



FAIRFIELD-SUISUN SEWER DISTRICT

1010 CHADBOURNE ROAD • FAIRFIELD, CALIFORNIA 94534 • (707) 429-8930 • WWW.FSSD.COM

GREGORY G. BAATRUP, GENERAL MANAGER

September 15, 2013

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

Attention: Ms. Selina Louie, Water Resources Control Engineer

Reference: Fairfield-Suisun Urban Runoff Management Program - FY 2012-2013 Annual Report

Dear Mr. Wolfe:

The attached FY 2012-2013 Annual Report represents the Fairfield-Suisun Urban Runoff Management Program's responses to the items requested per Provision C.16 of NPDES Permit No. CA S612008 (Permit) as adopted on October 14, 2009 via Order No. R2-2009-0074. This letter also transmits by reference the BASMAA Regional Supplements to the Annual Report for FY 2012-2013.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my 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 my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Kevin A. Cullen, P.E.
Senior Environmental Engineer

Attachment

FY 2012-2013 Annual Report

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

ATTACHMENT B

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Permittee Name: Fairfield-Suisun Urban Runoff Management Program

Section 1 – Permittee Information

Background Information					
Permittee Name:	Fairfield-Suisun Urban Runoff Management Program				
Population:	135,000 (combined)				
NPDES Permit No.:	CAS612008				
Order Number:	R2-2009-0074R				
Reporting Time Period (month/year):	July 2012 through June 2013				
Name of the Responsible Authority:	Fairfield-Suisun Urban Runoff Management Program			Title:	Program Manager
Mailing Address:	1010 Chadbourne Road				
City:	Fairfield	Zip Code:	94534	County:	
Telephone Number:	707-428-9129		Fax Number:		
E-mail Address:	KCullen@fssd.com				
Name of the Designated Stormwater Management Program Contact (if different from above):	Kevin Cullen		Title:	Fairfield Suisun Urban Runoff Program Manager	
Department:	Fairfield-Suisun Sewer District				
Mailing Address:	1010 Chadbourne Road				
City:	Fairfield	Zip Code:	94534	County:	Solano
Telephone Number:	707-428-9129		Fax Number:	707-429-1280	
E-mail Address:	KCullen@fssd.com				

Section 2 - Provision C.2 Reporting Municipal Operations

Program Highlights and Evaluation

Highlight/summarize activities for reporting year:

Summary:

Program members participated in monthly Program Management meetings. Program Manager participated regularly in BASMAA's monthly committee meetings for Trash and Municipal Maintenance.

C.2.a. ► Street and Road Repair and Maintenance

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

NA	Control of debris and waste materials during road and parking lot installation, repaving or repair maintenance activities from polluting stormwater
NA	Control of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater from discharging to storm drains from work sites.
NA	Sweeping and/or vacuuming and other dry methods to remove debris, concrete, or sediment residues from work sites upon completion of work.

Comments:

Please see individual city reports, as these activities are implemented at the city level.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.2.b. ► Sidewalk/Plaza Maintenance and Pavement Washing

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

NA	Control of wash water from pavement washing, mobile cleaning, pressure wash operations at parking lots, garages, trash areas, gas station fueling areas, and sidewalk and plaza cleaning activities from polluting stormwater
NA	Implementation of the BASMAA Mobile Surface Cleaner Program BMPs

Comments:

Please see individual city reports as these activities are implemented at the city level.

C.2.c. ► Bridge and Structure Maintenance and Graffiti Removal

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

NA	Control of discharges from bridge and structural maintenance activities directly over water or into storm drains
NA	Control of discharges from graffiti removal activities
NA	Proper disposal for wastes generated from bridge and structure maintenance and graffiti removal activities
NA	Implementation of the BASMAA Mobile Surface Cleaner Program BMPs for graffiti removal
NA	Employee training on proper capture and disposal methods for wastes generated from bridge and structural maintenance and graffiti removal activities.
NA	Contract specifications requiring proper capture and disposal methods for wastes generated from bridge and structural maintenance and graffiti removal activities.

Comments:

Please see individual city reports as these activities are implemented at the city level.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.2.d. ► Stormwater Pump Stations

Does your municipality own stormwater pump stations: Yes No (see explanation under summary)

If your answer is **No** then skip to **C.2.e.**

Complete the following table for dry weather DO monitoring and inspection data for pump stations¹ (add more rows for additional pump stations). If a pump station is exempt from DO monitoring, explain why it is exempt.

Pump Station Name and Location	First inspection Dry Weather DO Data		Second inspection Dry Weather DO Data	
	Date	mg/L	Date	mg/L
Kellogg Street Pump Station, 1155 Kellogg St., Suisun City, CA	7/12/12	4.05	9/25/12	3.86
Mulberry Pump Station, 650 Marina Cir., Suisun City, CA	7/12/12	8.64	9/25/12	8.64
Chipman Lane Pump Station, 79 1/2 Chipman Lane, Suisun City, CA	7/12/12	5.85	9/25/12	6.54
Main Street Pump Station, 550 Sacramento St., Suisun City, CA	7/12/12	7.33	9/25/12	5.92
State Street Pump Station, 358 State Street, Fairfield CA	NA	NA	NA	NA
Air Base Parkway Pump Station, 2398 N. Texas St., Fairfield, CA	NA	NA	NA	NA
James Street Pump Station, 1433 James St., Fairfield, CA	NA	NA	NA	NA

Summarize corrective actions as needed for DO monitoring at or below 3 mg/L. Attach inspection records of additional DO monitoring for corrective actions:

Air Base Parkway Pump Station discharges into the storm drain system; this pump station is therefore exempt from DO monitoring.

James Street Pump Station discharges into a dry channel which then flows into the storm drain system; this pump station is therefore exempt from DO monitoring.

The State street was found to have low DO, this pump station was turned off in June of 2012 in anticipation of these findings. The water in the wet well was pumped out and deposited at the Fairfield-Suisun Sewer District Regional Wastewater Treatment Plant. The pump station was turned back on in late September of 2012. This pump station is also part of the C.11.f and C.12.f stormwater diversion project.

Summary:

Stormwater pump stations are owned by the cities of Fairfield and Suisun City and are operated, maintained and monitored by the Fairfield-Suisun Sewer District. See section C.11 and C.12 for a summary of the stormwater diversion activities at the State Street pump station.

¹ DO monitoring is exempted where all discharge from a pump station remains in a stormwater collection system or infiltrates into a dry creek immediately downstream.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

<p>Complete the following table for wet weather inspection data for pump stations (add more rows for additional pump stations):</p>

Pump Station Name and Location	Date (2x/year required)	Presence of Trash (Cubic Yards)	Presence of Odor (Yes or No)	Presence of Color (Yes or No)	Presence of Turbidity (Yes or No)	Presence of Floating Hydrocarbons (Yes or No)
Kellogg Street Pump Station, 1155 Kellogg St., Suisun City, CA	11/29/12 & 5/7/13	.04 & No	No & No	Yes & Yes	Yes & No	No & No
Mulberry Pump Station, 650 Marina Cir., Suisun City, CA	11/29/12 & 5/7/13	No & .07	No & No	Yes & Yes	Yes & Yes	No & No
Chipman Lane Pump Station, 79 1/2 Chipman Lane, Suisun City, CA	11/29/12 & 5/7/13	.04 & .11	No & No	No & No	No & No	No & No
Main Street Pump Station, 550 Sacramento St., Suisun City, CA	11/29/12 & 5/7/13	.04 & .04	No & No	No & Yes	No & Yes	No & No
State Street Pump Station, 358 State Street, Fairfield CA	11/29/12 & 5/7/13	.04 & No	No & No	No & No	Yes & No	Yes & Yes
Air Base Parkway Pump Station, 2398 N. Texas St., Fairfield, CA	11/29/12 & 5/7/13	No & .04	No & No	No & Yes	No & No	No & No
James Street Pump Station, 1433 James St., Fairfield, CA	11/29/12 & 5/7/13	.22 & .02	No & No	No & Yes	Yes & No	Yes & No

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.2.e. ► Rural Public Works Construction and Maintenance			
Does your municipality own/maintain rural ² roads:		<input type="checkbox"/>	Yes
		<input checked="" type="checkbox"/>	No
If your answer is No then skip to C.2.f.			
Place a Y in the boxes next to activities where applicable BMPs were implemented. If not applicable, type NA in the box and provide an explanation in the comments section below. Place an N in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.			
NA	Control of road-related erosion and sediment transport from road design, construction, maintenance, and repairs in rural areas		
NA	Identification and prioritization of rural road maintenance based on soil erosion potential, slope steepness, and stream habitat resources		
NA	No impact to creek functions including migratory fish passage during construction of roads and culverts		
NA	Inspection of rural roads for structural integrity and prevention of impact on water quality		
NA	Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts and excessive erosion		
NA	Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate		
NA	Inclusion of measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology when replacing culverts or design of new culverts or bridge crossings		
Comments including listing increased maintenance in priority areas:			
This type of maintenance work is handled at the city level. However, neither city in the Program has rural roads within its jurisdiction.			

² Rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing or open space uses.

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C.2.f. ► Corporation Yard BMP Implementation			
Place an X in the boxes below that apply to your corporations yard(s):			
<input checked="" type="checkbox"/>	We do not have a corporation yard		
<input type="checkbox"/>	Our corporation yard is a filed NOI facility and regulated by the California State Industrial Stormwater NPDES General Permit		
<input type="checkbox"/>	We have a Stormwater Pollution Prevention Plan (SWPPP) for the Corporation Yard(s)		
Place an X in the boxes below next to implemented SWPPP BMPs to indicate that these BMPs were implemented in applicable instances. If not applicable, type NA in the box. If one or more of the BMPs were not adequately implemented during the reporting fiscal year then indicate so and explain in the comments section below:			
NA	Control of pollutant discharges to storm drains such as wash waters from cleaning vehicles and equipment		
NA	Routine inspection prior to the rainy seasons of corporation yard(s) to ensure non-stormwater discharges have not entered the storm drain system		
NA	Containment of all vehicle and equipment wash areas through plumbing to sanitary or another collection method		
NA	Use of dry cleanup methods when cleaning debris and spills from corporation yard(s) or collection of all wash water and disposing of wash water to sanitary or other location where it does not impact surface or groundwater when wet cleanup methods are used		
NA	Cover and/or berm outdoor storage areas containing waste pollutants		
Comments:			
Please see individual city reports as these activities are implemented at the city level.			
If you have a corporation yard(s) that is not an NOI facility , complete the following table for inspection results for your corporation yard(s) or attach a summary including the following information:			
Corporation Yard Name	Inspection Date (1x/year required)	Inspection Findings/Results	Follow-up Actions
NA	NA	NA	NA

Section 3 - Provision C.3 Reporting New Development and Redevelopment

C.3.b.v.(2)(a) ► Green Streets Status Report

(All projects to be completed by December 1, 2014)

On an annual basis (if applicable), report on the status of any pilot green street projects within your jurisdiction. For each completed project, report the capital costs, operation and maintenance costs, legal and procedural arrangements in place to address operation and maintenance and its associated costs, and the sustainable landscape measures incorporated in the project including, if relevant, the score from the Bay-Friendly Landscape Scorecard.

Summary:

Program representatives regularly participated in BASMAA's New and Redevelopment subcommittee meetings. Green Streets projects are discussed at that monthly meeting. The opportunity for Green Streets projects is also discussed at the Program's monthly Management meetings. The cities continue to explore opportunities to incorporate Green Streets into rehabilitation projects.

C.3.b.v.(2)(c) ► Summary of Green Street Projects Completed by January 1, 2013

(For FY 12-13 Annual Report only) Provide a summary of all green street projects completed by January 1, 2013.

Summary:

BASMAA has prepared a regional summary of all green street pilot projects. The Green Street Pilot Project Summary Report is being submitted by BASMAA, on behalf of the MRP permittees, in BASMAA's MRP FY 12-13 Regional Supplement – New Development and Redevelopment. The Green Streets Pilot Project Summary Report contains all of the required elements listed in Provision C.3.b.v.(2)(c) for all green street projects completed by January 1, 2013, as well as information on projects not yet completed.

C.3.b.v.(1) ► Regulated Projects Reporting

Fill in attached table **C.3.b.v.(1)** or attach your own table including the same information.

Please see individual city reports as these activities are implemented at the city level. The Program has recreated its New Development

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

Guidance Document to include the regionally developed LID Infeasibility/Feasibility Worksheets, Biotreatment Soil Specifications and Green Roof Specifications. The Program utilized Contra Costa Clean Water Programs C3 Guidance Document as a model for the Fairfield Suisun Urban Runoff Program New Development Guidance Document.

Please see each cities' table C.3.b.v. (1) for specific information on regulated projects approved during FY 12-13.

C.3.e.v. ► Alternative or In-Lieu Compliance with Provision C.3.c.

(For FY 11-12 Annual Report and each Annual Report thereafter)

Is your agency choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e.?

x	Yes	<input type="checkbox"/>	No
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Comments (optional):

Please see individual city reports as these activities are implemented at the city level. The Program has modified Its New Development Guidance Document to include the regionally developed LID Infeasibility/Feasibility Worksheets, Biotreatment Soil Specifications and Green Roof Specifications. The Program utilized Contra Costa Clean Water Programs C3 Guidance Document as a model for the Fairfield Suisun Urban Runoff Program New Development Guidance Document. The Program does not currently have an alternative nor an in-lieu compliance available for C.3.

C.3.e.vi ► Special Projects Reporting

1. Has your agency received, but not yet granted final discretionary approval of, a development permit application for a project that has been identified as a potential Special Project based on criteria listed in MRP Provision C.3.e.ii(2) for any of the three categories of Special Projects (Categories A, B or C)?		Yes	x	No
2. Has your agency granted final discretionary approval of a project identified as a Special Project in the March 15, 2013 report? If yes, include the project in both the C.3.b.v.(1) Table, and the C.3.e.vi. Table.		Yes	x	No
<p>If you answered "Yes" to either question,</p> <p>1) Complete Table C.3.e.vi . below.</p> <p>2) Attach narrative discussion of 100% LID Feasibility or Infeasibility for each project. NA</p>				

C.3.h.iv. ► Installed Stormwater Treatment Systems Operation and Maintenance Verification Inspection Program Reporting

<p>(1) Fill in attached table C.3.h.iv.(1) or attach your own table including the same information.</p> <p>Please see individual city reports as these activities are implemented at the city level.</p>
<p>(2) On an annual basis, provide a discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.</p> <p>Summary: Please see individual city reports as these activities are implemented at the city level.</p>
<p>(3) On an annual basis, provide a discussion of the effectiveness of the O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness Program).</p> <p>Summary: Please see individual city reports as these activities are implemented at the city level.</p>
<p>(4) During the reporting year, did your agency: Please see individual city reports as these activities are implemented at the city level.</p>

<ul style="list-style-type: none"> Inspect all newly installed stormwater treatment systems and HM controls within 45 days of installation? 		Yes		No		Not applicable. No new facilities were installed.
<ul style="list-style-type: none"> Inspect at least 20 percent of the total number of installed stormwater treatment systems or HM controls?³ 		Yes		No		Not applicable. No treatment measures
<ul style="list-style-type: none"> Inspect at least 20 percent of the total number of installed vault-based systems? 		Yes		No		Not applicable. No vault systems.
If you answered "No" to any of the questions above, please explain: NA						

C.3.i. ► Required Site Design Measures for Small Projects and Detached Single Family Home Projects

On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

Summary:

BASMAA prepared standard specifications in four fact sheets regarding the site design measures listed in Provision C.3.i, as a resource for Co-permittees. We have modified local ordinances/policies/procedures and forms/checklists to require all applicable projects approved after December 1, 2012 to implement at least one of the site design measures listed in Provision C.3.i. The Program cities are using BASMAA's site design fact sheets for compliance with this requirement.

- BASMAA's site design fact sheets

³ If there is only 1 treatment measure in the jurisdiction, the agency must inspect it every year.

C.3.b.v.(1) ► Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

Project Name Project No.	Project Location ¹⁰ , Street Address	Name of Developer	Project Phase No. ¹¹	Project Type & Description ¹²	Project Watershed ¹³	Total Site Area (Acres)	Total Area of Land Disturbed (Acres)	Total New Impervious Surface Area (ft ²) ¹⁴	Total Replaced Impervious Surface Area (ft ²) ¹⁵	Total Pre- Project Impervious Surface Area ¹⁶ (ft ²)	Total Post- Project Impervious Surface Area ¹⁷ (ft ²)
Private Projects											
Please see individual city reports as these activities are implemented at the city level.											
Public Projects											
Please see individual city reports as these activities are implemented at the city level.											
Comments:											
Please see individual city reports as these activities are implemented at the city level.											

¹⁰ Include cross streets

¹¹ If a project is being constructed in phases, indicate the phase number and use a separate row entry for each phase. If not, enter "NA".

¹² Project Type is the type of development (i.e., new and/or redevelopment). Example descriptions of development are: 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse.

¹³ State the watershed(s) in which the Regulated Project is located. Downstream watershed(s) may be included, but this is optional.

¹⁴ All impervious surfaces added to any area of the site that was previously existing pervious surface.

¹⁵ All impervious surfaces added to any area of the site that was previously existing impervious surface.

¹⁶ For redevelopment projects, state the pre-project impervious surface area.

¹⁷ For redevelopment projects, state the post-project impervious surface area.

C.3.b.v.(1) ► Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (private projects)

Project Name Project No.	Application Deemed Complete Date ¹⁸	Application Final Approval Date ¹⁹	Source Control Measures ²⁰	Site Design Measures ²¹	Treatment Systems Approved ²²	Type of Operation & Maintenance Responsibility Mechanism ²³	Hydraulic Sizing Criteria ²⁴	Alternative Compliance Measures ^{25/26}	Alternative Certification ²⁷	HM Controls ^{28/29}
Private Projects										

Comments:

Please see individual city reports as these activities are implemented at the city level.

¹⁸ For private projects, state project application deemed complete date. If the project did not go through discretionary review, report the building permit issuance date.

¹⁹ For private projects, state project application final discretionary approval date. If the project did not go through discretionary review, report the building permit issuance date.

²⁰ List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.

²¹ List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.

²² List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.).

²³ List the legal mechanism(s) (e.g., O&M agreement with private landowner; O&M agreement with homeowners' association; O&M by public entity, etc...) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.

²⁴ See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).

²⁵ For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.

²⁶ For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.

²⁷ Note whether a third party was used to certify the project design complies with Provision C.3.d.

²⁸ If HM control is not required, state why not.

²⁹ If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control).

C.3.b.v.(1) ► Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (public projects)

Project Name Project No.	Approval Date ³⁰	Date Construction Scheduled to Begin	Source Control Measures ³¹	Site Design Measures ³²	Treatment Systems Approved ³³	Operation & Maintenance Responsibility Mechanism ³⁴	Hydraulic Sizing Criteria ³⁵	Alternative Compliance Measures ^{36/37}	Alternative Certification ³⁸	HM Controls ^{39/40}
Public Projects										

Comments:

Please see individual city reports as these activities are implemented at the city level.

³⁰ For public projects, enter the plans and specifications approval date.

³¹ List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.

³² List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.

³³ List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.).

³⁴ List the legal mechanism(s) (e.g., maintenance plan for O&M by public entity, etc...) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.

³⁵ See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).

³⁶ For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.

³⁷ For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.

³⁸ Note whether a third party was used to certify the project design complies with Provision C.3.d.

³⁹ If HM control is not required, state why not.

⁴⁰ If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), bioretention unit(s), regional detention basin, or in-stream control).

C.3.h.iv. ► Table of Installed Stormwater Treatment Systems Operation and Maintenance Verification Inspection Program Reporting

Fill in table below or attach your own table including the same information:

Name of Facility/Site Inspected	Address of Facility/Site Inspected	Newly Installed? (YES/NO) ⁴¹	Party Responsible ⁴² For Maintenance	Date of Inspection	Type of Inspection ⁴³	Type of Treatment/HM Control(s) Inspected ⁴⁴	Inspection Findings or Results ⁴⁵	Enforcement Action Taken ⁴⁶	Comments/Follow-up
Please see individual city reports as these activities are implemented at the city level.									

⁴¹ Indicate "YES" if the facility was installed within the reporting period, or "NO" if installed during a previous fiscal year.

⁴² State the responsible operator for installed stormwater treatment systems and HM controls.

⁴³ State the type of inspection (e.g., 45-day, routine or scheduled, follow-up, etc.).

⁴⁴ State the type(s) of treatment systems inspected (e.g., bioretention facility, flow-through planter, infiltration basin, etc...) and the type(s) of HM controls inspected, and indicate whether the treatment system is an onsite, joint, or offsite system.

⁴⁵ State the inspection findings or results (e.g., proper installation, improper installation, proper O&M, immediate maintenance needed, etc.).

⁴⁶ State the enforcement action(s) taken, if any.

C.3.e.vi.Special Projects Reporting Table

Reporting Period – January 1 – June 30, 2013

Project Name & No.	Permittee	Address	Application Submittal Date ⁴⁷	Status ⁴⁸	Description ⁴⁹	Site Total Acreage	Density DU/Acre	Density FAR	Special Project Category ⁵⁰	LID Treatment Reduction Credit Available ⁵¹	List of LID Stormwater Treatment Systems ⁵²	List of Non-LID Stormwater Treatment Systems ⁵³
		Please see individual city reports as these activities are implemented at the city level.										

⁴⁷ Date that a planning application for the Special Project was submitted.

⁴⁸ Indicate whether final discretionary approval is still pending or has been granted, and provide the date or version of the project plans upon which reporting is based.

⁴⁹ Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

⁵⁰ For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.

⁵¹ For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.

⁵² List all LID stormwater treatment systems proposed. For each type, indicate the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area.

⁵³ List all non-LID stormwater treatment systems proposed. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

Section 4 – Provision C.4 Industrial and Commercial Site Controls

Program Highlights

Provide background information, highlights, trends, etc.

The Program contracts with the Solano County Department of Resource Management to conduct stormwater inspections of industrial, commercial and food handling businesses within the Program area. The Program updates the Business Inspection Plan as necessary to keep the document current. Changes are made to facilities lists upon observations of facilities closing or a change in compliance status resulting in a reduction or increase in inspection frequency. Specific information on the number of facilities inspected, types of violations incurred and resolution of violations within reasonable time periods is included in each city's 2012-2013 Annual Report as required by the Water Board.

Training of Health Inspectors was performed on February 7, 2013. The focus of the training was consistency in enforcement levels, enforcement authority; city stormwater ordinances; high-priority facilities needed to be inspected during the fiscal year and enforcement levels associated with illegal discharges . All facilities on the Facilities to be Inspected list were inspected during FY 2012- 2013.

The Program Management team meets on a monthly basis to discuss important Program issues including commercial, industrial and restaurant inspections. The Program also participates in the Municipal Operations Committee meeting on a regional level.

C.4.b.i. ► Business Inspection Plan

Do you have a Business Inspection Plan? Yes No

If No, explain:
NA

C.4.b.iii.(1) ► Potential Facilities List

List below or attach your list of industrial and commercial facilities in your Inspection Plan to inspect that could reasonably be considered to cause or contribute to pollution of stormwater runoff.

The Potential Facilities List was generated at the Program level and distributed to the cities for submittal in their Annual Report. See individual city reports for this list.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.4.b.iii.(2) ► Facilities Scheduled for Inspection

List below or attach your list of facilities scheduled for inspection during the current fiscal year.

The Facilities Scheduled for Inspection was generated at the Program level and distributed to the cities for submittal in their Annual Report. See individual city reports for this list.

C.4.c.iii.(1) ► Facility Inspections

Fill out the following table or attach a summary of the following information. Indicate your violation reporting methodology below.

<input type="checkbox"/>	Permittee reports multiple discrete violations on a site as one violation.
<input checked="" type="checkbox"/>	Permittee reports the total number of discrete violations on each site.

	Number	Percent
Number of businesses inspected		
Total number of inspections conducted		
Number of violations (excluding verbal warnings)		
Sites inspected in violation		
Violations resolved within 10 working days or otherwise deemed resolved in a longer but still timely manner		

Comments:

1. Violation Explanation:

The Program industrial-commercial and restaurant inspection forms have been designed so that when a facility is seen as being free of violations and without threat to the environment, all of the inspection form line items are checked "yes" and the "In Compliance With Pollution Control Requirements?" box is also checked "yes".

Facilities that need to be directed to pursue certain activities which are occurring on-site (ie. dry oil spots in the parking lot) and are given a "no", under: A.2: Exterior Surfaces, Storm Drains, Loading Dock Drains, Manholes, and Sanitary Sewer Cleanouts Free of Chemical Stains and Oil Stains. When the facility is given a yes for "In Compliance With Pollution Control Requirements?", this does not result in a violation for the facility.

All inspection reports where the "no" box is marked in the checklist area and the facility is seen as not being "In Compliance With Pollution Control Requirements?" are incorporated into the "Number of violations" totaled above. The level of enforcement of the offense is delineated in an annual training given to the inspectors as described in the Program ERP.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

2. Violations not resolved within 10 days or otherwise deemed resolved in a longer but still timely manner:

This data is different for each city, see individual city reports for this information.

C.4.c.iii.(2) ► Frequency and Types/Categories of Violations Observed

Fill out the following table or attach a summary of the following information.

Type/Category of Violations Observed	Number of Violations
Actual discharge (e.g. active non-stormwater discharge or clear evidence of a recent discharge)	
Potential discharge and other	
Comments: The Program counts one discharge per source of discharge per inspection per site. This data is different for each city, see individual city reports for this information.	

C.4.c.iii.(2) ► Frequency and Type of Enforcement Conducted

Fill out the following table or attach a summary of the following information.

	Enforcement Action (as listed in ERP) ⁴⁸	Number of Enforcement Actions Taken	% of Enforcement Actions Taken ⁴⁹
Level 1			
Level 2			
Level 3			
Level 4			
Total	See individual city reports for this information.		

⁴⁸ Agencies to list specific enforcement actions as defined in their ERPs.

⁴⁹ Percentage calculated as number of each type of enforcement action divided by the total number of enforcement actions.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.4.c.iii.(3) ▶ Types of Violations Noted by Business Category

Fill out the following table or attach a summary of the following information.

Business Category ⁵⁰	Number of Actual Discharge Violations	Number of Potential/Other Discharge Violations
See individual city reports for this information.		

C.4.c.iii.(4) ▶ Non-Filers

List below or attach a list of the facilities required to have coverage under the Industrial General Permit but have not filed for coverage:

See individual city reports for this information.

C.4.d.iii ▶ Staff Training Summary

Training Name	Training Dates	Topics Covered	No. of Inspectors in Attendance	Percent of Inspectors in Attendance
Fairfield Suisun Urban Runoff Program Commercial, Industrial, and Food Handling Annual Refresher Training	February 7, 2013	Enforcement authority; city stormwater ordinances; high-priority facilities needed to be inspected this fiscal year; enforcement levels associated with illegal discharges.	10	91 %

⁵⁰ List your Program's standard business categories.

Section 5 – Provision C.5 Illicit Discharge Detection and Elimination

Program Highlights

Provide background information, highlights, trends, etc.

The Program Manager participates in BASMAA's monthly Municipal Maintenance and Commercial/ Industrial Controls meeting. Additionally, monthly Stormwater Management meetings are held at the Program level to discuss illicit discharge detection and elimination and screening protocol. Both cities utilize the Program's Illicit Discharge Detection and Elimination Program Manual to assist them in identification, detection and elimination of illicit discharges throughout both cities.

C.5.c.iii ► Complaint and Spill Response Phone Number and Spill Contact List

List below or attach your complaint and spill response phone number and spill contact list.

Contact	Description	Phone Number
Gary Sponsler	Public Works Supervisor, City of Fairfield	(707) 428-7405
Mike Gray	Public Works Manager, City of Fairfield	(707) 428-7404
Dan Kasperson	Building and Public Works Director	(707) 421-7340
Jeff Penrod	Public Works Superintendent	(707) 421-7349

C.5.d.iii ► Evaluation of Mobile Business Program

Describe implementation of minimum standards and BMPs for mobile businesses and your enforcement strategy. This may include participation in the BASMAA Mobile Surface Cleaners regional Program or local activities.

Description:

The Program participated in BASMAA's monthly Municipal Maintenance and Commercial Industrial Controls meeting. Additionally, monthly meetings are held at the Program level to discuss illicit discharge detection and elimination. Also, in FY 2010/2011, BASMAA and its Permittees scoped and budgeted for a new project to enhance the existing Surface Cleaner Training and Recognition Program in several ways. See BASMAA's FY 2012/2013 MRP Regional Supplement for Training and Outreach Annual Report on mobile surface cleaners updates.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.5.e.iii ► Evaluation of Collection System Screening Program

Provide a summary or attach a summary of your collection screening Program, a summary of problems found during collection system screening and any changes to the screening Program this FY.

Description:

This provision is handled at the city level. Please see individual city reports for this information.

C.5.f.iii.(1), (2), (3) ► Spill and Discharge Complaint Tracking

Spill and Discharge Complaint Tracking (fill out the following table or include an attachment of the following information)

	Number	Percentage
Discharges reported (C.5.f.iii.(1))	NA	
Discharges reaching storm drains and/or receiving waters (C.5.f.iii.(2))	NA	
Discharges resolved in a timely manner (C.5.f.iii.(3))	NA	

Comments:

This provision is handled at the city level. Please see individual city reports for this information.

C.5.f.iii.(4) ► Summary of major types of discharges and complaints

Provide a narrative or attach a table and/or graph.

This provision is handled at the city level. Please see individual city reports for this information.

Section 6 – Provision C.6 Construction Site Controls

C.6.e.iii.1.a, b, c ▶ Site/Inspection Totals		
Number of High Priority Sites (sites disturbing < 1 acre of soil requiring storm water runoff quality inspection) (C.6.e.iii.1.a)	Number of sites disturbing ≥ 1 acre of soil (C.6.e.iii.1.b)	Total number of storm water runoff quality inspections conducted (include only High Priority Site and sites disturbing 1 acre or more) (C.6.e.iii.1.c)
# NA	# NA	# NA
<p>Comments:</p> <p>This provision is handled at the city level. Please see individual city reports for this information.</p>		

C.6.e.iii.1.d ▶ Construction Activities Storm Water Violations		
This provision is handled at the city level. Please see individual city reports for this information.		
BMP Category	Number of Violations⁵¹ excluding Verbal Warnings	% of Total Violations⁵²
Erosion Control	NA	NA
Run-on and Run-off Control	NA	NA
Sediment Control	NA	NA
Active Treatment Systems	NA	NA
Good Site Management	NA	NA
Non Stormwater Management	NA	NA
Total⁵³		NA

⁵¹ Count one violation in a category for each site and inspection regardless of how many violations/problems occurred in the BMP category. For example, if during one inspection at a site, there are 2 erosion control violations, only 1 violation would be counted for this table.

⁵² Percentage calculated as number of violations in each category divided by total number of violations in all six categories.

⁵³ The total number of violations may count more than one violation per inspection, since some inspections may result in violations in more than one category. For example, during one inspection of a site, there may have been both an erosion control violation and a sediment control violation. For this reason, the total number of violations in this table may not match the total number of enforcement actions reported in Table C6.e.iii.1.e.

C.6.e.iii.1.e ► Construction Related Storm Water Enforcement Actions

This provision is handled at the city level. Please see individual city reports for this information.

	Enforcement Action (as listed in ERP) ⁵⁴	Number Enforcement Actions Issued	% Enforcement Actions Issued ⁵⁵
Level 1 ⁵⁶	NA	NA	NA
Level 2	NA	NA	NA
Level 3	NA	NA	NA
Level 4	NA	NA	NA
Total	NA	NA	100%

C.6.e.iii.1.f, g ► Illicit Discharges

This provision is handled at the city level. Please see individual city reports for this information.

	Number
Number of illicit discharges, actual and those inferred through evidence at high priority sites and sites that disturb 1 acre or more of land (C.6.e.iii.1.f)	NA
Number of sites with discharges, actual and those inferred through evidence at high priority sites and sites that disturb 1 acre or more of land (C.6.e.iii.1.g)	NA

⁵⁴ Agencies should list the specific enforcement actions as defined in their ERPs.

⁵⁵ Percentage calculated as number of each type of enforcement action divided by the total number of enforcement actions.

⁵⁶ For example, Enforcement Level 1 may be Verbal Warning.

C.6.e.iii.1.h, i ► Violation Correction Times		
	Number	Percent
Violations (excluding verbal warnings) fully corrected within 10 business days after violations are discovered or otherwise considered corrected in a timely period (C.6.e.iii.1.h)	NA	% ⁵⁷
Violations (excluding verbal warnings) not fully corrected within 30 days after violations are discovered (C.6.e.iii.1.i)	NA	% ⁵⁸
Total number of violations (excluding verbal warnings) for the reporting year⁵⁹	NA	100%
Comments:		
This provision is handled and reported at the city level. Please see individual city reports for this information.		

C.6.e.iii.(2) ► Evaluation of Inspection Data
Describe your evaluation of the tracking data and data summaries and provide information on the evaluation results (e.g., data trends, typical BMP performance issues, comparisons to previous years, etc.).
Description:
This provision is handled and reported at the city level. Please see individual city reports for this information.

C.6.e.iii.(2) ► Evaluation of Inspection Program Effectiveness
Describe what appear to be your Program's strengths and weaknesses, and identify needed improvements, including education and outreach.
Description:
The Program revised its inspection forms to correlate with the data collection requirements in the MRP. Inspections are made and data is collected in the field and brought back to the office for compilation into an Excel database. Training has been provided to inspectors at both cities. In addition, several inspectors and engineers from both cities have been trained and/or certified by the State as QSP or QSDs depending on their background and experience level.

⁵⁷ Calculated as number of violations fully corrected in a timely period after the violations are discovered divided by the total number of violations for the reporting year.

⁵⁸ Calculated as number of violations not fully corrected within 30 days after the violations are discovered divided by the total number of violations for the reporting year.

⁵⁹ The total number of violations reported in the table of Violation Correction Times equals the number of initial enforcement actions. I.e., This assumes one violation is issued for several problems during an inspection at a site. The total number of violations in the table of Violation Correction Times may not equal the total number of enforcement actions because one violation issued at a site may have a second enforcement action for the same violation at the next inspection if it is not corrected.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

Program members participate monthly on the Program's Stormwater Management Meetings. Information is distributed to the cities through city representatives at those meetings. The Program also participates in BASMAA's new development subcommittee meetings.

C.6.f ▶ Staff Training Summary

Training Name	Training Dates	Topics Covered	No. of Inspectors in Attendance	Percent of Inspectors in Attendance
See individual city annual reports				

Section 7 – Provision C.7. Public Information and Outreach

C.7.a ► Storm Drain Inlet Marking (existing storm drains)

(For FY 12-13 Annual Report only) Report prior years' estimated annual percentages of municipality maintained storm drain inlet markings inspected and maintained as legible with a no dumping message or equivalent. At least 80% of municipality-maintained storm drain inlet markings shall be inspected and maintained at least once per 5-year permit term.

Summary:

This provision is handled and reported at the city level. Please see individual city reports for this information.

C.7.a ► Storm Drain Inlet Marking (newly-constructed, privately-maintained streets)

(For FY 12-13 Annual Report only) Report prior years' annual number of projects accepted after inlet markings were verified. For newly-approved, privately-maintained streets, permittees shall require inlet marking by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings shall be verified prior to acceptance of the project.

Summary:

This provision is handled and reported at the city level. Please see individual city reports for this information.

C.7.b.ii.1 ► Advertising Campaign

Summarize advertising efforts. Include details such as messages, creative developed, and outreach media used. The detailed advertising report may be included as an attachment. If advertising is being done by participation in a countywide or regional Program, refer to the separate countywide or regional Annual Report.

Summary:

The Program is participating in the BASMAA Regional Litter Ad Campaign. BASMAA is also working with a consultant on a Five-Year Strategic Advertising Plan "Our Water, Our World" Pesticides Program. Please see BASMAA FY 2011/2012 MRP Regional Supplement for Training and Outreach Annual Report for more details relating to these outreach efforts.

The following separate report developed by BASMAA summarizes the activities of the Regional Youth Litter Campaign

- BASMAA Be the Street Campaign Report

C.7.b.iii.1 ► Pre-Campaign Survey

(For the Annual Report following the pre-campaign survey) Summarize survey information such as sample size, type of survey (telephone survey, interviews etc.). Attach a survey report that includes the following information. If survey was done regionally, refer to a regional submittal that contains the following information:

The Program is participating in the BASMAA Regional Litter Ad Campaign. Information on the pre-campaign survey for the BASMAA Regional Youth Litter Campaign was provided in the FY 12-13 Annual Report

Place an **X** in the appropriate box below:

<input type="checkbox"/>	Survey report attached
<input checked="" type="checkbox"/>	Reference to regional submittal:

C.7.c ► Media Relations

Summarize the media relations effort. Include the following details for each media pitch in the space below, AND/OR refer to a regional report that includes these details:

- Topic and content of pitch
- Medium (TV, radio, print, online)
- Date of publication/broadcast

Summary:

The following separate report developed by BASMAA summarizes media relations efforts conducted during FY 12-13:

- BASMAA Media Relations Final Report FY 12-13

Please see BASMAA FY 2012/2013 MRP Regional Supplement for Training and Outreach, Annual Report for more details relating to these outreach efforts conducted during FY 2012/2013.

In FY 12-13 the Program has also participated in the 95.3 KUIC Hometown Green Environmental Campaign. Program members on a regular basis have recorded segments which are played daily on KUIC and focus on environmental messages. Messages include: the connectedness of our streets to our local creeks; recycling mercury containing products; trash and litter; proper car washing; recycling; and the reduction of waste by using reusable items.

C.7.d ► Stormwater Point of Contact

Summary of any changes made during FY 12-13:

The Program promoted its Point of Contacts through the distribution of outreach materials: *You Are the Solution to Water Pollution / Creek and Marsh Watch*. This catchy trifold piece provides contact information to report illegal discharges and spills. These materials are given out at nearly every public event that the Program participates in. Contact information is also provided on each of the cities websites.

No other changes.

C.7.e ► Public Outreach Events

Describe general approach to event selection. Provide a list of outreach materials and giveaways distributed.

Use the following table for reporting and evaluating public outreach events

Event Details	Description (messages, audience)	Evaluation of Effectiveness
Provide event name, date, and location. Indicate if event is local, countywide or regional.	Identify type of event (e.g., school fair, farmers market etc.), type of audience (school children, gardeners, homeowners etc.) and outreach messages (e.g., Enviroscope presentation, pesticides, stormwater awareness)	Provide general staff feedback on the event (e.g., success at reaching a broad spectrum of the community, well attended, good opportunity to talk to gardeners etc.). Provide other details such as: <ul style="list-style-type: none"> • Estimated overall attendance at the event. • Number of people that visited the booth, comparison with previous years • Number of brochures and giveaways distributed • Results of any spot surveys conducted
Solano County Prescription Take Back Days, September 29, 2012, January 26, 2013, April 27, 2013, June 8, 2013 events were held at the Solano County Sheriff's office. This is a countywide and Program event.	Drug Take Back Events to keep prescription drugs out of our local waterways. Handouts included the Program's You are the Solution to Water.	Over 1,399 pounds of drugs taken back and 256 participants from our Program area.

FY 2012-2013 Annual Report

C.7 – Public Information and Outreach

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

<p>Coast and Creek Cleanup; September 15, 2012; 14 cleanup sites throughout Fairfield and Suisun City; this is a Program event.</p>	<p>The Program lead volunteer cleanup of local creeks, marsh and open space areas.</p>	<p>525 volunteers picked up 3,367 pounds of trash and recyclables along 22 miles of waterway. This was a decrease of 100 people from the previous year. It is thought that the decrease in participants is due to the fact that the local high schools have decreased the requirements for volunteer hours for graduation, thus reducing the number of volunteers.</p>
<p>Tomato Festival; August 19, 2012; Texas Street, Fairfield, CA; this is a Program event.</p>	<p>The Program shared information with approximately 75 people of all ages and nationalities in attendance at the festival;</p>	<p>The Program handed out funnels for changing motor oil, along with plate scrapers, coloring books, and crayons. Connectivity between the streets and creeks was explained.</p>
<p>Back to School Event; August 11, 2012; 1600 Union Avenue; Fairfield CA; this is a Program event.</p>	<p>The Program shared information with approximately 300 people of all ages and nationalities in attendance at the event.</p>	<p>The Program handed out funnels for changing motor oil, plate scrapers, coloring books, and crayons. Connectivity between the streets and creeks was explained.</p>
<p>Earth Day at Home Depot; May 3, 2013; 2121 Cadenasso Dr. Fairfield, CA; this is a Program event.</p>	<p>IPM Consultant Annie Joseph and IPM advocate Theresa Travers provided IPM training for Home Depot customers on safe gardening practices at the local Home Depot store.</p>	<p>Discussions were held with Home Depot customers regarding alternatives to toxic pesticides. Customers were very engaged.</p>
<p>Operation Green Tomato, Fairfield- Suisun Farmers Market; Thursdays from May 3 through October 4; the event is held in downtown Fairfield at the intersection of W. Texas St. and Jefferson Street; this is a Program event.</p>	<p>The Program contracts with Fairfield Main St. Association to attend the weekly farmers market and man the Operation Green Tomato booth. Messages include the connectedness of our streets to our local creeks; and only clean stormwater should be flowing to our local storm drain system. The booth also features information about pesticide free pest control, reporting illegal discharges and free grease scrapers to avoid sanitary sewer overflows.</p>	<p>Starting in May and ending October an average of 80 visitors per week stop at the Operation Green Tomato booth. Green Tomato crewmembers also quiz guests and give out prizes went questions are answered correctly.</p>
<p>Earth Day - April 21, 2012; The Program assisted Mission Solano during this event in downtown Suisun city. The event included a cleanup at 10 sites in the city, a tree planting ceremony and</p>	<p>The Program assisted in volunteer cleanup of local creeks, marsh and open space areas.</p>	<p>Gathered over 100 leaves on our pledge tree form children promising to help protect susiun marsh and community creeks. Mobilized aproximately, 55 people collected 2000 pounds</p>

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

<p>earth friendly vendors. this is a Program event.</p>		<p>of trash in 10 areas throughout the Program area. Trees also planted.</p>
<p>Solano County Master Gardener Training; January 25, 2013; 501 Texas Street , Fairfield, CA; this is a Program activity.</p>	<p>IPM Consultant Annie Joseph along with Program manager, provided IPM training for Solano County Master Gardeners, who in turn instruct the general public on safe gardening practices at local farmers' markets and events throughout the county. Program representative on hand to describe connectivity of the streets to our local creeks; the difference between storm water and wastewater; the wastewater treatment process; how pesticides can impact the process.</p>	<p>35 Master Gardeners were in attendance, based on the interaction between the presenters and speakers, the audience was highly engaged. Initial understanding of the direct connection between the streets and creeks appeared to be low. Upon completion of the event the understanding of the direct connection was very near to 100%.</p>

C.7.f. ► Watershed Stewardship Collaborative Efforts

Summarize watershed stewardship collaborative efforts and/or refer to a regional report that provides details. Describe the level of effort and support given (e.g., funding only, active participation etc.). State efforts undertaken and the results of these efforts. If this activity is done regionally refer to a regional report.

Evaluate effectiveness by describing the following:

- Efforts undertaken
- Major accomplishments

Summary:

The Program conducts an array of activities which qualify for watershed stewardship collaborative efforts. These efforts are also mentioned in other portions of this Annual Report. Efforts directed toward Coast and Creek Cleanup result in watershed stewardship collaboration. Presentations were made to schools and clubs in the Fairfield Suisun Unified School District which resulted increased number of participants in our creek cleanup events. Creek Captains meetings are also used to encourage public involvement in watershed volunteer efforts.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.7.g. ► Citizen Involvement Events		
List the types of events conducted (e.g., creek clean up, storm drain inlet marking, native gardening etc.). Use the following table for reporting and evaluating citizen involvement events.		
Event Details	Description	Evaluation of effectiveness
Provide event name, date, and location. Indicate if event is local, countywide or regional	Describe activity (e.g., creek clean-up, storm drain marking etc.)	Provide general staff feedback on the event. Provide other evaluation details such as: <ul style="list-style-type: none"> • Number of participants. Any change in participation from previous years. • Distance of creek or water body cleaned • Quantity of trash/recyclables collected (weight or volume). • Number of inlets marked. • Data trends
Coast and Creek Cleanup; September 15, 2012; 14 cleanup sites throughout Fairfield and Suisun City; this is a Program event.	The Program lead volunteer cleanup of local creeks, marsh and open space areas.	525 volunteers picked up 3,367 pounds of trash and recyclables along 22 miles of waterway. This was a decrease of 100 people from the previous year. It is thought that the decrease in participants is due to the fact that the local high schools have decreased the requirements for volunteer hours for graduation, thus reducing the number of volunteers.
Earth Day - April 21, 2012; The Program assisted Mission Solano during this event in downtown Suisun city. The event included a cleanup and 10 sites in the city, a tree planting ceremony and earth friendly vendors. this is a Program event.	The Program assisted in volunteer cleanup of local creeks, marsh and open space areas.	Mobilized approximately, 55 people collected 2000 pounds of trash in 10 areas along local creeks. Trees also planted.
Community Service Days; on the last Saturday of every month (weather permitting); this is a local event in Fairfield	These are volunteer events that involve picking up litter in various locations throughout the city of Fairfield.	Numbers were not kept, only approximations. Throughout the year, at five different locations throughout the city, there were over 100 people that participated and collected over 240 yards of trash throughout the streets of Fairfield.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.7.h. ► School-Age Children Outreach

Summarize school-age children outreach Programs implemented. A detailed report may be included as an attachment. Use the following table for reporting school-age children outreach efforts.

Program Details	Focus & Short Description	Number of Students/Teachers reached	Evaluation of Effectiveness
Provide the following information: Name Grade or level (elementary/ middle/ high)	Brief description, messages, methods of outreach used	Provide number or participants	Provide agency staff feedback. Report any other evaluation methods used (quiz, teacher feedback etc.). Attach evaluation summary if applicable.
School Water Education Program (SWEP); this Program is available for Kindergarten through 12 th grade, and is a Program element.	SWEP provides free water education resources to teach water awareness and conservation to students, teachers and parents in our service areas of Dixon, Vacaville, Fairfield, Suisun City and Travis Air Force Base. The in-class education Programs as well as the resource materials and assembly Programs are multi-discipline and aligned to the content standards for California public schools. The Programs encourage students and adults to develop a healthy attitude of personal responsibility towards our environment and develop skills needed to contribute meaningfully to decision-making process on issues involving our resources and particularly conserving our most precious resource, water.	8,202 students and 264 teachers were reached throughout the County of Solano.	See attached Annual Summary Report from SWEP.
The Watershed Explorers Program; Solano County third-graders. This is a Program element.	This Program is held at Lynch Canyon open space and Hanns Park. The Program utilizes science and placed base learning to build awareness and understanding of local creeks and	1,198 people and approximately 40 teachers in every city in the county participated in the	See attached Annual Summary Report from The Watershed Explorers Program.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

	<p>watersheds, their unique ecosystems and ways in which we care for them. In the field discussions and activities teach children about the fragile habitats of birds and other wildlife. Students learn the importance of water quality in a watershed and discover that can be negatively impacted by urban runoff and its complements: trash, oil, household chemicals and other human and domestic animal waste and discards. Please go to : http://www.solanorcd.org/ for videos of the Program.</p>	<p>2012/13 Program.</p>	
<p>Suisun Marsh Watershed and Wetland Education Program; the classes available to middle schools throughout Solano County.</p>	<p>The Program provides place-based environmental education for underserved middle school students in Solano County. The central Program themes include: watersheds, wetlands, marsh functions, native and non-native plants, storm runoff, endangered and threatened species, and watershed connections between their residential communities, Suisun marsh, the San Francisco Bay, and the Pacific Ocean.</p>	<p>27 classes of approximately 882 students from the Crystal Middle school in Suisun city, Grange Middle school in Fairfield, Vac Pena and Orchard elementary schools in Vacaville and Solano middle school in Vallejo participated in the Program.</p>	<p>See attached Suisun Marsh Watershed and Wetland Education Program 2012 - 2013 Year End Report</p>

C.7.i. ► Outreach to Municipal Officials

(For FY 12-13 Annual Report only) Summarize outreach conducted to increase the overall awareness of stormwater and/or watershed messages among municipal officials.

Summary:

On April 29, 2013 the stormwater Program manager presented to the Fairfield-Suisun Sewer District Board on stormwater management in Fairfield and Suisun city. The Fairfield Suisun Sewer District Board is made up of 10 members, five members from each City Council, representing all city Council member's from both cities. Nine of ten Council members were in attendance.

The presentation covered the functionality of the stormwater utility in the two cities, financial issues, regulatory responsibilities of the cities and the Fairfield-Suisun Urban Runoff Management Program. The Sewer District Board was very engaged and a very interactive discussion occurred after the presentation was made.

High-level representatives from both cities' staff were present and also engaged in the discussion. Upon conclusion of the meeting the District Board had a very good understanding on the commitment that needs to be made by the cities to ensure clean water in our local creeks and the Suisun marsh.

Be the Street FY 2012-2013 Summary

Be the Street Facebook Page <https://www.facebook.com/BetheSt>:

The Be the Street Facebook page (<https://www.facebook.com/BetheSt>) was maintained throughout the year to engage the target audience, Bay Area youth ages 14-24 years old, with interesting content and event photos. The focus was on clean streets and community ownership as a social norm. The page allows fans to connect with Be the Street, get the latest program updates such as the PSA video contest news and winners announcement, share thoughts and photos and ask questions. Other outreach components such as the Be the Street website (www.BetheStreet.org), YouTube channel (<http://www.youtube.com/bethestreet>) and Instagram account (<http://instagram.com/bethestreet>) are linked on the page. The following are Facebook statistics from the year:

- 268 published posts;
- 1,062 new fans, resulting in a total of 1,468 fans;
- 2,048 total interactions (includes likes, comments, shares and responses to poll questions); and
- 115,513 total post views.

In addition, this year we created and integrated a customized Be the Street Instagram app (https://www.facebook.com/BetheSt/app_148296625321468) on the Facebook page to highlight our Be the Street Instagram account feed. It allows fans to easily connect with this additional social media channel. As well, fans can easily see and engage with a gallery of Be the Street photos.

eNewsletter

While we had originally planned on creating a quarterly eNewsletter, our analysis indicated that the readership of the eNewsletter was much lower than our interaction rates on social media outlets. This led to the discontinuation of this tactic in favor augmenting both the social media and video contest components

1. 2 eNewsletters released
2. 23% open rate
3. 13% clickthrough rate

Be the Street YouTube Channel <http://www.youtube.com/bethestreet>:

The Be the Street YouTube channel (<http://www.youtube.com/bethestreet>) was maintained throughout the year to present clean street and pollution prevention related videos online. The channel hosted the PSA video entries, promotional videos and award show. The Be the Street YouTube channel allows for a positive visual association with the program and attracts new interest. Similar to other social media channels, it offers an opportunity for viewers to comment or give feedback. It also offers quick access to links to easily share and embed these videos. Other outreach components such as the Be the Street website (www.BetheStreet.org), Facebook page (<https://www.facebook.com/BetheSt>) and Instagram account (<http://instagram.com/bethestreet>) are linked on the channel. The following are YouTube statistics from the year:

- 54 videos uploaded;

- 16 subscribers;
- 21 total interactions (includes likes/dislikes, comments and shares); and
- 15,506 video views.

Be the Street Instagram Account [instagram.com/bethestreet](https://www.instagram.com/bethestreet):

The Be the Street Instagram account ([instagram.com/bethestreet](https://www.instagram.com/bethestreet)) was created and launched in November 2012 to build awareness and engagement with Bay Area youth ages 14-24 years old through photos. The value of this social media channel is that it combines mobile and photo sharing. The Instagram account allows Bay Area youth to follow the program's photos, comment on photos, like photos, tag themselves and tag the program @BetheStreet/#BetheStreet in their own photos. The photos tell the story of how the program and youth are inspiring others to take pride in clean streets and community ownership. It includes a link to the Be the Street Facebook page (<https://www.facebook.com/BetheSt>). The following are Instagram statistics from the year:

- 68 posted photos;
- 67 followers; and
- 729 total interactions (likes, comments and #BetheStreet).

Website www.bethestreet.org

While the below numbers are wonderful in their own right, it should be noted that mobile visitors are underreported below as they are difficult for Google Analytics to accurately track right now. We hope that this issue is solved soon but we are unable to compensate for this tracking inadequacy for the time being

1. Total Visits: 15,431
2. Unique Visitors: 10,040
3. Visit Duration: 2:19. We should highlight that this is a tremendously high average duration number. This has everything to do with our content rich work stemming from the video contest
4. Pageviews: 37,135
5. *Popup click through results: 39 (ran from 5/1/13-6/30/13 where Unique Visitors during that period were 3,171. This resulted in a 1.2% conversion.)

Video Contest

As its major effort of the Fiscal year, Be the Street conducted a video contest asking participants to submit their best anti-litter video. The contest was designed not only to render a crowd-sourced video advertisement which Be the Street subsequently put use to, but also to drive traffic to various Be the Street outlets (most notably the website and social media). As a whole, the video contest was a tremendous success, yielding dozens of local entries and exponentially increasing our traffic across the targeted outlets. Additionally, we allowed for voting and commenting on videos on our website. Finally, we conducted a live streaming online awards show to act as a lightning rod moment; something to get our audience in one place at one time.

1. 283 organizations reached out to

2. 52 video entries received
3. 4,844 votes cast (every IP address was only allowed to vote once to ensure real voters)
4. 593 unique views of the 25 minute Awards Show. This number represents more than 530 views as many people presumably watched the show in groups
5. 359 user comments on videos
6. While we are unable to track the exact number here, since each video was given a dedicated profile page on the website, we were able to track at least fourteen instances of filmmakers promoting their own page through their own social media channels.
7. More than fifteen users live commenting during our awards show

Ads

With our winning video, Be the Street launched a regional AdBuy putting use to Pandora, YouTube, Google, Facebook, and KTVU.

1. 3.82% clickthrough rate on Pandora ad (against Industry standard of 1.2)
2. Approximately 6.5 million impressions from target demographic of 14-24 year olds in the Bay Area
3. \$7,800 in pro-bono donations gained with more coming in FY 13-14 based on media outlets' availability

- With each city doing their part identifying and building the list of local partnerships, it looks like we'll be able to make a strong initial offering to prospective members. We'll be able to grow the participants on the SGA side as well, but starting with a good list is important for a healthy launch
Respondents provided a great array of existing or potential businesses partners that would appeal to young people such as a karaoke ice cream truck, a skateboard shop, Wingstop, and more.
- In selecting what type of "token" to use (traditional card vs. digital), it is clear that tracking is a very important component to us. However, e-mail might not be the most audience-appropriate format.
Ideas for other forms of traceable digital tokens included text messages or a smartphone app. The incremental complexity of developing an app might not fit best with our timeline.
- When it came to possible criteria for becoming a member, nearly all responders agreed on the value of obtaining a pledge, but perhaps not right off the bat.
Age (14-24) would be an appropriate entrance requirement, in order to establish a feeling of identity or exclusivity amongst members. Home city seems to be less important, since all partner locations will be in Bay Area cities, and therefore our members will most likely come from those cities.
- Regarding the important things we want members to do on an ongoing basis, "social media diffusion" (likes, shares, etc.) and "active promotion to networks" were highest ranked, followed closely by "calling out littering when seen".
The lowest ranked activities were the big asks: "recruiting members" and a common open field response regarding "organizing anti-litter activities".
- Most responders were intrigued by the idea of building in distinct levels where members could work towards goals and level up, but this idea needs to be further developed.
Several pointed out that for this to happen, we would need to use the digital token option. Also, there was the idea of waiting until later in the program to build this in, if extra motivation was shown to be needed in generating member activity.

Based on the survey feedback received and key findings listed above, we see the core components taking shape:

Value:

Our primary offering to members will be a long list of business partners and discounts offered, pooled from each individual city developing several partnerships. The secondary offering will be the social validation in joining and identifying with a club consisting of like-minded 14-24 year olds.

Activities to ask of members:

We will follow the best practice of starting small, and moving up with each ask of our members. The first step will be just the sign up. Then, a simple pledge. From there we may move up to asking for social media likes and then shares. After having enough tracked data to segment out high volume redeemers, we may ask them to do things such as volunteer.

Token & Tracking:

A digital token will be used by members to redeem discounts or privileges, and redemptions will be tracked by us through a system we set up, rather than by the various partners manually. A membership card could be used in tandem so no one is left out (of course that complicates tracking their usage). The question remains as to which form of digital token to go with:

Form of Token	Description	Pros	Cons
Text Message	Member sends an SMS to a short code like BtSNow (287669) and they get a text back, which is shown to the business to redeem	<ul style="list-style-type: none"> - Anyone who can send/receive text messages can join - We can track by counting the number of texts sent - Cell phone numbers are obtained - Discounts are easy to redeem on the spot as long as member has or remembers the code - Relatively simple to set up this system 	<ul style="list-style-type: none"> - We do not obtain their email address, which limits subsequent outreach options - Since licensing a short code costs \$1,000/month, having one (rather than several) means we can only track the number of redemptions, and not where they were used - Interaction with our brand would be limited to the short code itself and any promotional materials
Web or Email Voucher	Member logs in online (via computer or mobile) using their e-mail address. Selecting from the list takes them to (or e-mails them) a voucher which can be printed or displayed via smartphone to redeem	<ul style="list-style-type: none"> - Anyone who has internet access can join - Detailed tracking is possible, knowing who redeemed, how many, and where - Email addresses are obtained - Not as simple to implement as the option above, but still not complex 	<ul style="list-style-type: none"> - Redemption could be considered cumbersome: needing to visit a web site is a barrier
Mobile Application	Member downloads/installs free app, logs in through the app using their e-mail address. Selecting from the list brings up a digital voucher which can be displayed to redeem	<ul style="list-style-type: none"> - This is the most seamless form of digital token, for people with smartphones - Sharing would be encouraged - Potentially could link directly to Facebook (though that adds complexity) - Enables heavy interaction with our brand 	<ul style="list-style-type: none"> - Open only to 14-24 year olds who have smart phones - Development is much more complex (multiple versions for various mobile operating systems) - Getting app approved by Apple and into iTunes can take several weeks
Membership Card	After a member signs up, cards are either mailed out or printed from the website. The card can be used	<ul style="list-style-type: none"> - Simple to implement - Redemption is very straightforward - Card design allows for some interaction with branding 	<ul style="list-style-type: none"> - No reliable way to track usage; this form would need to be used in tandem with a digital option above - Requires an additional step

at any participating
location to redeem

for members to obtain card
- A barrier to usage is if
members misplace cards

Future

After our launch, this framework provides the skeleton for a lot of evolution, particularly in the way of online identity building. Potentially, we could apply values to any activity and users could automatically gain points, growing their score both for prizes and social badges of sorts. We could also move forward with different levels of membership and tracking which leads to direct outreach from cities looking for volunteers. Essentially, if we can make this work (and we'll be developing our short-term goalposts so we can make course corrections around December of this year) then the sky is the limit when it comes to future evolutions.

School Water Education Program (SWEP)

2012-2013 End of Year Narrative Report

Prepared by SWEP Educator Megan Harns

Submitted to the SWEP Committee 21 June 2013

Content of this report

The purpose of the School Water Education Program (SWEP) is to develop awareness and stewardship of local water resources in school-age children in Solano County through direct programming, partner program referral, educator training, and the distribution of free educational materials. This report contains summative information on the success of each of these educational efforts during 2012-2013. Detailed data, formatted for use in CUWCC reporting, will be made available separately. Effective July 2013, SWEP experienced two dramatic changes: a new contract educator, and an expansion in territory with the addition of funding from Vallejo and Benicia. Reflections on the challenges and opportunities afforded by these and other upcoming changes are also included in this report.

Organization of this report

Highlights and Accomplishments

Impact of SWEP

Impact of Partner Programs

Reflections on challenges and opportunities in 2012-2013

Looking forward to 2013-2014

Highlights and Accomplishments

- *Analyzed past programming* to identify what to keep, what to modify, and what to discontinue in light of factors like new academic standards, new audiences, and newly available materials
- *Diversified advertising to educators* using new print brochures and posters, print & email fliers, personal letters & emails, and promotion of the online brochure at www.solanosaveswater.org
- *Expanded target audiences* to youth in Vallejo & Benicia and after-school programs county-wide
- *Laid the groundwork* for more teacher trainings showcasing more curricula next year
- *Leveraged SWEP Partner Programs* to increase teacher outreach and material distribution
- *Significantly increased SWEP impact* (mostly through increased material distribution) from 184 teachers reported last year to 264 teachers this year and 5,372 students reported last year to approximately 8,202 students this year

Impact of SWEP

SWEP's largest impact in 2012-2013 was through the distribution of materials to teachers and students:

- 126 curricula and over 70 posters were given to teachers for further use in their classrooms
- 149 classes benefitted from SWEP materials while attending WaterWays and SRCD programs
- Over 7,200 SWEP student materials were distributed (workbooks, bookmarks, pencils, etc.)

The first half of the fiscal year was heavily focused on outreach to educators:

- 1,500 K-6 brochures and 1,500 Grade 6-12 brochures and 100 posters were printed; the majority were distributed by the Solano County Office of Education through inter-district mail
- Over 100 introductory emails were sent to teachers personally known to the SWEP Educator

The second half of the fiscal year saw more direct programming by the SWEP Educator:

- 26 classroom & after-school presentations to approximately 820 K-12 youth
- About 700 3rd graders were reached at a multi-program booth at Vallejo Youth Ag Day
- Water careers workshop for 12 middle school girls at Solano Community College conference

Creative outreach and leveraging the SWEP Educator's existing networks yielded promising results:

- Promotional materials were given to SWEP and WaterWays teachers at the point of service; most of these teachers had not heard of or used SWEP resources before
- At Vallejo Youth Ag Day, a raffle netted the interest and contact information for 15 teachers who all received a thank you letter with promotional messages and a poster for their class
- Cross-promotion with SWEP Partner Programs and tie-in distribution increased SWEP's impact dramatically and has the potential to increase student contacts by the thousands next year

In summary, in 2012-2013 the SWEP Educator served 115 teachers and approximately 3,790 students with direct programming, educational materials, or both through classroom/after-school programs and special events. By leveraging partnerships with WaterWays and Solano RCD, another 149 teachers and approximately 4,412 students benefitted from SWEP material resources. This puts the overall impact of SWEP at 264 teachers and approximately 8,202 students this year (teacher overlap notwithstanding).

Compared to last year's annual report when SWEP served 184 teachers and approximately 5,372 students with programs and/or materials, this year appears to be a significant increase. However, the following factors should be taken into account:

- EnviroScape loans to SRCD last year were not reported (over 1,100 student contacts) until the new Educator created 2012 CUWCC-formatted reports and discovered the omission, so last year's student contacts were closer to 6,472
- Last year's Educator provided direct programming to 120 classes. This year, owing to the teacher contact gap, direct programming was only 20% of last year's level at 26 classes
- The majority of this year's student contacts were through SWEP materials distribution, which may be considered lower-impact, but this is tempered by the fact that 95% of teachers receiving SWEP materials got them as a result of participating in another high-context water education program like class visits and field trip programs run by SWEP and its Partner Programs

Impact of Partner Programs

SWEP's Partner Programs are those which share the same educational goals as SWEP, are promoted in the SWEP brochures, and are funded by at least one of the SWEP member organizations. The following information summarizes their impact; detail data is included in the CUWCC-formatted CD.

- SCWA's Water Conservation Bookmark Art and Video PSA Contest
 - 296 entries were submitted in the K-12 Bookmark Art contest
 - 37 entries were submitted for the high school Video PSA contest
 - SWEP cross-promoted these contests with educators and passed out over 1,500 bookmarks featuring last year's contest winners as part of materials distribution
 - Bookmark/Video Coordinator cross-promoted SWEP's Project W.E.T. Workshop
- Solano Resource Conservation District
 - Three programs served 103 teachers and 3,032 students in multiple grades
 - All students used the Enviroscape pollution model, on loan to SRCD from SWEP
 - SRCD Coordinator cross-promoted SWEP's Project W.E.T. Workshop
- Loma Vista Farm
 - Contact with the coordinator pending as of the writing of this report
- ZunZun
 - Water themed musical assemblies served 10,369 elementary school students
 - ZunZun Coordinator cross-promoted SWEP's Project W.E.T. Workshop
- Rock Steady
 - Water themed juggling assemblies served 12,446 elementary school students
- WaterWays
 - Classroom and field trip programs served 1,440 students in 4th and 5th grade
 - 46 teachers and 1,380 students received various SWEP materials as "thank you" gifts
 - WaterWays Coordinator cross-promoted SWEP's Project W.E.T. Workshop

Reflecting on challenges and opportunities in 2012-2013

Transitioning to a new SWEP Educator presented several major challenges to SWEP's operations.

Challenge 1: Continuity of contact with past participating teachers, addressed by:

- Mining 2011-2012 participation data for teacher names, finding their contact information on school websites, and sending them emails to provide them with new Educator contact info
- Gratefully accepting referrals & requests forwarded by Ursula Heffernon, former SWEP Educator

Challenge 2: Outreach network incomplete (new territory, contact continuity, etc.), addressed by:

- Tracking down staff in each school district and SCOE responsible for distribution
- Learning what the (changing) policies are for each school district and following them

Challenge 3: SCOE distribution of print brochures and fliers unreliable, addressed by:

- Asking currently participating teachers if they ever received a print brochure to identify where gaps were occurring (least deliveries in Vacaville, least feedback from Vallejo and Benicia)
- Emailing PDFs of the brochure, or a link to the online version, to known teachers
- Printing, packaging, and hand delivering district-approved Project W.E.T. advertisements to every public and several private K-12 schools in Vallejo, Fairfield-Suisun, and Dixon

Reflecting on challenges and opportunities in 2012-2013, continued

Challenge 4: Analogous and/or competing programming, addressed by:

- Asking providers to showcase SWEP's other resources like educational materials to teachers they are already working with (since teachers are unlikely to have time for multiple programs)
- Changing focus or timing of SWEP programming to find open niches like careers or after-school
- Working with local educator networks and SWEP Committee members to identify and reduce areas of overlap/competition when possible

However, changing Educators presented new opportunities to take advantage of. The new Educator is:

Opportunity 1: well-connected to Vacaville, Travis, and Fairfield-Suisun schools & after-school programs

Opportunity 2: also the coordinator of a SWEP Partner Program, WaterWays, which directly serves students, teachers, and the public as well as cooperates with other programs in Solano County

Opportunity 3: up-to-date on changes in state and local education through her participation in a variety of professional development, networking, and teaching at UC Davis where she is also employed

Opportunity 4: experienced in MS Office, desktop publishing, and video & website production, meaning:

- A new emphasis on diversifying, personalizing, and updating outreach & communications with educators to make SWEP more user-friendly, more responsive, and more efficient
- Brochures, posters, and other materials were designed quickly in-house and at less cost
- Reporting templates in Excel matching current CUWCC reporting format were created
 - Data from 2012 (spring of last fiscal year and fall of this fiscal year) were reorganized to fill these templates and were distributed to each SWEP Committee member
 - Data from 2013 (Jan-June) will also be formatted and distributed in this manner
- The addition of an interactive online ordering component for SWEP is under investigation

Looking forward to 2013-2014

The SWEP Educator respectfully suggests these as some top priority projects for next fiscal year:

- Work with SCWA to add an online ordering component to the *Solano Saves Water* website
- Offer more teacher workshops (different sizes, times, locations, and curricula) to take advantage of the monumental shift in academic standards from fact-based to project-based learning
- Increase cross-promotional advertising between SWEP and its Partner Programs
 - Provide outreach and educational materials to program coordinators to distribute
 - Ask program coordinators to pass along special announcements to educators
 - Consider creating a "master list" of educator emails gleaned from partner coordinators
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DATE: June 12, 2013

TO: Kevin Cullen
Fairfield Suisun Sewer District

PROGRAM: Watershed Explorers Program 2013

DESCRIPTION: Solano Resource Conservation District has fulfilled 27 field trips for 63 classes across Solano County. All 1,761 students learned about stormwater and how they can be stewards of their watershed. Students took home a County-wide used oil brochure. And, for the hundreds of parents that attended, they also had the opportunity to learn firsthand about the impacts of storm water.

Through the Habitat Conservation Grant, the first edition of the Solano County OUTDOORS! Guide was completed in early 2013. The guide includes ten County parks and open space areas and is designed to leverage student participants' experiences and promote excitement and curiosity about visiting and exploring other outdoor spaces.



1170 N Lincoln, Suite 110 • Dixon, CA 95620
 (707) 678-1655 x 3 • FAX (707) 678-5001
 www.solanorcd.org

Name	School	# of Students	Date
Benicia - 3 field trips (7 classes)			
Suzanne James-Peters	Henderson	24	3/26/2013
Trinity Leiser	Henderson	28	3/26/2013
Renata Twamley	Henderson	25	3/28/2013
Danska	Henderson	28	3/28/2013
Wendy Meineche	Semple	27	5/7/2013
Tony Johnson	Semple	27	5/7/2013
Tony Stallings	Semple	28	5/7/2013
Vallejo - 8 field trips (17 classes)			
Wendy Kandel	Beverly Hills	26	2/12/2013
Janet Bennett	Beverly Hills	26	2/12/2013
Carole Hartley	Wardlaw	32	2/6/2013
Kirsten Morgan	Wardlaw	32	2/5/2013
David Wade	Wardlaw	32	2/5/2013
Alison Egan	Wardlaw	32	2/6/2013
Amy Cook	Wardlaw	32	2/6/2013
Hillary Gutierrez	Cooper	29	1/29/2013
Julie Grand	Cooper	30	1/29/2013
Genuina Mercado	Cooper	31	2/1/2013
Gayle Brown	Highland	34	2/1/2013
Rosemary Mullane	Highland	34	1/31/2013
Kevin Steele	Highland	34	1/31/2013
Kim Knight	Lincoln	32	2/13/2013
Amanda Propst	Lincoln	32	2/13/2013
Nicole Bandy	Vallejo Charter	31	1/30/2013
Jennifer O'Brien	Vallejo Charter	32	1/30/2013
Fairfield/Suisun - 10 field trips (21 classes)			
Crystal Smith	Suisun Elementary	20	5/15/2013
Corie Barloggi	Suisun Elementary	20	5/15/2013
Louise Craig	Suisun Elementary	20	5/15/2013
Jenel Jensen	Suisun Elementary	20	5/29/2013
Sharon Campbell	Suisun Elementary	20	5/29/2013
Linda Engel	Cleo Gordon	32	5/23/2013
Shirley Padgett	Cleo Gordon	32	5/23/2013
Carla Co	Cleo Gordon	32	5/30/2013
Emilie Castanon	Cleo Gordon	32	5/30/2013
Katherine Kerner	Suisun Valley	22	4/23/2013
Ms. Passama	Suisun Valley	22	4/23/2013
Emily Nute	Crescent	32	3/22/2013
Elaine James	Crescent	32	3/22/2013
Lilli Ede	Crescent	32	5/9/2013
Laura DeKloe	Crescent	32	5/9/2013



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Delicia Saclolo	Crescent	32	5/10/2013
Kathy Gambaro	Crescent	32	5/10/2013
Stacia Symanski	Cordelia Hills	30	4/9/2013
Cindy Noble	Cordelia Hills		4/9/2013
Debbie Stone	Cordelia Hills	30	4/9/2013
Nicole Rodgers	Oakbrook	31	4/16/2013
Brenda Cooper	Oakbrook	31	4/16/2013
Vacaville - 3 field trips (7 classes)			
Valerie Blanchard	Orchard	32	5/16/2013
Lola Kraft	Orchard	32	5/16/2013
Naomi Frederick	Cambridge	28	5/2/2013
Kathryn Carter Stewart	Cambridge	28	5/2/2013
Lenore Hubal	Hemlock	30	24-May
Lorane Younger	Hemlock	30	24-May
Shannon Gardener	Hemlock	15	24-May
Dixon - 2 field trips (7 classes)			
Melissa Moore	Dixon Montessori	25	5/28/2013
Kim Powers	Dixon Montessori	25	5/28/2013
Heather Rose DeLong	Dixon Montessori	25	5/28/2013
Leslie Morris	Dixon Montessori	25	5/28/2013
Sandy Crepps:	Gretchen Higgins	25	4/30/2013
Libba Brothers	Gretchen Higgins	25	4/30/2013
Courtney Young	Gretchen Higgins	28	4/30/2013
Rio Vista - 1 field trips (4 classes)			
Shauna Okusako	DH White	21	5/6/2013
Mrs. Cox	DH White	21	5/6/2013
Mrs. Briggs	DH White	21	5/6/2013
Mrs. Fraser	DH White	21	5/6/2013

Total Students	1761
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The Watershed Explorers Program

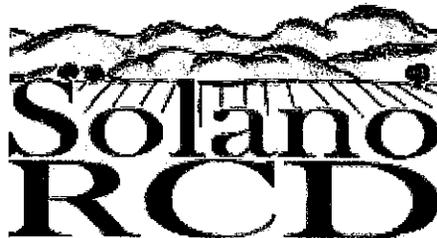
2012 Program Summary

Solano RCD is very grateful of its current local funders, which include:

Solano County & all City Jurisdictions
Vallejo Water Conservation Program
Fairfield Suisun Sewer District
Suisun Resource Conservation District
City of Suisun City
Vallejo Sanitation and Flood Control District
Potrero Hills Landfill

In conjunction with all school districts in Solano County

Written and Administered by
Solano Resource Conservation District



1170 N. Lincoln Street, Suite 110
Dixon, CA 95620
Tel (707) 678-1655x3

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FAIRFIELD-SUISUN
SEWER DISTRICT

The Watershed Explorers Program 2012 Program Summary

Overview

The Watershed Explorers Program utilizes science and place-based learning to build awareness and understanding of local creeks and watersheds, their unique ecosystems, and ways in which we care for them. In-the-field discussions and activities teach children about the fragile habitats of birds and other wildlife. Students learn the importance of water quality in their watershed and discover the impacts of urban runoff and its components: trash, oil, household chemicals and other human and domestic animal waste and discards. Concepts are directly linked to the California State Standards and the program offers local children, many of whom have little or no experience being in open space settings, a concrete, experiential introduction to their watershed and creatures that inhabit it.

Audience

The Watershed Explorers Program was located in Lynch Canyon Open Space in 2007 and 2008. Four classes participated (~120 students) in 2007. Eighteen classes participated (~ 427 students) in 2008. Four classes participated in an abridged program in Hanns Park along the Blue Rock Springs Corridor (~ 80 students) in 2009. In 2010, we expanded the program to encompass both locations and 807 students and 214 adults participated.

1,181 students from 54 classes in every city in the county participated in the 2011 program. In Hanns Park, Benicia and Vallejo students participated along the Blue Rock Springs Corridor. The Lynch Canyon location was moved to Rockville Hills Park in Fairfield. Students from Rio Vista, Fairfield, Suisun City, Vacaville and Dixon were involved in the program.

There were 923 students from 39 classes involved in the program this year. Six field trips took place at Hanns Park with a total of 11 classes of students. Nine field trips were held at Rockville Park with 28 classes participating. The program totals are show below. 1,198 students and parents attended at one of the two locations from February through June 2012 (about 300 less than 2011).

Unfortunately, in 2013 the program is projected to lose more funding due to the exhaustion of one of our funders resources. It is never the less our hope to expand locations and add on locations at Lagoon Lake in Vacaville and Sandy Beach Park in Rio Vista.

Total Participants

Date	City	School	Total Students	Total Adults	Total People
Watershed Explorers at Hanns Park 2012					
February 9, 2012	Vallejo	Cooper	35	8	43
February 16, 2012	Vallejo	Wardlaw	49	17	66
February 21, 2012	Vallejo	Beverly Hills	52	18	70
February 23, 2012	Vallejo	Cooper	51	11	62
February 28, 2012	Vallejo	Wardlaw	56	10	66
March 6, 2012	Benicia	Henderson	36	6	42

**The Watershed Explorers Program
2012 Program Summary**

Watershed Explorers at Rockville Hills Park 2012					
May 4, 2012	Vacaville	Alamo	78	39	117
May 10, 2012	Rio Vista	DH White	70	24	94
May 17, 2012	Vacaville	Orchard	43	15	58
May 24, 2012	Fairfield	David A Weir	99	17	116
May 25, 2012	Dixon	Dixon Montessori	67	25	92
May 30, 2012	Fairfield	Cordelia Hills	76	30	106
May 31, 2012	SC Unincorporated	Tolenas	58	9	67
June 1, 2012	Suisun City	Suisun Elementary	73	23	96
June 7, 2012	Fairfield	Cleo Gordon	80	23	103
PROGRAM TOTALS (Includes both locations)			923	275	1198

Goals and Objectives

The primary program goal is to help students develop an awareness of the outdoor, natural world. Participants leave the program:

- understanding the impact of storm water on their watershed, particularly the impacts of oil, chemicals and human debris in that storm water;
- learning individual stewardship practices in their watershed, i.e., how they can mitigate or eliminate the impacts of their own and their family's behaviors around storm water protection and water quality;
- understanding the difference between native and non-native, invasive plants;
- knowing about at least one pollinator species.

Prior to the field trip, teachers are provided with manuals to prepare students for their experience. Students are given journals and participate in various activities including:

- making their own paper watershed model to observe what happens when oil or other contaminants are improperly disposed of somewhere in the watershed;
- learning how water flows;
- counting the number of gallons of water they use each day and discussing ways to lessen their consumption;
- drawing the life cycle of a plant, reading about pollinators and discussing phenology and its relevance to the interconnectedness of humans, animals, weather and our environment.

Method

When students arrive for the field trip, they are greeted with an introduction to the Watershed Explorers Program. As young scientists, students are informed of their tasks and are equipped with instruments to assist them with data collection: their journal, clipboard, magnifying lens, and binoculars.

In the natural environment, students, teachers and parents engage in an interactive learning experience about the relationship between human behaviors in urban areas and the impact of those behaviors in wild or open space. An Enviroscape presentation demonstrates the dynamics of a watershed and how it is affected by pollution. This hands-on activity provides students with a three-dimensional visual of the watershed and allows them to see how urban runoff enters

The Watershed Explorers Program 2012 Program Summary

nearby storm drains and ends up in the Sacramento River, Suisun Marsh, or San Pablo Bay (depending on the students' residence). Students are instructed to think about the runoff on the topographies of their study watershed and their constructed watershed. Following the demonstration, students receive a used oil collection brochure, which is intended for the use of their parents/guardians.

As students look for traces of birds, insects and mammals, they hike through open spaces only miles from their home. Students use their journals and identify popular plant species, learn how some plants are pollinated and learn how seed dispersal works for different plants. While engaged in these activities, students are asked to continually keep in mind how everything in nature fits together.

During the field trip, usually for the first time, students have the opportunity to plant plugs or propagate plants. Students attending the Rockville Park field trip site had the chance to propagate California poppy's. Students were provided with a 'cow pot' or a small pot made from cow dung. It was a hit with students especially since the pots are biodegradable and can be placed directly into the ground. This was the first year students took the plants home with them. We plan to continue this method next year at the Rockville site.

At the Hanns Park site along Blue Rock Springs Creek students planted 1000 grass plugs of Creeping wild rye, Santa Barbara sedge, and Idaho fescue. The hands-on restoration component of our field trips is a valuable experience for the students. Nearly all students have never had the opportunity to get their hands in the soil and plant plugs. Additionally, students get to be a part of the installation of a major restoration project in their own town whose progress they are able to observe over a number of years.

At the end of the field trip the majority of students exclaim that the planting and seeing wildlife was their favorite components of the program. Many also note their enjoyment with the watershed model. They gain a more comprehensive understanding of the watershed by observing the course litter/oil/dog waste takes from the storm drain to the creek as they rain down with spray bottles on the enviroscape.

2012 Watershed Explorers Evaluation Narrative

A four-hour field trip cannot fill in the gaps in applied learning created by a curriculum that teaches only to test results, but we believe that our program allows participating children to develop a beginning experiential understanding of their local watershed systems and a curiosity to learn more about the natural world. We expect the students we work with to take away a heightened sense of stewardship, and some practical means of demonstrating good stewardship in their daily lives when they finish the Watershed Explorers program.

To measure the outcome of the program and our expectations, we administer a 6-question pre and post assessment to each participating student. Questions designed to measure students' understanding of two watershed systems (the water cycle, focusing on storm water runoff and native plant and pollinator systems), and to assess students' grasp of concrete ways they can interact with those systems to protect and enhance their watershed.

The Watershed Explorers Program 2012 Program Summary

We collected 860 pre-assessments from participating students who took part in the class at one of two different sites, followed by 827 post-assessments from the same students. Data tables providing of these results can be found at the end of this report.

In the pre-assessment, 21% of respondents were able to answer all questions with correct/partially correct answers. By the post assessment, 77% of the respondents were able to respond to all questions with correct/partially correct answers. This represents a performance increase of 55%, and represents a "grade" movement from an "F" to a high "C." Students who participated at the Blue Rock Springs Creek site demonstrated an increase of 57% in their overall assessment score: in the post-assessment 74% of respondents were able to provide correct or partially correct answers; while students who participated at the Rockville Park site increased their overall post-assessment score by 60% (79% of respondents providing correct or partially correct answers).

The orange columns in each of the data tables provide information about the total number of correct and partially correct answers for each question. The delta columns in the post assessment section demonstrate the percent change in correct answers from the pre-assessment to the post assessment. At the Blue Rock Springs Creek site, 97% of respondents responded with correct/partially correct answers to question 6 (the question that asked for students to demonstrate real-life applications to what they learned) in the post assessment. In the pre-assessment, only 36% of those same students gave correct/partially correct answers for that question, an improvement in performance of 61%. At the Blue Rock Springs Creek site the numbers were very similar: 96% of respondents responded with correct/partially correct answers to question 6 in the post assessment, compared to 46% of students able to provide correct/partially correct answers for that question in the pre-assessment, a 50% improvement in performance.

Improvement of this sort was generally consistent with all questions, though as is shown in the tables, some concepts were more difficult for the students than others. The differences between native and non-native/invasive organisms proved most difficult (59% of all respondents could correctly or partially correctly explain the difference). This represents a 9% increase in understanding of this concept from last year.

The post-assessment response improvements are better than the early years of the program and consistent with or slightly improved from last year's scores. We begin with a fresh audience each year, so we cannot compare results across program years, but it is interesting to look at the trends. They do suggest improvements in large societal understanding of watershed functions and importance. Additionally, we can attribute at least part of this improvement in post assessment performance with our continual fine tuning of the program and our teaching strategy, as well as with our growing number of established relationships with many of the teachers of participating classes, whom we assume – and in some cases know – incorporate the Watershed Explorers program into their curriculum.

The current budget reality has retarded one of Solano RCD's big picture program goals to expand watershed education efforts throughout the county to provide three outdoor watershed experiences during each child's K-12 school experience. We would like to have the opportunity to work with Watershed Explorer program alumni again in middle school and then again in high

The Watershed Explorers Program 2012 Program Summary

school. When that happens, we will have sufficient program depth to make some more sophisticated measurements of long-term retention of concepts and concrete use of the knowledge students take away from their Watershed Explorers experience.

Teacher Quotes

We had a fabulous time! Yes, it was a bit trying at the end with the delay from the bus, but we won't let that discolor our experiences. We had wonderful teachers (field trip educators) and all of the kids thoroughly enjoyed the day and learned very important information! We all appreciate everything you do!!! Janet Bennett, Beverly Hills, Vallejo

I just wanted to tell you what an outstanding field trip that was! The kids truly enjoyed it and learned a lot! The kids in my class say it is the best fieldtrip of their life and I thought the length and projects that the kids got to do were very valuable and just right. I appreciate letting the kids use the binoculars, as so much of science is taken away from kids these days that it makes this very organized fieldtrip even more valuable. I also heard from the parents that they really loved it. I look forward to the next one!
Carole Hartley, Wardlaw Elementary, Vallejo

This program is invaluable to the students of Fairfield. The students need to be out in nature to learn about the world we live in. And they need to be out in nature just to enjoy it as well. I grew up in the country, and I completely took for granted what a gift that was. As a kid, it was great fun just to be outside and observe the plants, trees, and wildlife. As an adult it is fun to watch the wonder of the children as they explore their world. All kids need that. I was blessed to share this experience with them, and I hope to return next year.
Lisa Drake, David A.Weir Elementary, Fairfield

Suisun Marsh Watershed & Wetland Education Program

2012 Final Report

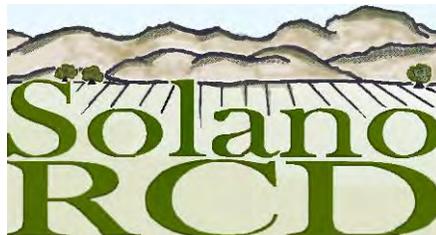
February 2013

Program Funding
Solano County Water Agency

Additional support for transportation costs
Fairfield-Suisun Sewer District

In conjunction with
Fairfield-Suisun Unified School District &
Vacaville Unified School District

*Report written by
Solano Resource Conservation District*



1170 N Lincoln, Ste 110 Dixon, CA 95620
Office 707.678.1655
Fax 707.678.5001

Suisun Marsh Watershed & Wetland Education Program
Final Report 2012

Solano County Water Agency (SCWA) is in the fifth year contracting the Solano Resource Conservation District (Solano RCD) to implement the Suisun Marsh Watershed & Wetland Education Program. Through SCWA's funding for 2012, 27 classes participated in the program. Fairfield-Suisun Sewer District provided \$2,500 to fund a portion of the transportation cost.

The curriculum was written in August of 2008 and has been revised each year. It includes three pre-field trip classroom lessons, one poster session, a five hour field trip at Rush Ranch and a post-field trip lesson. Marianne Butler with Solano RCD managed the program, Martha Rocha with Suisun RCD taught the in-class lessons and coordinated the field trips and Solano RCD's four program educators Don Broderson, Carla Murphy, Wendy Low and Deborah Bartens assisted on the field trips.

Students

In 2008, 4 classes of approximately 140 students participated from Crystal Middle School of Suisun City.

In 2009, 18 classes of approximately 600 students participated from Crystal Middle School in Suisun City, Grange Middle School in Fairfield, Sullivan Middle School in Fairfield, and Cambridge Elementary in the Travis Unified School District.

In 2010, 18 classes of approximately 626 students participated from Crystal Middle School in Suisun City and Grange Middle School in Fairfield.

In 2011, 33 classes of approximately 1,129 students participated from Crystal Middle School in Suisun City, Grange and Sullivan Middle Schools in Fairfield, Vaca Peña and Orchard Elementary in Vacaville, Center Elementary in the Travis District and Solano Middle School in Vallejo.

In 2012, 27 classes of approximately 882 students participated. Figure 1 provides details.

Teacher	School	# Students	# Classes
Karen Olson	Vaca Pena	168	5
Laura Klein	Suisun Valley	60	2
Ken Baptista	Crystal	30	1
Tia McCormick	Crystal	30	1
Carol Schnieder	Crystal	30	1
Carla Accettola	Crystal	67	2
Tammy Collins	Crystal	31	1
Mike Mulvihill & Lisa Lewis	Crystal	65	2
Acacia Tinsley	Tolenas	34	1
Breanna Rutledge	Tolenas	33	1
Megan Taylor	Tolenas	34	1
Dee Ramirez	Grange	72	2
Jim Bastian	Grange	34	1
Lori Bader	Grange	62	2
Stephanie Cassidy	Grange	68	2
Michelle McGilvary	Orchard	33	1
Maggie Vadnais	Orchard	31	1
TOTAL		882	27

Figure 1 – Students totals

Since 2008, 3,277 students in 100 classes have participated in the program.

Methods

Note: This section has not changed from the previous year

Beginning in late August, three classroom sessions are held. Each class then participates in a poster session at their school followed by the all-day field trip to Rush Ranch Open Space. Field trips are followed with a classroom session where students solidify what they've learned and talk about the ramifications of human behaviors on marine and marsh health. Martha Rocha with Suisun RCD presented the lessons separately to each class.

The student field manual is included with this report. The California science standards are aligned with each lesson. The standards are incorporated in Appendix A. Descriptions of the lessons are as follows:

The first lesson addresses the characteristics of a watershed and demonstrates how storm water pollution affects our creeks, marsh, and ocean. An enviroscape model is presented to visually show students how litter and debris runs off the pavement, flows into the storm drain, to the nearest creek, enters the Suisun Marsh and eventually makes its way to the ocean. Following, students work together to create a wetland model, which demonstrates the buffering and filtering effects of the marsh. The lesson works to bring home the concept that the Suisun Marsh is part of the students' watershed, while demonstrating the important features of a marsh.

In the second lesson, students look at the geography of Solano County as it relates to the Suisun Marsh Watershed through various types of maps. Students travel around the classroom in small groups, visiting different mapping stations and work together in groups to answer questions about each map. Maps for this session include a local area road map, Solano County topographic map, Suisun Marsh watershed map, a nautical chart of Suisun Bay, and an aerial map stretching from Lake Berryessa to Suisun Bay.

The third lesson consists of two central concepts. The first provides background on native and non-native plants. The second reveals the significance of plants and animals on the endangered, threatened, and species of concern lists that reside within the Suisun Marsh. Classes participate in a discussion on how human actions dictate whether a species is tipped over the edge to extinction, or brought back to increase in numbers for future generations. This lesson also provides instruction for the poster session. Students are broken into eight groups and assigned a species to research. The list of species included: Suisun Shrew, Chinook Salmon, Soft Birds-beak, Giant Garter Snake, Delta Smelt, Salt Marsh Harvest Mouse, Suisun Thistle, and the California Clapper Rail. Each group is provided with a packet of information on their species.

The poster sessions are primarily held prior to each class's field trip. Students research their species and present their findings to the class.

The all-day outdoor excursions at Rush Ranch are held September - December. Each field trip begins with a rotation through three stations centered on the topics of soil, water, and plants. At the soil station, students use a color chart to identify soil composition and use their hands to experience the different textures of soil in the marsh and grassland. At the water station, students test the water from First Mallard Slough for dissolved oxygen, temperature, phosphate, pH, and turbidity. As a small group, they discuss the data from the experiments and theorize how various types of pollution may affect Suisun Marsh and other wetlands. At the plant station, students taste pickle weed and set up a plant sampling quadrant by using a hula-hoop to randomly select a site. Students analyze the percent cover of plant species (native or non-native) within the site using plant guides created by Suisun RCD. Following the stations, students enjoy lunch at the picnic tables in the eucalyptus grove.

Suisun Marsh Watershed & Wetland Education Program
Final Report 2012

Next, students explore the Rush Ranch property by taking a nature walk through the different habitats, which include a eucalyptus grove, grassland and marsh. While on the walk, students look for scat, tracks, plants and wildlife. Each student is equipped with a pair of binoculars to look for birds and they have the opportunity to view several barn owls. An olive tree outside of the barn provides evidence of owls as students observe owl pellets. As students venture into the marsh they taste wild blackberry, which is a very exciting experience for them.

Following the interpretive walk, students sit quietly on top of Overlook Hill and write poetry about their experiences and impressions of the wetland. Teachers submit the poems to River of Words. River of Words is a California-based non-profit organization that connects kids to the watersheds they live in through art and poetry. The organization runs an annual Art and Poetry Contest in conjunction with the Library of Congress. All program participants receive a Watershed Explorers Certificate. In 2010 a student from Grange Middle School was a finalist in the One Block Contest.

After the field trip teachers are asked to play “Our Synthetic Sea,” which explains the harmful effects of marine debris, especially plastic, in an easy to understand scientific study by the Algalita Marine Research Foundation. The video prepares students for the final lesson on marine debris. The presentation discusses how birds and other marine life are affected by marine debris. A display box of an albatross bolus (consisting of squid beaks and plastic) is past around the class. We want students to feel within them that the land, the plants and the animals are all part of the same system we are and that their survival and health is not only as important as ours, but that the two are linked. Following the lesson, students take a post-assessment.

Deliverables and Results

Listed below are the tasks that were involved in initiating and completing the program. We have met the central program themes that include; watersheds, wetlands, marsh functions, native and non-native plants, storm run-off, endangered and threatened species, and watershed connections between their residential communities, the Suisun Marsh, the San Francisco Bay, and the Pacific Ocean. Sections of the curriculum were adapted from the California Coastal Commission’s *Waves, Wetlands and Watersheds* and *Our Wetlands, Our World* and the teaching objectives are directly linked to California science standards. Pre and post knowledge assessments were distributed and a summary of the evaluation analysis is listed below.

Task	Completion
<i>Planning and Administration</i>	
Contact teacher participants to establish their willingness to participate and schedule for classroom and field visits	Teachers were recruited through teacher meetings, phone calls to principals, and email fliers. Coordinated schedules with teachers.
Program administration	Worked to ensure the program ran smoothly, purchased supplies, student journals and nature center rental. Worked with the programs staff on their availability etc.
Budget tracking of program	Tracked all expenditures.
Assisted Program Admin by Suisun RCD	Martha Rocha coordinated while Marianne Butler was on leave.
Creation of final report w/ assessment results and photo documentation (per site)	Final report submitted January 2013
Program development and funding for future continuation and expansion	Funding discussions were held with the City of Vacaville, Office of Education, Solano County Department of Resource Management, Fairfield Suisun Sewer District, Solano Environmental Educators group, Solano County Board of Supervisors and other agencies to promote the program. Partnerships are continuously being created

Suisun Marsh Watershed & Wetland Education Program
Final Report 2012

Program Manager attends one field trip (one 8 hr field trip)	Attended lessons and field trips to ensure all material was provided accordingly.
Project Curriculum, Support Documents and Outreach	
Refine curriculum, update lessons	The program was edited and revised by Solano RCD. Fliers, teacher emails, teacher packets were updated.
Design and layout of student manual to Microsoft publisher (one time cost)	Student journals transferred to Microsoft publisher and updated with previous years suggestions
Preparation of supplies for program lessons and field trips	All materials were purchased and prepared for each lesson.
Evaluate assessment results	Kathleen Robins, DOC contractor evaluated and analyzed the program assessments.
Create press release for program	A press release was sent to all Solano County papers.
Project Implementation	
Suisun RCD training time as program manager and pre-program meeting	SRCD Coordinator received training
Program Assistant 1 pre-program meeting	Field educator attended program training
Program Assistant 2 pre-program meeting	Field educator attended program training
Program Assistant 3 pre-program meeting	Marianne Butler trained Martha Rocha, Carla Murphy, Don Broderson, Wendy Low and Deborah Bartens for program.
Solano RCD Educator pre-program meeting	Environmental educator from Suisun RCD instructed lessons.
Suisun RCD instruct pre and post-field trip classroom sessions (4 lessons per class @ 1.5 hrs)	Classroom sessions were prepared and instructed by Suisun RCD.
Solano RCD prepare for & manage field trips (7.5 hrs per trip)	N/A - Field trips were prepared and instructed by Suisun RCD for 2013.
Suisun RCD prepare for & manage field trips (7.5 hrs per trip)	Field trips were prepared and instructed by Suisun RCD.
Program Assistant 1 (6 hrs per field trip) + end of program organization, supply assessment and packaging for next year other program needs	Program assistant attend field trips and assisted with program needs. This was rotated with all three program educators.
Program Assistant 2 (6 hrs per field trip)	Program assistant attend field trips. This was rotated with all three program educators.
Program Assistant oversees poster session (1 hr per session)	Program assistant attend poster sessions. This was rotated with all four program educators.
Materials and Non Personnel Expenses	
Printing costs for student manuals	Total printing came to \$2,798.50
Solano RCD educator mileage (trips to RR (50 miles) and 10 additional trips to schools (30 miles)	Total miles came to \$270.84
Suisun RCD educator mileage - 4 trips to classroom per class (@ 30 miles) + trips to RR for sessions SRCD leads (@50 miles) divided by three to account for teaching classes in a row	Total miles came to \$1104.45
Nature Center Expense	The nature center was utilized on sixteen occasions for \$1,600
Costs for bus transportation (\$180/ bus)	20 bus invoices will be paid through Solano RCD with SCWA and FSSD funding. Not all invoices have been received.
Costs for bus transportation (\$430/ bus)	7 bus invoices will be paid through Solano RCD with SCWA and FSSD funding. Not all invoices have been received.
Field trip materials	Total supply budget came to \$741.53
First Aid/CPR Training for field trips - expected 2013	Will be completed in 2013
Video of program - expected 2013	Will be completed in 2013

Program Evaluation

This program took place over an eighteen-week period during September through December, 2012. 27 classes from 6 schools in Fairfield, Suisun City, and Vacaville participated in the program, which included three pre-field trip classroom lessons to help students prepare for the field trip, a guided field trip to the Suisun Marsh and two post-trip classroom lessons to process lessons learned. Student participants are asked to take a seven-question assessment quiz at the start of the program and again on the last day of the program.

The pre and post assessments consisted of the same questions, listed below in italics. Directly below each question is a representative answer from the post assessment.

1. What is a watershed?
A watershed is the area of land where water runs off the highest points to the lowest points, collecting in larger and larger creeks and sloughs and eventually draining into the ocean.
2. What watershed do you live in?
Suisun Marsh Watershed
3. Where does storm (rain) water go after it hits the pavement?
Water runs off the roads and paved surfaces, enters the storm drains, flows into creeks, into the Suisun Marsh and eventually drains into the Pacific Ocean.
- 4.a. What are the main threats to the Suisun Marsh?
Non-native invasive plants and pollution (which includes pesticides, fertilizers, oil, litter, pet waste, etc.)
- 4.b. Write the name of one species that is in danger now in the Suisun Marsh.
Soft birds beak Giant garter snake Delta smelt Chinook Salmon
Suisun Shrew Suisun thistle Salt harvest mouse CA Clapper Rail
5. Write down two ways you can help protect the Suisun Watershed.
* Throw litter into the garbage can and not on the ground
* Clean up after your dog
* Educate your friends and family on where litter goes
* Fix your car if its leaking oil
* Attend California Coastal Cleanup
6. How can non-native, invasive plants hurt the Suisun Marsh?
Non-native plants come from somewhere else, and may not provide habitat for wildlife. Non-native plants can out-compete the native plants, and disrupt the natural balance of the watershed

Evaluation Overview

Pre and Post Assessment Quizzes

Children who participated in this program completed a pre-assessment quiz prior to receiving any program instruction. After participating in the program's in-class lessons and the Rush Ranch fieldtrip, students completed a post-assessment quiz composed of the same questions. Both sets of responses were randomized (to remove correlation to class or field trip date) and a 10% sample of each set of responses was chosen for analysis.

Student answers on the pre-assessment instruments in the 10% sample reflected very low knowledge about the concepts examined in the quiz. The greatest number of correct answers given for any question (asking participants to identify the watershed they lived in) in the pre-assessment represented just 9% of the sample for the question. Only 3% of the sample students were able to correctly answer 5 of the 6 pre-assessment questions, and none of the sample could correctly identify two good stewardship practices to help protect the Suisun Marsh.

When we looked at partially correct answers- those that identified at least some portion of the concept we were looking for- the numbers rose from 3% to 8%. 89% percent of the sample provided incorrect or no answers to the pre-assessment quiz questions.

Student responses in the sample of post-assessment quizzes showed an average improvement of 66% when considering correct and partially correct answers, compared to an improvement of 59% in 2011. 97% percent of students in the sample were able to correctly or partially correctly name their watershed, while 80% could identify major threats to the Suisun Marsh. This number is higher than last year's program performance (95% correct and partially correct). In this year's sample, 89% of participants could also identify two stewardship behaviors they could enact to protect the marsh, and 84% could identify an endangered species endemic to the Marsh. When we went back to check these correlations, we found that when the student could demonstrate understanding of one of these concepts, they almost always could demonstrate that understanding (at least partially) for all four of them.

Sample performance on the question about storm water runoff improved from 17% correct and partially correct responses in the pre-assessment to 82% correct and partially correct responses in the post-assessment, an improvement of 65%. Performance improvement on this question matches that of the ecosystem questions discussed above.

The greatest improvement in sample performance was in response to the home watershed identification question and to the question about endangered species in the Marsh. In the pre-assessment, just 4% of the sample was able to correctly or partially correctly identify one of the endangered species that resides in the Marsh. By the post-assessment, this number rose to 84%. This improvement is greater than the improvement seen on this response last year, though that sample overall showed greater mastery of the concepts on the post assessment. It is also slightly better than the improvements in 2010 and 2009. This particular concept is one that has a very strong student research component to it. Students are given information, and then do further research on their own, using on-line and print resources. They compile this research into a poster, which they present at a poster session at their school during the course of the program.

There was also great improvement in the sample responses to the individual stewardship question, with 89% of respondents able to name at least one good individual behavior to protect the Marsh, up from 23% in the pre-assessment

As in years past, and similar to every K-12 watershed education program Solano RCD runs, mastery of the definition of a watershed continues to be a struggle. In the pre-assessment, 7% of the sample was able to provide a correct or partially correct answer to the question "What is a watershed?" This number improved to 38% of the sample correctly answering the question in the post assessment. This number is slightly lower than last year, and begs numerous questions. The program curriculum is slightly refined each year, but this concept is a standard and important one. It seems to be difficult for a lot of people: not all adults are familiar with the concept, and as with most things, mastery improves with greater exposure.

The other topic that seemed to be a little more difficult for sample students was the concept of invasive/non native species. In the pre-assessment, 5% of the sample responded with correct or partially correct answers. This number improved greatly in the post assessment (to 71%, by 66%- a significant improvement, and consistent with improvement on other concepts).

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Overall, 77% of respondents gave correct or partially correct answers to all questions, compared to the 11% able to do so in the pre-assessment. Again, these results are both lower than the results from last year's program, but are consistent with results from the 2009 and 2010 program results.

In conclusion, students represented by the sample improved dramatically in their ability to answer every question, indicating an overall gain in understanding of the big concepts we are working with. The correlation in answers about linked concepts indicates participants learned more than just rote answers to individual questions, and suggests the beginnings of a good foundation for further learning and understanding of the multi-disciplinary concepts necessary for them to become good stewards of their watershed and environment.

Appendix A – Quotes and Student Poems

Teacher Quotes

"I am excited to be a part of this local program that has such a global impact."- Laura Klein, Suisun Valley Elementary

"I think it's a wonderful program that lets the children explore learning in an outside environment. I enjoy taking part in it and have myself learned through taking part in this great program." - Deanne Rameriz, Grange Middle School

"To me, this program is invaluable; it gives students real-life information about very important topics."- Jim Bastian, Grange Middle School

"This program is the bright spot of the year. The hands-on experience students get...priceless!"- Ken Baptista, Crystal Middle School

Student Quotes

"My favorite part of this program was the poster session because I liked learning about the endangered animals/plants and ways I can help them." - Peyton N., Suisun Valley Elementary

"My favorite activity was Lesson 3 where we learned about endangered and threatened species because I became more aware of how pollution, human development and non-native species affect animals lives too." - Syd, Suisun Valley Elementary

"My favorite part was the field trip because we went to a real marsh. - Harrison, Suisun Valley Elementary

My favorite part "was Lesson 1 because it showed how water moves through the watershed."- William Jones, Suisun Valley Elementary

"My favorite part of the program was the field trip because we actually got to explore and do what scientists do." -Treshon Davidson, Grange Middle School

"My favorite part of the program was learning how a watershed works. It was interesting to me that a watershed is everywhere." - Ryan Cabasal, Grange Middle School

"My favorite part of the program was the soil station because we got to get our hands dirty." - Minerva, Grange Middle School

"My favorite station on the field trip was the nature walk because it was so peaceful and quiet."- Joel Bilboa, Grange Middle School

"My favorite part was when we tested soil and found rabbit scat."- Meghen Park, Grange Middle School

"My favorite part of this program was the field trip because I got to see animals and plants that I have never seen before AND I got to go out and explore nature in an amazing way." -Ana, Grange Middle School

"My favorite part of this program was going on the field trip and looking for animal tracks. I liked it because it was fun and I noticed a lot of evidence the animals left behind."- Ayanna Anderson

Student Poems

You hear the birds chirp
as you sit on top of the hill
enjoying nature
at the Suisun Marsh.

Calms you, takes you away
from stress or technology.

Nature is great,
thanks to Mother Nature.

Anaiah Guevarra, Grange Middle School

The water flows as I walk through the breeze.

The plants and animals are spreading their beauty
that they were gifted with.

The sun shines high in the sky
while birds fly spreading their joy.

This place spreads their love
even when people don't care about them.

But this place will spread its love
to the world.

Gaberiela Gallegos, Grange Middle School

Oh, Suisun Marsh
with your many species
exclusive to you.

Threatened by non-native species,
pollution and development.

When non-native plants threaten your plants
do not just lay down and die.

They fight!

Even it will take a long time.

You will win this war inside beauty.

Christopher Hamilton, Grange Middle School

Appendix B - Sixth Grade Standards

Lesson One - The Watershed and Wetlands of Suisun Marsh

Science Content Standards

- 2.a. Students know water running downhill is the dominant process in shaping the landscape, including California's landscape.
- 2.b. Students know rivers and streams are dynamic systems that erode, transport sediment, change-course and flood their banks in natural and recurring patterns.
- 2.d. Students know earthquakes, volcanic eruptions, landslides, and floods change human and wildlife habitats.
- 6.b. Students know different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.
- 7.a. Develop a hypothesis.
- 7.d. Communicate the steps and results from an investigation in written reports and oral presentations.
- 7.e. Recognize whether evidence is consistent with a proposed explanation.
- 7.h. Identify changes in natural phenomena over time without manipulating the phenomena (e.g., a tree limb, a grove of trees, a stream, a hillslope).

Lesson Two - Mapping Suisun Marsh

Science Content Standards

- 7.a. Develop a hypothesis.
- 7.f. Read a topographic map and a geologic map for evidence provided on the maps and construct and interpret a simple scale map.

Investigation & Experimentation

- 1h. Students will read and interpret topographic and geologic maps.

History-Social Science

- 3.1.1. Identify geographical features in their local region (e.g., deserts, mountains, valleys, hills, coastal areas, oceans, lakes).

Lesson Three – Species of Suisun Marsh

Science Content Standards

- 5.c. Students know populations of organisms can be categorized by the functions they serve in an ecosystem.
- 5.d. Students know different kinds of organisms may play similar ecological roles in similar biomes.
- 5.e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

Field Trip - Rush Ranch

Science Content Standards

- 2.a. Students know water running downhill is the dominant process in shaping the landscape, including California's landscape.

- 2.b. Students know rivers and streams are dynamic systems that erode, transport sediment, change-course and flood their banks in natural and recurring patterns.
- 2.d. Students know earthquakes, volcanic eruptions, landslides, and floods change human and wildlife habitats.
- 5.a. Students know energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis and then from organism to organism through food webs.
- 5.b. Students know matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.
- 5.c. Students know populations of organisms can be categorized by the functions they serve in an ecosystem.
- 5.d. Students know different kinds of organisms may play similar ecological roles in similar biomes.
- 5.e. Students know the number and types of organisms and ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.
- 6.b. Students know different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.
- 7.a. Develop a hypothesis.
- 7.b. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.
- 7.d. Communicate the steps and results from an investigation in written reports and oral presentations.
- 7.e. Recognize whether evidence is consistent with a proposed explanation.
- 7.h. Identify changes in natural phenomena over time without manipulating the phenomena (e.g., a tree limb, a grove of trees, a stream, a hillslope).

English Content Standards

- 3.4 Define how tone or meaning is conveyed in poetry through word choice, figurative language, sentence structure, line length, punctuation, rhythm, repetition, and rhyme.

Math Content Standards

- Number Sense 1.2. Interpret and use ratios in different contexts (e.g. batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations.
- Algebra and Functions 2.2. Demonstrate an understanding that rate is a measure of one quantity per unit value of another quantity.
- Algebra and Functions 2.3. Solve problems involving rates, average speed, distance and time.

Poster Session

English Content Standards

- 2.1 Identify the structural features of popular media (e.g., newspapers, magazines, online information) and use the features to obtain information.
- 2.4 Clarify an understanding of texts by creating outlines, logical notes, summaries, or reports.

Writing Content Standards

- 1.4 Use organizational features of electronic text (e.g., bulletin boards, databases, keyword searches, e-mail addresses) to locate information.
- 1.6 Revise writing to improve the organization and consistency of ideas within and between paragraphs.
- 2.3 b. Support the main idea or ideas with facts, details, examples, and explanations from multiple authoritative sources (e.g., speakers, periodicals, online information searches).

Written Oral and English Conventions

- 1.1 Use simple, compound, and compound-complex sentences; use effective coordination and subordination of ideas to express complete thoughts.
- 1.2 Identify and properly use indefinite pronouns and present perfect, past perfect, and future perfect verb tenses; ensure that verbs agree with compound subjects.
- 1.3 Use colons after the salutation in business letters, semicolons to connect independent clauses, and commas when linking two clauses with a conjunction in compound sentences.
- 1.4 Use correct capitalization.
- 1.5 Spell frequently misspelled words correctly (e.g., *their, they're, there*).

Listening and Speaking

- 1.1 Relate the speaker's verbal communication (e.g., word choice, pitch, feeling, tone) to the nonverbal message (e.g., posture, gesture).
- 1.2 Identify the tone, mood, and emotion conveyed in the oral communication. 1.3 Restate and execute multiple-step oral instructions and directions.
- 1.4 Select a focus, an organizational structure, and a point of view, matching the purpose, message, occasion, and vocal modulation to the audience.
- 1.5 Emphasize salient points to assist the listener in following the main ideas and concepts.
- 1.6 Support opinions with detailed evidence and with visual or media displays that use appropriate technology.
- 1.7 Use effective rate, volume, pitch, and tone and align nonverbal elements to sustain audience interest and attention.

Speaking Applications

- 2.2 Deliver informative presentations:
 - a. Pose relevant questions sufficiently limited in scope to be completely and thoroughly answered.
 - b. Develop the topic with facts, details, examples, and explanations from multiple authoritative sources (e.g., speakers, periodicals, online information).

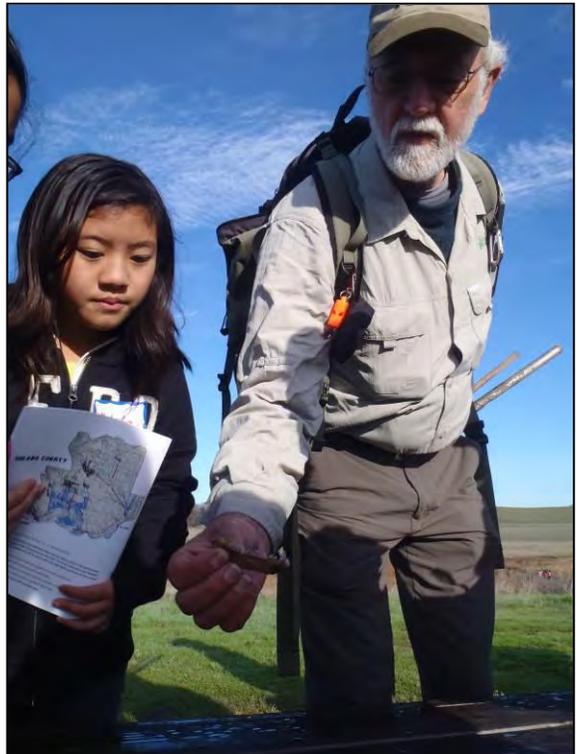
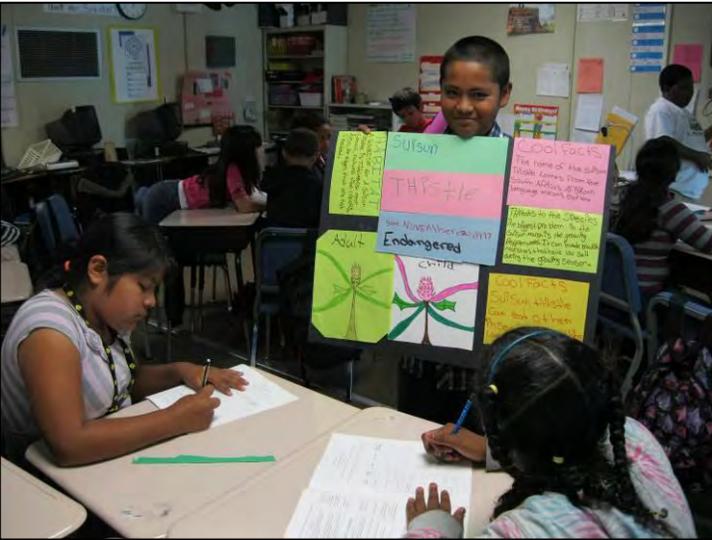
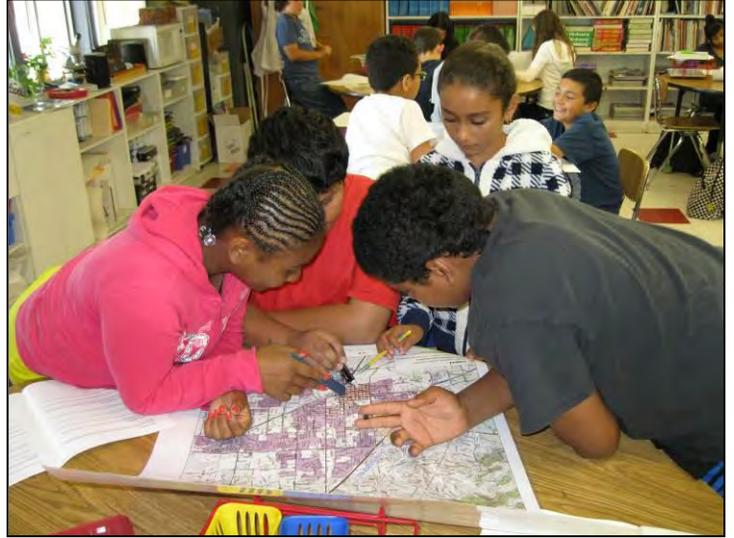
Lesson Four – Tracking their Travels and Tracking Plastic Trash

Science Content Standards

- 5e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

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Photo Documentation



Section 8 - Provision C.8 Water Quality Monitoring

C.8 ► Water Quality Monitoring

State below if information is reported in a separate regional report. Municipalities can also describe below any Water Quality Monitoring activities in which they participate directly, e.g. participation in RMP workgroups, fieldwork within their jurisdictions, etc.

Summary:

Sampling commenced in March of 2013 with the collection of parameters described in table 8.1 of the MRP. As described in C.8.g, the electronic reporting of status and trends data will be submitted to the Water Board's on January 15, 2014 and will include data collected during the period of September 30, 2012 through October 1, 2013. The second Urban Creeks Monitoring Report will be submitted to the Water Board on March 15, 2014 and will include data collected from the same period of time.

During FY 12-13, the Program contributed to the BASMAA Regional Monitoring Coalition (RMC). In addition, we contributed financially to the Regional Monitoring Program for Water Quality in the San Francisco Estuary (RMP) and were represented at RMP committees and work groups. Monitoring efforts and results are documented in a separate report submitted March 15 of each year, as required in Provision C.8. For additional information on monitoring activities conducted by the Program, BASMAA RMC and the RMP, see the C.8 Water Quality Monitoring section of the Regional Supplement FY 12-13 Annual Report.

Section 9 – Provision C.9 Pesticides Toxicity Controls

C.9.b ► Implement IPM Policy or Ordinance					
Report implementation of IPM BMPs by showing trends in quantities and types of pesticides used, and suggest reasons for increases in use of pesticides that threaten water quality, specifically organophosphates, pyrethroids, carbaryl, and fipronil. A separate report can be attached as evidence of your implementation.					
Trends in Quantities and Types of Pesticides Used⁶⁰					
Both Program cities have adopted IPM policies. This provision is handled at the city level. Please see individual city reports for this information.					
Pesticide Category and Specific Pesticide Used	Amount ⁶¹				
	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
Organophosphates	NA	NA	NA	NA	
Product or Pesticide Type A	NA	NA	NA	NA	
Product or Pesticide Type B	NA	NA	NA	NA	
Pyrethroids	NA	NA	NA	NA	
Product or Pesticide Type X	NA	NA	NA	NA	
Product or Pesticide Type Y	NA	NA	NA	NA	
Carbaryl	NA	NA	NA	NA	
Fipronil	NA	NA	NA	NA	

⁶⁰ Includes all municipal structural and landscape pesticide usage by employees and contractors.

⁶¹ Weight or volume of the product or preferably its active ingredient, using same units for the product each year. The active ingredients in any pesticide are listed on the label. The list of active ingredients that need to be reported in the pyrethroids class includes: allethrin, bifenthrin, beta-cyfluthrin, bioallethrin, cyfluthrin, cypermethrin, cyphenothrin, deltamethrin, esfenvalerate, etofenprox, fenpropathrin, gamma-cyhalothrin, imiprothrin, lambda-cyhalothrin, metofluthrin, permethrin, phenothrin, prallethrin, resmethrin, sumithrin (d-phenothrin), tau-fluvalinate, tefluthrin, tetramethrin, tralomethrin, cis-permethrin, and zeta-cypermethrin.

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C.9.c ▶ Train Municipal Employees	
Enter the number of employees that applied or used pesticides (including herbicides) within the scope of their duties this reporting year.	NA
Enter the number of these employees who received training on your IPM policy and IPM standard operating procedures within the last 3 years.	NA
Enter the percentage of municipal employees who apply pesticides who have received training in the IPM policy and IPM standard operating procedures within the last three years.	NA

C.9.d ▶ Require Contractors to Implement IPM				
Did your municipality contract with any pesticide service provider in the reporting year?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes, attach one of the following:				
<input type="checkbox"/>	Contract specifications that require adherence to your IPM policy and standard operating procedures, OR			
<input type="checkbox"/>	Copy(ies) of the contractors' IPM certification(s) or equivalent, OR			
<input type="checkbox"/>	Equivalent documentation.			
If Not attached , explain:				
Both Program cities have adopted IPM policies. This provision is handled at the city level. Please see individual city reports for this information.				

C.9.e ▶ Track and Participate in Relevant Regulatory Processes
Summarize participation efforts, information submitted, and how regulatory actions were affected OR reference a regional report that summarizes regional participation efforts, information submitted, and how regulatory actions were affected.
<p>During FY 12-13, the Program participated in regulatory processes related to pesticides through contributions to BASMAA and CASQA. For additional information, see the Regional Pollutants of Concern Report submitted by BASMAA on behalf of all MRP Permittees.</p> <p>Furthermore, through discussions with other Clean Water Programs, the Fairfield Suisun Urban Runoff Program has learned the following the regarding regulatory process and DPR:</p> <p>New California Department of Pesticide Regulation (DPR) requirements that become effective July 19 will modify the way that professional applicators apply pyrethroid insecticides around buildings. In parallel, new pyrethroid product labeling being implemented voluntarily by manufacturers at DPR's request--including special labels for the most persistent pyrethroid, bifenthrin--will provide further water quality protection. Both the regulations and the labeling will reduce treatments of outdoor impervious surfaces, thus reducing the quantity of pyrethroids that can be washed directly into gutters and storm drains when it rains or when water like irrigation overflow runs across treated surfaces. Together, the</p>

regulations and the new labeling will reduce the amount of pyrethroid insecticides in urban stormwater runoff by 80-90%.

DPR developed the regulations and requested manufacturers modify product labels in response to the finding that pyrethroid insecticides are causing water and sediments in California urban creeks to be toxic to sensitive aquatic organisms. California Water Boards and the California Stormwater Quality Association (CASQA), using information assembled by the government-funded Urban Pesticides Pollution Prevention Project (UP3 Project), worked with DPR toward development of a solution to this water pollution problem.

University of California scientific research played a key role in the characterization of the pyrethroid insecticide water pollution problem and in identification of application practices that reduce pyrethroid use while continuing to control pests. California's professional structural pest control applicators provided DPR and other agencies invaluable information about pyrethroid application practices and the practical aspects of controlling insects around buildings.

UP3 Project analysis--based on pyrethroid monitoring data, pyrethroid use data, and urban runoff modeling by U.C. Davis-- suggests that the regulations will largely--but not completely--end widespread water and sediment toxicity from pyrethroids in California's urban watersheds. In some watersheds, lower levels of toxicity may continue. In a larger number of watersheds, pyrethroid concentrations will continue to exceed aquatic life protection benchmarks such as the water quality criteria developed by UC Davis with funding from the Central Valley Water Board.

In coming months, some professional pest control operators are likely to switch to other insecticides, some of which may create new water pollution problems. A recent CASQA monitoring data summary suggests that one substitute insecticide, fipronil, may already be washing into urban creeks at levels sufficient to harm sensitive aquatic organisms.

California government agencies will be monitoring urban creeks and working together toward making further adjustments as necessary to protect water quality.

Businesses and residents can prevent pesticide-related water pollution by employing effective pest control practices that minimize the need to use pesticides. Professional applicators certified by Ecowise or Green Pro provide this type of pest control. Do-it-yourselfers can learn how to implement these practices from Our Water Our World or University of California's Integrated Pest Management Program.

DPR's Enforcement Branch will be working with California's Agricultural Commissioners and California professional pest control applicators to implement the new regulations. For implementation questions, DPR recommends contacting George Farnsworth, Chief of DPR's Enforcement Branch at garnsworth@cdpr.ca.gov

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C.9.f ▶ Interface with County Agricultural Commissioners				
Did your municipal staff observe any improper pesticide usage or evidence of improper usage (e.g., pesticides in storm drain systems, along street curbs, or in receiving waters) during this fiscal year?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
If yes, provide a summary of improper pesticide usage reported to the County Agricultural Commissioner and follow-up actions taken to correct any violations. A separate report can be attached as your summary.				

C.9.g. ► Evaluate Implementation of Source Control Actions Relating to pesticides

(For FY 12-13 Annual Report only) Submit a report that evaluates; 1) the effectiveness of control measures implemented, and 2) attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (Provision C.8.). If needed, the report should include the following:

- Improvements to existing control measures and/or additional control measures required.
- A plan to implement improved and/or new control measures.

Summary:

On March 20, 2013 the Program sampled upper Laurel Creek (Site 207R00236) in the northern portion of Fairfield city limits. Samples drawn and analyzed at this location indicate that there were no significant reductions in survival or growth in any of the species tested. Species tested, as per the requirements of the MRP (C.8. Table 8.1), include: *Selanastrum capricornutum*, *Ceriodaphnia dubia*, *Hyaella Azteca* and Fathead Minnow. Please see attached summary for FSURMP ambient water quality monitoring on Laurel Creek.

Summertime water column toxicity and sediment toxicity samples were taken at upper Laurel Creek (Site 207R00236) on July 17, 2013. Results from the sampling event will be reported again through the Urban Creeks Monitoring Report, which is due on March 15, 2014. Since *Hyaella Azteca* (sediment) toxicity result was not <50% of the control result, a follow-up "monitoring" (SSID) project per MRP Table 8.1 and provision C.8.d.i. was not triggered.

- Adopting IPM Policy/Ordinance

As required by the MRP, both cities in the Program adopted IPM policies in 2011. Based on comments received by the Water Board on April 3, 2012 both cities revised their IPM policy, during fiscal year 2012/13, to reflect the requested changes by the Water Board. Primary changes to both cities policies focused on an IPM hierarchy. Both cities adopted IPM policies very similar to the San Mateo County Stormwater Pollution Prevention Program.

- Municipal Staff Training

Annually both cities provide training to all employees who apply pesticides. There does not appear to be a need for improvement at the city level for municipal staff training for pesticide application.

- Requiring Contractors to Implement IPM

Both cities' now have IPM policies which require city staff to review its purchasing procedures, contracts or service agreements with pest-control contractors to determine what changes, if any, need to be made to support the implementation of their policy to ensure the implementation of

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IPM during contract work. These policies were adopted this fiscal year at the city level. Purchasing procedures, contracts and service agreements with pest-control contractors have been reviewed by city staff.

C.9.h.ii ► Public Outreach: Point of Purchase

Provide a summary of public outreach at point of purchase, and any measurable awareness and behavior changes resulting from outreach (here or in a separate report); **OR** reference a report of a regional effort for public outreach in which your agency participates.

Summary:

Point-of-purchase outreach occurred at the following stores in the Fairfield-Suisun area:

Orchard Supply Hardware (Facility currently being converted to Lowe's)
 1500 Oliver Road
 Fairfield Ca. 94534
 707-427-8665

Home Depot Fairfield
 2121 Cadenasso Drive
 Fairfield, Ca. 94533
 707-426-9600

Ace Hardware Suisun (facility closed during the fiscal year)
 252 Sunset Ave.
 Suisun City Ca 94585
 707-428-4223

Based on information received from management at OSH and Home Depot, the percentage increase in their less toxic category are 29% and 22-25% respectively in Northern California.

These numbers are approximate and there were many factors contributing to these increases, including:

1. An early dry spring
2. In improved economy
3. An increased consumer interest and demand in organic and green products
4. Increased selection and higher visibility of less toxic products due to better displays and OWOW participation in end-cap displays

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5. Increased participation of OWOW at these retailers (more call frequency as a whole)
6. Increased participation of OWOW with IPM Advocates at regional road shows and district kick-off meetings where we met with hundreds of employees we never have before reached in such numbers.
7. Increased trainings of Home Depot and OSH employees at OWOW stores
8. Increased tablings at these two retailers

Also, see attached Program report from consultant Annie Joseph regarding Our Water Our World, including other outreach efforts regarding pesticide reduction or the use of less toxic products to pesticides. For additional information on regional efforts, see the Regional Pollutants of Concern Report for FY2012-2013 submitted by BASMAA on behalf of all MRP Permittees.

C.9.h.iv ► Pest Control Contracting Outreach

(For FY 12-13 Annual Report only) Document effectiveness of outreach to residents who use or contract for structural or landscape pest control **OR** reference a regional that summarizes these actions.

Summary:

Fairfield Suisun Pesticide Applicators Outreach; In 2012 approximately 19 flyers were sent throughout the Fairfield Suisun jurisdictional area; this was a Program event to promote the Professional Association of Pesticide Applicators (PAPA). Several calls were received back from the pest control operators with the majority of the callers needing clarification as to why the Program was supporting the Association.

See the C.9 Pesticides Toxicity Control section of BASMAA's FY 12-13 Regional Pollutants of Concern Report for a summary of the Program's participation in and contributions towards regional public outreach to pest control operators and landscapers to reduce pesticide use. The Program works closely with Annie Joseph to better understand the real issues associated with pesticide applications. It is through this relationship that the Program understands that a concerted effort should be directed toward the PCOs.

On January 25, 2013, the Program attended the Solano County Master Gardener Training at 501 Texas Street in Fairfield, CA. IPM Consultant Annie Joseph along with the Program manager, provided IPM training for Solano County Master Gardeners, who in turn instruct the general public on safe gardening practices at local farmers' markets and events throughout the county. Program representative on hand to describe connectivity of the streets to our local creeks; the difference between storm water and wastewater and how pesticides can impact the environment. 35 Master Gardeners were in attendance, based on the interaction between the presenters and speakers, the audience was highly engaged. Initial understanding of the direct connection between the streets and creeks appeared to be low. Upon completion of the event the understanding of the direct connection was very near to 100%.

During outreach events OWOW flyers were prominently displayed. Discussions occurred during the events regarding the control of particular pests. Flyers were described and explained to the individuals expressing interest. The Program elected not to count the number of brochures distributed nor the number of residents contacted. Annually, the Program orders print materials from OWOW. During 2013, 4,500 fact sheets were ordered from BASMAA. Please see attached order form.

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Throughout the year multiple announcements of city HHW collection facilities were made. The Program elected not to count the number of brochures distributed nor the number of residents contacted.

C.9.h.vi ► Public Outreach: Pest Control Operators

Provide a summary of public outreach to pest control operators and landscapers and reduced pesticide use (here or in a separate report); **OR** reference a report of a regional effort for outreach to pest control operators and landscapers in which your agency participates.

Summary:

Solano County Master Gardener Training; January 27, 2012; 501 Texas Street , Fairfield, CA. IPM Consultant Annie Joseph along with Program manager, provided IPM training for Solano County Master Gardeners, who in turn instruct the general public on safe gardening practices at local farmers' markets and events throughout the county. Program representative on hand described connectivity of the streets to our local creeks; the difference between storm water and wastewater; the wastewater treatment process; how pesticides can impact the process. 38 Master Gardeners were in attendance, based on the interaction between the presenters and speakers, the audience was highly engaged. Initial understanding of the direct connection between the streets and creeks appeared to be low. Upon completion of the event the understanding of the direct connection was very near to 100%.

See attached Program report from consultant Annie Joseph regarding Our Water Our World, including other outreach efforts regarding pesticide reduction or the use of less toxic products to pesticides. For additional information on regional efforts, see the Regional Pollutants of Concern Report for FY2012-2013 submitted by BASMAA on behalf of all MRP Permittees.

Response to Water Board Staff Comments on Section 9, Provision C.9, of FY 11-12 Annual Report

Use this area to respond to any Water Board staff comments on Section 9 of your FY 11-12 Annual Report, and refer to any required submittals that are attached.

As required by the MRP, both cities in the Program adopted IPM policies in 2011. Based on comments received by the Water Board on April 3, 2012 both cities revised their IPM policy, during fiscal year 2012/13, to reflect the requested changes by the Water Board. Primary changes to both cities policies focused on an IPM hierarchy. Both cities adopted IPM policies very similar to the San Mateo County Stormwater Pollution Prevention Program. Please see attached current IPM policies from each city.

Kevin Cullen
 Fairfield-Suisun Sewer District
 1010 Chadbourne Road
 Fairfield, CA 94534

April 30, 2013

Kevin:

I have enclosed our report "Evaluation of the Chronic Toxicity of Fairfield-Suisun Urban Runoff Management Program Stormwater" for the sample that was collected March 20, 2013. The results of this testing are summarized below.

Toxicity summary for the FSURMP stormwater sample.						
Sample Station	Toxicity relative to the Lab Control treatment?					
	<i>Selenastrum capricornutum</i>	<i>Ceriodaphnia dubia</i>		<i>Hyaella azteca</i>	Fathead Minnow	
	Growth	Survival	Reproduction	Survival	Survival	Growth
207R00236	no	no	no	no	no	no

Chronic Toxicity of FSURMP Stormwater to *Selenastrum capricornutum*

There was no significant reduction in algal growth in the FSURMP stormwater sample.

Chronic Toxicity of FSURMP Stormwater to *Ceriodaphnia dubia*

There was no significant reduction in *Ceriodaphnia dubia* survival or reproduction in the FSURMP stormwater sample.

Chronic Toxicity of FSURMP Stormwater to *Hyaella azteca*

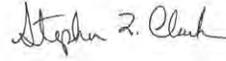
There was no significant reduction in *H. azteca* survival in the FSURMP stormwater sample.

Chronic Toxicity of FSURMP Stormwater to Fathead Minnows

There was no significant reduction in fathead minnow survival or growth in the FSURMP stormwater sample.

If you have any questions regarding the performance and interpretation of these tests, feel free to contact my colleague Eddie Kalombo or myself at (707) 207-7760.

Sincerely,



Digitally signed by
Stephen L. Clark
Date: 2013.05.01 12:06:21
-07'00'

Stephen L. Clark
Vice President/Special Projects Director

This testing was performed under Lab Order 20702. The test results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report, and only relate to the sample(s) tested. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk.

Fairfield Suisun Sewer District OWOW Report 2012/2013 August through June 2013
Annie Joseph
Ann Joseph Consulting

On 8/10/12, 9/21/12, 11/8/12, 11/30/12, 1/3/13, 1/29/13, 2/5/13, 2/20/13, 3/7/13, 4/8/13, 4/16/13 We visited the stores and replenished fact sheets and put up shelf talkers on the new products. Ace Hardware Suisun has been out of business since before Thanksgiving. Annie has been concentrating on Home Depot and OSH with plans to add in Lowes when we have the corporate ok.

Osh Fairfield:

OSH has had some major changes in management. Ed Mittleman has moved to the Elk Grove store in March and Betty the assistant manager has been on medical leave. Teresa has been calling on the store monthly and has tried to schedule a training. There will be a training on Thursday May 23rd where she will do an in the aisle training. She has been putting shelf talkers up on displays that are eco-friendly throughout the season. Teresa has scheduled a tabling event for a no tax day Sunday May 26th 10-2 pm. New store manager is Tanya from the El Cerrito store.

Solano County Master Gardener Outreach: I trained the new class of Master Gardeners on Water Quality and Pesticides on **January 25, 2012**. There were 22 new class members and I concentrated on the runoff from pyrethroid pesticides and the residues that can end up in wastewater in addition to Suisun Marsh. I also discussed proper disposal of pesticides.

I also discussed the concerns with nutrient runoff from customers fertilizing lawns with synthetic fertilizers. Kevin Cullen joined up and made a presentation on the work he does with FFSSD.

These Master Gardeners will carry this message to tablings they do at OSH and the local Farmers Markets in the area. Many of the master Gardeners have their own gardening businesses so these messages will go also into the communities they service with their business and as volunteers in the communities. .Photos sent.

Home Depot:

Annie has been working with the distributor reps so she can get an organic product display going for Fairfield Home Depot. The representatives from the Bayer and Kellogg's company are very supportive. Annie will place a banner once the display is built. There is also a new store manager as of March. The new manager's name is John Bonetti. I know him from the Napa and Fairfield stores. This is his first store as a manager.

There are two trainings scheduled one for OSH and one for Home Depot... One will be **5/22/13** for OSH and on 6/13/13, Home Depot.

- Teresa and Annie participated in the Annual Regional kick-off meeting on **2/12/13**. The regional meeting with eight stores was held at the Rohnert Park Home Depot. Teresa joined Annie as the support for our local Home Depot attendees. The manager John from our Home Depot really was very impressed with our presentation and wanted to schedule a training for his staff this spring. This was the second time OWOW has been invited to a regional event. We contacted about **75 employees** that day. These attendees were key garden staff at local Home Depots. The District Manager Gregg Kenney invited me to join up and I was also able to briefly address the group as a whole. Photos were taken and sent to Kevin.
- On 2/27/13 On behalf of BASMAA OWOW Annie attended the first Road Show for Home Depot that OWOW was invited to attend, We had many of our Fairfield store folks attending. This was another regional event for Home Depot and we were the only people invited that had no financial ties to Home Depot. Over 150 attendees. Photos sent to Kevin.

Annie and Teresa were invited to speak on water pollution prevention at a local pest control operators in Vacaville on June 6th. It will be continuing education for them and they will be learning about BMP'S for water pollution prevention.

The Ace in Suisun has had a struggle this year and closed before Thanksgiving. I will be pursuing Lowe's in Fairfield. Geoff Brosseau has sent a letter to their corporate headquarters to invite them to entertain a partnership but he has not yet received a response.

May and June update

Store Visits in May and June were as follows: 5/3, 5/7, 5/13, 5/23, 5/24, 6/4, 6/19, 6/21, 6/28.

Teresa and Annie concentrated on making sure the staff at OSH and Home Depot were up to speed on current pests that were coming due to the hot weather like increased cockroaches, mosquitoes, and yellow jackets. They also were making sure shelf talkers were placed on new displays of less toxic products. Teresa has been concerned about the lack of employees at OSH and feels they are struggling financially. Geoff confirmed this with some sudden news that the store in Fairfield would be closing and Osh was going to be purchased by Lowe's. Teresa went into the store at the end of June and retrieved the literature rack. Until that time Teresa was supporting the store throughout this year in the OWOW program with top notch service.

I conducted an outreach event at Home Depot. On May 4th Saturday, I contacted 43 customers and handed out fact sheets and information on attracting beneficial insects to the garden. I was able to guide six customers away from using pyrethroid pesticides for perimeter spraying and to guide them to purchasing ant bait stations. I was also able to guide customers away from using Bugetta to using Sluggo.

5/26 No Tax Day OSH Fairfield – Teresa had about 45 customers that she reached that day. Teresa also did some training and mentoring of store employees before the garden department got busy in the afternoon. The subjects she covered with customers were caterpillars on vegetables, tomato problems with wilt, and overwatering turf areas. The store was very busy that day and they were very happy to have Teresa fielding pest questions.

Training at Home Depot 6//6 pm with Teresa and Annie. We trained 10 employees and received a lot of positive feedback from the store scheduler who wants additional training for all departments who may answer questions on gardening either at the registers or on the phone. She actually attended our training and found it to be really helpful.

Meeting am with area Professional Pest Control Operators and landscapers 6/6 Vacaville Community Center at a continuing education day for professional applicators. PAPP. Annie as a part of her continuing education for Master Gardeners did research for this talk. She led the presentation and Teresa manned the table of posters and information on good bugs for the garden. Annie spoke with over 180 attendees after her presentation Teresa and Annie handed out posters on beneficial insects and plants that will attract them to the landscape. We had many grounds maintenance, landscape maintenance, Cal Trans maintenance, and landscape contractors who apply pesticides. Annie focused on the fact that many of the applicators are now working with areas within their schools or parks that have organic garden projects. This is new to them and we wanted them to know about the how little pesticide is needed to upset the balance and make pest problems worse. Also Annie emphasized the concerns for the Suisun Marsh and all our local waterways due to pesticide and fertilizer runoff. It was very well received and the head of the speaker selection said she had never seen the group so enthused about a talk as the one we prepared. We are following up with over 40 requests for additional posters beyond the 25 we gave out at the event.

Meeting with store manager at Lowe's 6/28/13 to discuss partnering with OWOW. I was very fortunate to meet with the store manager Suzanne Mooers at Lowe's on North Texas Street in Fairfield. She is very interested in the OWOW program but as we knew she has to get the ok from their corporate headquarters. I

told her that Geoff Brosseau had contacted Lowe's but had not received a response. Suzanne said she would forward our letter to the contact folks at Lowe's. She said Lowe's had just gone through a reorganization and dismissed a lot of upper management so she was not surprised we had not heard back. I contacted Geoff on 7/30 and he sent the letter to her that day.

Fairfield-Suisun_OWOW printed materials order_2013

Fact Sheets	Fairfield-Suisun Urban Runoff Program		
	Count	# Imprinted	Estimated cost* not incl tax / shipping
Growing a Healthy Garden...	300		\$41.40
Controlling Ants...	300		\$41.40
Controlling Aphids...	300		\$41.40
Keeping Cockroaches Out...	0		\$0.00
Keeping Fleas Off...	200		\$27.60
Tips for a Healthy Beautiful Lawn	200		\$27.60
Keeping Mosquitoes Away	200		\$27.60
Keeping Rats and Mice Away...	300		\$41.40
Tips for Wonderful Roses	300		\$41.40
Controlling Snails and Slugs...	300		\$41.40
Living with Spiders...	400		\$55.20
How to Control Weeds	300		\$41.40
Controlling Yellowjackets...	0		\$0.00
Use and Disposal of Pesticides	0		\$0.00
Pesticides and Water Pollution	200		\$27.60
Finding a Pest Control Company...	200		\$27.60
Spanish Healthy Garden	100		\$13.80
Spanish Ants	100		\$13.80
Spanish Aphids	100		\$13.80
Spanish Cockroaches	100		\$13.80
Spanish Fleas	100		\$13.80
Spanish Lawns	0		\$0.00
Spanish Mosquitoes	100		\$13.80
Spanish Roses	100		\$13.80
Spanish Snails and Slugs	0		\$0.00
Spanish Spiders	0		\$0.00
Spanish Weeds	100		\$13.80
Spanish Yellowjackets	0		\$0.00
Spanish Use and Disposal	100		\$13.80
Spanish Pesticides and Water Pollution	0		\$0.00
Spanish Pest Control Company	100		\$13.80
Total	4,500	0	\$621.00

Section 10 - Provision C.10 Trash Load Reduction

C.10.a.iii ► Minimum Full Trash Capture (Summary of Actions)

Provide the following:

- 1) Descriptions of actions/tasks initiated, conducted or completed in implementing Minimum Full Trash Capture Devices (due July 1, 2014), including numbers of devices, device types and total land area treated to-date by full capture devices;
- 2) Descriptions of planned actions/tasks and time schedules for completion;
- 3) A map that includes locations of all full capture devices installed (private and public) to-date and associated treatment areas, trash generation rates/areas, creek/shoreline trash hot spots, and trash management areas defined to-date.
- 4) A summary of maintenance activities implemented for each device or groups of devices, including descriptions of typical maintenance frequencies and issues associated with maintaining these devices.

Descriptions of Actions/Tasks (Conducted or Planned):

The cities participated in the Bay Area SFEP/ABAG Trash Capture Grant Project. In an effort to provide as much full trash capture treatment area as possible and because the city of Fairfield drains through Suisun City, the cities proposed a combined full trash capture device for approval to the Water Board. On March 11, 2011 the cities received approval from the Water Board to share their full trash capture device.

The device was installed in June 2012 and is located downstream from the city of Fairfield and upstream from Suisun City Marina. The device chosen is a Contech CDS 5653. One of the largest devices made by Contech. With the MRP requiring Fairfield to fully capture 146 acres and Suisun City's to fully capture 22 acres, the total required treatment area is 168 acres. The treatment area provided resulted in 270 acres which is 102 acres (61%) above that required in the MRP.

Descriptions of Maintenance Activities:

Maintenance for the CDS device has been accepted by the city of Fairfield. Please see city of Fairfield annual report for 2012 2013 for maintenance activities on the Contech CDS 5653.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.10.a.iii ► Minimum Full Trash Capture (List of Devices)

Provide a list of trash full capture devices installed to-date or planned for installation by July 1, 2014 and the land area treated by each device or group of devices.

Applicable Trash Management Area (Preliminary Map ID)	Device Type	Planned or Installed	Maintenance Frequency	Total Number Installed	Total Area Treated (acres)
This full capture device unit is a joint full capture device between Fairfield and Suisun City. Credit for this device is given at a 5:1 ratio base on the city population. See next two rows for area distribution.					
See Fairfield city maps	Contech CDS 5653	Installed	Annual	.75	216
See Suisun city maps	Contech CDS 5653	Installed	Annual	.25	54
Totals				1	270

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.10.b.iii ► Trash Hot Spot Assessment

Provide the volume of material removed from each Trash Hot Spot cleanup, and the dominant types of trash (e.g., glass, plastics, paper) removed and their sources to the extent possible. Additionally, include a map that identifies the location(s) of trash hot spots.

Trash Hot Spot	Cleanup Date	FY 2012-13 Volume of Trash Removed (cubic yards)	FY 2011-12 Volume of Trash Removed (cubic yards)	FY 2010-11 Volume of Trash Removed (cubic yards)	Dominant Type(s) of Trash	Trash Sources (where possible)
This provision is handled at the city level. Please see individual city reports for this information.						

C.10.c ► Long-Term Trash Load Reduction Plan

Provide descriptions of the progress made to-date on the development of Long-term Trash Load Reduction Plans due to the Water Board by February 1, 2014.

Long-Term Trash Load Reduction Plans are being developed to focus on cities specific problems. This element is being reported at the city level. Please see individual city reports for these items.

Long-Term Plan Task	Summary of Progress
1. Identifying and mapping trash generating areas	This element is being reported at the city level. Please see individual city reports for these items.
2. Identifying trash sources (as necessary or feasible) to assist in selecting trash management actions	This element is being reported at the city level. Please see individual city reports for these items.
3. Prioritizing trash generating areas and associated types of trash problems	This element is being reported at the city level. Please see individual city reports for these items.
4. Identifying and selecting trash management actions for specific management areas	This element is being reported at the city level. Please see individual city reports for these items.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

<p>5. Defining the type of assessment(s) that will be used to demonstrate progress towards goals</p>	<p>This element is being reported at the city level. Please see individual city reports for these items.</p>
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C.10.d Summary of Trash Reduction Actions

For each trash reduction action (i.e., control measures and best management practices) implemented by your municipality during the reporting period include a full description of the action. Describe actions initiated prior to and continued after the MRP effective date (December 2009), actions initiated after the MRP effective date, and actions planned for future implementation. If a planned action, also include the planned date of implementation. Add rows for actions not listed below as needed. Also identify the dominant source of trash and dominant types of trash removed for each action. To the extent possible, identify the applicable management areas identified on the map created under reporting section C.10.a.iii.

Action	Description	Trash Management Area(s) (Preliminary Map ID)	Dominant Sources	Dominant Types
Trash Management Area Specific Actions				
Full-Capture Treatment Devices	Continued Pre-MRP Actions: NA			
	New/Enhanced Post-MRP Actions Initiated/Planned: See description in Section C.10.a.ii			
Street Sweeping	Continued Pre-MRP Actions: This element is being reported at the city level. Please see individual city reports for these items.			
	New/Enhanced Post-MRP Actions Initiated/Planned: This element is being reported at the city level. Please see individual city reports for these items.			
On-land Trash Cleanups	Continued Pre-MRP Actions: This element is being reported at the city level. Please see individual city reports for these items.			
	New/Enhanced Post-MRP Actions Initiated/Planned: This element is being reported at the city level. Please see individual city reports for these items.			
Partial-Capture Treatment Devices	Continued Pre-MRP Actions: This element is being reported at the city level. Please see individual city reports for these items.			

C.10.d Summary of Trash Reduction Actions

For each trash reduction action (i.e., control measures and best management practices) implemented by your municipality during the reporting period include a full description of the action. Describe actions initiated prior to and continued after the MRP effective date (December 2009), actions initiated after the MRP effective date, and actions planned for future implementation. If a planned action, also include the planned date of implementation. Add rows for actions not listed below as needed. Also identify the dominant source of trash and dominant types of trash removed for each action. To the extent possible, identify the applicable management areas identified on the map created under reporting section C.10.a.iii.

Action	Description	Trash Management Area(s) (Preliminary Map ID)	Dominant Sources	Dominant Types
	New/Enhanced Post-MRP Actions Initiated/Planned: This element is being reported at the city level. Please see individual city reports for these items.			
Enhanced Storm Drain Inlet Maintenance	Continued Pre-MRP Actions: This element is being reported at the city level. Please see individual city reports for these items.			
	New/Enhanced Post-MRP Actions Initiated/Planned: This element is being reported at the city level. Please see individual city reports for these items.			
Activities to Reduce Trash from Uncovered Loads	Continued Pre-MRP Actions: This element is being reported at the city level. Please see individual city reports for these items.			
	New/Enhanced Post-MRP Actions Initiated/Planned: This element is being reported at the city level. Please see individual city reports for these items.			
Anti-littering and Illegal Dumping Enforcement Activities	Continued Pre-MRP Actions: This element is being reported at the city level. Please see individual city reports for these items.			
	New/Enhanced Post-MRP Actions Initiated/Planned: This element is being reported at the city level. Please see individual city reports for these items.			
Improved Trash Bins/Container Management	Continued Pre-MRP Actions: This element is being reported at the city level. Please see individual city reports for these items.			
	New/Enhanced Post-MRP Actions Initiated/Planned: This element is being reported at the city level. Please see individual city reports for these items.			

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.10.d Summary of Trash Reduction Actions

For each trash reduction action (i.e., control measures and best management practices) implemented by your municipality during the reporting period include a full description of the action. Describe actions initiated prior to and continued after the MRP effective date (December 2009), actions initiated after the MRP effective date, and actions planned for future implementation. If a planned action, also include the planned date of implementation. Add rows for actions not listed below as needed. Also identify the dominant source of trash and dominant types of trash removed for each action. To the extent possible, identify the applicable management areas identified on the map created under reporting section C.10.a.iii.

Action	Description	Trash Management Area(s) (Preliminary Map ID)	Dominant Sources	Dominant Types
Creek, Channel, Shoreline Cleanups	Continued Pre-MRP Actions: Creek clean-ups were performed, however no records were kept as to the volumes, and types of trash collected.		All sources	All types
	New/Enhanced Post-MRP Actions Initiated/Planned: Activities include: removal of homeless encampments; Coast and Creek Cleanup; routine or regularly scheduled Creek maintenance; illegal dump site correction; and other ongoing cleanup efforts	City-wide		
Area/Jurisdictional-wide Actions				
Single-Use Carryout Bag Policies	Continued Pre-MRP Actions: None	Jurisdiction-wide	Grocery stores and large chain stores	Plastic Bags
	New/Enhanced Post-MRP Actions Initiated/Planned: None, however discussion of bag bans locally and statewide occur on a monthly basis. It is expected that eventually plastic bag will be banned in both cities in the Program.			
Polystyrene Foam Food Service Ware Policies	Continued Pre-MRP Actions: None	Jurisdiction-wide	Restaurants	Polystyrene

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

	<p>New/Enhanced Post-MRP Actions Initiated/Planned: None, however discussion of polystyrene bans locally and statewide occur on a monthly basis. It is expected that eventually polystyrene will be banned in both cities in the Program.</p>			
<p>Public Education and Outreach Programs</p>	<p>Continued Pre-MRP Actions: Education of the local children about the connectedness of our local streets to our local creeks.</p> <p>New/Enhanced Post-MRP Actions Initiated/Planned: Advertising Campaign: Be the Street: Please see BASMAA FY 2012/2013 Regional Supplement for Training and Outreach, Annual Report for details relating to these outreach efforts conducted during FY 2012/2013.</p> <p>Public Outreach and Education: Please see section C.7 of the Program Annual Report for detailed information on Program efforts to reduce trash through Public Education and Outreach. Enhancements primarily consist of an increased emphasis on littering and its effect on the environment.</p>	<p>Jurisdiction-wide</p>	<p>All sources</p>	<p>All types</p>

Section 11 - Provision C.11 Mercury Controls

C.11.a.i ► Mercury Recycling Efforts

List below or attach lists of efforts to promote, facilitate, and/or participate in collection and recycling of mercury containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs).

- 1) Promotion (i.e., media advertising, providing information on your agency's website, etc.) of:
 - a) Household Hazardous Waste (HHW) Programs, including promotion of HHW drop-off events and local businesses that provide residents and small businesses the opportunity to drop-off mercury-containing devices and equipment (e.g., bulbs, thermostats, thermometers and/or switches). Solano Garbage Company (Republic Services) at 2901 Industrial Court runs the household hazardous waste collection facility that serves the City of Fairfield, Suisun City and Solano County unincorporated areas. They operate twice monthly on the second and fourth Saturday from 9 AM to 12 noon. Household hazardous waste drop-off is offered free to residents for a small fee and to Fairfield businesses that qualify as small quantity generators. Other items can be dropped off at local businesses such as: Home Depot, Lowe's, and Orchard Supply Hardware, DND Plumbing, Slinky Brothers Fairfield, and Solano Garbage Company.

Promotional events include websites information on cities of Fairfield, Suisun City and Solano County and Solano garbage company's website; printed/published materials include countywide recycling guide household hazardous waste/used oil brochures, flyers and handouts; mailers included in billing by Solano garbage company; community events such as weekly farmers market, Earth Day, tomato Festival, coast and Creek cleanup and radio ads on the local station, KUIC.

- b) The Thermostat Recycling Corporation, is an organization developed on behalf of the thermostat manufacturers, that recycles mercury-containing thermostats and switches generated by residents and small businesses. The HVAC industry is the largest generator of these waste streams and is the targeted audience to inform of this recycling option.

- 2) Facilitation/Organization : Solano Garbage Company (Republic Services) at 2901 Industrial Court runs the household hazardous waste collection facility that serves the City of Fairfield, Suisun City and Solano County unincorporated areas. They operate twice monthly on the second and fourth Saturday from 9 AM to 12 noon. Household hazardous waste drop-off is offered free to residents for a small fee and to Fairfield businesses that qualify as small quantity generators. Other items can be dropped off at local businesses such as: Home Depot, Lowe's, and Orchard Supply Hardware, DND Plumbing, Slinky Brothers Fairfield, and Solano Garbage Company.

- 3) Collection of:
 - a) Mercury-containing devices and equipment at designated drop-off points or HHW drop-off events is organized and conducted by Solano garbage company. Twice a month on the second and fourth Saturdays from 9 to 12 noon. Household hazardous waste drop-off events are offered to residents and small businesses within the Fairfield and Suisun city area
 - b) Currently, there are no curbside Programs offered in the City of Fairfield and City of Suisun City.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

C.11.a.ii ► Mercury Collection

Provide an estimate of the mass of mercury collected through these efforts, or provide a reference to a report containing this estimate.

The estimated mass of mercury collected through recycling efforts conducted by the cities of Fairfield and Suisun City's designated HHW Program, are included in each city's 2011-12 Annual Report. The Program has only counted mercury-containing devices and equipment collected from residents and businesses in our jurisdiction. We have used the Supplemental Excel Spreadsheet and Guidance developed by BASMAA to estimate the mass of mercury collected through our efforts, and have only counted those items indicated herein as restricted in the footnotes.

Mercury Containing Device/Equipment	Total Amount of Devices Collected	Estimated Mass of Mercury Collected
Fluorescent Lamps ⁶² (linear feet)		
CFLs ⁶³ (each)		
Thermostats ⁶⁴ (each)		
Thermostats (lbs)		
Thermometers (each)		
Switches (lbs)		
Total Mass of Mercury Collected During FY 2011-2012:		See individual city reports.

⁶² Only linear fluorescent lamps should be included

⁶³ Only compact fluorescent lamps should be included

⁶⁴ Thermostats can be reported by quantity or by pounds. Whichever unit is used, please avoid double-counting.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

- C.11.b ▶ Monitor Methylmercury**
- C.11.c ▶ Pilot Projects to Investigate and Abate Mercury Sources in Drainages**
- C.11.d ▶ Pilot Projects to Evaluate and Enhance Municipal Sediment Removal and Management Practices**
- C.11.e ▶ Conduct Pilot Projects to Evaluate On-Site Stormwater Treatment via Retrofit**
- C.11.f ▶ Diversion of Dry Weather and First Flush Flows to POTWs**
- C.11.g ▶ Monitor Stormwater Mercury Pollutant Loads and Loads Reduced**
- C.11.h ▶ Fate and Transport Study of Mercury In Urban Runoff**
- C.11.i ▶ Development of a Risk Reduction Program Implemented Throughout the Region**
- C.11.j ▶ Develop Allocation Sharing Scheme with Caltrans**

State below if information is reported in a separate regional report. Municipalities that participate directly in regional activities to can provide descriptions below.

Summary

Highlights from the Region and the Program include:

A summary of Program and regional accomplishments for these sub provisions are included within the C.11 BASMAA Regional POC Report for FY 12-13.

Highlights from the Program include:

The Program has dedicated a significant amount of time and money (see attached invoice) toward the development of the design, plans and will specifications for the Vallejo retrofit projects (see attached plans), and other elements of the Clean Watersheds for Clean Bay grant project. It was decided through the Clean Water for a Clean Bay Project Management Team that the city of Vallejo was the best location to conduct pilot projects for the evaluation of on-site stormwater treatment via retrofits in Solano County.

The first project is located on Broadway and Redwood streets between Redwood and Valle Vista in downtown Vallejo. The project retrofits a vegetative swale in the area between Broadway and the Southern Pacific railroad tracks. The land is owned by Southern Pacific Railroad but the Vallejo Sanitation and Flood Control District has an easement on the property that permits construction of a BMP. The BMP concept is to install a vegetative swale for a large portion of the block and provide curb cuts along Broadway to divert roadway runoff into the swale.

The second project is a retrofit of a PG&E substation with a two cartridge linear precast storm filter. The storm filter will receive all of the runoff from the PG&E substation. Both projects are currently out to bid, as a single package and it is anticipated that the project will be constructed before the rain arrives in 2013 so that assessment of effectiveness of both projects will be reported in the 2013 2014 Annual Report.

The diversion of dry weather and first flush flows to POTWs in Solano County has been taken on by the Fairfield Suisun Sewer District. The project involves changing the operation of an existing pump station so as to divert stormwater from the station to the Fairfield Suisun Sewer District wastewater treatment plant. The pump station is located in the city of Fairfield just upstream from Suisun city. It serves a watershed area of approximately 6 acres all of which is zoned commercial, of which a significant portion is automotive repair. The pump station changes to be evaluated for this project include:

- Shutting off the stormwater pump station during dry weather
- Removing standing water in the pump station wet well throughout the dry season and before the first flush
- Monitoring concentrations of pollutants and pollutant indicators in the diverted water

The goal of this pilot project is to comply with provision C.11/12f of the MRP by better understanding the applicability, costs, and benefits associated with this and similar projects. The results from this in parallel studies by other agencies will inform planning for focused implementation of urban runoff measures during subsequent permit terms, in order to achieve maximum benefits and continue to make progress towards achieving load reductions called for in Mercury and PCB TMDLs.

The following three objectives have been developed for the project:

- Evaluate pollutant loads to the Bay that are reduced due to stormwater diversion
- Estimate project benefits, challenges and costs of operating a similar diversion and a similar drainage area and or an area known to have elevated concentrations of PCBs or Mercury
- Document the knowledge and experience gained from evaluation of the diversion project

Current Status

Normal discharges from the State Street Pump Station were terminated in mid -June. The contents of the pump stations wet well are tested and removed by Vactor truck and then discharged to the Fairfield Suisun Sewer District treatment plant. As dry weather runoff accumulates in the pump station, the water will be removed and disposed of at the POTW.

Water samples were collected at the State Street pump station discharge during June of 2012 (station shut down for dry weather) and September (start up of pump station for wet weather)of 2012. Volumes of water removed and diverted to the treatment plant have also been recorded.

The Final Diversion Report is currently being worked on by the Program and will be submitted to the Water Board in December of 2013. The volume of water being diverted to the Fairfield-Suisun Wastewater Treatment Plant is continues to be measured by the Program.



B A S M A A

Alameda Countywide
Clean Water Program

Contra Costa
Clean Water Program

Fairfield-Suisun
Urban Runoff
Management Program

Marin County
Stormwater Pollution
Prevention Program

Napa County
Stormwater Pollution
Prevention Program

San Mateo Countywide
Water Pollution
Prevention Program

Santa Clara Valley
Urban Runoff Pollution
Prevention Program

Sonoma County
Water Agency

Vallejo Sanitation
and Flood
Control District

June 29, 2012

Invoice No. 2012-03

Kevin Cullen
Fairfield-Suisun Urban Runoff Management Program
1010 Chadbourne Road
Fairfield, CA 94534

Subject: Invoice for *Clean Watersheds for a Clean Bay* project, Task 5.b Retrofits Implementation

Dear Mr. Cullen:

This is an invoice for **\$17,000** for *Clean Watersheds for a Clean Bay* project, Task 5.b Retrofits Implementation.

Please remit payment to:

Bay Area Stormwater Management Agencies Association
P.O. Box 2385
Menlo Park, CA 94026

Make the check payable to 'BASMAA'.

If you have any questions, please contact me.

Sincerely,

Geoff Brosseau, Executive Director

Approved for Payment By:

Approval Date 7/23/12 Total Paid \$ 17,000

Acct Code 6222-440-4 Amt: \$ 8,500

Acct Code: 6222-150-1 Amt: \$ 8,500

Batch #: _____ Batch Date: _____

Processed By: _____ Vendor #: _____

Bay Area

Stormwater Management

Agencies Association

P.O. Box 2385

Menlo Park, CA 94026

510.622.2326

info@basmaa.org

BASMAA is a 501(c)(3) non-profit corporation.
BASMAA Tax payer ID number is 26-4061031.

Section 12 - Provision C.12 PCBs Controls

C.12.a.ii,iii ▶ Ongoing Training

(For FY 10-11 Annual Report and Each Annual Report Thereafter) List below or attach description of ongoing training development and inspections for PCB identification, including documentation and referral to appropriate regulatory agencies (e.g. county health departments, Department of Toxic Substances Control, California Department of Public Health, and the Water Board) as necessary.

Description:

Inspector training materials have been developed by BASMAA and provided to Solano County Health Inspectors. A description of efforts to train municipal industrial inspectors was provided in FY 09-10 Program Annual Reports. Training of Health Inspectors was performed again on February 7, 2013. The focus of the training was consistency in enforcement levels, enforcement authority; city stormwater ordinances; high-priority facilities needed to be inspected during the fiscal year and enforcement levels associated with illegal discharges.

C.12.b ▶ Conduct Pilot Projects to Evaluate Managing PCB-Containing Materials and Wastes during Building Demolition and Renovation Activities

C.12.c ▶ Pilot Projects to Investigate and Abate On-land Locations with Elevated PCB Concentrations

C.12.d ▶ Conduct Pilot Projects to Evaluate and Enhance Municipal Sediment Removal and Management Practices

C.12.e ▶ Conduct Pilot Projects to Evaluate On-Site Stormwater Treatment via Retrofit

C.12.f ▶ Diversion of Dry Weather and First Flush Flows to POTWs

C.12.g ▶ Monitor Stormwater PCB Pollutant Loads and Loads Reduced

C.12.h ▶ Fate and Transport Study of PCBs In Urban Runoff

C.12.i ▶ Development of a Risk Reduction Program Implemented Throughout the Region

State below if information is reported in a separate regional report. Municipalities that participate directly in regional activities to can provide descriptions below.

Summary

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

Highlights from the Region and the Program include:

A summary of Program and regional accomplishments for these sub provisions are included within the C.12 BASMAA Regional POC Report for FY 12-13.

Highlights from the Program include:

The Program has dedicated a significant amount of time and money (see attached invoice) toward the development of the design, plans and will specifications for the Vallejo retrofit projects (see attached plans), and other elements of the Clean Watersheds for Clean Bay grant project. It was decided through the Clean Water for a Clean Bay Project Management Team that the city of Vallejo was the best location to conduct pilot projects for the evaluation of on-site stormwater treatment via retrofits in Solano County.

The first project is located on Broadway and Redwood streets between Redwood and Valle Vista in downtown Vallejo. The project retrofits a vegetative swale in the area between Broadway and the Southern Pacific railroad tracks. The land is owned by Southern Pacific Railroad but the Vallejo Sanitation and Flood Control District has an easement on the property that permits construction of a BMP. The BMP concept is to install a vegetative swale for large portion of the block and provide him and curb cuts along Broadway to divert roadway runoff into the swale.

The second project is a retrofit of a PG&E substation with a two cartridge linear precast storm filter. The storm filter would receive all of the runoff from the PG&E substation. The project is currently out to bid and it is anticipated that the project will be constructed before the rain arrives. Please see the attached Semi-Annual Report number 6 for the Clean Water for a Clean Bay 2012-2013 for further details.

The diversion of dry weather and first flush flows to POTWs in Solano County has been taken on by the Fairfield Suisun Sewer District. The project involves changing the operation of an existing pump station so as to divert stormwater from the station to the Fairfield Suisun Sewer District wastewater treatment plant. The pump station is located in the city of Fairfield just upstream from Suisun city. It serves a watershed area of approximately 6 acres all of which is zoned commercial, of which a significant portion is automotive repair. The pump station changes to be evaluated for this project include:

- Shutting off the stormwater pump station during dry weather
- Removing standing water in the pump station wet well throughout the dry season and before the first flush
- Monitoring concentrations of pollutants and pollutant indicators in the diverted water

The goal of this pilot project is to comply with provision C.11/12f of the MRP by better understanding the applicability, costs, and benefits associated with this and similar projects. The results from this in parallel studies by other agencies will inform planning for focused implementation of urban runoff measures during subsequent permit terms, in order to achieve maximum benefits and continue to make progress towards achieving load reductions called for in Mercury and PCB TMDLs.

Permittee Name: Fairfield-Suisun Urban Runoff Management Program

The following three objectives have been developed for the project:

- Evaluate pollutant loads to the Bay that are reduced due to stormwater diversion
- Estimate project benefits, challenges and costs of operating a similar diversion and a similar drainage area and or an area known to have elevated concentrations of PCBs or Mercury
- Document the knowledge and experience gained from evaluation of the diversion project

Current Status

Normal discharges from the State Street Pump Station were terminated in mid -June. The contents of the pump stations wet well are tested and removed by Vactor truck and then discharged to the Fairfield Suisun Sewer District treatment plant. As dry weather runoff accumulates in the pump station, the water will be removed and disposed of at the POTW.

Water samples were collected at the State Street pump station discharge during June of 2012 (station shut down for dry weather) and September (start up of pump station for wet weather)of 2012. Using EPA method 1631 samples have shown non-detect for PCBs. Volumes of water removed and diverted to the treatment plant have also been recorded.

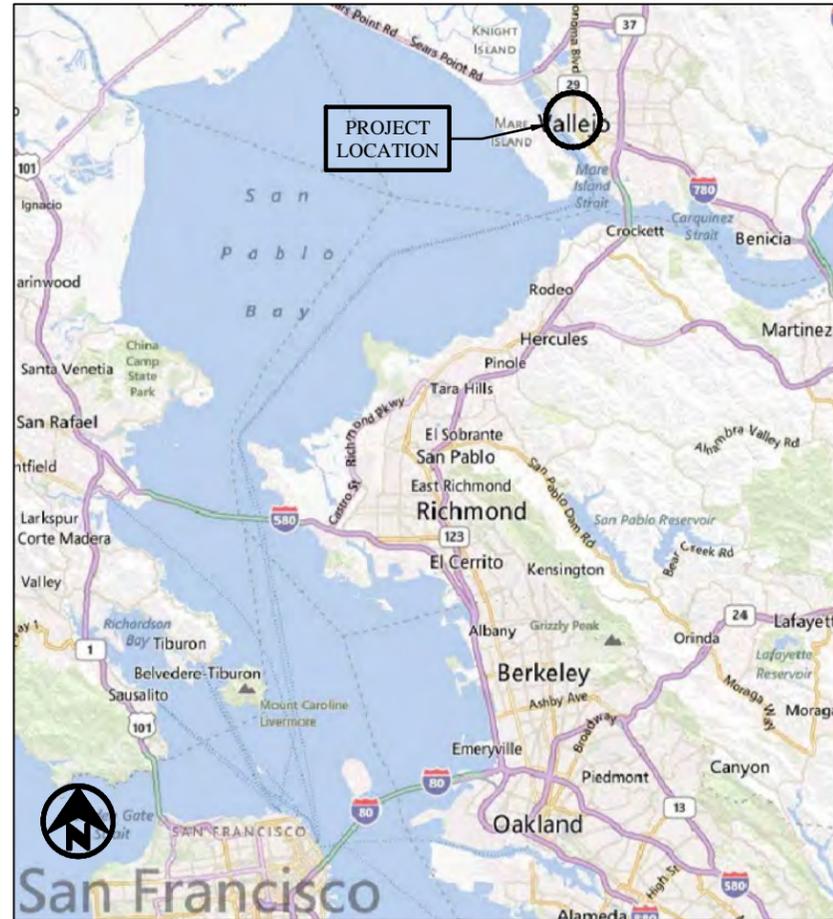
The Final Diversion Report is currently being worked on by the Program and will be submitted to the Water Board in December of 2013. The volume of water being diverted to the Fairfield-Suisun Wastewater Treatment Plant is continues to be measured by the Program.

CITY OF VALLEJO

SOLANO COUNTY, CALIFORNIA

PROJECT PLANS FOR

URBAN RUNOFF TREATMENT RETROFITS



LOCATION MAP
NO SCALE



VICINITY MAP
NO SCALE

CITY OF VALLEJO

PUBLIC OFFICIALS
MAYOR - OSBY DAVIS
VICE MAYOR - STEPHANIE GOMES

COUNCIL MEMBERS
MARTI BROWN
JESUS "JESS" MALGAPO
ROBERT McCONNELL
BOB SAMPAYAN
HERMIE SUNGA

SHEET INDEX

DRAWING NO.	SHT NO.	DESCRIPTION
1	T-1	TITLE SHEET
2	G-1	GENERAL NOTES, LEGEND AND ABBREVIATIONS
3	L-1	LAYOUT SHEET
4	L-2	LAYOUT SHEET
5	C-1	CONSTRUCTION DETAILS
6	C-2	CONSTRUCTION DETAILS
7	DP-1	DRAINAGE PROFILE
8	DD-1	DRAINAGE DETAILS
9	DD-2	DRAINAGE DETAILS
10	LS-1	LANDSCAPE DETAILS

PROJECT CONTACTS

OWNER: CITY OF VALLEJO
555 SANTA CLARA STREET
VALLEJO, CA 94590

CONTACT: SAM KUMAR
TEL: (707) 648-4432
FAX: (707) 648-4691



PLANS REVIEWED FOR CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS – ENGINEERING DIVISION

THIS PLANS HAVE BEEN REVIEWED FOR COMPLIANCE WITH CHAPTER 2.10.122 OF THE VALLEJO MUNICIPAL CODE AND ARE ACCEPTED FOR CONSTRUCTION AS INDICATED:

JILL A. MERCURIO, CITY ENGINEER
R.C.E. #54670, EXP. 12-31-2013

DATE _____

CITY OF VALLEJO



1243 ALPINE ROAD, SUITE 108
WALNUT CREEK, CA 94596
TEL: (925) 941-0017
WWW.WRECO.COM



ANALETTE OCHOA
R.C.E. #55279, EXP. 12-31-14



BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION
URBAN RUNOFF TREATMENT RETROFITS
CITY OF VALLEJO, CALIFORNIA

TITLE SHEET



DESIGN BY: IL
DRAWN BY: IL
CHECKED BY: AO
DATE: JULY 2013
SCALE: AS SHOWN

TS-1

SHEET 1 OF 10

REVISION NO.	DESCRIPTION	BY	DATE

GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF VALLEJO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS.
- HORIZONTAL LAYOUT AND/OR DIMENSIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ACTUAL CONSTRUCTION DIMENSIONS AND DISTANCES MAY VARY FROM THOSE SHOWN ON THE DRAWINGS. REFER TO THE SPECIFICATIONS FOR PAYMENT OF QUANTITIES. THE CONTRACTOR IS RESPONSIBLE FOR THE INTENT OF THESE PLANS AND SHALL REPORT ANY DISCREPANCIES FOUND IN THEM TO THE ENGINEER PRIOR TO CONSTRUCTION.
- IT IS CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES WITH THE APPROPRIATE UTILITY AGENCIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY OWNERS 48 HOURS PRIOR TO COMMENCEMENT OF WORK ADJACENT TO THE UTILITY. CONTRACTOR SHALL NOTIFY "UNDERGROUND SERVICE ALERT" (USA) AT 811 OR 800-642-2444 AT LEAST 10 DAYS PRIOR TO EXCAVATION AT ALL LOCATIONS.
- THE FOLLOWING PUBLIC AGENCIES ARE AFFECTED BY THE CONTRACT WORK IN THESE PLANS. THE SPECIFIC INDIVIDUALS LISTED SHALL BE CONTACTED AT LEAST 7 DAYS PRIOR TO ANY WORK PERFORMED ON EACH AGENCY'S PROPERTY.

CITY OF VALLEJO (CITY), PUBLIC WORKS DEPARTMENT
555 SANTA CLARA STREET VALLEJO, CA 94590
CONTACT: SAM KUMAR
TEL: (707)648-4432

VALLEJO SANITATION & FLOOD CONTROL DISTRICT (VSFCD)
450 RYDER STREET VALLEJO, CA 94590
CONTACT: LANCE BARNETT
TEL: (707)644-8949 x269
- LOCATIONS OF EXISTING GAS AND ELECTRIC LINES OR OTHER FACILITIES SHOWN HEREIN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY IN FIELD AND NOTIFY ENGINEER AND UTILITY COMPANIES OF DISCREPANCIES FROM THIS PLAN, AND TAKE PROPER PRECAUTIONS TO PROTECT THE EXISTING FACILITIES AND UTILITIES.
- EXISTING SURVEY MONUMENTS AND UTILITIES THAT ARE DAMAGED OR REMOVED DURING WORK BY THE CONTRACTOR SHALL BE REPLACED OR RECONSTRUCTED WITH NEW MATERIAL EQUAL OR BETTER IN STRENGTH AND QUALITY AT THE CONTRACTOR'S EXPENSE. DAMAGE TO TELEPHONE, TV CABLE, AND WATER SUPPLY PIPELINES WILL BE REPAIRED BY THE RESPECTIVE AGENCIES AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES TO WITHIN THE PROJECT LIMITS, CONSISTING OF ROAD RIGHT OF WAY, RIGHTS OF ENTRY AND/OR PROJECT CONFORMS, AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE STANDARD PLANS, SPECIFICATIONS AND REQUIREMENTS SET FORTH IN THE CITY OF VALLEJO'S ENGINEERING STANDARDS.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING GRADES.
- ALL EXISTING UTILITIES AND TWO WAY TRAFFIC SHALL BE MAINTAINED IN OPERATION AT ALL TIMES, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. TRAFFIC CONTROL MAINTENANCE AND OPERATIONS SHALL COMPLY WITH THE FOLLOWING STATE STANDARD SPECIFICATIONS: SECTION 7-1.09 "PUBLIC SAFETY", 7-108 "PUBLIC CONVENIENCE", AND SECTION 12 "CONSTRUCTION AREA TRAFFIC CONTROL DEVICES". TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)", 2009 EDITION.
- THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS FOR EACH STREET UNDER CONSTRUCTION AT PRE-CONSTRUCTION MEETING, FOR REVIEW AND APPROVAL BY THE CITY TRAFFIC ENGINEER, PRIOR TO BEGINNING WORK. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFETY AND TRAFFIC CONTROL DEVICES REQUIRED ON ALL STREETS AFFECTED DURING THE COURSE OF CONSTRUCTION. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
- THE CONTRACTOR IS PROHIBITED FROM PARKING CONSTRUCTION EQUIPMENT, INCLUDING TRUCKS AND TRAILER BEDS ON ROADWAYS. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM RESPECTIVE PROPERTY OWNERS PRIOR TO STAGING MATERIALS OR CONSTRUCTION EQUIPMENT.
- THE CONTRACTOR SHALL PROVIDE FOR CONTINUOUS INGRESS AND EGRESS TO ALL PUBLIC AND PRIVATE PROPERTIES ADJACENT TO THE WORK THROUGHOUT THE PERIOD OF CONSTRUCTION UNLESS APPROVED BY THE ENGINEER.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING/REPLACING DAMAGED CURB, SIDEWALK AND PAVEMENT RESULTING FROM CONSTRUCTION AND LANDSCAPING OPERATIONS. ALL EXISTING STREET IMPROVEMENTS, UTILITIES, LANDSCAPING, STREET SIGNS, ETC. NOT PROPOSED FOR REPLACEMENT SHALL BE ASSESSED BY THE CONTRACTOR PRIOR TO BEGINNING WORK. EXISTING IMPROVEMENTS THAT ARE DAMAGED OR REMOVED DURING WORK BY THE CONTRACTOR SHALL BE RECONSTRUCTED TO THEIR ORIGINAL CONDITION OR BETTER AT THE CONTRACTOR'S EXPENSE AND IN ACCORDANCE WITH CALTRANS, CITY OR VSFCD STANDARDS AND TO THE SATISFACTION OF THE ENGINEER.
- AT ALL TIMES DURING CONSTRUCTION AND UNTIL ACCEPTANCE BY THE CITY, CONTRACTOR SHALL PREVENT THE FORMATION OF ANY AIRBORNE DUST NUISANCE BY WATERING OR TREATING THE SITE OF WORK IN SUCH A MANNER THAT WILL CONFINE DUST PARTICLES TO THE IMMEDIATE SURFACE OF THE WORK. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST FROM HIS OR HER SUBCONTRACTOR'S ACTIVITIES IN PERFORMING THE WORK UNDER THE CONTRACT AND SHALL BE RESPONSIBLE FOR ANY CITATIONS, FINES, OR CHARGES RESULTING FROM DUST AND NOISE NUISANCE THE NOISE LEVEL OF THE CONTRACTOR'S OPERATIONS SHALL BE KEPT TO A MINIMUM AS PER STANDARD SPECIFICATIONS.
- FOR CONSTRUCTION WATER, THE CONTRACTOR SHALL COORDINATE USAGE OF A CITY-ISSUED FIRE HYDRANT METER AND INSTALL A BACKFLOW PREVENTER. THE CONTRACTOR SHALL PROVIDE PORTABLE WATER VEHICLES AS NECESSARY FOR DUST CONTROL AND SUPPLY OF CONSTRUCTION EQUIPMENT. THE CONTRACTOR WILL BE CHARGED \$1,000 PER DOCUMENTED CONNECTION WITHOUT A METER.
- WITHIN THE EXTENTS OF ASPHALT OR CONCRETE INSTALLATION, CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ENCOUNTERED DEBRIS AND ORGANIC MATERIALS, AND RESTORATION OF SUBGRADE AND AGGREGATE BASE TO PROPER MOISTURE AND COMPACTION AS DIRECTED BY THE ENGINEER.
- UNPAVED AREAS ADJACENT TO CURBS AND SIDEWALKS AFFECTED BY THE WORK SHALL BE BACKFILLED, GRADED SMOOTH AND CLEARED OF ALL TRASH AND CONSTRUCTION MATERIALS.
- THE CONTRACTOR IS RESPONSIBLE FOR MATCHING EXISTING STREETS, SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, SIDEWALKS, GRADING, ETC. AND TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.
- PRIOR TO LEAVING THE WORK SITE EACH DAY, THE CONTRACTOR SHALL ENSURE AFFECTED ROADWAYS AND WORK AREAS ARE FREE OF CONSTRUCTION DEBRIS, TRASH, GRAVEL OR DIRT. IN THE EVENT THE CONTRACTOR IS NOTIFIED BY THE CITY OF SAID DEFICIENCY AND IS UNABLE TO MITIGATE, THE CONTRACTOR WILL BE CHARGED A MINIMUM OF \$1,000 PER DAY UNTIL RESOLVED.
- THE CONTRACTOR SHALL HOLD HARMLESS, INDEMNIFY, AND DEFEND THE CITY AND ITS OFFICERS, OFFICIALS, EMPLOYEES, AND AGENTS FROM AND AGAINST ALL LOSSES, CLAIMS, DEMANDS, PAYMENTS, SUITS, ACTIONS, RECOVERIES, AND JUDGEMENTS OF EVERY NATURE AND DESCRIPTION BROUGHT OR RECOVERABLE AGAINST IT OR THEM BY REASON OF ANY ACT, ERROR, OR OMISSION OF THE CONTRACTOR, HIS AGENTS OR EMPLOYEES, IN THE PERFORMANCE OF THE WORK.

BASIS OF BEARING

THE BEARINGS SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM (CCS 83), ZONE II.

BENCHMARK

BROADWAY & REDWOOD
ELEVATION BENCHMARK TAKEN FROM SET CROSS ON WEST SIDEWALK OF BROADWAY STREET, MARKED "LUK1", APPROXIMATELY 50 FT SOUTH OF THE INTERSECTION WITH REDWOOD STREET.
NORTHING, EASTING = 1806406.13, 6489916.51
ELEVATION = 19.18 FEET, ASSUMED DATUM

PG&E SUBSTATION
ELEVATION BENCHMARK TAKEN FROM SET MAG AND SHINER IN PAVEMENT NEAR CURB RETURN AT NORTHEAST CORNER OF PENNSYLVANIA AND SUTTER STREETS.
NORTHING, EASTING = 1797651.24, 6488622.82
ELEVATION = 12.26 FEET, ASSUMED DATUM.

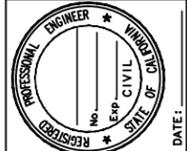
ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
CL	CENTER LINE
CITY	CITY OF VALLEJO
CONC	CONCRETE
DI	DRAIN INLET
DIA	DIAMETER
E	EAST/EASTING
EBMUD	EAST BAY MUNICIPAL UTILITY DISTRICT
ELEC	ELECTRICAL
EXIST	EXISTING
FES	FLARED END SECTION
FL	FLOWLINE
FT	FEET
GAL	GALLON
GALV	GALVENIZED
GR	GRATE ELEVATION
IN	INCH
LF	LINEAR FEET
LT	LEFT
MIN	MINIMUM
NE	NORTHEAST
NO.	NUMBER
N	NORTH/NORTHING
NTS	NOT TO SCALE
O.C.	ON CENTER
PCC	PORTLAND CEMENT CONCRETE
RCP	REINFORCED CONCRETE PIPE
RIM	RIM ELEVATION
RT	RIGHT
SHT	SHEET
SF	SQUARE FEET
SD	STORM DRAIN
SPECS	SPECIFICATIONS
ST	STREET
STA	STATION
STD	STANDARD
SW	SIDEWALK OR SOUTHWEST
TC	TOP OF CURB
THRU	THROUGH
TP	TOP OF PAVEMENT
TYP	TYPICAL
USA	UNDERGROUND SERVICE ALERT
VSFCD	VALLEJO SANITATION AND FLOOD CONTROL DISTRICT
W	WATER OR WEST
W/	WITH

LEGEND

	NEW CONCRETE SIDEWALK
	NEW CURB
	6" DEEP LIFT AC
	LIMITS OF WORK
	POTHOLE LOCATION
	BIOFILTRATION SWALE
	DETAIL NO. SHEET NO.

wreco
1243 ALPINE ROAD, SUITE 108
WALNUT CREEK, CA 94596
PH: (925) 941-0017



BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION
URBAN RUNOFF TREATMENT RETROFITS
CITY OF VALLEJO, CALIFORNIA

GENERAL NOTES, LEGEND AND ABBREVIATION



DESIGN BY: IL
DRAWN BY: IL
CHECKED BY: AO
DATE: JULY 2013
SCALE: AS SHOWN

G-1
SHEET 2 OF 10

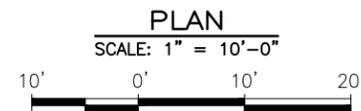
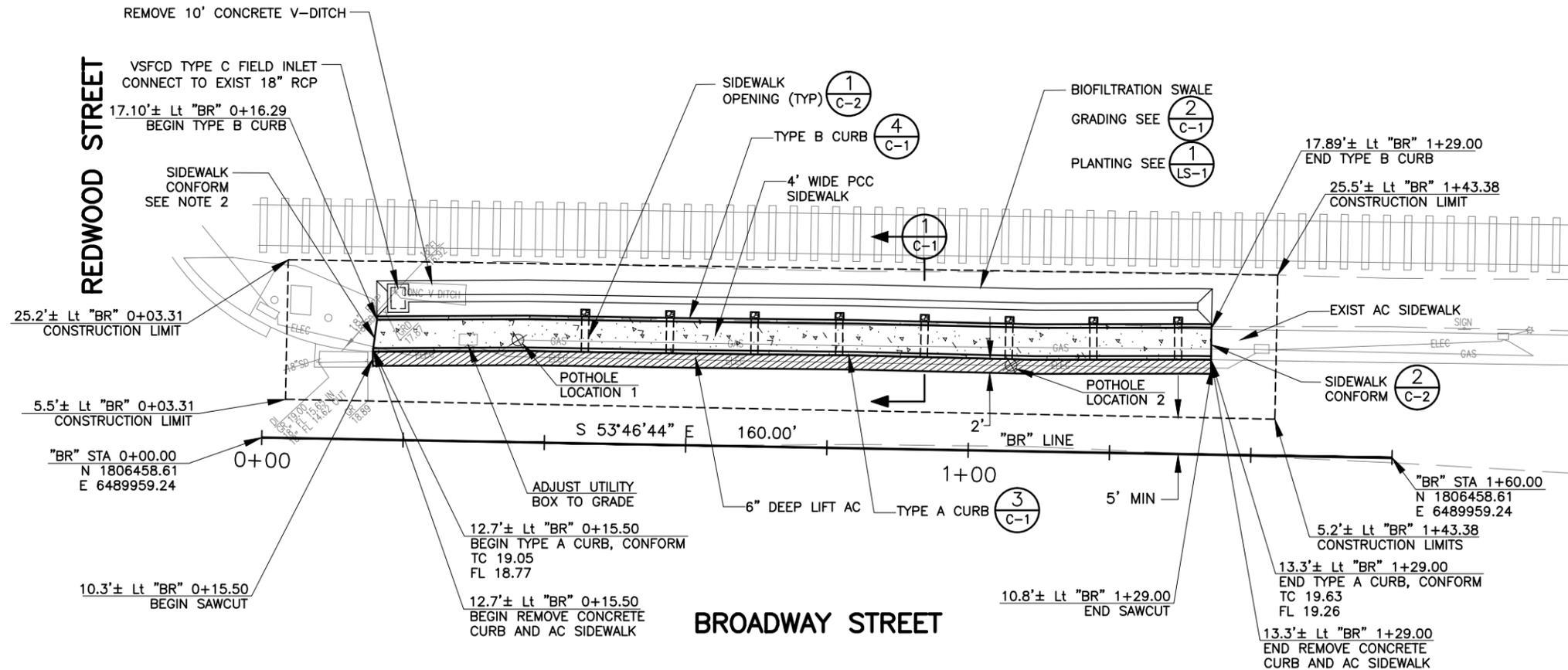
NO.	REVISION	DATE

NOTES:

1. FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS SEE SHT G-1.
2. FOR CONCRETE SIDEWALK DOWELING, SEE CITY OF VALLEJO STANDARD DETAIL DRAWING NO. 3-08.
3. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH CITY OF VALLEJO.
4. FOR BIOFILTRATION SWALE PLANTING, SEE SHEET LS-1.
5. FOR DRAINAGE FLOWLINE INFORMATION SEE SHEET C-1.

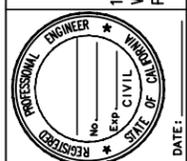
POTHOLE LOCATION TABLE:

POTHOLE LOCATION	COORDINATE		GROUND ELEVATION	POTHOLE ELEVATION	TYPE	SIZE (in)	OWNER
	N	E					
1	1806425.64	6489979.68	19.17	16.24	GAS	8	PG&E
2	1806356.44	6489989.54	19.10	18.42	ELEC	-	PG&E



REVISION NO.	DESCRIPTION	BY	DATE

wreco
1243 ALPINE ROAD, SUITE 108
WALNUT CREEK, CA 94596
PH: (925) 941-0017



BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION
URBAN RUNOFF TREATMENT RETROFITS
CITY OF VALLEJO, CALIFORNIA



DESIGN BY: IL
DRAWN BY: IL
CHECKED BY: AO
DATE: JULY 2013
SCALE: AS SHOWN

L-1

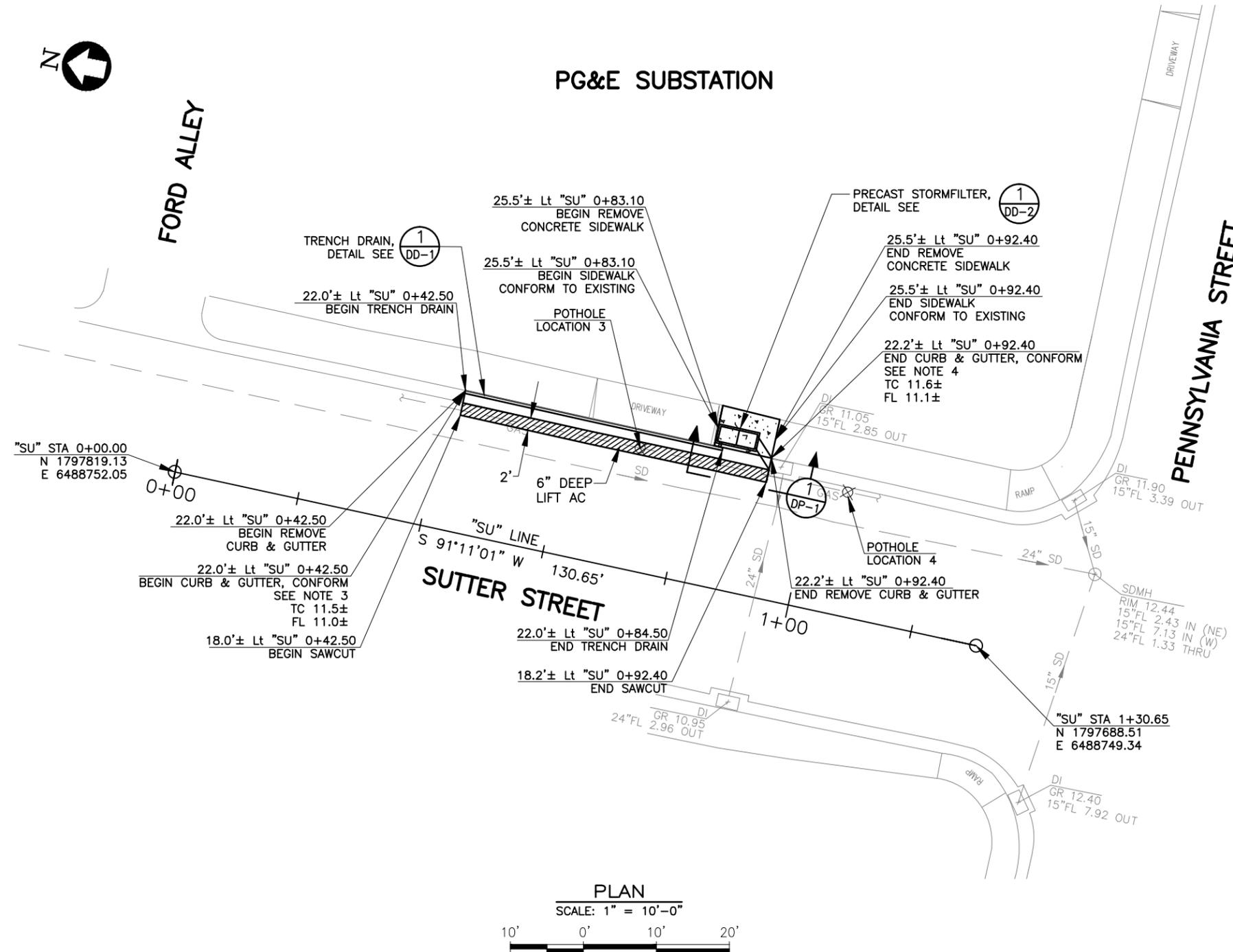
SHEET 3 OF 10

NOTES:

- FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHT G-1.
- FOR DRAINAGE PROFILE, SEE SHT DP-1.
- FOR SIDEWALK, CURB AND GUTTER DETAIL, SEE SHT DD-1.

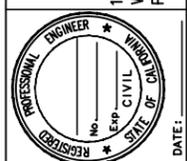
POTHOLE LOCATION TABLE:

POTHOLE LOCATION	COORDINATE		GROUND ELEVATION	POTHOLE ELEVATION	TYPE	SIZE (in)	OWNER
	N	E					
3	1797747.09	6488769.95	11.17	7.83	GAS	6	PG&E
4	1797713.30	6488769.38	11.35	8.22	GAS	6	PG&E



REVISION NO.	DESCRIPTION	BY	DATE

wreco
1243 ALPINE ROAD, SUITE 108
WALNUT CREEK, CA 94596
PH: (925) 941-0017

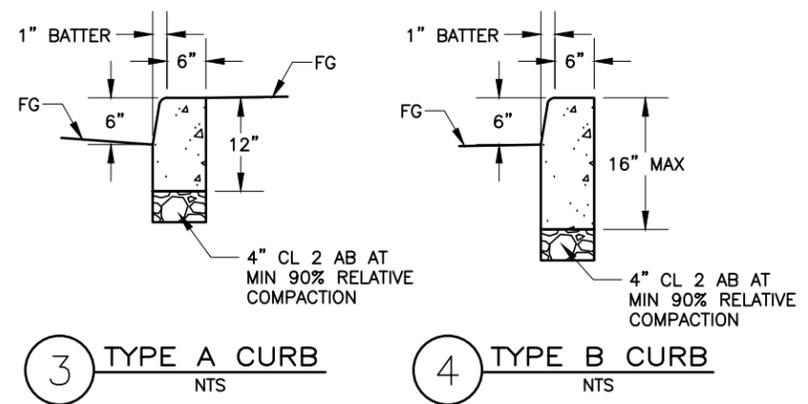
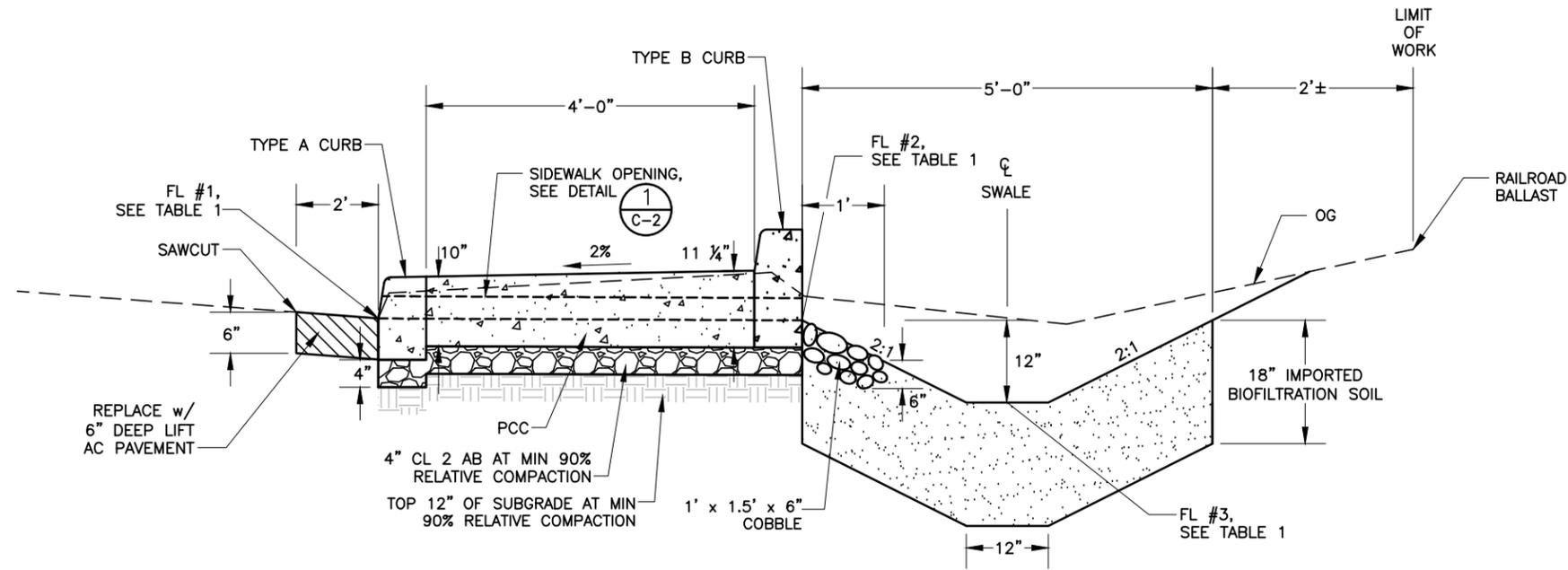


BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION
URBAN RUNOFF TREATMENT RETROFITS
CITY OF VALLEJO, CALIFORNIA

LAYOUT SHEET



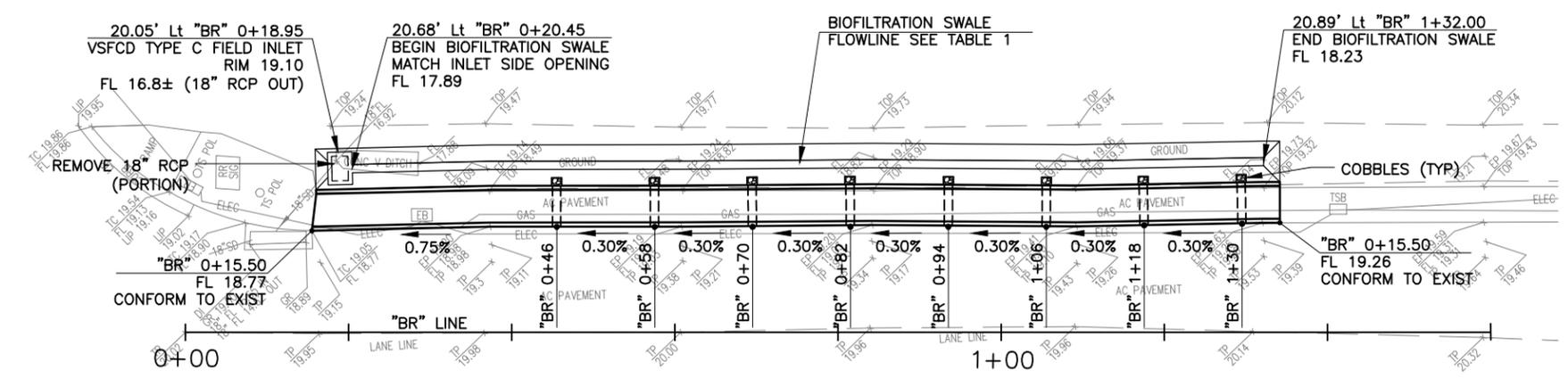
DESIGN BY: IL
DRAWN BY: IL
CHECKED BY: AO
DATE: JULY 2013
SCALE: AS SHOWN



SIDEWALK OPENING LOCATION	FL #1		FL #2		FL #3	
	OFFSET	FL	OFFSET	FL	OFFSET	FL
"BR" 0+46	12.92	19.00	17.92	18.97	20.42	17.97
"BR" 0+58	12.93	19.03	17.93	19.00	20.43	18.00
"BR" 0+70	13.00	19.07	18.00	19.04	20.50	18.04
"BR" 0+82	13.09	19.11	18.09	19.08	20.59	18.08
"BR" 0+94	13.05	19.14	18.05	19.11	20.55	18.11
"BR" 1+06	12.97	19.18	17.97	19.15	20.47	18.15
"BR" 1+18	13.10	19.21	18.10	19.18	20.60	18.18
"BR" 1+30	13.33	19.25	18.33	19.22	20.83	18.22

1 TYPICAL CROSS SECTION (AT SIDEWALK OPENING)
NTS

TABLE 1

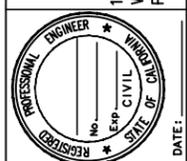


PLAN
NTS

2 BIOFILTRATION SWALE
NTS

NO.	DATE	BY	DESCRIPTION

wreco
1243 ALPINE ROAD, SUITE 108
WALNUT CREEK, CA 94596
PH: (925) 941-0017

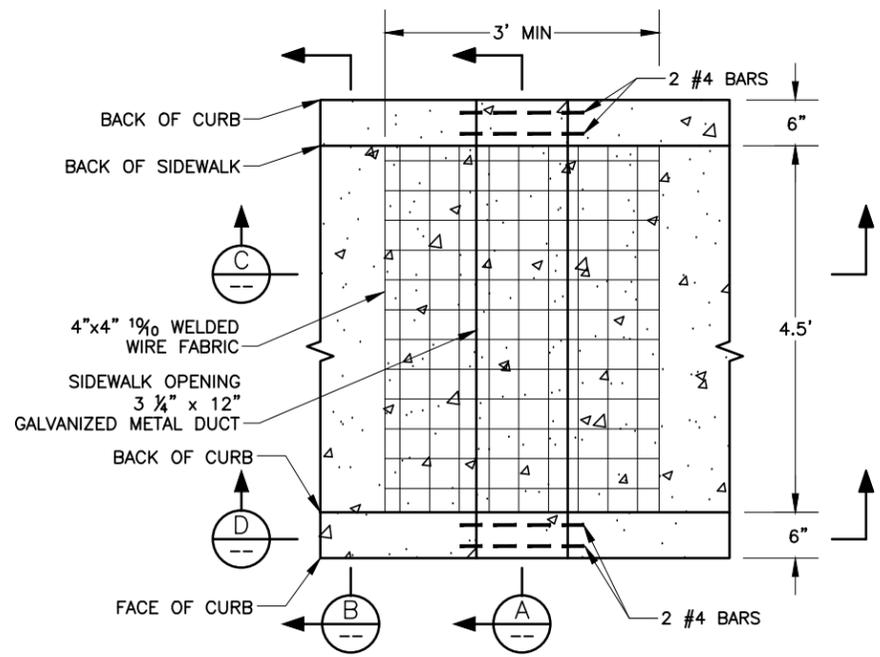


BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION
URBAN RUNOFF TREATMENT RETROFITS
CITY OF VALLEJO, CALIFORNIA

CONSTRUCTION DETAILS



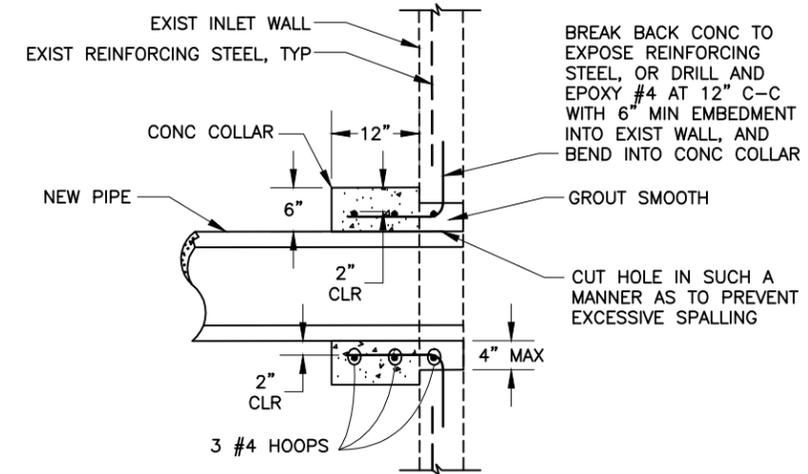
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DATE: JULY 2013
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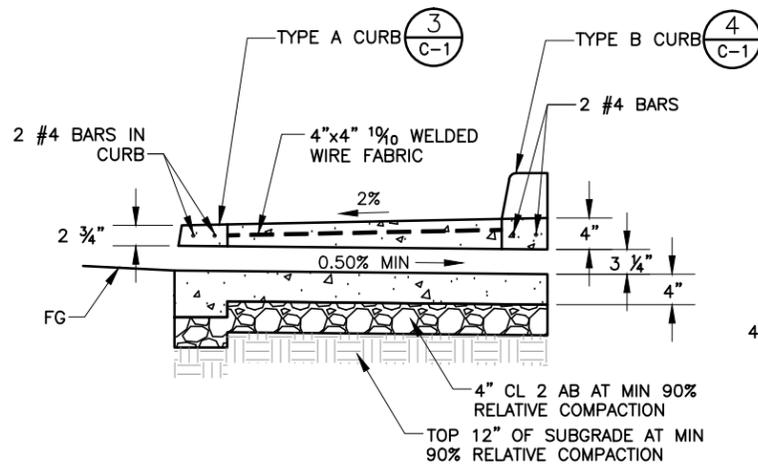
BROADWAY STREET
PLAN
NTS

NOTES:

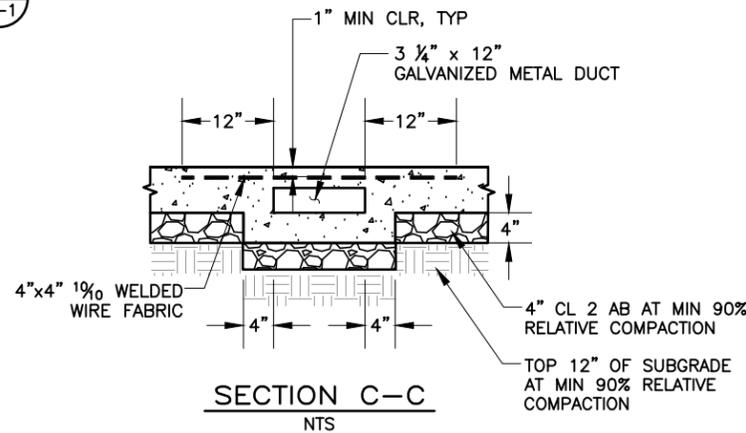
- SEE CITY OF VALLEJO STANDARD DETAIL "STANDARD VERTICAL CURB, GUTTER & SIDEWALK", DRAWING NO. 3-10, FOR ADDITIONAL DETAILS NOT SHOWN.
- DOWELS ARE NOT REQUIRED WHEN CONFORMING TO EXISTING AC SIDEWALK.



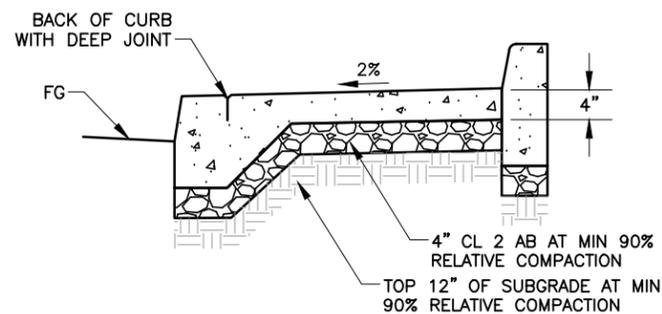
3 PIPE CONNECTION TO EXISTING INLET
NTS



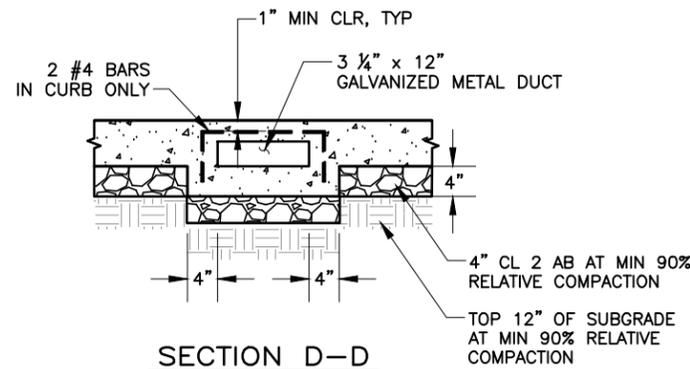
SECTION A-A
NTS



SECTION C-C
NTS

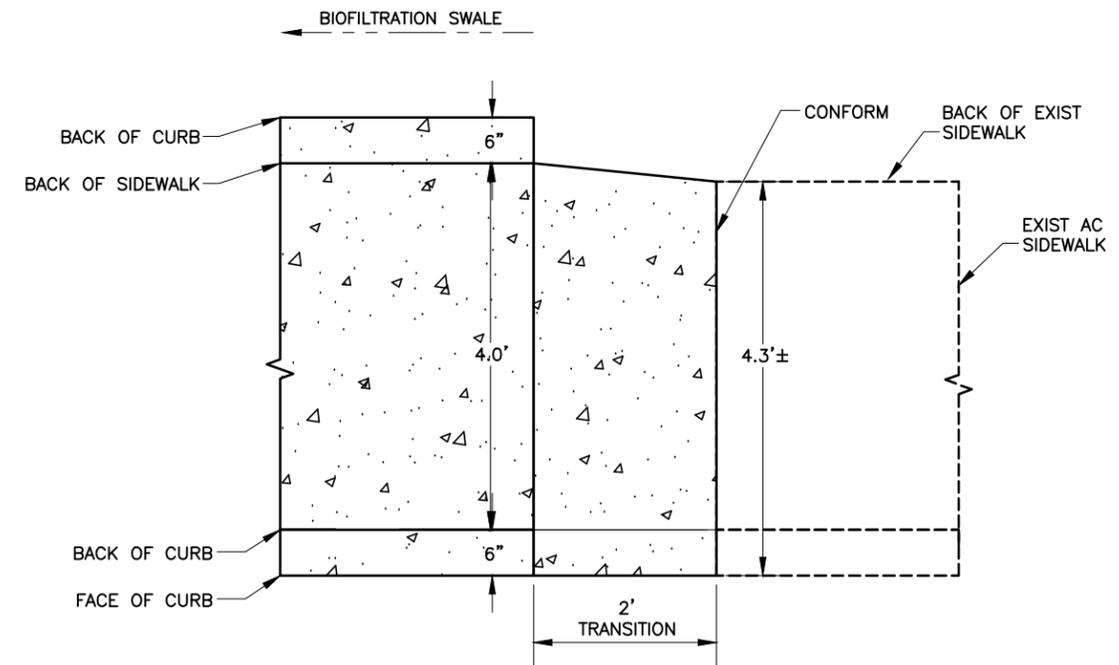


SECTION B-B
NTS



SECTION D-D
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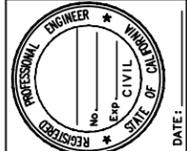
1 SIDEWALK OPENING
NTS



BROADWAY STREET
PLAN
NTS

2 SIDEWALK CONFORM
NTS

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CITY OF VALLEJO, CALIFORNIA

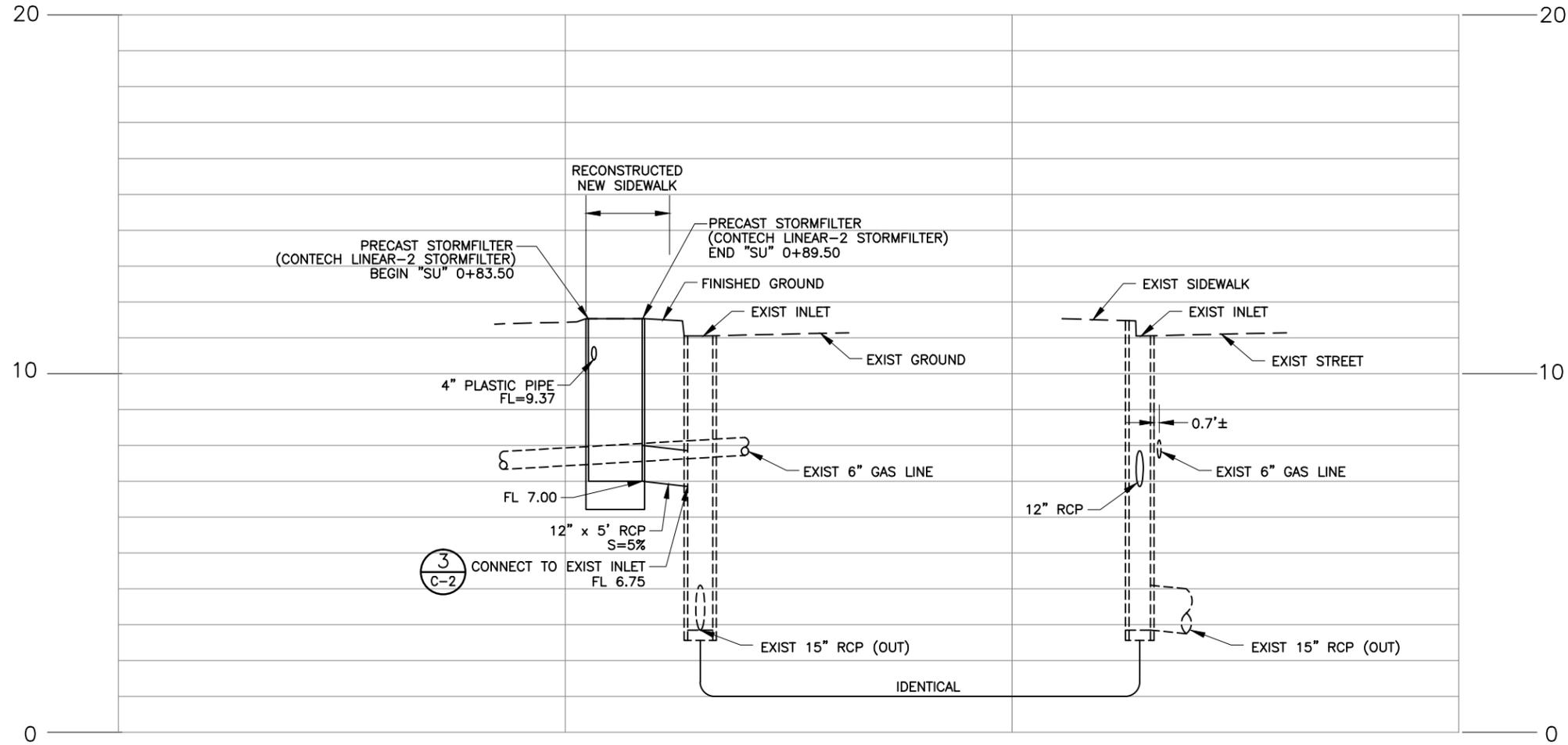
CONSTRUCTION DETAILS



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DATE: JULY 2013
SCALE: AS SHOWN

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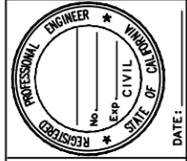
1. FOR NOTES AND ABBREVIATIONS NOT SHOWN SEE SHEET G-1.



1 DRAINAGE PROFILE (PG&E SUBSTATION)
SCALE: 1"=10'-0" H; 1"=2'-0" V

REVISION NO.	DESCRIPTION	BY	DATE

wreco
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URBAN RUNOFF TREATMENT RETROFITS
CITY OF VALLEJO, CALIFORNIA

DRAINAGE PROFILE

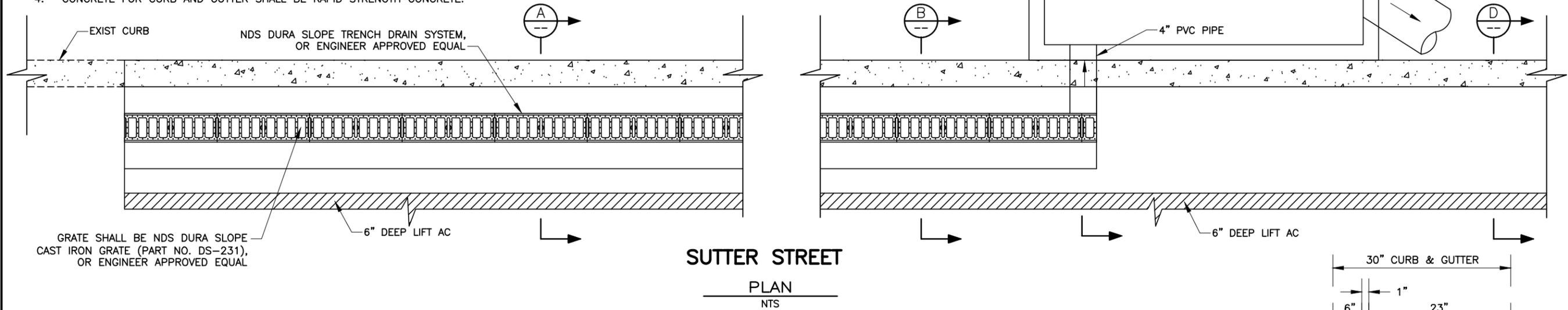


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CHECKED BY: AO
DATE: JULY 2013
SCALE: AS SHOWN

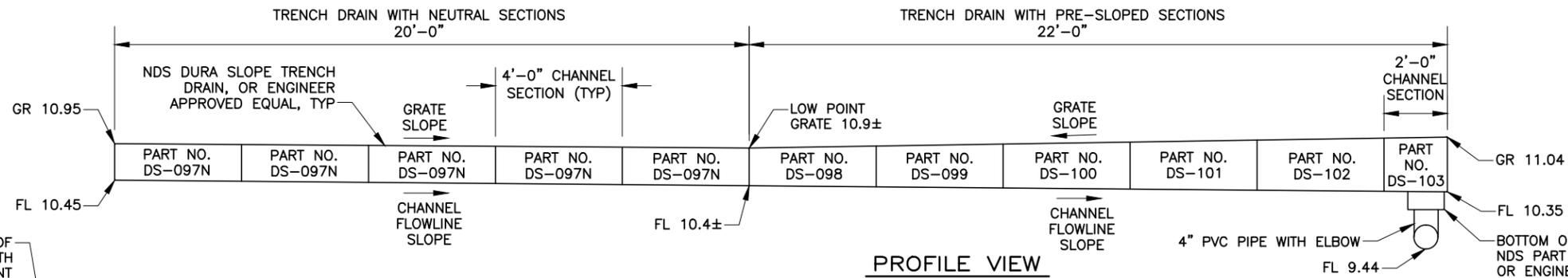
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SHEET 7 OF 10

NOTES:

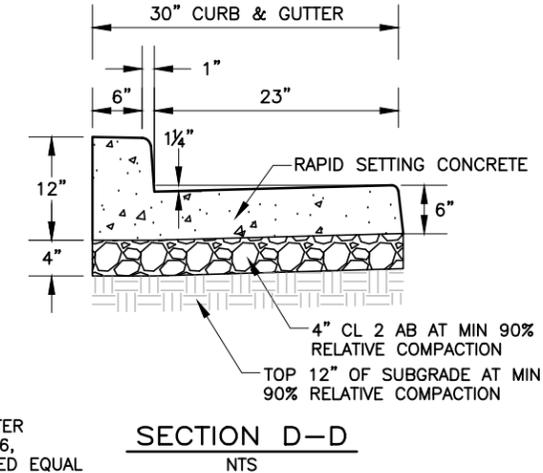
- TRENCH DRAIN CHANNELS TO BE INSTALLED WITH BLANK GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR (COVER HOLES WITH TAPE). TRENCH DRAIN SYSTEM CONSISTS OF NEUTRAL SECTIONS AND PRE-SLOPED SECTIONS WITH 0.7% BUILT IN SLOPE. SEE PROFILE VIEW FOR DETAILS.
- SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 6" OF RAPID STRENGTH CONCRETE WITH A MINIMUM OF 3,500 P.S.I. AND AVOID FULL LOAD TRAFFIC UNTIL CONCRETE HAS COMPLETELY HARDENED.
- ADJUST 2' WIDE GUTTER WITHIN TRENCH DRAIN AREA.
- CONCRETE FOR CURB AND GUTTER SHALL BE RAPID STRENGTH CONCRETE.



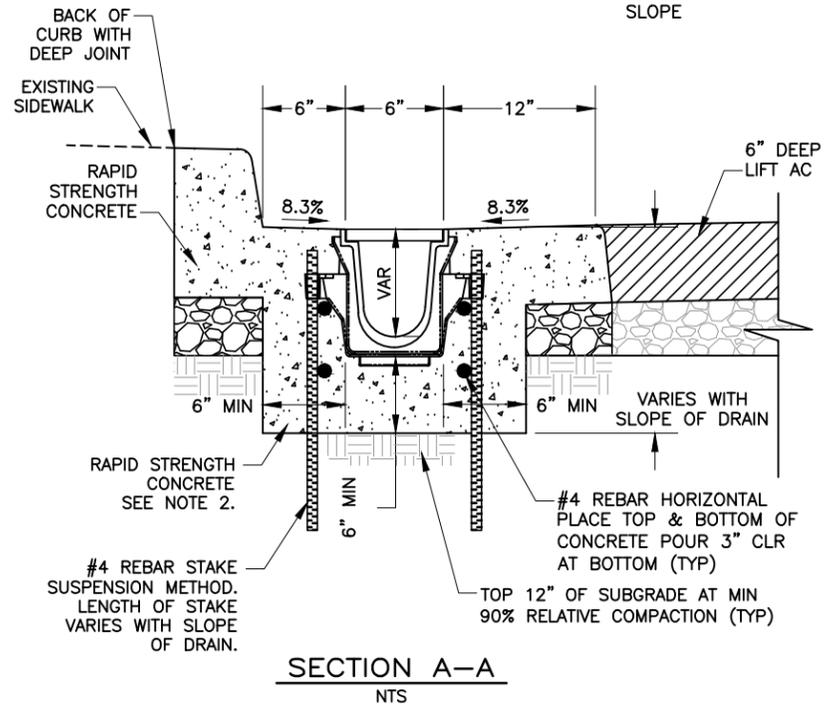
SUTTER STREET
PLAN
NTS



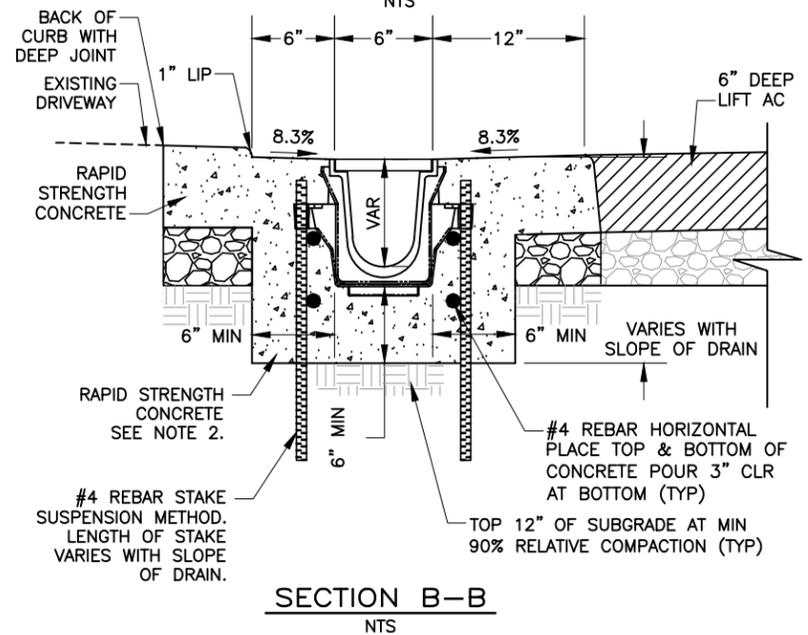
PROFILE VIEW
NTS



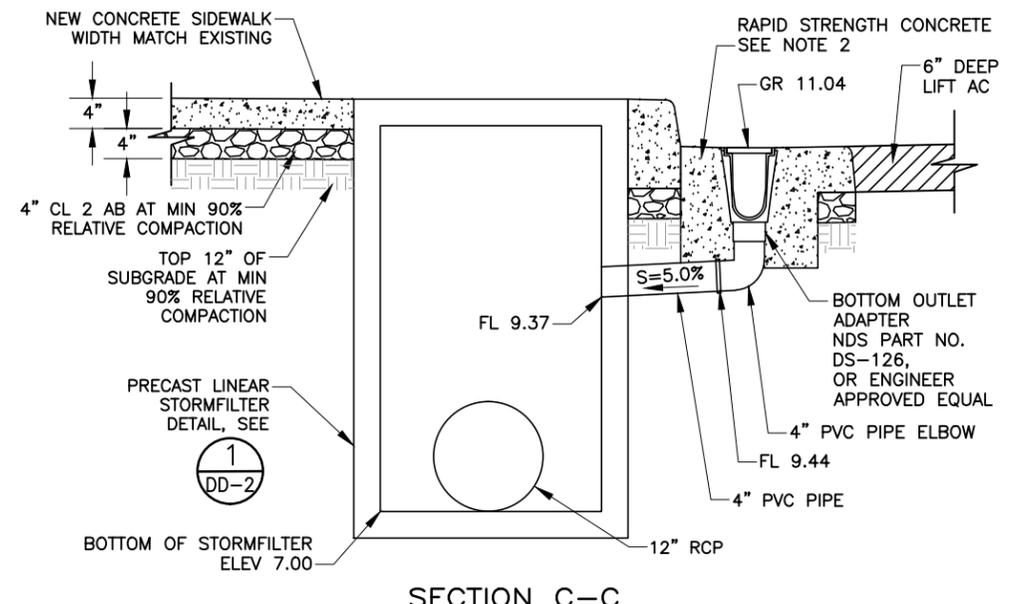
SECTION D-D
NTS



SECTION A-A
NTS



SECTION B-B
NTS

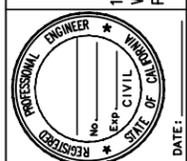


SECTION C-C
NTS

1 TRENCH DRAIN (NDS DURA SLOPE TRENCH DRAIN SYSTEM)
NTS

NO.	REVISION	DESCRIPTION	BY	DATE

wreco
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WALNUT CREEK, CA 94596
PH: (925) 941-0017

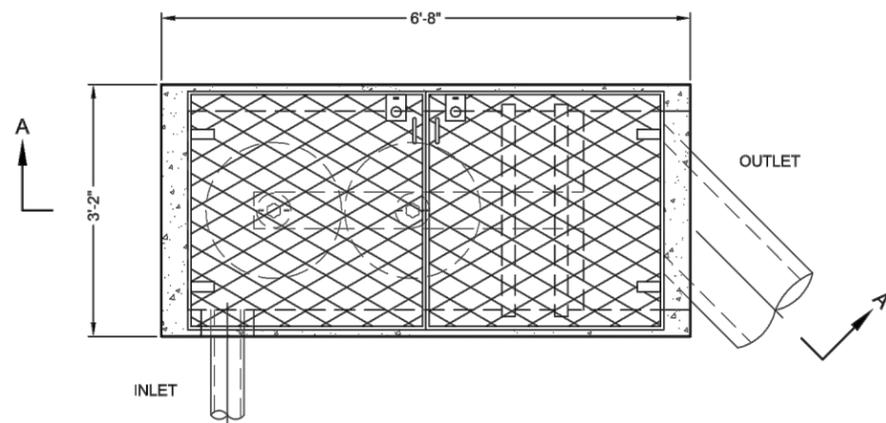


BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION
URBAN RUNOFF TREATMENT RETROFITS
CITY OF VALLEJO, CALIFORNIA

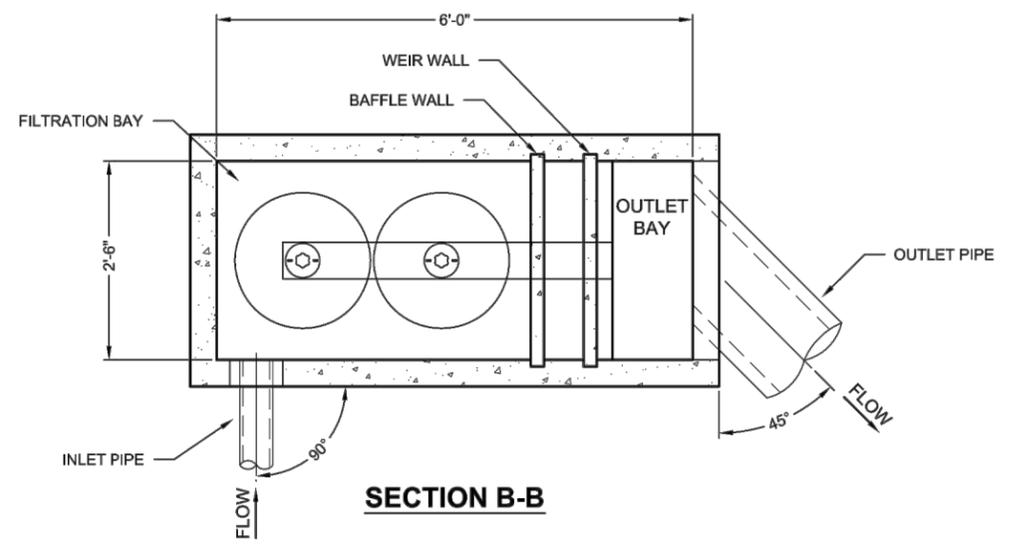


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DRAWN BY: IL
CHECKED BY: AO
DATE: JULY 2013
SCALE: AS SHOWN

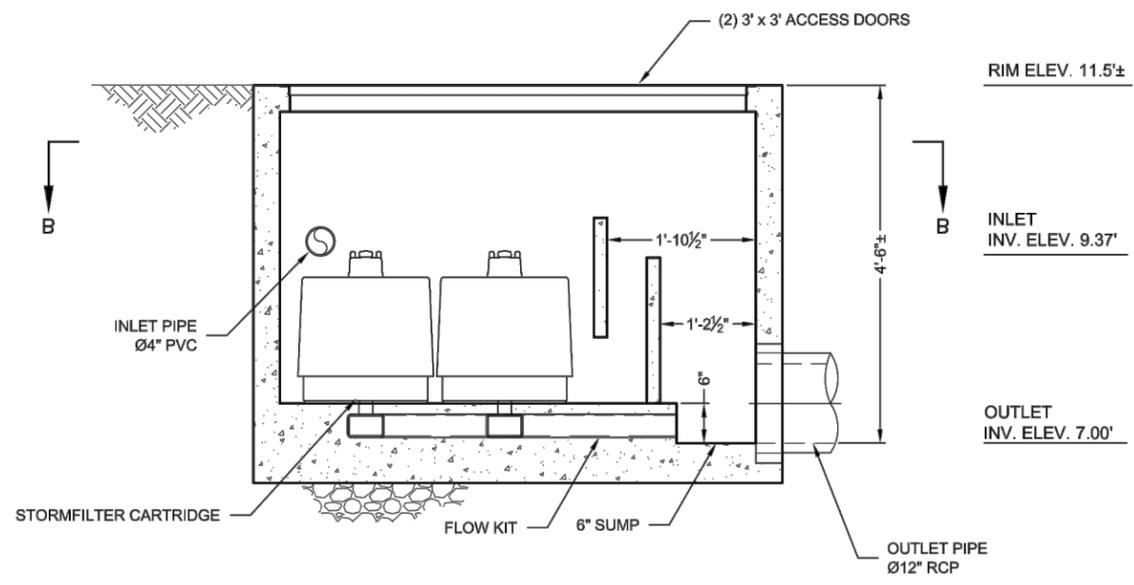
DRAINAGE DETAILS



PLAN VIEW



SECTION B-B



SECTION A-A

MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
2	18", 7.5 GPM, CSF/GAC CARTRIDGE (BLU)	CONTECH
0	2" PVC SLIP PLUG	CONTECH
1	FLOW KIT	CONTECH
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
2	3' x 3' ACCESS DOORS WITH ADJUSTABLE FRAME	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	0.03 CFS
PEAK FLOW RATE	0.3± CFS
RETURN PERIOD OF PEAK FLOW	10 YRS
FILTER MEDIA TYPE	CSF/GAC

PERFORMANCE SPECIFICATION
 FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES.** FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **37 SECONDS.** SPECIFIC FLOW RATE SHALL BE **# GPM/SF (MAXIMUM).** SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM).**

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
- LINEAR STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE LINEAR STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

STRUCTURE WEIGHT

APPROXIMATE HEAVIEST PICK = 8000 LBS.



The design and information shown on this drawing is provided as a service to the project owner, engineer or contractor. It is not to be used for any other purpose. No liability is assumed by the designer for any use of this drawing, in whole or in part, for any other project. The user of this drawing is responsible for obtaining all necessary permits and for the accuracy of the information provided. The user of this drawing is responsible for the design and construction of the project. The user of this drawing is responsible for the safety of the project. The user of this drawing is responsible for the cost of the project. The user of this drawing is responsible for the time of the project. The user of this drawing is responsible for the quality of the project. The user of this drawing is responsible for the success of the project.

MARK	DATE	REVISION DESCRIPTION	BY

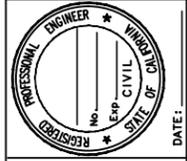
2 CARTRIDGE LINEAR PRECAST STORMFILTER - 484762-10
BASMAA PG&E SUB-STATION SITE
VALLEJO, CA
SITE DESIGNATION: XXX

CONTECH ENGINEERED SOLUTIONS LLC
 WWW.CONTECHES.COM
 5025 Contra Costa Dr., Suite 400, Walnut Creek, CA 94598
 925-938-3189 FAX: 925-938-7983 FAX

The Stormwater Management **StormFilter** is an innovative, modular, precast concrete structure designed to filter stormwater runoff. It is designed to meet the requirements of the California Stormwater Quality Act (CSWA) and the National Stormwater Management Association (NSMA) standards.

DATE:	6/12/13
DESIGNED:	DRAWN:
CHECKED:	APPROVED:
PROJECT NUMBER:	484762
SHEET:	1 OF 1

wreco
 1243 ALPINE ROAD, SUITE 108
 WALNUT CREEK, CA 94596
 PH: (925) 941-0017



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 URBAN RUNOFF TREATMENT RETROFITS
 CITY OF VALLEJO, CALIFORNIA



DESIGN BY: IL
 DRAWN BY: IL
 CHECKED BY: AO
 DATE: JULY 2013
 SCALE: AS SHOWN

DD-2
 SHEET 9 OF 10

1 PRECAST STORMFILTER (CONTECH LINEAR-2)
 NTS

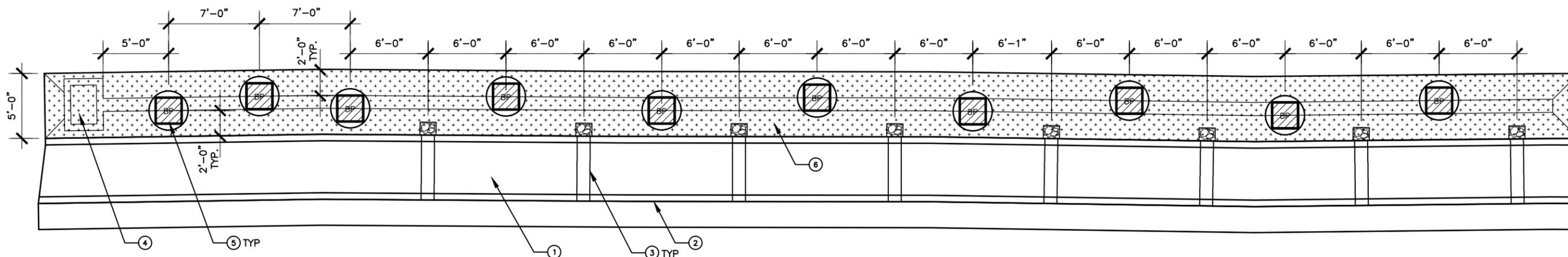
I:\AD\CONTECH\PROJECTS\484762\484762-10-STORMFILTER\DRAWINGS\CONTRACT\484762-10_SFLN2-COMA.DWG 6/18/2013 11:14 AM

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	SPACING	CONTAINER SIZE	DROUGHT TOLERANT	WATER USE	WATER USE SOURCE	COMMENTS
	BACCHARIS PILULARIS 'POZO SURF'	COYOTE BUSH	AS SHOWN	1 GAL.	YES	LOW	EBMUD	VARIETY IS AS AVLALE FROM LAS PILITAS NURSERY OR OTHER, 2' HEIGHT X 3' SPREAD
	BIOFILTRATION SOD: FESTUCA RUBRA HORDEUM BRACHYANTHERUM BRACHYANTHERUM HORDEUM CALIFORNICUM NASSELLA PULCHRA	BIOFILTRATION SOD: MOLATE FESCUE MEADOW BARLEY CALIFORNIA BARLEY PURPLE NEEDLE GRASS	NA	NA	YES	LOW	SOD SUPPLIER	SOD AS AVAILABLE FROM DELTA BLUEGRASS COMPANY, WWW.DELTABLUEGRASS.COM, COMMERCIAL NAME: BIORETENTION SOD, OR APPROVED EQUIVALENT

NOTES:

- ① SIDEWALK
 - ② FACE OF CURB
 - ③ SIDEWALK OPENING, TYP.
 - ④ FIELD INLET
 - ⑤ EDGE OF 2' SQUARE CUTOUT IN SOD FOR SHRUB PLANTINGS, COVER OPENING WITH 3" LAYER OF MULCH
1. LAY SOD CONTINUOUS THE PLANTER STRIP.
 2. MULCH IS: COMPOSTED MULCH KNOWN AS BROWNING-FERRIS INDUSTRIES NEWBY ISLAND SUPER-HUMUS COMPOST AS MANUFACTURED BY THE NEWBY ISLAND COMPOSTING FACILITY, MILPITAS, CA HTTP://ALLIEDWASTESCO.COM/FACILITIES.CFM

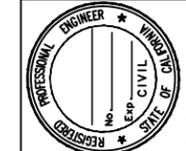


BROADWAY

① BIOFILTRATION SWALE PLANTING (TYP)
NTS

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CITY OF VALLEJO, CALIFORNIA

LANDSCAPE DETAIL

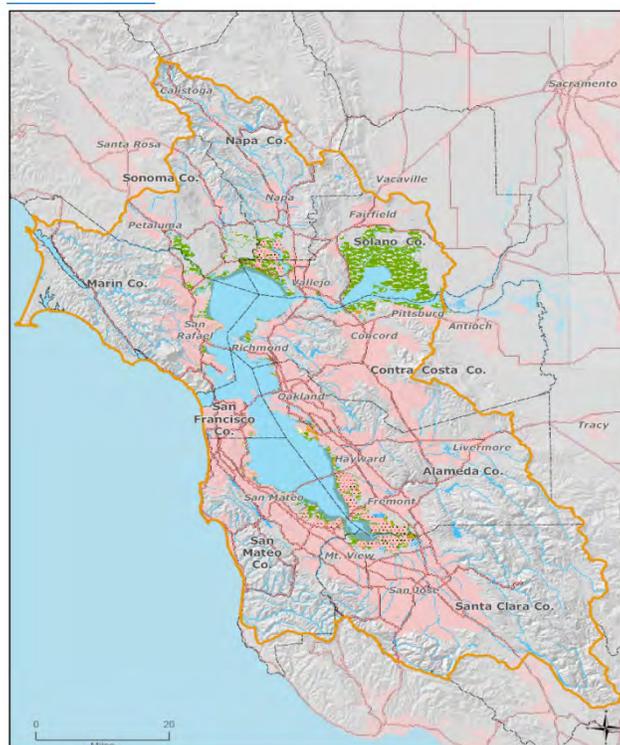


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DRAWN BY: IL
CHECKED BY: AO
DATE: JULY 2013
SCALE: AS SHOWN

CLEAN WATERSHEDS FOR A CLEAN BAY (CW4CB)

SEMI-ANNUAL PROGRESS REPORT NUMBER SIX

October 1, 2012 through March 31, 2013



April 30, 2013

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CLEAN WATERSHEDS FOR A CLEAN BAY (CW4CB) SEMI-ANNUAL PROGRESS REPORT NUMBER SIX

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B A S M A A

CLEAN WATERSHEDS FOR A CLEAN BAY (CW4CB)

SEMI-ANNUAL PROGRESS REPORT NUMBER SIX

April 30, 2013

I. INTRODUCTION

The Bay Area Stormwater Management Agencies Association (BASMAA)¹ is implementing a grant-funded project to test methods to improve water quality in San Francisco Bay. The project is called Clean Watersheds for a Clean Bay (CW4CB). CW4CB is evaluating a variety of potential control options to reduce mass loadings to the Bay of polychlorinated biphenyls (PCBs), mercury, and other particle-bound pollutants conveyed by urban stormwater runoff.

This sixth semi-annual report summarizes CW4CB's progress, focusing on the six-month reporting period of October 1, 2012 through March 31, 2013 (hereinafter referred to as "this reporting period"). The five main sections in this report are: (I) Introduction, (II) Background, (III) Status of Each Project Task, (IV) Financial Accounting, and (V) References. The first and second sections describe the project and provide background information. The third section provides the following information about the status of each project task:

- A description of activities accomplished;
- Status of achieving milestones;
- Problems encountered with achieving outputs/outcomes and their resolutions; and
- Activities planned over the next six-month reporting period (i.e., April 1, 2013 through September 30, 2013, hereinafter referred to as "the next reporting period").

The fourth section addresses the project's financial accounting. The fifth and final section provides a list of references cited in this report.

II. BACKGROUND

Fish tissue monitoring in San Francisco Bay has revealed bioaccumulation of PCBs, mercury, and other pollutants. The levels found are thought to pose a health risk to people consuming fish caught in the Bay. As a result of these findings, California has issued an interim advisory on the consumption of fish from the Bay. The advisory led to the Bay being designated as an impaired water body on the Clean Water Act "Section 303(d) list" due to PCBs, mercury, and other pollutants. In response, the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) has developed Total Maximum Daily Load (TMDL) water quality restoration programs targeting PCBs and mercury in the Bay. The general goals of the TMDLs are to identify sources of PCBs and mercury to the Bay and implement actions to control the sources and restore water quality.

¹BASMAA is a 501(c)(3) non-profit organization that coordinates and facilitates regional activities of municipal stormwater programs in the San Francisco Bay Area. BASMAA represents 96 agencies, including 84 cities, 7 counties, and several special districts.



CW4CB is implementing a number of priority urban runoff-related actions called for by the Bay PCBs and mercury TMDLs. The project is facilitated through a partnership among Bay Area municipalities and countywide municipal stormwater management programs and is funded by a grant to BASMAA from the United States Environmental Protection Agency (EPA).² A work plan for the project (BASMAA 2010) was submitted to EPA on September 23, 2009 (a final revised version is dated April 19, 2010 and is referred to as the "Project Work Plan" hereinafter). The total project cost is \$7.04 million - \$5M from USEPA and \$2.04M matching funds from Bay Area municipal stormwater agencies, municipal wastewater treatment agencies, and industrial dischargers. In addition, the project's efforts are leveraged by in-kind assistance from staff of municipalities participating in CW4CB. The planned project period is four years (July 2010 – June 2014). The knowledge and experience gained and the lessons learned during CW4CB will be promoted and made readily available to inform future similar efforts by others in the Bay Area and elsewhere in California and the United States.

The successful project outcome will contribute to developing a comprehensive regional strategy for reducing PCB and mercury loads in urban runoff, based on the cost-effectiveness of a range of potential pollutant control strategies, including pollution prevention, site remediation, municipal operation and maintenance (O&M) enhancements, stormwater treatment retrofitting, and diversion of stormwater to existing publicly owned treatment works (POTWs).

CW4CB is comprised of seven major tasks:

1. Project management, oversight, and reporting;
2. Selecting for pilot investigations five Bay Area region watersheds with relatively high levels of PCBs³ in sediments collected from roadway and stormwater drainage infrastructure and other relevant attributes;
3. Identifying potential PCB and mercury source properties within the five pilot watersheds and referring these sites to regulatory agencies for additional investigation, cleanup and abatement;
4. Developing and pilot-testing methods to enhance removal of sediment with PCBs and mercury during municipal street and storm drain system O&M activities within the five pilot watersheds;
5. Retrofitting eight to ten urban runoff treatment facilities into existing storm drainage infrastructure in the Bay Area region to remove PCBs and mercury;
6. Facilitating development and implementation of a Bay Area regional risk communication and exposure reduction program that focuses on educating the public about the health risks of consuming certain species of Bay fish with relatively high levels of PCBs and mercury; and
7. Documenting the knowledge and experience gained and the lessons learned during the project and making this information readily available.

III. STATUS OF EACH PROJECT TASK

The following sections describe the current status of each project task.

²Funding is through EPA's San Francisco Bay Area Water Quality Improvement Fund.

³Reducing loads of PCBs is the primary consideration whereas reducing loads of mercury and other particle-bound pollutants is a secondary factor.



Task 1. Management, Oversight, and Reporting

A. Description of activities accomplished

OVERSIGHT AND COORDINATION

A Project Management Team (PMT) consisting of BASMAA's executive director and representatives from several BASMAA member agencies (i.e., Bay Area stormwater management programs contributing matching funds to the project)⁴ was formed at the outset of the project. The PMT provides project oversight and facilitates coordination among the participating stormwater programs and Bay Area cities that are partnering in the project.⁵ The PMT meets periodically, usually on the second Wednesday of the month, and met once during this reporting period: February 13, 2013. Meeting highlights and action items are memorialized in a subsequent meeting agenda package that is available upon request. The PMT has also convened task-specific workgroups. These workgroups did not meet during this reporting period.

TAC

The CW4CB Technical Advisory Committee (TAC) is tasked with helping to optimize the scientific and technical soundness, integrity, and objectivity of the project. The TAC is comprised of four local and national experts in the field of stormwater pollution control:

1. Dr. Tom Mumley (Assistant Executive Officer, Regional Water Board).
2. Dr. Lester McKee (Director of the Watershed Program, San Francisco Estuary Institute).
3. Scott Taylor, P.E. (Senior Vice President, RBF Consultants)
4. Dr. Roger Bannerman (Environmental Scientist, Wisconsin Department of Natural Resources)

An initial meeting of the TAC was held October 24, 2011. During this reporting period, a second TAC meeting was held on October 26, 2012. Prior to this meeting, a draft monitoring work plan for the retrofitting program (CW4CB Task 5) and the draft results of desktop analyses to inform design of the O&M enhancement pilot studies (CW4CB Task 4) were submitted to the TAC for review. These documents were discussed at the TAC meeting.

QAPP and SAP

EPA approved both the overall project Quality Assurance Project Plan (QAPP) and the Task 3 Sampling and Analysis Plan (SAP) during the previous reporting period. Separate SAPs are being developed for each task to reflect the detailed monitoring efforts specific to a given task. These task-specific SAPs are submitted to EPA for review and approval prior to the start of monitoring for each respective Task.

⁴The following BASMAA agencies are represented on the PMT and contribute matching funds to the project: San Mateo Countywide Water Pollution Prevention Program, Santa Clara Valley Urban Runoff Pollution Prevention Program, Alameda Countywide Clean Water Program, Contra Costa Clean Water Program, Fairfield-Suisun Urban Runoff Management Program, and Vallejo Sanitation and Flood Control District.

⁵Six Bay Area cities are current project partners: City of El Cerrito, City of Vallejo, City of Oakland, City of San Carlos, City of Richmond, and City of San Jose.



During this reporting period the following activities related to Task 5 SAP development occurred:⁶

- The AMS monitoring contractor team, under the guidance of the PMT, developed a draft Task 5 Screening Monitoring SAP (e.g., the first Phase of Task 5), which was submitted to EPA for review.
- EPA provided to the PMT their comments and suggested revisions for the Task 5 Screening Monitoring SAP.
- The Task 5 Screening Monitoring SAP was revised according to EPA comments and re-submitted to EPA.
- The revised Task 5 Screening Monitoring SAP was approved by EPA.

B. Status of Achieving Milestones

OVERSIGHT AND COORDINATION

The PMT continued to meet regularly in accordance with the Project Work Plan schedule.

TAC

The project work plan calls for TAC guidance and oversight of key decision points and reviewing and commenting on drafts of all project deliverables. The PMT received TAC input on Task 4 O&M enhancement pilot study design and the Task 5 retrofit monitoring plan at the TAC meeting held on October 26, 2012. Following the October meeting, the PMT received additional written comments on both the Task 5 monitoring plan and Task 4 O&M enhancement pilot study selection from the TAC.

QAPP and SAP

The schedule in the Project Work Plan calls EPA approval of the QAPP during Year 1 Q3 of the project (January - March 2011). EPA provided final approval of the QAPP and the Task 3 SAP during the previous reporting period. Per ongoing discussions between the PMT and EPA, the PMT is developing task-specific SAPs and submitting to EPA for review and approval prior to commencement of field monitoring activities for a given task.

During this reporting period the Task 5 Screening Monitoring SAP was developed, reviewed by EPA, revised, and then approved by EPA.

C. Problems encountered with achieving outputs/outcomes and their resolutions

Problems related to this task were not encountered during this reporting period.

D. Activities planned over the next six months

OVERSIGHT AND COORDINATION

The PMT and its workgroups will continue to meet regularly as needed.

⁶The Alameda Countywide Clean Water Program (ACCWP) is assisting with the effort to develop CW4CB's Task 5 Screening Monitoring SAP as an in-kind contribution to its matching funds commitment.



TAC

The PMT will submit the Task 4 O&M enhancement pilot study designs to the TAC for their review and comment during the next reporting period. The PMT anticipates submitting a revised Task 5 retrofit evaluation monitoring plan to the TAC for review and comment before the end of the next reporting period. The monitoring plan will be implemented during the 2013/14 wet season.

SAPs

The PMT anticipates developing a draft Task 4 SAP and submitting to EPA for review and final approval during the next reporting period.

Task 2. Watershed Selection for Task 3 Investigations

CW4CB Task 2 entailed selecting five Bay Area region watersheds for pilot source property identification and referral investigations conducted via CW4CB Task 3 (see the next section for a description of Task 3). During a previous reporting period the PMT confirmed the following five watersheds (Figure 1) have been selected for CW4CB Task 3 source property identification and referral pilot investigations:

1. Parr Channel watershed in the City of Richmond in Contra Costa County.
2. Lauritzen Channel watershed in the City of Richmond in Contra Costa County.
3. Ettie Street Pump Station watershed in the City of Oakland, Alameda County.
4. Pulgas Creek Pump Station watershed in the City of San Carlos, San Mateo County.
5. Leo Avenue watershed in the City of San Jose, Santa Clara County.

These five watersheds are located in older industrial regions in the Bay Area where past studies have found elevated PCB and mercury concentrations in sediments collected from streets and storm drains.

A. Description of activities accomplished

Not applicable - Task 2 is complete.

B. Status of Achieving Milestones

Not applicable - Task 2 is complete.

C. Problems encountered with achieving outputs/outcomes and their resolutions

Not applicable - Task 2 is complete.

D. Activities planned over the next six months

Not applicable - Task 2 is complete.



B A S M A A

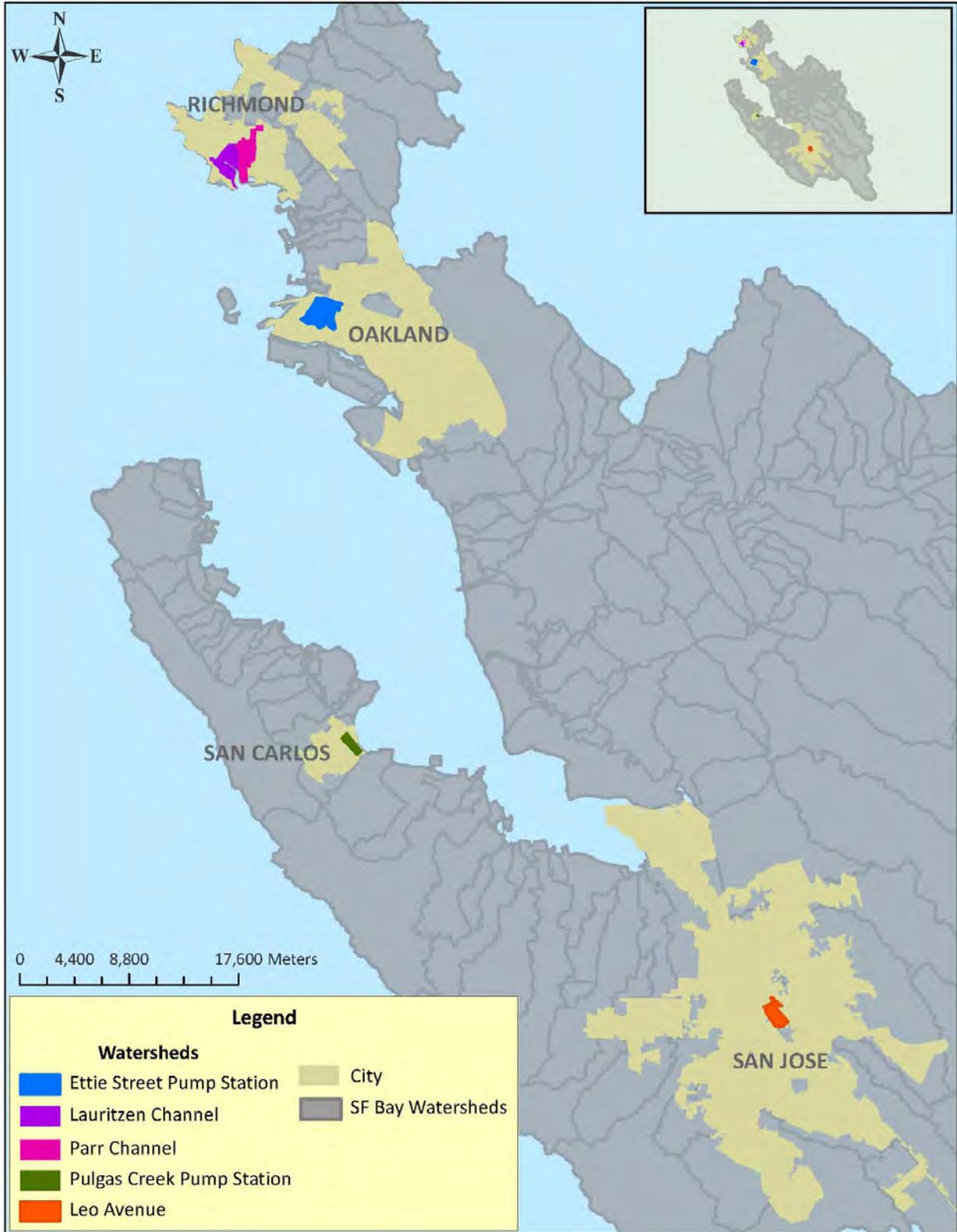


Figure 1. Study Watershed Locations.



Task 3. Investigations to Identify Potential Source Properties and Refer for Abatement

Task 3 implements a process to identify specific potential PCB and mercury source properties within the five project watersheds and refer these sites to regulatory agencies for additional investigation, cleanup and abatement. The process generally consists of the following five steps:

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

A. Description of activities accomplished

During this reporting period, the AMS and KLI monitoring teams completed the first round of soil/sediment sample collection in the public right-of-way in each of the five project watersheds. The number of soil/sediment samples that were collected in each watershed is as follows:

AMS Team:

- Ettie Street Pump Station Watershed (28 samples)
- Lauritzen Channel Watershed (7 samples)
- Parr Channel Watershed (8 samples)

KLI Team:

- Leo Avenue Watershed (22 samples)
- Pulgas Creek Pump Station Watershed (13 samples)

All samples were collected and submitted to the project laboratories as described in the QAPP and Task 3 SAP. Consistent with the Project Work Plan, soil/sediment samples were analyzed for PCBs, mercury, total organic carbon (TOC), and grain size. Approximately 10 percent of the samples (selected randomly) were also analyzed for dioxins, PBDEs, organochlorine pesticides, and PAHs.

SFEI, as part of the AMS team, was selected to provide data management and data quality review for all Task 3 soil/sediment testing results. BASMAA contracts for data management and data quality review were finalized in October 2012.



During the current reporting period, data validation and data verification efforts began as chemical analyses were completed for the first round of soil/sediment samples. All PCB and mercury concentration data from these samples were validated and verified for quality per the QAPP and distributed to the PMT during this reporting period.

In addition, planning for the second round of sampling, which will focus on private properties, was initiated during this reporting period. The PMT representative from each study watershed reviewed the available public right-of-way sediment chemistry data, identified potential private properties for sample collection during the second round of monitoring, and initiated efforts to gain permission to access these private properties for sample collection. The Contra Costa Clean Water Program did not propose additional private property sample collection in the Richmond watersheds (Lauritzen Channel and Parr Channel) because they deemed that the results from the first round of sampling in the public right-of-way, combined with past efforts in these watersheds, provided sufficient evidence to proceed with private property referrals to the Regional Water Board.

B. Status of Achieving Milestones

The schedule in the Project Work Plan calls for conducting surface soil/sediment testing during Q4 Year 1 and Q1 Year 2 of the project (April through September 2011). The first round of surface soil/sediment sample collection in the public right-of-way was completed in all five project watersheds during this reporting period.

C. Problems encountered with achieving outputs/outcomes and their resolutions

Problems related to this task were not encountered during this reporting period.

D. Activities planned over the next six months

Data quality verification and validation of all public-right-of-way soil/sediment samples collected during the first round of sampling will be completed during the next reporting period. The second round of soil/sediment collection on private properties will commence during the next reporting period. The PMT anticipates the monitoring contractors will complete the second round of soil/sediment testing during the next reporting period. Consistent with the Project Work Plan, soil/sediment samples will be analyzed for PCBs, mercury, total organic carbon (TOC), and grain size. Approximately 10 percent of the samples (selected randomly) will also be analyzed for dioxins, PBDEs, organochlorine pesticides, and PAHs.

In addition, the PMT anticipates working with the Regional Water Board staff over the next reporting period to develop the procedures for submitting private property referrals based on Task 3 records review, inspections, and soil/sediment chemistry data.

Task 4. Enhancements of Municipal O&M Practices

CW4CB Task 4 will evaluate on a pilot-scale methods to enhance the pollutant load reduction benefits of municipal O&M activities that remove sediment from streets and storm drain system infrastructure. The pilot studies will mainly be conducted within the five Bay Area region watersheds selected for source property identification and referral (CW4CB Task 3) as described earlier. The project will work



with municipal staff to test enhancing removal of sediments and associated particle-bound pollutants during routine activities such as street sweeping, storm drain inlet cleaning, storm drain system piping maintenance, and pump station maintenance. The evaluation will also include consideration of street and piping flushing (potentially with recycled water) and capture, collection, and/or routing to the sanitary sewer.

A. Description of activities accomplished

During this reporting period, efforts to select municipal O&M enhancement pilot studies continued. The draft results of a Desktop Analysis to inform selection of municipal O&M enhancement pilot studies in the Ettie Street Pump Station, Leo Avenue, and Pulgas Creek Pump Station pilot investigation watersheds (BASMAA 2012a) were presented to the TAC at the October 2012 meeting. The Contra Costa Clean Water Program also presented their proposal for two O&M enhancement pilot studies in the Lauritzen and Parr Channel watersheds to the TAC at the October meeting. After receiving feedback from the TAC at the meeting and written comments from some TAC members following the meeting, the PMT proposed the following six O&M enhancement pilot projects:

1. Enhanced pump station maintenance (Ettie Street Pump Station watershed, Oakland)
2. Integrated monitoring/modeling enhanced street sweeping (Leo Avenue watershed, San Jose, and East California Avenue, Sunnyvale)
3. Storm drain system cleaning and closed circuit television inspection (Lauritzen Channel/Santa Fe Channel watersheds, Richmond)
4. Curb and gutter improvements (North Richmond watershed, Richmond)
5. Street flush and capture (Pulgas Creek Pump Station watershed, San Carlos)
6. Storm drain line cleanout (Leo Avenue watershed, San Jose)

During the current reporting period, a BASMAA contract was finalized with the Geosyntec and Brian Currier study design team, which was selected through a competitive process during the previous reporting period. The study design team was tasked with developing five study designs/monitoring plans for the Task 4 O&M enhancement pilot projects. The PMT continued to work closely with the study design team to provide any required information, and work with relevant municipal staff to facilitate development of the study designs. The study designs are currently being developed and the first draft is anticipated early in the next reporting period. The sixth project in Leo Avenue was added to the list later, and the study design for this project will be developed through in-kind contributions of the Santa Clara Valley Urban Runoff Pollution Prevention Program, following the study design variables and methodologies detailed in the Richmond storm drain system cleaning pilot project.

B. Status of Achieving Milestones

The schedule in the Project Work Plan calls for preparing proposed subwatershed strategies for Task 4 pilot studies by the end of Q1 of Year 2 of the project (September 2011). Progress toward developing watershed-specific sediment management strategies continues with the selection of six O&M enhancement pilot projects and ongoing development of specific study designs for those projects.

The schedule in the Project Work Plan calls for implementing the municipal O&M enhancement pilot studies during Q2 Year 2 through Q1 Year 4 (October 2011 - September 2013). This work has not yet



commenced and is pending development of the pilot study designs and Task 4 SAP, which are expected to be finalized during the next reporting period.

C. Problems encountered with achieving outputs/outcomes and their resolutions

Problems related to this task were not encountered during this reporting period.

D. Activities planned over the next six months

Planning for the Task 4 pilot studies will be ongoing throughout the next reporting period. The O&M Enhancement pilot study designs are expected to be completed early in the next reporting period, and submitted to the PMT and TAC for review and comment prior to finalization. Once the plans have been finalized, the monitoring contractor will develop the Task 4 SAP. The PMT expects to submit the Task 4 SAP to the EPA for review and approval during the next reporting period. Once the Task 4 SAP has been approved, the O&M enhancement pilot studies will be initiated. The PMT anticipates starting the O&M enhancement pilot studies before the end of the next reporting period.

Task 5. Urban Runoff Treatment Retrofits

This task is evaluating the effectiveness of eight to ten urban runoff treatment facilities that have been or will be retrofitted into existing infrastructure in the Bay Area region. The retrofitting program is targeting areas in the Bay Area urban landscape with elevated PCBs, with mercury and other pollutants being a secondary consideration. At least one retrofit has been or will be installed in each of five major Bay Area counties (Santa Clara, San Mateo, Alameda, Contra Costa, and Solano).⁷

A. Description of activities accomplished

During this reporting period, the Retrofit Workgroup continued to refine the work plans, budgets, and schedules for the pilot retrofit projects. No Retrofit Workgroup meetings were held during the reporting period.

Planning, engineering, design, permitting and construction of the retrofit projects were ongoing during this reporting period, with each project following a separate schedule. BASMAA (2012b) contains additional details about each retrofit project and its schedule.

Under guidance from the PMT, the Geosyntec and Brian Currier study design team, continued to develop Task 5 monitoring plans, and provide general technical guidance, as needed, for the design and construction of the retrofit projects to meet anticipated monitoring needs. The draft Task 5 monitoring plan was submitted to the TAC, and presented at the TAC meeting in October 2012. Based on TAC input, the PMT subsequently decided on a two-phase approach to Task 5 monitoring. The first phase is a screening monitoring entailing collecting grab urban runoff samples at locations representative of retrofit influent, and the second phase is a post-construction evaluation of retrofit effectiveness. The study design team developed a draft screening monitoring plan, which was submitted to the PMT and TAC for review and comment, and finalized based on the input received in January 2013 (Currier 2013).

⁷Some but not all of the retrofits will be sited within the five pilot watersheds selected for source property identification and referral described previously.



Following development and EPA approval of a Task 5 Screening Monitoring SAP (described under Task 1), the AMS monitoring team was prepared to conduct the screening monitoring during this reporting period. However, due to a lack of storms large enough to meet sampling criteria, screening monitoring was not conducted during this monitoring period.

B. Status of Achieving Milestones

The schedule in the Project Work Plan calls for conducting conceptual design of the retrofit locations and types during the first year of the project (July 2010 - June 2011) and, during the second year of the project (July 2011 - June 2012), conducting planning, engineering, design and permitting for each project. The schedule then calls for construction of the retrofits during Q1 and Q2 of year 3 of the project (July 2012 – December 2012). Planning, engineering, design, permitting and construction of the retrofit projects were ongoing during this reporting period, with each project following a separate schedule. BASMAA (2012b) contains additional details about each project and associated schedule.

The schedule in the Project Work Plan calls for monitoring of the retrofit projects during Q3 and Q4 of Year 3 of the project (January 2013 through June 2013). The results of the monitoring will inform a quantitative estimation of the degree to which the retrofits reduce loads of PCBs and mercury (and other pollutants as appropriate) to the Bay. A draft monitoring plan was reviewed by the PMT and TAC and revised based on the input received during this reporting period. Based on the input received, a two-phase approach to monitoring was proposed, and a draft plan for the first phase (screening monitoring) was developed. The monitoring plan for the second phase (retrofit effectiveness evaluation) will be developed with input from the screening monitoring results. Following a process of review by the PMT and TAC and subsequent revision, the screening monitoring plan was finalized, the Task 5 screening monitoring SAP was developed and received final approval from EPA, and the monitoring contractor finalized preparations to initiate screening monitoring.

C. Problems encountered with achieving outputs/outcomes and their resolutions

Problems related to this task were not encountered during this reporting period.

D. Activities planned over the next six months

During the next reporting period, planning, engineering, design, permitting and construction of the retrofit projects will continue, with each project following a separate schedule (BASMAA 2012b). In addition, the retrofitting workgroup will continue to hold meetings as appropriate.

It is anticipated that screening monitoring will be conducted during the remainder of the 2012/13 rainy season. Utilizing the results of the screening monitoring, the PMT will continue to develop a monitoring plan for the second phase of monitoring to evaluate pilot retrofit effectiveness. It is anticipated monitoring for the second phase will be conducted during the 2013/14 rainy season.

Task 6. Risk Communication and Exposure Reduction

This task implemented a regional program of risk communication activities to raise public awareness of fish contamination issues in San Francisco Bay and to encourage fish-consuming populations to reduce



their exposure to pollutants in contaminated fish. The Project Work Plan describes how this effort was accomplished and includes four general sub-tasks:

- Sub-task 1. Convene a risk reduction stakeholder advisory group.
- Sub-task 2. Develop a broad risk communication strategy.
- Sub-task 3. Award and oversee implementation of mini-grants.
- Sub-task 4. Conduct evaluation activities.

BASMAA developed the above sub-tasks and an associated schedule in coordination with a Bay Area risk communication and exposure reduction work group that included representatives from BASMAA, the California Department of Public Health (CDPH), Bay Area Clean Water Agencies (BACWA), and Regional Water Board and EPA staff. This task is received additional funding from other dischargers to the Bay that have similar NPDES permit requirements, including BACWA and industrial dischargers. CDPH was put under contract through the Aquatic Science Center (ASC) to BASMAA to conduct the above sub-tasks as part of what is now called the San Francisco Bay Fish Project (SFBFP).

A. Description of activities accomplished

Not applicable - Task 6 is complete.

B. Status of Achieving Milestones

Not applicable - Task 6 is complete.

C. Problems encountered with achieving outputs/outcomes and their resolutions

Not applicable - Task 6 is complete.

D. Planned activities for the next six months

Not Applicable. Task 6 is complete.

Task 7. Outreach and Technology Transfer

This task will document the knowledge and experience gained and the lessons learned during the project and making this information and guidance readily available to inform future efforts to mitigate urban runoff discharges of PCBs and other pollutants.

A. Description of activities accomplished

During this reporting period, work began on Sub-task 7.a – Work Plan. The draft work plan describes the tasks and sub-tasks, schedules, and budgets; as well as responsible parties for implementing Task 7.



B. Status of Achieving Milestones

The schedule in the Project Work Plan calls for the developing and updating a project web portal, beginning during the first quarter of the project and continuing over the course of the project. The web portal is at an early stage of development. Other milestones are not reached until near the end of the project.

C. Problems encountered with achieving outputs/outcomes and their resolutions

Problems related to this task were not encountered during this reporting period.

D. Activities planned over the next six months

The draft Work Plan will be finalized and the PMT will launch a web portal during the next reporting period.

IV. FINANCIAL ACCOUNTING

The third progress report provided a financial accounting of costs incurred during the first year of the project (July 2010 through June 2011). The project team is currently gathering information (e.g., timesheets from the various individuals documenting in-kind contributions towards their agency's match) and preparing a financial accounting of costs incurred during the second year of the project (July 2011 through June 2012) and through the first half of the third year of the project (July 2012 – December 2012). BASMAA will submit this information to EPA as soon as possible.

V. REFERENCES

BASMAA 2010. *Clean Watersheds for a Clean Bay*. Bay Area Stormwater Management Agencies Association San Francisco Bay Water Quality Improvement Fund Proposal submitted September 23, 2009. Revised April 19, 2010.

BASMAA 2012a. *Desktop Analysis to Inform Pilot Testing of Municipal Operation and Maintenance Enhancements for PCB and Mercury Load Reduction*. Final Report. October 2012.

BASMAA 2012b. *Regional Pollutants of Concern Report for FY 2011-2012 and Regional Monitoring Coalition Monitoring Status Report for February-June 2012*. September 11, 2012.

Currier 2013. *CW4CB Task 5 2012-13 Monitoring Scope*. Office of Water Programs, Sacramento State University. January 9, 2013.

**CW4CB Task 4: Operation and Maintenance Enhancement Pilot Projects
Monitoring for the Pulgas Creek Pump Station Watershed Street Flushing Pilot Project,
San Carlos, CA
WORK ORDER 4**

EXHIBITS

- A Scope of Work**
- B Compensation**
- C CONSULTANT's Fee Schedule**
- D CW4CB Task 4 Sampling and Analysis Plan (SAP)**
- E CW4CB Quality Assurance Project Plan (QAPP)**
- F CW4CB Task 4 Street Flushing Field SAP**
- G Standard Scope of Services for Laboratories Performing Chemical Analyses**

EXHIBIT A - SCOPE OF WORK

Introduction

BASMAA is implementing a new grant-funded project to test methods to improve water quality in San Francisco Bay called Clean Watersheds for a Clean Bay (CW4CB). CW4CB is evaluating a variety of potential control options to reduce mass loadings to the Bay of polychlorinated biphenyls (PCBs), mercury and other particle-bound pollutants conveyed by urban stormwater runoff. BASMAA is a 501(c)(3) non-profit organization that coordinates and facilitates regional activities of municipal stormwater programs in the San Francisco Bay Area. BASMAA represents 96 agencies, including 84 cities, seven counties, and several special districts.

The CW4CB Grant is comprised of seven major tasks:

1. Project management, oversight and reporting
2. Selecting for pilot investigations five Bay Area region watersheds with relatively high levels of PCBs in sediments collected from roadway and stormwater drainage infrastructure and other relevant attributes
3. Identifying PCB and mercury source properties within the five pilot watersheds and referring these sites to regulatory agencies for cleanup and abatement
4. Developing and pilot-testing methods to enhance removal of sediment with PCBs and mercury during municipal street and storm drain system operation and maintenance activities
5. Retrofitting eight to ten urban runoff treatment facilities into existing storm drainage infrastructure in the Bay Area region to remove PCBs and mercury
6. Facilitating development and implementation of a Bay Area regional risk communication and exposure reduction program that focuses on educating the public about the health risks of consuming certain species of Bay fish that contain relatively high levels of PCBs and mercury
7. Documenting the knowledge and experience gained and the lessons learned during the project and making this information and guidance readily available

CW4CB Task 4 will evaluate on a pilot-scale methods to enhance the pollutant load reduction benefits of municipal O&M activities that remove sediment from streets and storm drain system infrastructure. The pilot studies will be conducted within the five Bay Area region watersheds selected for source property identification and referral (CW4CB Task 3) as described earlier. The project will work with municipal staff to test enhancing removal of sediments and associated particle-bound pollutants during routine activities such as street sweeping, storm drain inlet cleaning, storm drain system piping maintenance, and pump station maintenance. The evaluation will also include consideration of street and piping flushing (potentially with recycled water) and capture, collection, and/or routing to the sanitary sewer.

This Scope of Work details tasks to be completed by the CONSULTANT in support of the Pulgas Creek Pump Station Watershed Street Flushing pilot project. This pilot project entails

four flush and capture events implemented by the City of San Carlos. Each event will cover 1,000 feet of complete street width (curb to curb), subject to water availability and other considerations. Each event will use two vactor trucks and four maintenance staff for a single day of flushing. The first vactor truck will be the water source and will use a wand attachment for flushing. The second vactor truck will capture the debris and wash water using its vacuum, with no water returning to the storm drain system. Wastewater will be decanted and disposed of into the sanitary sewer system via an existing hose connection on the vactor truck. The remaining sediment slurry will be emptied and dried at the municipal corporation yard and disposed of with other debris routinely collected by maintenance staff. Sediment and water samples collected during the flushing events will be characterized for mercury, PCBs, total organic carbon, and grain size.

Task 1. Project Management and Coordination

The CONSULTANT shall coordinate the management of the tasks described in this Scope of Work and communicate with the CW4CB Project Management Team and staff from the City of San Carlos. The CONSULTANT shall provide the following key project personnel:

- Fieldwork Project Manager. This person will be responsible for ensuring field sampling personnel adhere to the provisions of the BASMAA CW4CB Task 4 Sampling and Analysis Plan (SAP, Exhibit D), the BASMAA CW4CB Quality Assurance Project Plan (QAPP, Exhibit E), and the appropriate fieldwork SOPs.
- Data Manager. This person will be responsible for receipt and review of all project related documentation and reporting associated with both field efforts and laboratory analysis as described in this work order.
- Laboratory Project Manager(s). This person(s) will be responsible for ensuring the laboratory's quality assurance program and standard operating procedures (SOPs) are consistent with the QAPP (Exhibit D), and that laboratory analyses meet all applicable requirements or explain any deviations. Each Laboratory Project Manager will also be responsible for coordinating with the CW4CB Project Manager and other staff as required for the project.

The CONSULTANT's Project Manager shall meet with BASMAA personnel as needed to review the progress of this work order, and to discuss any outstanding issues and potential problems.

The CONSULTANT shall prepare a monthly project summary detailing:

- A listing of work performed during the month and anticipated during the next month. Information will be broken down by task.
- CONSULTANT staff hours used to date, along with total staff hours allocated. This shall be done for each task.
- CONSULTANT's direct labor, indirect costs, other direct costs, budget expended to date, and budget remaining. This shall be done for each task.

CONSULTANT shall deliver monthly reports to BASMAA on or before the 15th day of the following month.

During months when work is performed, the CONSULTANT will submit to BASMAA monthly invoices that detail costs incurred under this Work Order. Each invoice will cover a period of one calendar month and will be submitted to BASMAA on or before the 15th day of the following month. Invoices for the period covered in the report will not be paid until the monthly report is delivered to and approved by BASMAA.

CONSULTANT shall provide all deliverables in electronic format.

Task 2. Collect Sediment/Water Samples during Street Flushing Events

The CONSULTANT shall conduct monitoring during four street flushing events in the City of San Carlos. The timing and location of all street flushing events will be determined by Program and City of San Carlos staff in consultation with the CONSULTANT.

During each flushing event, CONSULTANT shall collect one sample of the flush water and two vacuum sediment samples (one prior to flushing and one after flushing) using the detailed methods and procedures described in the project SAP (Exhibit D), the Field SAP (Exhibit F) and in accordance with the QA/QC requirements of the project QAPP (Exhibit E). At least one field duplicate water sample, one field duplicate vacuum sediment sample, and one vacuum equipment blank sample will also be collected. In addition, to meet the requirements of the wastewater discharge permit, up to two additional water samples from the vactor truck discharge may be requested. The type and number of samples to be collected under this task, including all required QA/QC samples, are provided in Table 1.

Table 1. Description of type and number of samples to be collected.

Medium	Collection Method	Total Number of Samples
Sediment	Vacuum Technique	10 (includes one field duplicate and one equipment blank for QA/QC purposes)
Water	Peristaltic pump operated in manual mode	7 (includes one field duplicate for QA/QC purposes and 2 vactor truck discharge samples)

One member of the CONSULTANT's field team will attend a training session to learn the vacuum sampling technique on September 5, 2013 in Richmond, CA. The equipment for the

vacuum collection technique will be provided by BASMAA to the CONSULTANT for use during this pilot study.

For all monitoring events, the CONSULTANT will use standardized field data sheets provided in the SAP (Exhibit D, Appendix A). The CONSULTANT will deliver samples to laboratories as soon as possible but in all cases in a timeframe consistent with programmatic hold time requirements identified within the QAPP (Exhibit E). Contracting laboratories will also be obligated to conduct analyses within the identified hold time requirements.

Task 3. Laboratory Analysis

Sediment samples will be analyzed for the analytes listed in Table 2, using the methods shown in Table 2 and further described in the SAP and QAPP (Exhibits D, E and F). All sediment samples will be sieved at 2 mm prior to analysis and PCBs will be analyzed on the total fraction (< 2 mm). For a maximum of 2 sediment samples, additional PCB analysis will also be done on the fractions >63 µm and < 63 µm. Samples will be selected for this additional PCB analysis based on an analysis of the whole sample: if the whole sample PCB concentration is ≥ 100 µg/Kg and the sample has more than 25 percent fines based on the particle size distribution analysis.

Table 2. Analytes, Sampling & Analytical Methods, and Laboratories for Sediment Samples

Analyte	Sampling Method	Analytical Method	Reporting Units	Assigned Laboratory
Total Organic Carbon (TOC)	Grab	ASTM D4129	%	ALS
Particle Size Distribution	Grab	ASTM D422M/PSEP	%	ALS
Mercury	Grab	EPA 7471	µg/kg	ALS
PCBs	Grab	EPA 1668	µg/kg	ALS
Bulk Density	Grab	ASTM E1109-86	g/cm3	ALSs

Water samples will be analyzed for the analytes listed in Table 3, using the methods shown in Table 3 and further described in the SAP and QAPP (Exhibits D, E and F).

Table 3. Analytes, Sampling & Analytical Methods, and Laboratories for Aqueous Samples

Analyte	Sampling Method	Analytical Method	Reporting Units	Assigned Laboratory
Total Organic Carbon (TOC)	Grab	EPA415.1 or EPA 9060	%	ALS
Particle Size Distribution	Grab	SSC plus Nephelometric PSD (Soil Control Lab SOP#W-72)	%	Soil Control Laboratory
Total Mercury	Grab	EPA 1631	µg/kg	ALS
PCBs	Grab	EPA 1668A	µg/kg	ALS
Total Solids	Grab	SM2540G	%	ALS

CONSULTANT will sub-contract with laboratories shown in Table 2 for each analyte group, unless otherwise directed in writing by BASMAA. CONSULTANT will insure all requirements included in Exhibit G (Standard Scope of Services for Laboratories Performing Chemical Analyses) are included in their agreements with contract laboratories associated with this project. Analyses and determinations must be performed by qualified personnel in accordance with approved test methods identified in the QAPP (Exhibit E). The CONSULTANT will ensure that contract laboratories will meet or exceed Measurement Quality Objectives (MQOs) and Method Reporting Limits (RLs) contained within the QAPP (Exhibit E).

Task 4. Data Delivery

The CONSULTANT will record all field data on standardized field data entry forms and photo documentation logs provided in Exhibit D (Appendices A and B). CONSULTANT will prepare and submit to the CW4CB Project Data Manager (Cristina Grosso of SFEI) and CW4CB Project QA Officer (Don Yee of SFEI) completed EDDs for data collected in the field, a field methods report documenting all field sampling activities and hard copies of all field data sheets, photographs and photo logs. The information in the EDD shall correspond exactly to the information contained within the field data sheets provided. The EDD shall include delivery of all requested information in a Microsoft Excel SWAMP or CEDEN comparable format.

Sub-contracting laboratories shall submit laboratory data reports and EDDs in Microsoft Excel® SWAMP or CEDEN comparable templates provided by BASMAA, to both BASMAA and CONSULTANT.

Task 5. Data Verification

CONSULTANT shall perform data verification (as described in the QAPP, Exhibit E) to evaluate lab data reports for completeness and ensure that all samples submitted for analyses have a value reported for each parameter, including:

1. Checks to confirm all requested results data are reported (Check against chain of custody)
2. Checks to confirm all requested lab QC sample data are reported
3. Checks for errors (e.g., typographical, obvious inconsistencies, etc.)

Through the completeness review, CONSULTANT shall identify, document and correct (if possible) any deviations from the expected results in coordination with the laboratories. The CONSULTANT shall prepare and submit to the CW4CB Data Manager and QA Officer a Data Completeness Report documenting the review of the laboratory data report and EDDs, including any corrective actions taken.

CONSULTANT shall prepare a final report documenting field methods and results after the lab and field data have gone through complete QA/QC data validation and the dataset has been released by the CW4CB project QA Officer (Don Yee, SFEI).

PROJECT SCHEDULE

CONSULTANT shall conduct all fieldwork during September 2013 and October 2013. CONSULTANT shall complete all reporting between September 2013 and May 2014.

CONSULTANT shall submit to Cristina Grosso and Don Yee (CW4CB Project Data Manager and QA Officer, respectively) the Field Methods Report and EDD for information collected in the field 20 working days following each monitoring event. Additionally, the CONSULTANT shall submit Data Completeness Reports to Cristina Grosso and Don Yee (CW4CB Project Data Manager and QA Officer, respectively) no later than 20 working days following the submittal of final results from the contract laboratory. The CONSULTANT shall submit the final report documenting field methods and results to BASMAA no later than 30 working days following the release of the dataset by the CW4CB project QA Officer (Don Yee, SFEI).

The per sample analytical costs provided in Exhibit G are based on analyses being performed within 20 days of receipt of samples and the data report provided to CONSULTANT within 30-days of sample receipt. CONSULTANT will ship samples to the laboratories in a timely manner in order to stay within the hold time limits for all analytes.

Section 13 - Provision C.13 Copper Controls

C.13.a.iii.(2) ▶ Training, Permitting and Enforcement Activities

(FY 11-12 Annual Report and each Annual Report thereafter) Provide summaries of activities implemented to manage waste generated from cleaning and treating of copper architectural features, including copper roofs, during construction and post-construction including. :

- Development of BMPs on how to manage the water during and post construction
- Requiring the use of appropriate BMPs when issuing building permits
- Educating installers and operators on appropriate BMPs
- Enforcement actions taken again noncompliance

Training of Health Inspectors was performed on February 7, 2013. The focus of the training was consistency in enforcement levels, enforcement authority; city stormwater ordinances (including Copper controls); high-priority facilities needed to be inspected during the fiscal year and enforcement levels associated with illegal discharges.

The Program has revised its C.3 New Development Guidance Document and BMPs to reduce the impact of architectural copper features, including copper roofs, during construction and post construction. Because architectural Copper is not a popular feature in the Fairfield Suisun area, discharge of copper laden water from these structures is not seen as a significant source of copper.

In addition, the Program has developed a flyer for the permit counter entitled: Requirements for Architectural Copper. The flyer is based on a similar version from the San Mateo County-wide Water Pollution Prevention Program. The flier describes how copper can harm aquatic life and best management practices which must be implemented to prevent prohibited discharges to the storm drain system.

C.13.a.iii.(3) ▶ Evaluation of Effectiveness

(FY 12-13 Annual Report) Evaluate the effectiveness of measures the agency has undertaken to prevent discharge of wastewater to storm drains during the installation, cleaning, treating, and washing of the surface of copper architectural features. The discussion of the effectiveness of these measures should include BMP implementation and may propose additional measures to address this source of pollutants.

The Program has developed a flyer for the city permit counters entitled: Requirements for Architectural Copper. The flyer is based on a similar version from the San Mateo County-wide Water Pollution Prevention Program. The flier describes how copper can harm aquatic life and best management practices which must be implemented to prevent prohibited discharges to the storm drain system.

Because architectural Copper is not a popular feature in the Fairfield Suisun area, discharge of copper laden water from these structures is not seen as a significant source of copper. The Program has made an appropriate amount of effort to address copper discharges to the local creeks in its jurisdiction.

C.13.c ► Vehicle Brake Pads

An assessment of copper water quality issues associated with automobile brake pads and recommend brake-pad related actions for inclusion in subsequent permits is included within the C.13 Copper Controls section of FY 12-13 the BASMAA Regional POC Report.

Our Program has been championing scientific studies of the sources and effects of copper in our waterways for 15 years. The results of these studies culminated in a new State law, SB 346, that requires brake pad manufacturers to begin phasing out the use of copper from vehicle brake pad manufacturing. Preventing this important source of copper from reaching waterways is more sustainable and cost-effective than trying to remove copper from the water.

The Brake Pad Partnership (Partnership) conducted a multi-year study into the role automobile brakes play in elevated copper levels within San Francisco Bay Area watersheds. The results of these studies indicated that copper from brakes is the single greatest contributor to elevated copper levels in urban creeks. After a 15-year fight that surfaced with concerns about the San Francisco Bay, Gov. Arnold Schwarzenegger signed SB346, which requires brake pad manufacturers to reduce the use of copper to no more than 5 percent by 2021 and no more than 0.5 percent by 2025.

C.13.c.iii ► Water Quality Issues Associated with Automobile Brake Pads

(FY 12-13 Annual Report Only) – Assess status of copper water quality issues associated with automobile brake pads and recommend brake-pad related actions for inclusion in subsequent permits if needed.

An assessment of copper water quality issues associated with automobile brake pads and recommend brake-pad related actions for inclusion in subsequent permits is included within the C.13 Copper Controls section of FY 12-13 BASMAA Regional POC Report.

C.13.d.iii ► Industrial Sources Copper Reduction Results

Based upon inspection activities conducted under Provision C.4, highlight copper reduction results achieved among the facilities identified as potential users or sources of copper, facilities inspected, and BMPs addressed.

Summary

Training of Health Inspectors was performed on February 7, 2013. The focus of the training was consistency in enforcement levels, enforcement authority; city stormwater ordinances (including Copper controls); high-priority facilities needed to be inspected during the fiscal year and enforcement levels associated with illegal discharges .

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No facilities were identified as potential sources of elevated levels of copper due to their industrial activities. The Program will continue to attempt to identify industrial facilities with a higher potential to discharge copper to the storm drain system.

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

Report on progress of studies being conducted countywide or regionally to reduce copper pollutant impact uncertainties. State below if information is reported in a separate regional report.

Summary

A summary of the Program and/or regional efforts to develop regional studies to reduce copper pollutant impact uncertainties is included within the C.13 Copper Controls section of FY 12-13 BASMAA Regional POC Report.

Requirements for Architectural Copper

Fairfield-Suisun Urban Runoff Management Program

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

Copper from Buildings May Harm Aquatic Life

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



Building with copper flashing, gutter and drainpipe.

Use Best Management Practices (BMPs)

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

During Installation

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



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

During Maintenance

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

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

Protect the Bay/Ocean and yourself!

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



Photo credit: Don Edwards National Wildlife Sanctuary

Section 14 - Provision C.14 PBDE, Legacy Pesticides and Selenium Controls

C.14.a ► Control Programs for PBDEs, Legacy Pesticides and Selenium Controls

Report on progress of studies being conducted countywide or regionally to characterize the distribution and pathways of PBDEs, legacy pesticides, and selenium. State below if information is reported in a separate regional report.

Summary

A summary of the Program and regional efforts related to the Control Program for PBDEs, Legacy Pesticides and Selenium is included within the C.14 PBDE, Legacy Pesticides and Selenium section of FY 12-13 BASMAA Regional POC Report.

C.14.a.v. ► Control Programs for PBDEs, Legacy Pesticides and Selenium Controls – Load Computation

(For FY 12-13 Annual Report only) Submit a report with information required to compute loading estimates of PBDEs, legacy pesticides and selenium from urban runoff to the Bay.

Summary

Information required to compute loading estimates of PBDEs, legacy pesticides and selenium from urban runoff to the Bay is included within the C.14 PBDE, Legacy Pesticides and Selenium section of FY 12-13 BASMAA Regional POC Report.

C.14.a.vi. ► Control Programs for PBDEs, Legacy Pesticides and Selenium Controls – Control Measures

(For FY 12-13 Annual Report only) Submit a report identifying control measures and/or management practices to reduce impacts from discharges of PBDEs, legacy pesticides or selenium in urban runoff.

Summary

A report identifying control measures and/or management practices to reduce impacts from discharges of PBDEs, legacy pesticides or selenium in urban runoff is included within the C.14 PBDE, Legacy Pesticides and Selenium section of FY 12-13 BASMAA Regional POC Report.

Section 15 - Provision C.15 Exempted and Conditionally Exempted Discharges

C.15.b.iii.(1), C.15.b.iii.(2) ► Planned and Unplanned Discharges of Potable Water

Is your agency a water purveyor?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
If No , skip to C.15.b.vi.(2):				
If Yes , Complete the attached reporting tables or attach your own table with the same information. Provide any clarifying comments below.				
Comments:				

C.15.b.vi.(2) ► Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

Provide implementation summaries of the required BMPs to promote measures that minimize runoff and pollutant loading from excess irrigation. Generally the categories are:

- Promote conservation Programs
- Promote outreach for less toxic pest control and landscape management
- Promote use of drought tolerant and native vegetation
- Promote outreach messages to encourage appropriate watering/irrigation practices
- Implement Illicit Discharge Enforcement Response Plan for ongoing, large volume landscape irrigation runoff.

Summary:

See Program's annual report, section C.7. This portion of the annual report shows the Program's efforts towards the promotion of the School Water Education Program (SWEP). One of the primary focuses of this Program is water conservation. SWEP provides free water education resources to teach water awareness and conservation to students, teachers and parents in our service areas of Fairfield, Suisun City and Travis Air Force Base. The in-class education Programs as well as the resource materials and assembly Programs are multi-discipline and aligned to the content standards for California public schools. The Programs encourage students and adults to develop a healthy attitude of personal responsibility towards our environment and develop skills needed to contribute meaningfully to decision-making process on issues involving our resources and particularly conserving our most precious resource, water.

See above section C.9 of the Program's annual report. This portion of the annual report shows the Program's efforts toward the promotion of less toxic pest control and landscape management. The Program contracts with consultant Annie Joseph regarding Our Water Our World, including outreach efforts regarding pesticide reduction or the use of less toxic products to pesticides. For additional information on regional efforts, see section C.9.h.i of the Regional Supplement for Training and Outreach for FY2012-2013 submitted by BASMAA on behalf of all MRP Permittees.

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Quarterly, Suisun City publishes their *Discovery* newsletter. This newsletter is mailed to all households in Suisun City, and informs residents about the proper methods for disposal of all Household Hazardous Waste, including items containing mercury

Suisun City Council has adopted a water efficient landscaping ordinance. The goal of this ordinance is to promote the conservation and efficient use of water and to prevent the waste of this valuable resource and use water efficiently without waste by setting a maximum applied water allowance as an upper limit for water use and reduce water use to the lowest practical amount. This ordinance, effective January 1, 2010 applied to all new construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review.

The City of Fairfield has also put the State Water Efficient Landscape Ordinance into effect. The ordinance focuses on new development design to be highly water efficient and minimize run-off. It applies to large developments and large re-landscaping in the city.

Fairfield also has an aggressive Program to visit and correct high water use properties. Running a county-wide Program to audit single family homes, we have marketed to the top water users in Solano County. Between 500 to 1500 audits occur a year. Annually approximately 45% of these visits were overwatering landscaping, resulting in run-off from the properties. Another approximately 20% have irrigation leaks. This Program estimates a savings of 35,000 gallons per day in Fairfield and Suisun. County-wide efforts have saved 110,000 gallons per day, mostly from excessive irrigation and leaks that affect storm drain discharges.

C.15.b.iii.(1) ► Planned Discharges of the Potable Water System

Site/ Location	Discharge Type	Receiving Waterbody(ies)	Date of Discharge	Duration of Discharge (military time)	Estimated Volume (gallons)	Estimated Flow Rate (gallons/day)	Chlorine Residual (mg/L)	pH (standard units)	Discharge Turbidity ⁶⁵ (NTU)	Implemented BMPs & Corrective Actions

⁶⁵ Monitor the receiving water for turbidity if necessary and feasible. Include data in this column if available.

