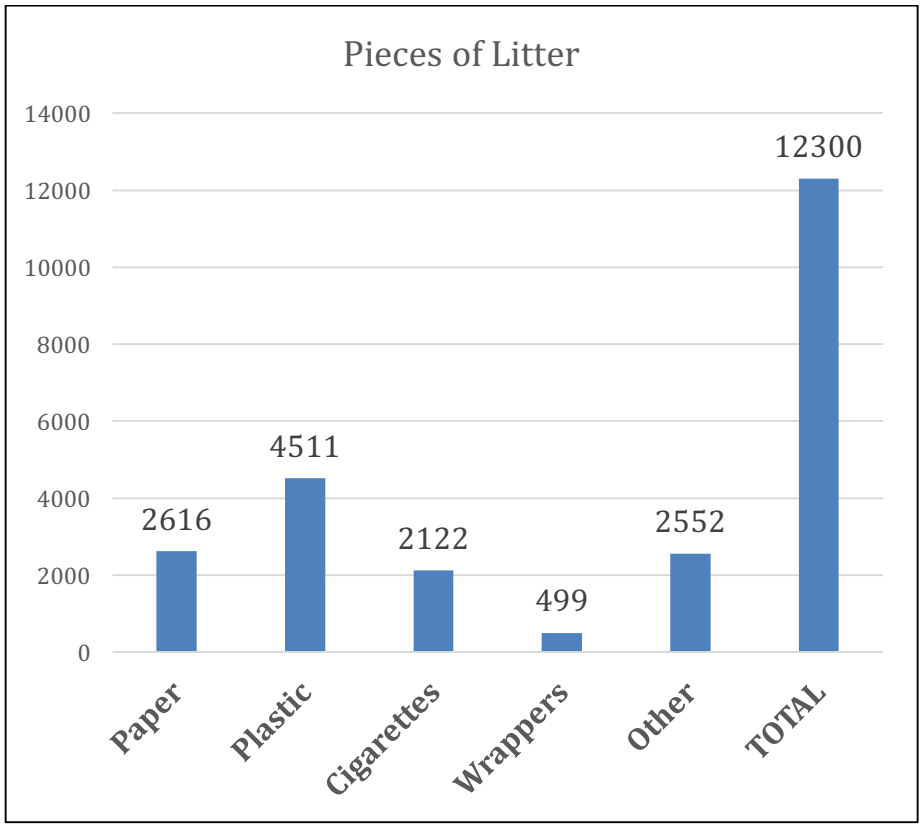
-Bertha Arvizo

Evaluation and Intern Recommendations

Besides the detailed litter data collection stats available at our Zerolitter.org site, we conducted pre and post surveys to measure attitudinal changes in the students.

Litter ID and Removal Data





Attitude Change Scores

Following are the results of the qualitative evaluation, using pre and post surveys during the year with a set of 12 questions measuring behavior and attitudinal changes amongst the students.

#	Questions	Pre-Score	Pre Avg	Post-score	Post Avg	Difference
1	I am aware of environmental issues in my school or community.	31	3.875	35	4.38	4
2	I am knowledgeable about my watershed and what I can do to help improve its health.	25	3.125	32	4.00	7
3	I know how to work effectively in a team.	36	4.5	35	4.38	-1
4	I have the training and skills to participate in ecological field work like restoration and monitoring.	28	3.5	31	3.88	3
5	I am comfortable communicating to others about litter reduction and watershed health.	31	3.875	33	4.13	2
6	I talk about local environmental issues with my friends or family.	21	2.625	29	3.63	8
7	I want to work on environmental issues now and later in life.	29	3.625	33	4.13	4
8	I understand how I can have a positive impact on my local environment.	29	3.625	35	4.38	6
9	I am knowledgeable about waste at my school and what I can do to address this issue.	28	3.5	37	4.63	9
10	I am comfortable working with technology to address the waste issue in my community.	33	4.125	30	3.75	-3
11	I have the training and skills necessary to participate in litter reduction efforts.	29	3.625	31	3.88	2
12	I feel comfortable applying for internships and jobs.	35	4.375	32	4.00	-3

#	Questions	Pre-Score	Pre-Avg	Post-score	Post Avg	Difference
1	I am aware of environmental issues in my school or community.	32	4.57	40.5	5.79	8.5
2	I am knowledgeable about my watershed and what I can do to help improve its health.	19	2.71	38	5.43	19
3	I know how to work effectively in a team.	37	5.29	39	5.57	2
4	I have the training and skills to participate in ecological field work like restoration and monitoring.	28	4.00	33	4.71	5
5	I am comfortable communicating to others about waste reduction and watershed health.	31	4.43	34	4.86	3
6	I talk about local environmental issues with my friends or family.	20	2.86	30	4.29	10
7	I want to work on environmental issues now and later in life.	30	4.29	32.5	4.64	2.5
8	I understand how I can have a positive impact on my local environment.	34	4.86	39.5	5.64	5.5
9	I am knowledgeable about waste at my school and what I can do to address this issue.	34	4.86	38	5.43	4
10	I am comfortable working with technology to address the waste issue in my community.	33	4.71	38	5.43	5
11	I have the training and skills necessary to participate in waste reduction efforts.	29	4.14	36	5.14	7
12	I feel comfortable applying for internships and jobs.	28	4.00	32	4.57	4

#	Questions	Pre-Score	Pre-Avg	Post-score	Post Avg	Difference
1	I am aware of environmental issues in my school or community	32	3.92		4.83	0.92
2	I am knowledgeable about my watershed and what I can do to improve its health	19	2.25		4.67	2.42
3	I have a clear understanding of how aquatic ecosystems work	37	2.17		3.50	1.33
4	I have the training and skills to participate in ecological field work like restoration and monitoring.	28	2.42		4.42	2.00
5	I am comfortable communicating ecological issues and restoration methods to others.	31	3.67		4.08	0.42
6	I talk about local environmental issues with my friends or family	20	3.25		4.25	1.00
7	I want to work on environmental issues now and later in life	30	3.55		4.09	0.55
8	I understand the factors that affect water quality	34	3.75		4.42	0.67
9	I feel comfortable speaking in front of groups.	34	3.58		4.42	0.83
10	I know how to work effectively in a team	33	4.50		4.58	0.08
11	I feel comfortable reading scientific literature.	29	3.92		4.33	0.42
12	I feel comfortable applying for internships and jobs	28	4.50		4.67	0.17

Student Quotes

Students completed pre and post surveys as well as contributed writing samples and interviews to provide feedback for the project and gauge growth, learning and the success of project outcomes. Students showed a strong increase in knowledge gain, awareness and enthusiasm for the environment as well as leadership, public speaking and other professional skills as a result of the internship. Student quotes best illustrate this growth and impact.

"I think that all the activities done outside of school and with the public helped me out the most because it made me comfortable talking and presenting in front of people now. Then also seeing the results from the data we collected and actually then addressing it was truly eye-opening because now I know that we can in fact change things as teens and that people do actually care." ***-Kevin Duong, 10th Grader, San Lorenzo High.***

"I do consider myself a scientist now because we actually gathered data that turned into a solvable issue we are addressing. We've done every step any scientist could've done and from that experience, I believe that we are scientists." ***-Bertha Arvizo, 12th Grader, San Lorenzo High***

"The activities that helped me was actually going out and collecting data and seeing our results. I like how we acted on what we found and made an impact with the petition. The best experiences that helped me was going on field trips where we got to see the damage in our community. I also liked the native plant sale because that's where I learned how to comfortably talk to the public. I loved planting the trees also." ***-Venus Eltaki, 12th Grader, San Lorenzo High***

"I really like the webinar because it makes me feel more connected to teens who also care about the environment as much as I do. I noticed that while doing the Webinar some of my peers felt uncomfortable presenting their ideas and projects to others because they were shy but overall we all enjoyed connecting with other groups. I think my peers will start coming out of their shells more as we continue to connect with #ZeroLitter Project Interns about our work. Overall the Webinar is very ideal for high schoolers to share ideas and relate to one another through our favorite output, social media!" – ***Elijah Allen, OHS, 2017 on presenting with EcoMatic at a Webinar***

"The Zero litter project has helped us realize how much trash we have around our school campus. Before joining the Zero Litter internship the majority of students didn't make a connection between social media and sustainability, but once starting were amazed to see the global efforts that were behind the project. The best part about the #zerolitter project is that's its accessible to everyone. Taking a photo of the litter you find is a new and interesting way to encourage people to pick up litter." - ***Visah Munassar, OHS 2015***

*"Bin monitoring on our school campus was the bomb! We found that teaching our fellow students about waste is extremely helpful for our school because students are more likely to properly separate their trash. Other students and I learned how to recycle and throw away trash into the right bin. With support from each other and the staff, we could easily identify the difference between landfill, compost, and recycle! It was a fun and effective experience for everyone." -****Zanin David, OHS 2017***

"I joined Earth Team because I wanted to make a change in how people view trash and find new ways to educate people and myself about recycling. Earth Team makes me see the world as a cleaner place and it shows me people actually care about their environment they are in…Earth Team has made me a stronger, more conscious person in my community." - ***Elijah Allen, OHS 2017***

Oakland HS Interns would like to continue to see Litter Blitzes and Lake Merritt, more environmental engineering themed projects, and more opportunities to interact with their community to share their experiences in the internship. Interns felt that they had grown professionally after the experience; specifically, interns who were initially shy were the ones to spearhead the ZeroLitter Blitzes at Lake Merritt and interact with their peers both on and off campus.

Media

During the year, the project was extensively documented by students and staff using photography, social media (Instagram), interviews, video, webinars and a student blog. *Click the 'Activity" links below to explore media.*

School	Blog	Instagram
Oakland High	https://oaklandhighearthteam.wordpress.com/	@EarthTeamOaklandHS
American High	https://americanhighearthteam.wordpress.com	@EarthTeamAmericanHigh
San Lorenzo High	https://instagram.com/earthteamsanlorenzohs	@EarthTeamSanLorenzoHS

MEDIA	EVENT	DATE
Blog	Project Blog	Continuous
Instagram	@EarthTeamSanLorenzoHS	Continuous
Web	"#ZeroLitter @SanLorenzoHS Petition Change"	4.23.15
Web	"Student Campaign Gains Worldwide Support"	3.10.15
Web	"Support Students Making Change"	2.26.15
Web	"Student Interns Get Tough on Litter"	2.6.15
Web	Change.org Campaign	2.24.15
Photo	Internship Mtg.	1.7.15
Photo	Bay Trees Community Event	1.24.15
Photo	Internship Mtg.	5.13.15
Photo	Intern Camping Trip @ Lake Chabot	5.24-25.15
Photo	Leadership & Environmental Action Forum	5.30-31.15
Photo	Professional Waste Audit & Education Project	6.24.15
Video	Year End Project Highlight Video	6.2.15
Video	Zero Litter Student Webinar	4.29.15
Video	Zero Litter Student Webinar	4.15.15
Video	San Lorenzo Student Interview (1 of 2)	5.14.15
Video	San Lorenzo Student Interview (2 of 2)	5.14.15

Closing

Over the course of the year, we learned that a small group of students can catalyze positive environmental change in their campuses and communities while also undergoing a powerful and lasting personal transformation. We found that by providing consistent structure, support and resources to a group of interns we were able to see many positive outcomes beyond just litter pick up events. Once they get inspired with awareness, energized with confidence and equipped with new knowledge and a set of new communication and leadership skills, youth can serve as a powerful community engagement link, bringing awareness and change in litter-reduction and in the protection of our water resources.

For 2015-16 we plan to build on the lessons learned to provide the best educational outcomes while reducing litter directly and through strategic awareness campaigns and events. This means shifting from concentrating on constant collections of large amounts of litter data and focusing on engaging students and their communities in solutions to reduce litter.

It has been our emphasis on well organized on and off campus public activities that brought the best results. The collection of litter data using new technologies combining Instagram, Google Maps and other publicly available tools that are part of the new API economy is not the objective but one more tool the students can use to help design highly focused, well researched data-driven service learning projects that target specific litter-reduction objectives.

Thank you for supporting EarthTeam as we work with students on their journey to become life long environmental stewards!

TABLE OF CONTENTS

EXECUTIVE SUMMARY	**1**
EXPECTED OUTCOMES	**2**
ACTIVITIES	**3**
#CIGARETTE BUTTS BLITZ	**7**
#BOTTLETRASH	**9**
#APPLE AND EVE	**10**
EVALUATION AND INTERN RECOMMENDATIONS	**12**
MEDIA	**16**
CLOSING	**17**

Annual Reporting for FY 2014-2015

Regional Supplement for Training and Outreach

San Francisco Bay Area Municipal Regional Stormwater Permit

B A S M A A

Bay Area Stormwater Management Agencies Association

September 2015

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

B A S M A A

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

Bay Area

Stormwater Management

Agencies Association

P.O. Box 2385

Menlo Park, CA 94026

510.622.2326

info@basmaa.org

Table of Contents Page

INTRODUCTION **2**

Training **2**
C.5.d. Control of Mobile Sources 2

Public Information and Outreach **3**
C.7.c. Media Relations – Use of Free Media 3
C.7.d. Stormwater Point of Contact 4

Pesticides Toxicity Control **4**
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

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

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.

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-

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 p 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)

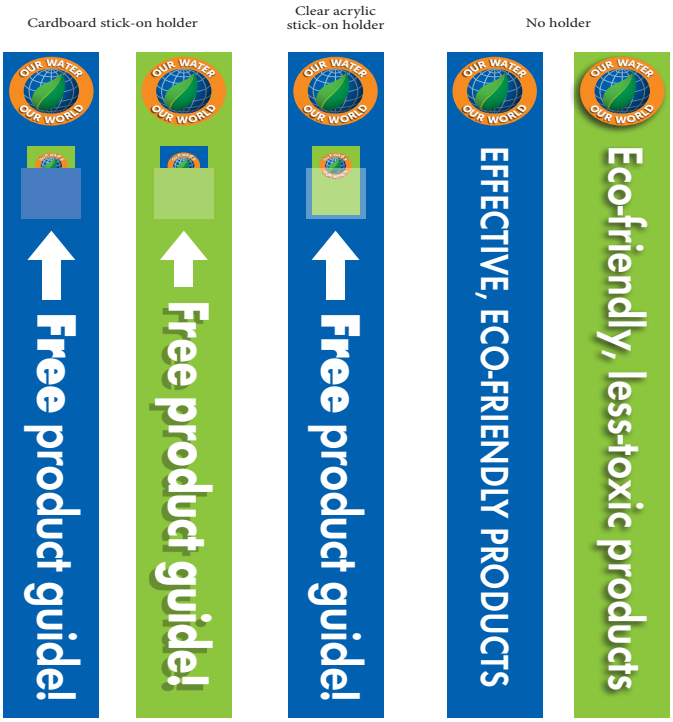
Summary of tasks for Advanced Regional Trainings with Home Depot (101 pages)

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

Less Toxic Products

OUR WATER OUR WORLD

Manage Pests in Your Home and Garden

www.ourwaterourworld.org

LOOK FOR THESE LESS-TOXIC PRODUCTS

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 Attrax 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-Go!, 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

© Copyright 2015 Bay Area Stormwater Management Agencies Association

This pocket guide was developed by Marin County Stormwater Pollution Prevention Program (MCSTOPPP), San Rafael CA, with assistance from Ann Joseph Consulting.

MANAGE PESTS WITH EFFECTIVE, ECO-FRIENDLY PRODUCTS!

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

Eco-friendly
Less-toxic Product!

OUR WATER OUR WORLD

PLANTS THAT ATTRACT HELPFUL INSECTS AND BUTTERFLIES

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 (*Lobularia maritima*)
Wild buckwheat *(Eriogonum spp.)*
Yarrow *(Achillea millefolium)*
Zinnia *(Zinnia spp.)*

LESS TOXIC ACTIVE INGREDIENTS

Active ingredients are listed on the front of the product. For a more complete list, go to **www.ourwaterourworld.org**.

Abamectin
Ammoniated soap of fatty acids
Azadirachtin
Bacillus subtilis
Bacillus thuringiensis isrealensis
Borax and boric acid
Canola oil
Castor oil, vegetable wax, gum resin
Citric acid
Clove, rosemary, sesame and thyme oil
Corn gluten
Cottonseed oil
D-Limonene
Diatomaceous earth
Eugenol
Hydramethlynon *(ONLY use in containerized bait or gel form)*
Hydrophobic extract of neem
Iron phosphate
Lemon eucalyptus oil
Methoprene
Orthoboric acid
Paraffinic oil
Petroleum oil
Picaridin
Potassium bicarbonate
Potassium soap (or salts) of fatty acids
Pyrethrins
Sodium tetraborate decahydrate
Soybean oil
Spinosad

MORE INFORMATION

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

Eco-friendly
Less-toxic Product!

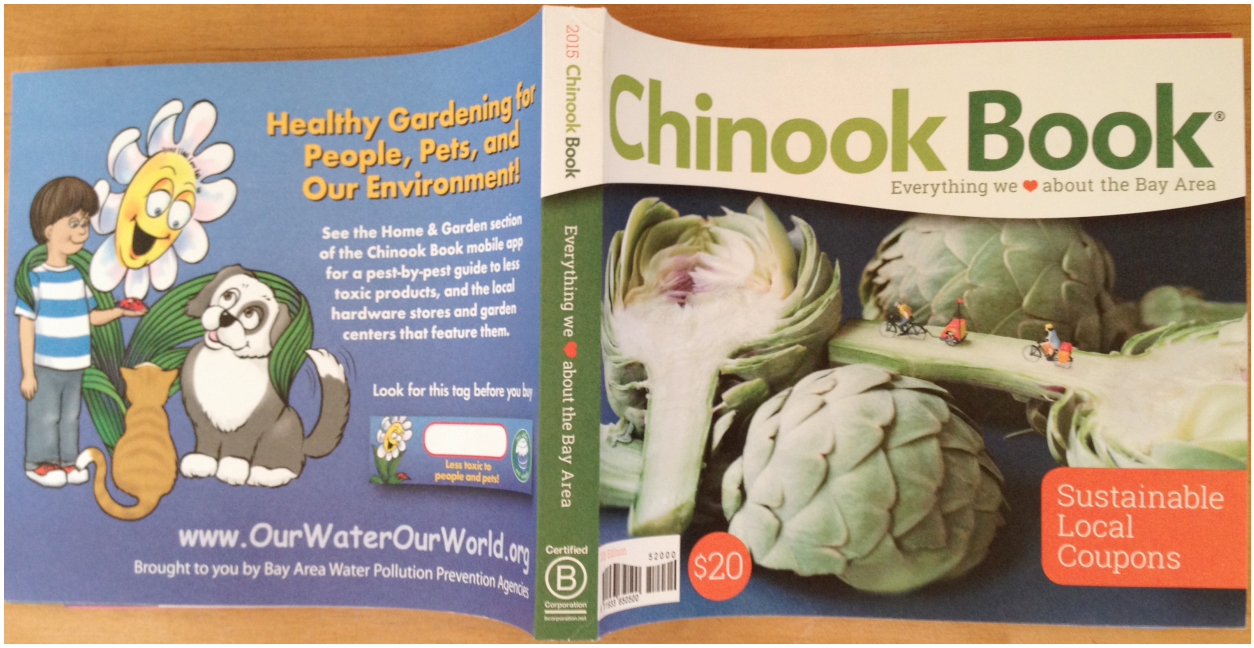
OUR WATER OUR WORLD

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

TABLE OF CONTENTS

INTRODUCTION 3

SCOPE OF WORK 3
- PROJECT DELIVERABLES 3
- ROLE OF IPM ADVOCATES 4
- PARTICIPATING STORES 5
- RESULTS AT A GLANCE 6

TASK 1: DEVELOP MATERIALS 6
- Task 1.1: Develop Resources for Two-tiered Training Programs 6
- Task 1.2: Provide Easy to Access Resources 7
- Task 1.3: Provide Training Materials From UC 8
- Task 1.4: Develop a "Pests Bugging You" Pocket Guide 8
- Task 1.5: Install Signage for Displays 9

TASK 2: ESTABLISH STORE SET-UPS AND TRAININGS 10
- Task 2.1: Schedule Meetings for Green Garden Specialists and Advocates 10
- Task 2.2: Place new signage for shelf talker awareness 10
- Task 2.3: Label Less-Toxic Products 10
- Task 2.4: Display Literature Racks 11
- Task 2.5: Schedule Monthly Visits 12
- Task 2.6: Train Associates and Green Garden Specialists 12

TASK 3: DEVELOP DISPLAYS FOR LESS-TOXIC PRODUCTS 13
- Task 3.1: Provide Display and End-Cap Banners 13
- Task 3.2: Work With Vendors to Build Displays 13
- Task 3.3: Add Seasonal Wing Stack Displays 14
- Task 3.4: Provide A Seasonal Pest Calendar 14
- Task 3.5: Evaluate the Effectiveness of End Caps and Wing Stacks 15

TASK 4: HOLD TABLING EVENTS 15
Task 4.1: Provide Two Tabling Events For Each Store 15

TASK 5: EVALUATION MEASURES 17
Task 5.1: Analyze Pre- and Post Training Surveys 17
Task 5.2: Measure Changes of Less-Toxic Products 20
Task 5.3: Measure Tabling Evaluations By The Number Of Customers 20
Task 5.4: Evaluate Store Manager Surveys 21

TASK 6: COORDINATION 24

CONCLUSIONS 26

HOME DEPOT STORES IN THE OWOW PROGRAM 27

RECOMMENDATIONS 28

ACKNOWLEDGEMENTS 28

Appendices

Appendix A: Home Depot Monthly Pest At-A-Glance Calendar
Appendix B: *Home Depot Pests Bugging You Pocket Guide*
Appendix C: Home Depot On-Line Ordering Information for Beneficial Insects

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.

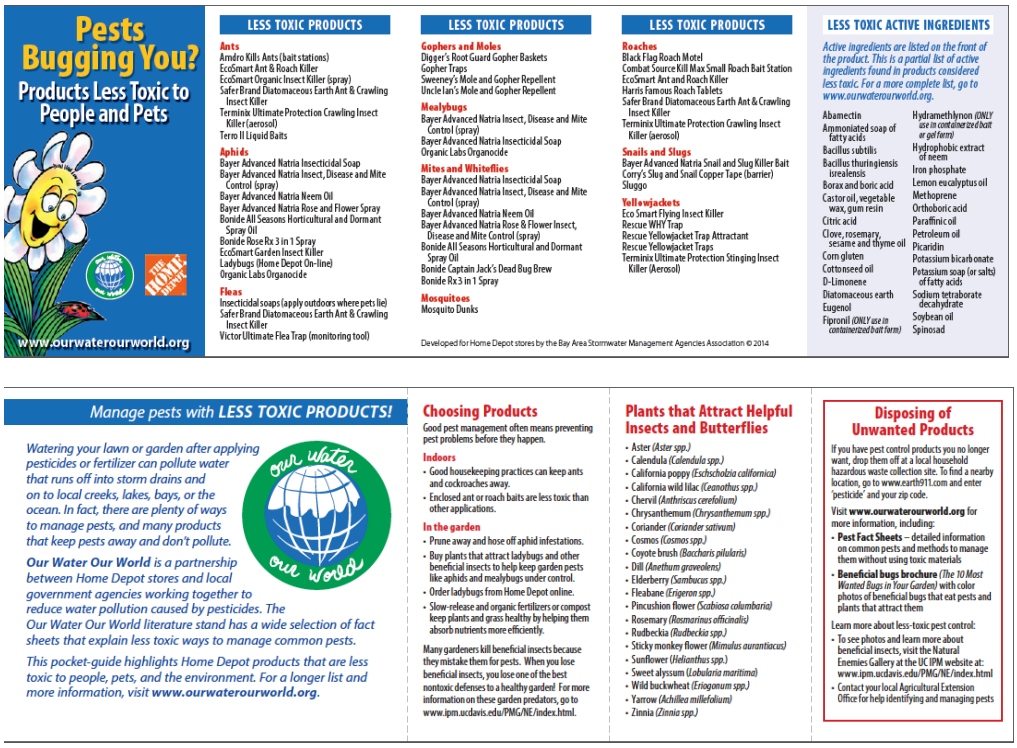
During the training, Associates were introduced to several easy-to-use resource materials published by the University of California, and were instructed in the use of these materials to answer customer questions. These materials included:

- 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
Armdro 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)

Developed for Home Depot stores by the Bay Area Stormwater Management Agencies Association © 2014

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
Ammoniated soap of fatty acids
Bacillus subtilis
Bacillus thuringiensis israelensis
Borax and boric acid
Castor oil, vegetable wax, gum resin
Citric acid
Clove, rosemary, sesame and thyme oil
Corn gluten
Cottonseed oil
D-Limonene
Diatomaceous earth
Eugenol
Fipronil *(ONLY use in containerized bait form)*
Hydramethylnon *(ONLY use in containerized bait or gel form)*
Hydrophobic extract of neem
Iron phosphate
Lemon eucalyptus oil
Methoprene
Orthoboric acid
Paraffinic oil
Petroleum oil
Picaridin
Potassium bicarbonate
Potassium soap (or salts) of fatty acids
Sodium tetraborate decahydrate
Soybean oil
Spinosad

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)*
- 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.)*

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

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.

Our Water - Our World

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.) • 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, leaffooted bugs, 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

Thank you to the following:

- **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

Our Water - Our World

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)

© Copyright Bay Area Stormwater Management Agencies Association 2014

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
Ammoniated soap of fatty acids
Bacillus subtilis
Bacillus thuringiensis isrealensis
Borax and boric acid
Castor oil, vegetable wax, gum resin
Citric acid
Clove, rosemary, sesame and thyme oil
Corn gluten
Cottonseed oil
D-Limonene
Diatomaceous earth
Eugenol
Fipronil *(ONLY use in containerized bait form)*
Hydramethlynon *(ONLY use in containerized bait or gel form)*
Hydrophobic extract of neem
Iron phosphate
Lemon eucalyptus oil
Methoprene
Orthoboric acid
Paraffinic oil
Petroleum oil
Picaridin
Potassium bicarbonate
Potassium soap (or salts) of fatty acids
Sodium tetraborate decahydrate
Soybean oil
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

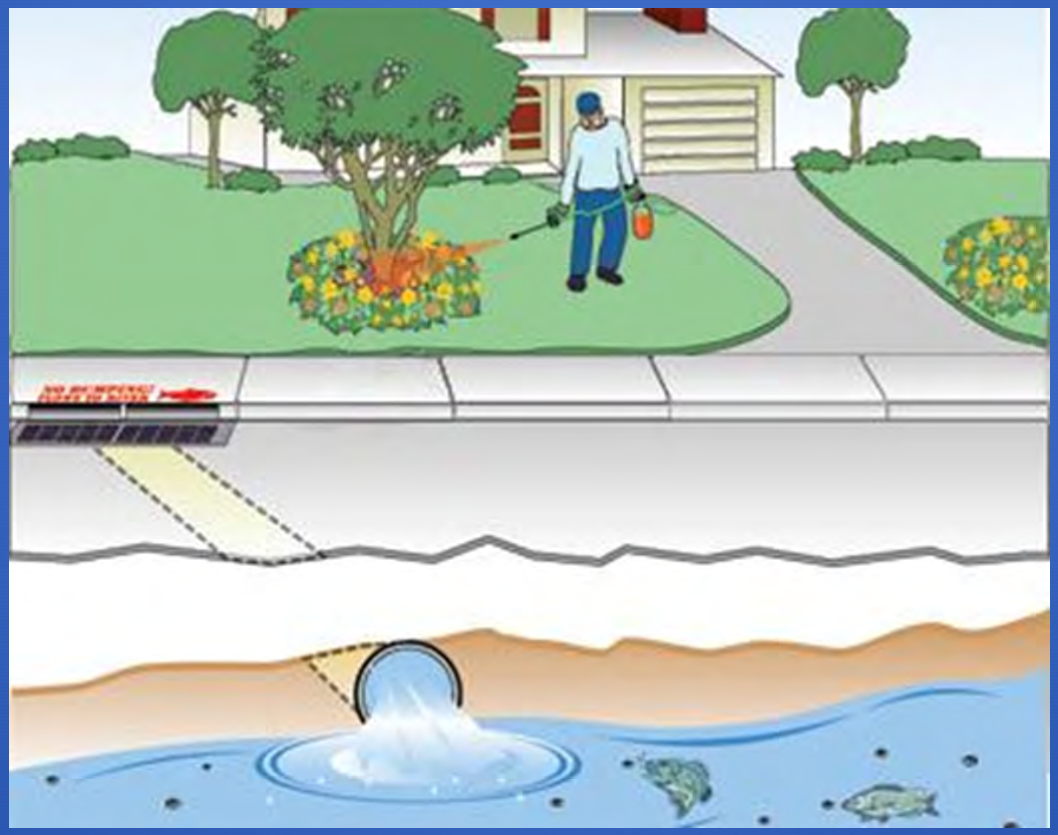
b. Large industrial plants and factories

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

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 pubic learn about less-toxic products and the connection between pesticide use and water quality

What is Our Water Our World?

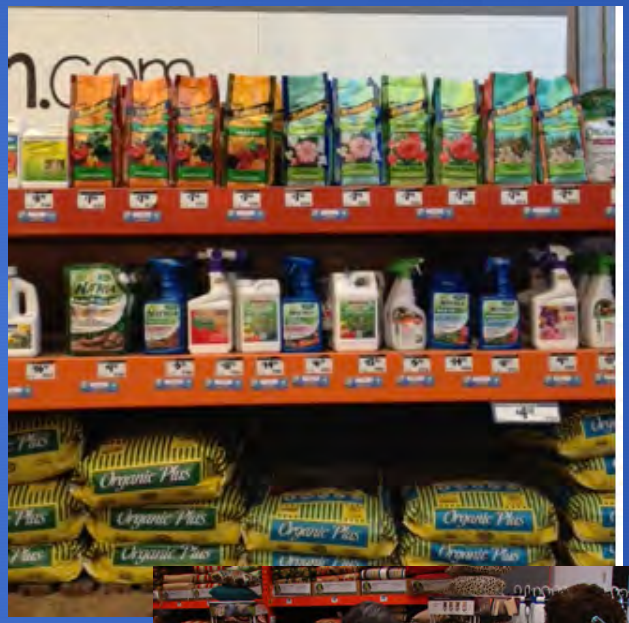
- Partnership with water pollution prevention agencies and retail stores
- National Award Winning Program

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

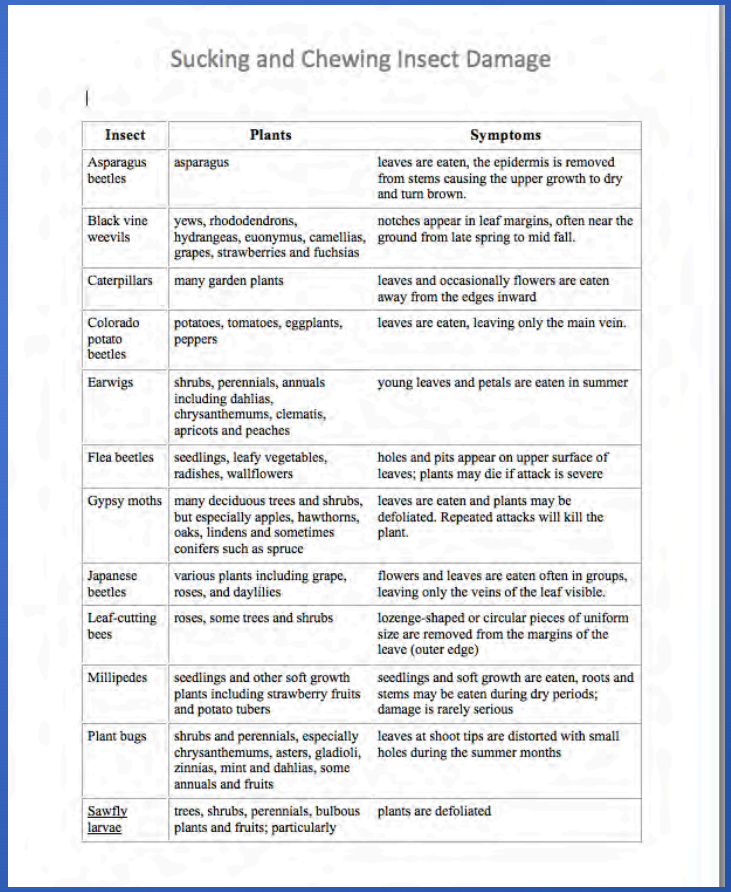
- Do you see insects on the damaged plant?
- What kind of damage do you see?
- What plant do you see the damage on?
- Has the plant been fertilized recently?
- Is the plant situated in the right spot?
- Are beneficals present?

chewing damage

sucking damage

Resources for Pest Identification and Management

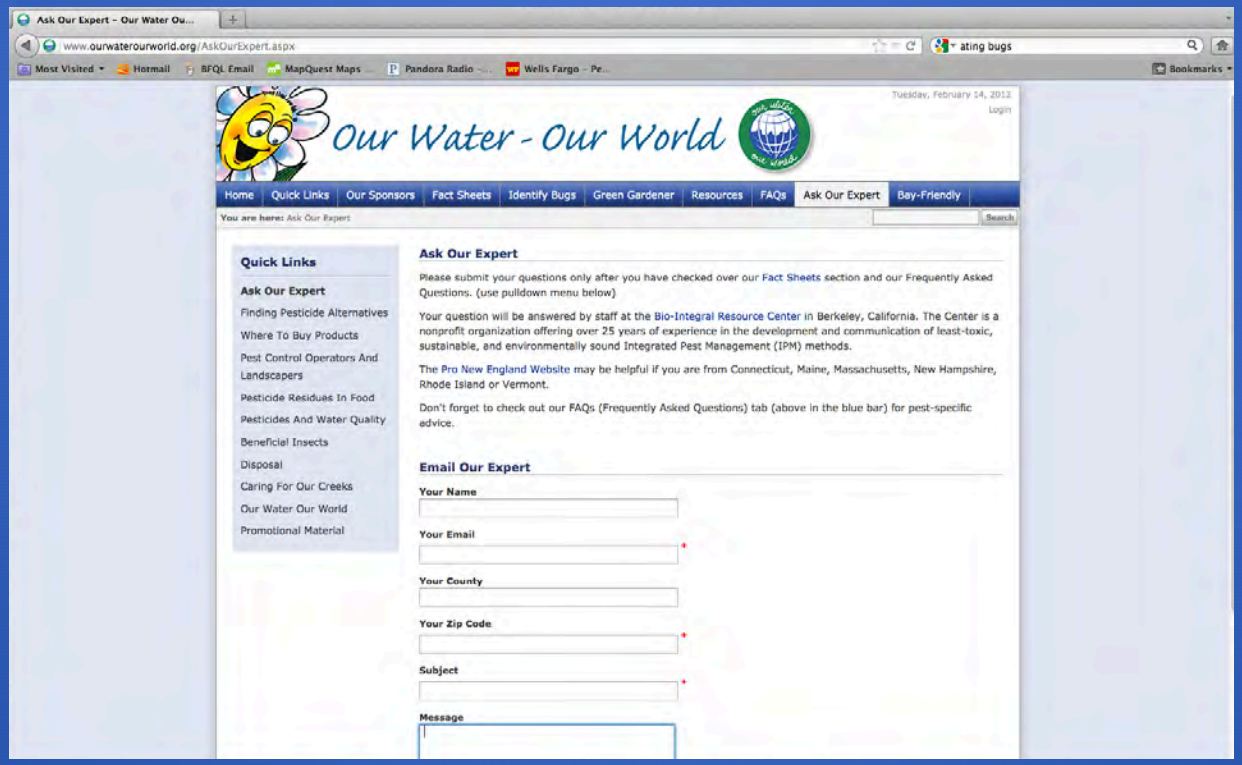
Resources for Pest Identification and Management



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



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

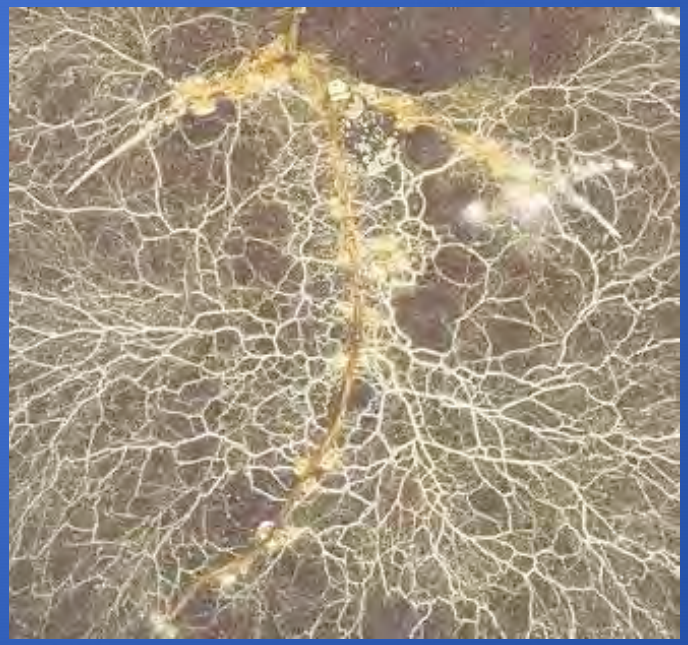
Organic & Slow Release Fertilizers Compost

- 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

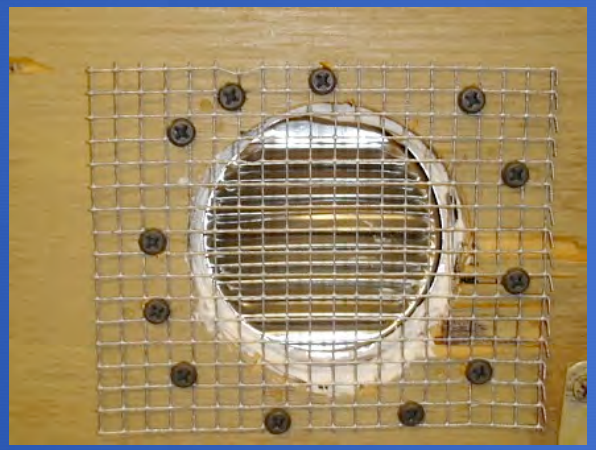
- Matching plants to the conditions of the site: sun, shade, soil type, etc.
- Choosing pest and disease resistant varieties
- Grouping plants with similar cultural needs together (hydrozoning)

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?

Working with Customers

Concentrates vs. Ready-to-Use

Our Water, Our World 000000Less-Toxic Product List 000000The Home Depot

Product Name (product type)	Active Ingredient
Ant Control	
Combat Ant Gel	Fipronil
Combat Quick Kill Ant	Fipronil
EcoSmart Ant and Roach Killer	Rosemary oil, cinnamon oil
EcoSmart Organic Home Pest Killer	2-Phenethy. propionate,clove oil,rosemary oil,peppermint oil, thyme oil
EcoSmart Organic Insect Killer	2-phenethylpropriate,
Grant's Kills Ants bait station	Hydramethylnon
Max Attrax Roach Killing Powder	Boric acid
Ortho Elementals Ant and Roach aerosol	
Otho Elementals Home Insect	
Raid Ant Baits III	Avermectin
Tanglefoot Pest Barrier	Castor oil, veg wax, gum resin
Terro II Liquid Ant Bait	Sodium Tretraborate Decahydrate (borax)
Terro Liquid Ant Bait Station Liquid	Sodium Tretraborate Decahydrate (borax)
Aphid Control	
Bayer Natria Insect, Disease, Mite	Sulfur, pyrethrins
Bonide. All Season's Spray Oil	Petroleum super paraffinic oil
Bonide Citrus Fruit and Nut Orchard Spray	Sulfer, pyrethrins
Bonide Rose RX 3 IN 1	Hypobolic extract of neem
Eco Smart Garden Insect Killer	Rosemary oil,peppermint oil,thyme oil, clove oil
EcoSmart Organic Insect Killer	2-Phenethyl propionate , sodium laurelsulfate, eugenol, thyme oil, sesame oil
Organocide	Sesame oil
Ortho Elementals Insect Soap	Potassium salts of fatty acids
Ortho Elementals 3 in 1	Sulfur, pyrethrins
Volck oil	Petroleum oil
Slow Release/Organic Fertilizers: see fertilizers	
Cockroach Control	
Combat Roach Gel	Fipronil
Combat Quick Kill Roach	Fipronil
Combat Roach	Fipronil
EcoSmart Ant and Roach Killer	Rosemary oil, cinnamon oil
EcoSmart Organic Home Pest Killer	2-Phenethylpropriate,clove oil, rosemary oil,peppermint oil,thyme oil
Harris Roach Tablets	Boric Acid
Max Attrax Roach Killing Powder	Boric Acid
Fertilizers Organic, Slow Release	
Alaska Fish Fertilizer	Organic and natural
Dynamite Water Maker	Organic and natural
Dynamite Orgainc	Organic and natural
Espoma Citrus Tone	Organic and natural
Espoma Plant Tone	Organic and natural
Jobes Fertilizer Spikes: Assorted Varieties	Slow release plant spikes
Kellogg Organic AC/R	Organic and natural
Kellogg Organic All Purpose	Organic and natural
Kellogg Organic Fruit Tree	Organic and natural
Kellogg Organic Rose and Flower	Organic and natural
Kellogg Organic Starter	Organic and natural
Kellog Organic Tomato and Vegetable	Organic and natural
Miracle Gro Fertilizer Spikes: Assorted varieties	Slow release plant spikes
Miracle Gro Organic Choice All Purpose	Organic
Miracle Gro Organic Choice. Blood Meal	Organic
Miracle Gro Organic Choice. Bone Meal	Organic
Miracle Gro Shake and Feed: assorted varieties	Slow release fertilizers
Vigoro Blood Meal	Organic
Vigoro Bone Meal	Organic
Osmocote Outdoor Indoor	Slow release
Osmocote Veg and Bedding	Slow release
Fungicides	
Bayer Insect , Disease and Mite	Sulfur, pyrethrins
Bonide Citrus Fruit Tree and Nut Orchard Spray	Sulfer, pyrethrins
Bonide Rose RX 3 IN 1	Hypobolic extract of neem
Eco Smart Garden Fungicide	Rosemary oil, sodium laurel sulfate
Organocide	Sesame oil
Ortho Elementals Garden Disease Control	Copper Octanoate
Ortho Elementals 3 in 1	Sulfer, pyrethrins
Lawns	
Bagged Compost for Top Dressing	Vartous types
Bayer Natria Weed and Grass	Ammoniated soap of fatty acids
Eco Smart Weed and Grass Killer	
Scott's Organic Lawn Food	Organic
Rose Diseases and Pests	
Bonide All Season's Spray Oil	Petroleum super paraffinic oil
Bonide Rose RX 3 in 1	Hypobolic extract of neem
Eco Smart Garden Insect Killer	Rosemary oil,peppermint oil,thyme oil,clove oil

Look for this symbol to find less-toxic products

February 2001

Page 1 of 2

Product List

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

Our Water - Our World

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 ¼" 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

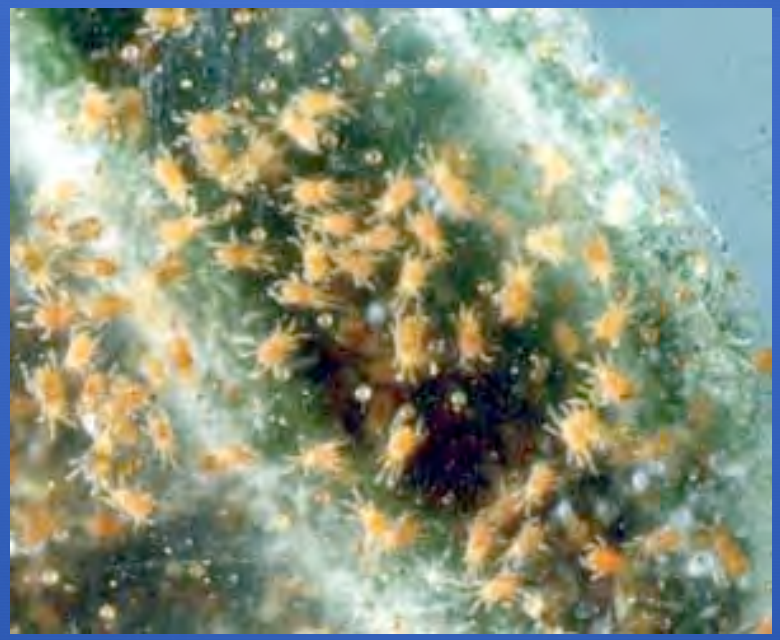
rust

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

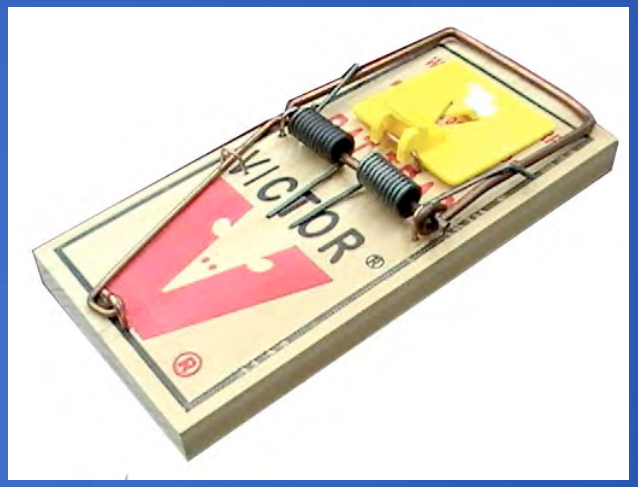
- Like dry, dusty conditions
- Can excrete sticky honeydew
- May not be predators around
- Group together on underside of leaf

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.

Brown Marmorated Stink Bug

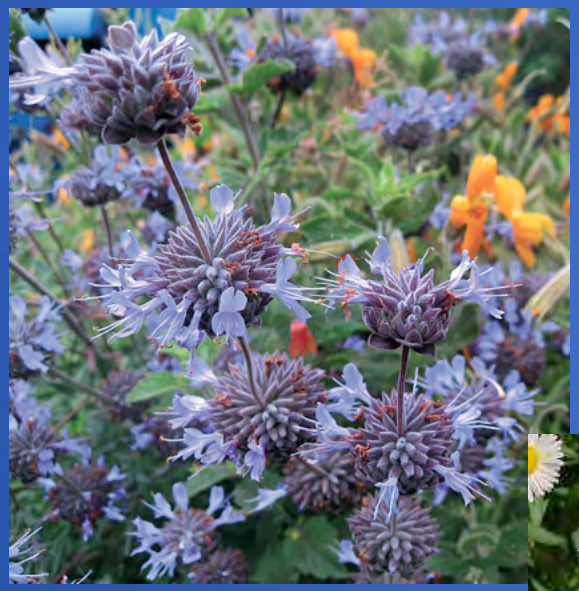
- Has been found in isolated spots on the West Coast
- Adults and nymphs suck juices from fruits & seeds
- Large numbers may congregate on walls or invade homes.
- If seen, contact your County Ag Dept. or local UC Cooperative Extension Office

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

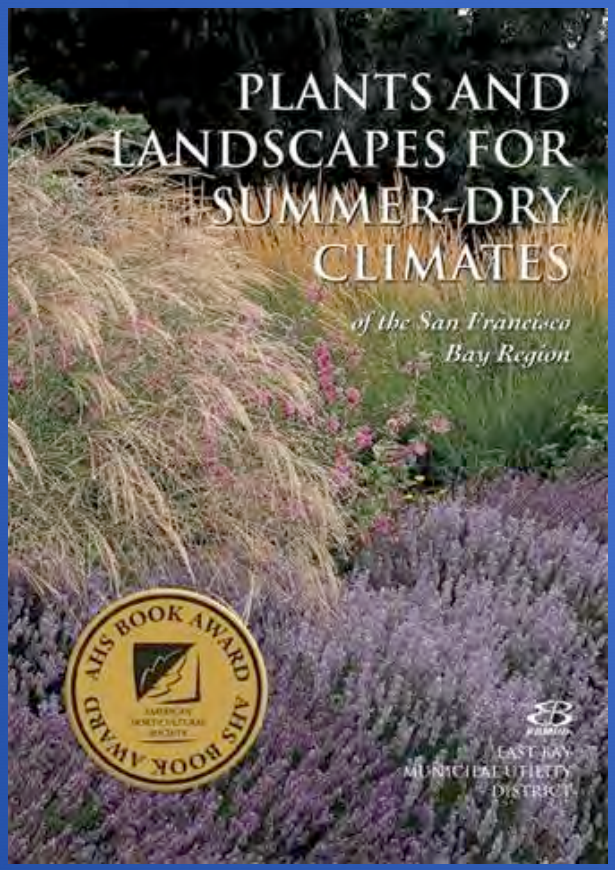
Smart Planet Plants

Smart Planet 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 berries have a pineapple-like flavor; can be used as hedging or as a screen; attracts hummingbirds.

Arctostaphylos densiflora
'Howard McMinn'
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 pipevine 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

Rosy-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 infrequent watering; attracts hummingbirds and beneficial insects.

Ceanothus maritimus
'Valley Violet'
valley violet maritime ceanothus

California native plant; best 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**

UC DAVIS ARBORETUM

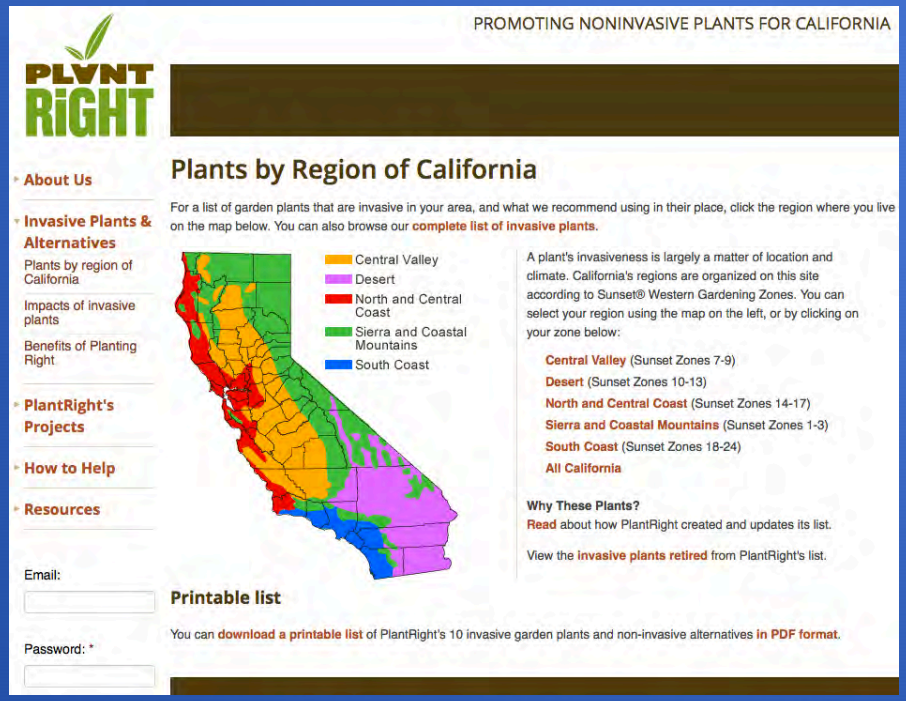
Invasive Plants

Many Ivy plants are rampant growers, can smother other plants and attract rats and snails.

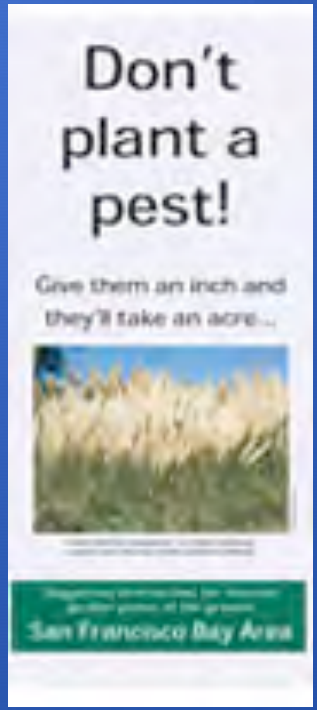
Pampas Grass can produce over a million seeds per year and seeds can travel for 20 miles.

Information on Invasive Plants

Plant Right



California Invasive Plant Council (Cal-IPC)



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.

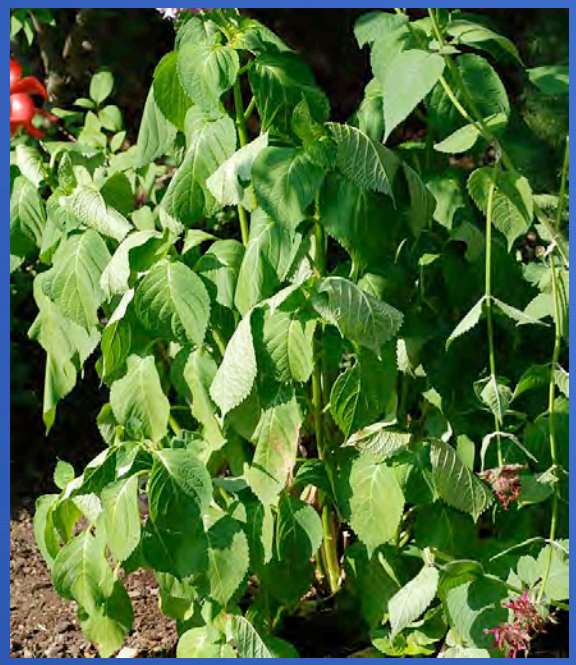
Irrigate Early in the Morning

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'

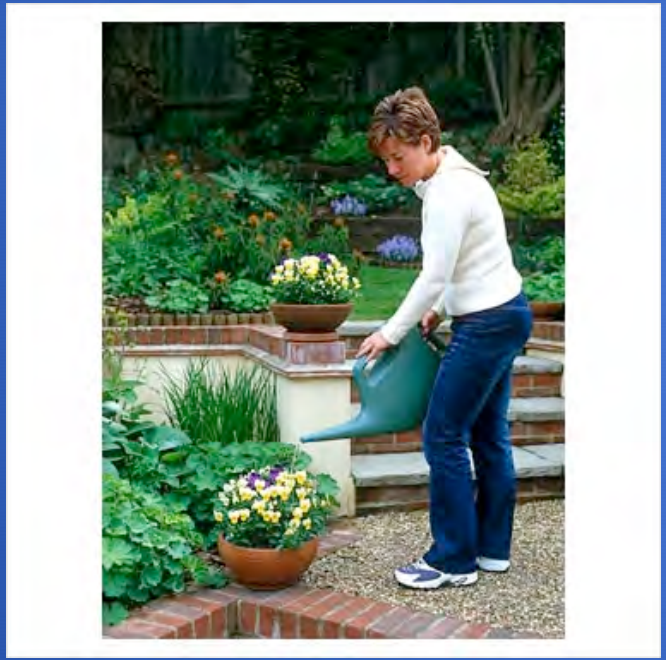
Many cities and water agencies offer cash incentives for removing lawns

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

www.ourwaterourworld.org

UC Statewide IPM Program: www.ipm.ucdavis.edu/

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?

- 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?

YES: 30% NO: 70%

Summary of 2015 Home Depot Regional Training Evaluation Forms

A total of 35 evaluations were returned. Here are the results for the evaluations that were returned.

Survey Question	Disagree	Neutral	Agree
The information provided was useful.			100%
I learned at least one new thing by coming today.			100%
The training will help me recommend and/or sell less-toxic products.			100%
The training will help me answer customer questions about pest problems		2%	98%

When water runs into a storm drain in the street, is it treated before it reaches a stream or the Bay?

YES: 0 NO: 100%

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?

YES: 2% NO: 98%

How do you dispose of leftover pesticides after you finish applying them, or when you no longer need the pesticides?

- Household Hazardous Waste Sites: 30
- Carefully: 2
- Dilute with water, apply to garden: 1
- Recycle Center: 1
- Pour out on dirt: 1

Do you know where your local Household Hazardous Waste facility is located?

YES: 66% NO: 34%

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

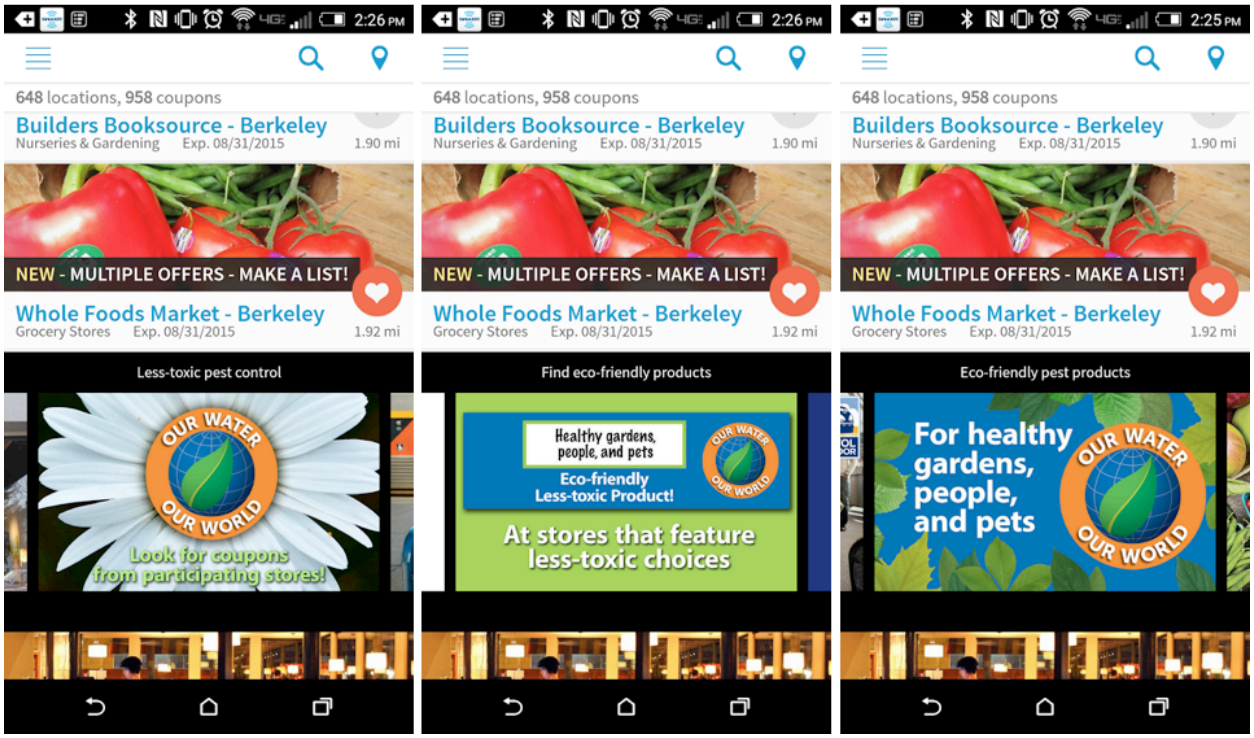
Comments:

- 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.

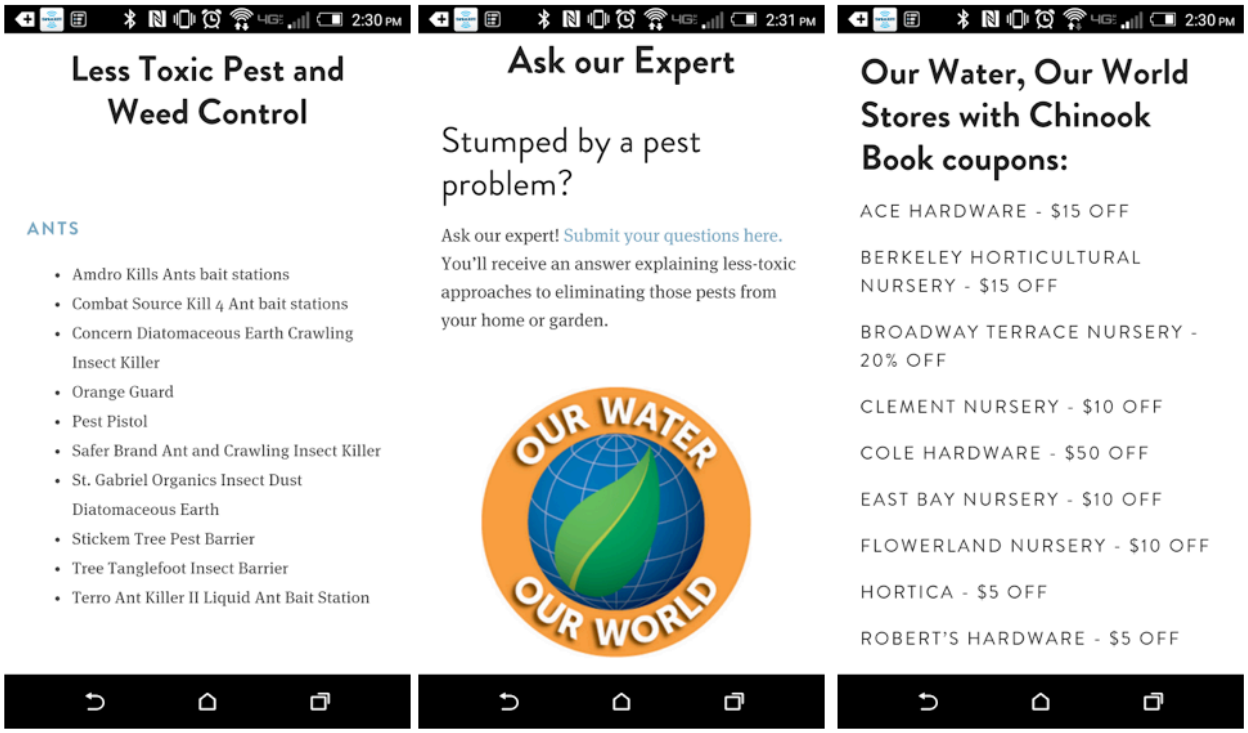
- I learned a lot that I didn't know and I hope I can share my knowledge.
- They took their time and explained in detail. The whole training was perfect.
- I've recommended both, but now I am planning on focusing on the less-toxic options.
- There are eco-friendly products I will recommend now.
- Learned 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

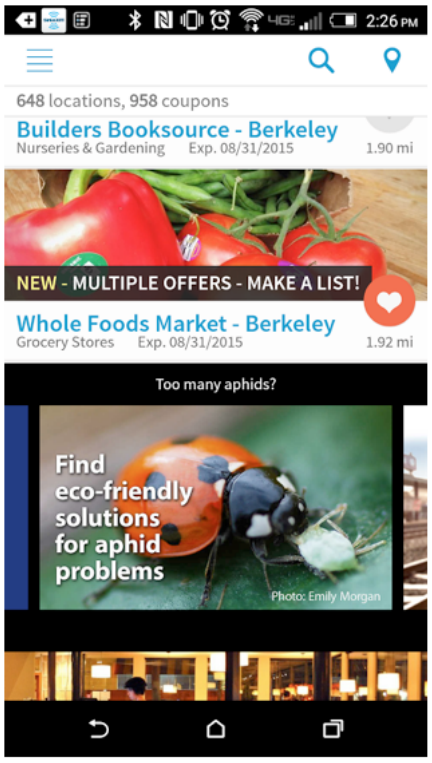
Inline Ads:



Article Content (all these pages are linked together, but only showed the top content of each page here)



2:30 PM
www.chinookbiz.com
Find Less Toxic Products
Look for this shelf tag before you buy:
For healthy gardens, people, and pets
Eco-friendly Less-toxic Product!
OUR WATER OUR WORLD
At stores that feature less-toxic choices


2:26 PM
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

2:30 PM
About Our Water Our World
OUR WATER OUR WORLD
Our Water Our World is a publicly supported program that educates California residents

Appendix G

Provision C.8 Water Quality Monitoring

- January 15, 2015 Transmittal Letter for the Electronic Creek Status Monitoring Data Report to the Water Board for Water Year 2014

Protecting Alameda County Creeks, Wetlands & the Bay

cleanwater PROGRAM

399 Elmhurst St.
Hayward, CA
94544
p. 510-670-5543

MEMBER AGENCIES:
Alameda
Albany
Berkeley
Dublin
Emeryville
Fremont
Hayward
Livermore
Newark
Oakland
Piedmont
Pleasanton
San Leandro
Union City
County of Alameda
Alameda County Flood Control and Water Conservation District
Zone 7 Water Agency

January 15, 2015

Bruce Wolfe
Executive Officer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

SUBJECT: Electronic Data Submittal - ACCWP Creek Status Monitoring from October 2013 through September 2014 Pursuant to Provision C.8.g

Dear Mr. Wolfe:

The member agency Permittees of the Alameda Countywide Clean Water Program (Program) through their Management Committee, and in conformance with the Memorandum of Agreement signed by their governing bodies, have authorized and directed me to prepare and submit certain reports as part of their compliance with Monitoring requirements of the Municipal Regional Stormwater NPDES Permit (MRP, Order No. R2-2009-0074, CAS612008).

With this letter I am submitting a CD-ROM containing the Program's Creek Status Monitoring data collected between October 1, 2013 and September 30, 2014 pursuant to Provision C.8.c of the MRP. These data are provided in Microsoft Excel files listed in Attachment A, which are formatted according to templates compatible with data management requirements of the Surface Water Ambient Monitoring Program (SWAMP). The Program is submitting these data to the Regional Water Board by January 15, 2014 as specified in Provision C.8.g.ii of the MRP. Other data addressing the requirements of MRP Provision C.8.e, which are fulfilled in part or in whole through the efforts of third parties other than the Program, will be submitted through the entities responsible for Quality Assurance in a time schedule consistent with the Provisions of the MRP[1].

By signing this letter on behalf of the program, I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are

[1] Data management and Quality Assurance of the alternative approach to Pollutants of Concern Loads Monitoring for all sites, including the San Leandro Creek site operated by ACCWP, were performed by the San Francisco Estuary Institute through a collaboration between BASMAA and the RMP. Data collection and reporting for Long Term Trends Monitoring are the responsibility of the SWAMP Sediment Pollution Trends (SPoT) program.

significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. [40CFR 122.22(d)].

The quality of all Creek Status Monitoring data was evaluated through data collection and evaluation methods consistent with the Standard Operating Procedures and Quality Assurance Project Plan developed through the BASMAA Regional Monitoring Coalition (RMC), a regional collaborative that includes all ACCWP member Permittees. These documents have been reviewed by Region 2 SWAMP staff for SWAMP-comparability where applicable, as provided in MRP C.8.h.

In conformance with MRP Provision C.8.g.ii, the Program has participated in the RMC's development of a regional information management system that supports electronic transfer of data to the Regional Data Center of the California Environmental Data Exchange Network (CEDEN). As requested by Water Board staff on August 5, 2011, concurrent with this submission the Program is transferring the subject monitoring data directly to CEDEN. As required in MRP Provision C.8.g.vii, the Program will notify stakeholders and members of the public of the availability of electronically submitted data and monitoring reports through its website and via other communications as appropriate.

We are in the process of identifying potential persistent water quality issues that would warrant a programmatic response as required by the MRP. Attachment A presents preliminary highlights of some of these issues. It should be emphasized that this water quality data review is preliminary and does not constitute a determination of whether water quality objectives were exceeded and/or if stormwater runoff or dry weather discharges are or may be causing or contributing to exceedances, if any. The Program is in the process of determining whether these data represent persistent exceedances in receiving waters; if it is determined that discharges under this permit are causing or contributing to persistent exceedances of the applicable water quality objectives, the Permittees will follow up as required by MRP Provision C.1.

Please contact me if you have any questions or comments.

Sincerely,

James Scanlin
Program Manager

Attachment: CD ROM
Attachment A: list of datafiles on CD-ROM

Copy via email: Alameda Countywide Clean Water Program Management Committee Representatives

Attachment A

Data files for ACCWP Creek Status Monitoring
October 1, 2013-September 30, 2014

Sources of templates for data files (see file ACCWP-EDS_ToC_WY2014.xlsx for details):

SWAMP v2.5 Database references at http://swamp.mpsl.mlml.calstate.edu/
Kevin Lunde, SFRWQCB SWAMP Program (Continuous Monitoring)
EOA, Inc. (Stream Survey using Urban Streams Assessment)

Based on preliminary review of water quality standards; these notes do not constitute a determination of whether water quality objectives were exceeded and/or if stormwater runoff or dry weather discharges are or may be causing or contributing to exceedances, Numeric water quality objectives for most data parameters have not been adopted to-date.

Sample Purpose	Filename, including site ID	Evaluation of Water Quality[a]
BMI, Algae, FieldMeasure, Habitat[2]	AC_BA_Phab_BMI_18Sites_2014.xls	No exceedance
WaterChem	AC_BA_WQ_18sites_2014.xls	Chloride concentrations greater than 250 mg/L single reading maximum for Alameda Creek Watershed/Municipal Supply at 204R01023, 204R01108, and 204R01433 Chlorine above 0.08mg/L at 205R01479 and 204R01620
WaterTox[3]	AC_SpringAqTox_Triad_2014.xls	Potential water toxicity effect for *Ceriodaphnia* reproduction at 203R00295
SedChem, SedTox[3], WaterTox[3], Chlorine	AC_DrySeason_AqTox_SedTox_SedChem_WQ_Triad_2014.xls	Potential water toxicity effect for *Selenastrum* growth at 204R00292, potential sediment toxicity effect for *Hyalella* growth at 203R00295
WaterChem (Pathogens)	AC_WQ_FIB_5sites_2014.xls	*E. coli* exceeded Basin Plan Table 3.2 criterion for REC-1 Beneficial Use at 204CVY020, 204CVY080 and 204CVY125 (moderately used) or 204CVY150 (infrequently used)
ContinuousMonitoring (GenWQ)	CM_ACCWP_YSI_204AVJ080_2014_spring.xls	No exceedance
ContinuousMonitoring (GenWQ)	CM_ACCWP_YSI_204CRW040_2014_spring.xls	Dissolved Oxygen concentrations were below the WQO for COLD Beneficial Use for 10% of readings

[2] Due to unusually dry seasonal streamflows, fewer than 20 bioassessment sites could be sampled during the 2014 index period. As agreed with RWQCB staff in meetings of the Regional Monitoring Coalition, additional sites will be sampled in 2015 to maintain an average of at least 20 bioassessment sites per year.

[3] Due to current formatting differences between CEDEN and the SWAMP templates accepted by the SWAMP datachecker, toxicity data are also being provided to SFEI in CEDEN-formatted files.

Sample Purpose	Filename, including site ID	Evaluation of Water Quality[a]
ContinuousMonitoring (GenWQ)	CM_ACCWP_YSI_204CRW042_2014_spring.xls	Dissolved Oxygen concentrations were below the WQO for COLD Beneficial Use for 6% of readings
ContinuousMonitoring (GenWQ)	CM_ACCWP_YSI_204AVJ080_2014_summer.xls	Dissolved Oxygen concentrations were below the WQO for COLD Beneficial Use for 98% of readings
ContinuousMonitoring (GenWQ)	CM_ACCWP_YSI_204CRW040_2014_summer.xls	Dissolved Oxygen concentrations were below the WQO for COLD Beneficial Use for 99% of readings
ContinuousMonitoring (GenWQ)	CM_ACCWP_YSI_204CRW042_2014_summer.xls	N/A-Equipment failure
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204AVJ070_2014	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204AVJ110_2014[4]	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204CRW030_2014	21% of rolling 7-day average above 19°C
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204CRW040_2014	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204CVY005_2014	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204LIO050_2014	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204LIO080_2014[4]	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204SAU035_2014	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204SAU070_2014	No exceedance
ContinuousMonitoring (Temp)	CM_ACCWP_HOBO_204SAU200_2014[4]	No exceedance
StreamSurvey	USA_ACCWP_AguaCaliente_2014.xlsx	N/A
StreamSurvey	USA_ACCWP_LagunaCreek_2014.xlsx	N/A
StreamSurvey	USA_ACCWP_LagunaCreekBypass_2014.xlsx	N/A
StreamSurvey	USA_ACCWP_WashingtonCreek_2014.xlsx	N/A

[4] Site 204AVJ110 dried out before the end of the deployment period and due to lack of wetted monitoring sites in the same stream a new mid-season deployment was made at 204SAU200. Site 204LIO080 also dried out in mid-season but was relocated to a deeper pool slightly upstream.

[a] Based on preliminary review of water quality standards; these notes do not constitute a determination of whether water quality objectives were exceeded and/or if stormwater runoff or dry weather discharges are or may be causing or contributing to exceedances, Numeric water quality objectives for most data parameters have not been adopted to-date.

Appendix H

Provision C.9 Pesticides Toxicity Control

- CASQA Pesticides Subcommittee Annual Report and Effectiveness Assessment - 2014-2015

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

B A S M A A

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.

Bay Area

Stormwater Management

Agencies Association

P.O. Box 2385

Menlo Park, CA 94026

510.622.2326

info@basmaa.org

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

CASQA
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

Neither CASQA, its Board of Directors, the Pesticides Subcommittee, any contributors, nor the authors make any warranty, expressed or implied, nor assume any legal liability or responsibility for any third party's use of this report or the consequences of use of any information, product, or process described in this report. Mention of trade names or commercial products, organizations, or suppliers does not constitute an actual or implied endorsement or recommendation for or against use, or warranty of products.

Copyright © 2015 California Stormwater Quality Association.
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

Table of Contents

Preface i

Executive Summary 1

Section 1: Introduction 3

1.1Importance of CASQA's Efforts to Improve Pesticide Regulation 3

1.2CASQA's Goals and Application to PEAIP Management Questions 6

Section 2: Results of CASQA 2014-2015 Efforts 8

2.1 Updated Pesticide Watch List 8

2.2. Results of Efforts Addressing Near-Term Regulatory Concerns 10

2.3 Long-Term Change in the Pesticides Regulatory Structure 18

2.4 Highlight – Successful Collaborations Between Water Boards and DPR 25

Section 3: CASQA's Approach Looking Ahead 27

3.1 CASQA's Fundamental Approach 27

3.2 FY 2015 Priorities and Key Action Items 29

List of Tables

Table 1. California TMDLs and Basin Plan Amendment Addressing Current-Use Pesticides in Urban Watersheds 4
Table 2. Pesticide Watch List developed by the PSC and the UP3 Partnership updated to reflect current regulatory concerns 9
Table 3. Results of FY 2014-15 Efforts Communicating Near-Term Regulatory Concerns 12
Table 4. Latest Outcomes and Next Steps Regarding Long-Term Regulatory Change 19
Table 5. Communication, Education, and Advisory Efforts to Support CASQA's Goals 22
Table 6. Types of Activities Undertaken to Address Immediate Pesticide Concerns and Long-term Regulatory Change 27
Table 7. Action Items Anticipated to be Taken Up by CASQA and UP3 Partnership in 2015-2016 31

List of Figures

Figure 1. Our current pesticide regulatory system does not adequately protect urban waterways. 5
Figure 2. EPA's New Pesticide Registration Process 10
Figure 3. EPA's Registration Review – process to review registered pesticides at a minimum of every 15 years. 11
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. 18
Figure 5. CASQA's Assessment of Recent Progress and Remaining Gaps Relative to Ultimate Goals 24

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 cyantraniliprole (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 municipalities[2] 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 used[3] 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=t%2btwBGMxunc%3d&tabid=194&mid=995.

Table 1. California TMDLs and Basin Plan Amendment Addressing Current-Use Pesticides in Urban Watersheds[5]

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.

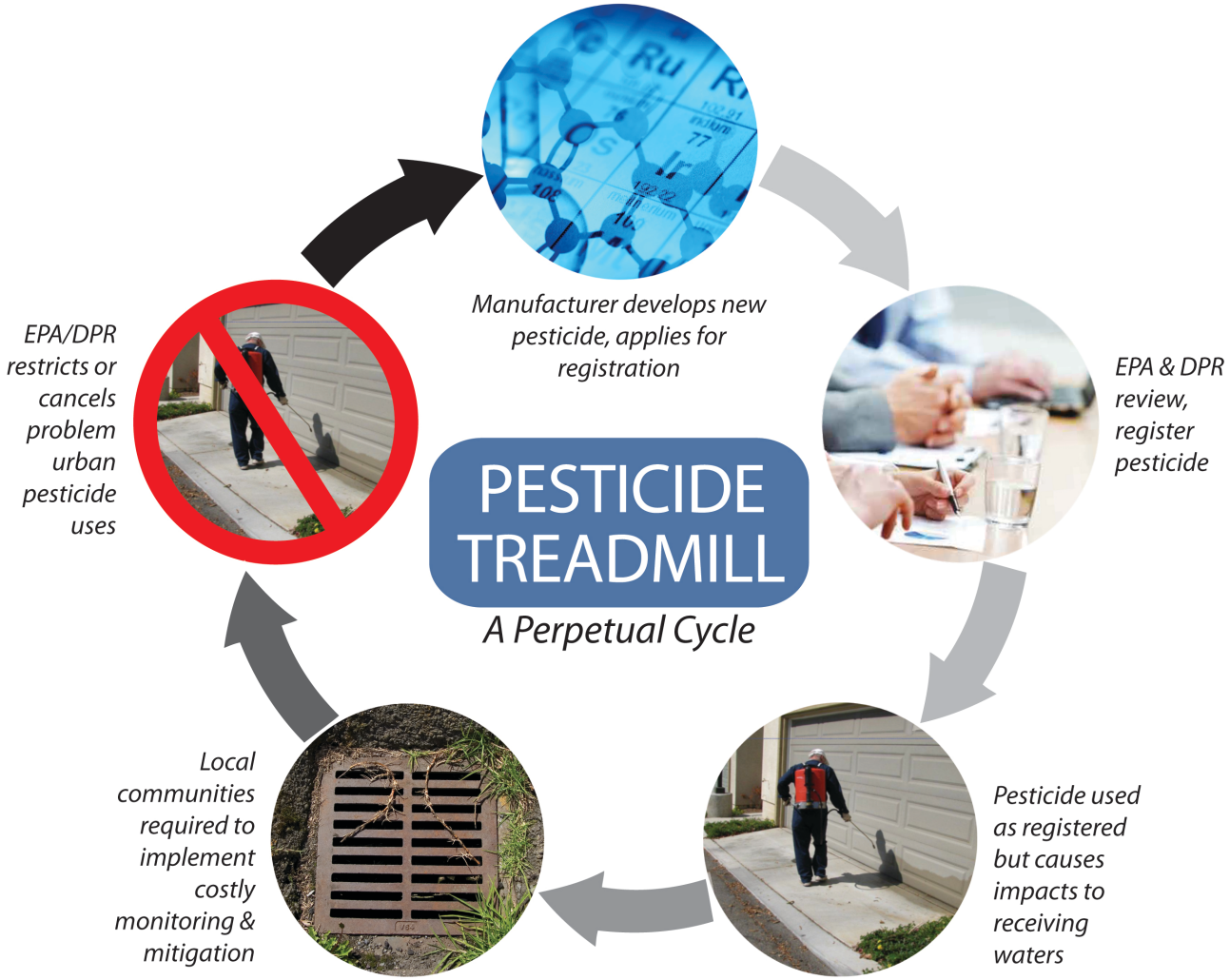


Figure 1. Our current pesticide regulatory system does not adequately protect urban waterways.[6]

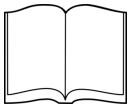
[6] Photos in Figures 1 and 4 of spraying pesticide along a garage was taken by Les Greenberg, UC Riverside.

1.2 CASQA's Goals and Application to PEAIP Management Questions

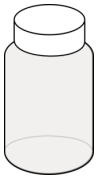
CASQA's ultimate goal in engaging in pesticide-related regulatory activities is to protect water quality by eliminating problems stemming from urban pesticide use. The CASQA Pesticides Subcommittee envisions a future when the following goals have been attained:

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 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 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 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 (PEAIP)[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 (PEAIP). 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 Halohydantoins 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] Allethrins, 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 PEAIP 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 cyantraniliprole, 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—cyantraniliprole. 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 cyantraniliprole building perimeter spray product without:

(1) Specifically examining water quality risks from the perimeter spray use
(2) Evaluating cumulative toxicity of cyantraniliprole 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 Concerns[11]

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.
Cyantraniliprole 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	✓				***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. 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.
Storm drain biocide (PathShield Antimicrobial Filter Media[12]) Registration Application	✓	✓			***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
Storm drain biocide (Smart Sponge Plus[13]) registration application	✓			Sacramento County	***Success!*** DPR agreed to route this registration application to its surface water program for review.
Registration applications – all storm drain products – request automatic routing for surface water review	✓				***Pending***
DPR Registration Branch PRDMS project Stakeholder Advisory Committee	✓				***Limited success.*** While DPR will take public input, DPR will not have CASQA on advisory committee, which is only for pesticide registrants.
Public notice and information access for DPR registration decisions	✓				***No success.*** Negative response from DPR to all requests.

[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.
MCPP 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).

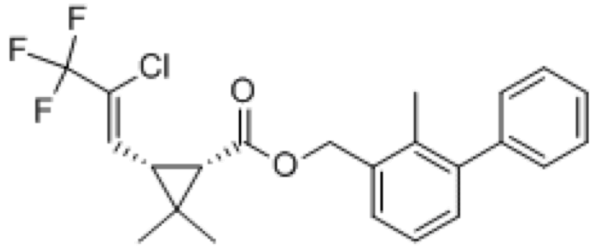
Eighteen-plus Pyrethroids to Be Combined into Single Water Quality Risk Assessment

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 PEAIP 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 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 4th 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	*Maximum possible: 5 drops*	
1. Effective proactive evaluations	💧💧💧💧	*DPR is utilizing effective WQ modeling and screening mechanisms as part of its registration process. The overall process has a high likelihood of identifying problem chemicals in advance of registration.*
2. Coordinated regulatory bodies	💧💧💧	*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

STATE WATER BOARD
BOARD MEETING
Tuesday, November 4, 2014 - 9:00 a.m.
Coastal Hearing Room – Second Floor
Joe Serna Jr. - Cal/EPA Building
1001 I Street, Sacramento

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… CDPR 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.	As many as a dozen opportunities to present at water quality, pesticides and chemical conferences nationally. Additional 8-10 opportunities per year for state and regional events. Preparation of presentations and coordination with water quality community can take as much as 40 hours per opportunity.
	Developing and delivering public testimony	Educate Water Board members about the problems with existing pesticide regulatory process, encourage change, report on achievements.	Two to three times per year. Preparation and coordination can take as much as 40 hours per opportunity.
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.	About 10 important publications per month and a dozen meetings per year.
	Data analysis of DPR/SWAMP/USGS/MS4 monitoring, pesticide use data, and information from scientific literature	Summarize data to educate CASQA members and water quality community, Water Boards, DPR, and EPA.	Detailed analysis is infrequent because finding, compiling, and analyzing data requires very high level of effort and funding. CASQA undertook a detailed monitoring summary in 2013. Report is available at www.casqa.org. CASQA/UP3 summarized information on fipronil water pollution and its sources in 2014 in a presentation and scientific poster.

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.

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.

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

    - 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 Partner[16] 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)
Upcoming Environmental Risk Assessments of Interest: • 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
Upcoming Work Plans of Potential Interest: • Diuron, Dicamba, Chromated Arsenicals, Tributyltin, Ziram (zinc)
Upcoming Registration Review Proposed Decisions • Chlorfenapyr
EPA Registration Applications
Applications of interest: • 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
• 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
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: • 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.