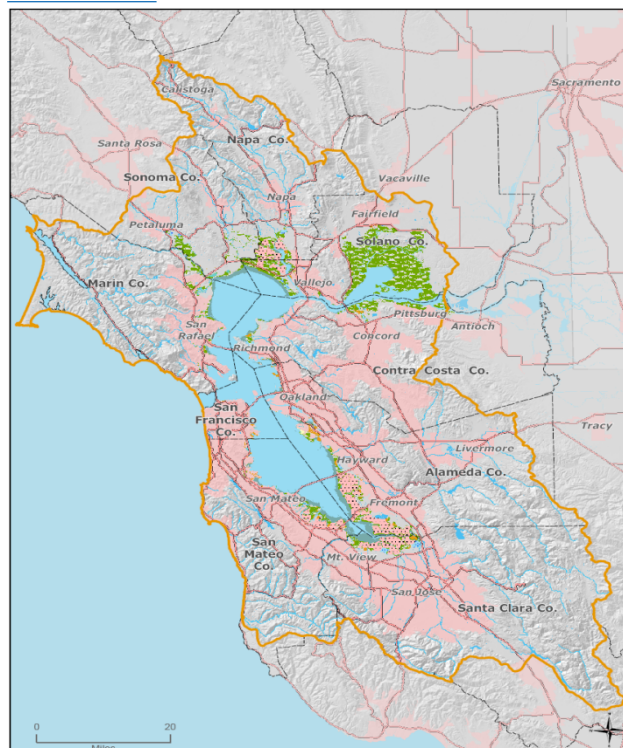


CLEAN WATERSHEDS FOR A CLEAN BAY (CW4CB)

SEMI-ANNUAL PROGRESS REPORT NUMBER TWELVE

October 1, 2015 through March 31, 2016



April 30, 2016

Updated: December 10, 2016

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

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CLEAN WATERSHEDS FOR A CLEAN BAY (CW4CB)

SEMI-ANNUAL PROGRESS REPORT NUMBER TWELVE

April 30, 2016

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 twelfth semi-annual report summarizes CW4CB's progress, focusing on the six-month reporting period of October 1, 2015 through March 31, 2016 (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, 2016 through September 30, 2016, 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.

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

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

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 budget 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 seven years (July 2010 – May 2017).³ 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 PCBs⁴ 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 and evaluating their effectiveness;
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.

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

³A request was submitted to EPA and accepted by EPA during the current reporting period to extend the project through May 3, 2017, as reported in Section III under Task 1 Project Management of this report.

⁴Reducing loads of PCBs is the primary consideration whereas reducing loads of mercury and other particle-bound pollutants is a secondary factor.

III. STATUS OF EACH PROJECT TASK

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

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)⁵ 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.⁶ The PMT meets periodically, usually on the second Wednesday of the month. One PMT meeting was held during this reporting period on October 14, 2015. Meeting highlights are available upon request. The PMT has also convened task-specific workgroups, although no task-specific workgroup meetings were held during the reporting period.

During this reporting period, BASMAA submitted a request to EPA for a no-cost extension of the project and budget to May 2, 2017. In December, 2015, EPA approved the requested extension.

QAPP and SAP

EPA approved the overall project Quality Assurance Project Plan (QAPP) and an updated QAPP (revision 1) during previous reporting periods.

Separate Sampling and Analysis Plans (SAPs) were developed for each task to reflect the detailed monitoring efforts specific to a given task. These task-specific SAPs have been submitted to EPA for review and approval prior to the start of monitoring for each respective task. EPA approved the Task 3 SAP, the Task 4 SAP, and the Task 5 Screening Monitoring SAP and the Task 5 BMP Monitoring SAP during previous reporting periods. During this reporting period, no activities related to SAP development occurred.

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 and a second TAC meeting was held on October 26, 2012. During this reporting period, the PMT scheduled the third TAC meeting for April 27, 2016. The

⁵The 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.

⁶Six 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.

purpose of the upcoming TAC meeting is to allow an opportunity for the TAC to provide feedback on the pilot project effectiveness evaluation methods that have been proposed by the project reporting team, as described further below.

FINAL PROJECT REPORTING

During this reporting period, the partner stormwater programs prepared draft reports for each of the individual pilot projects that were completed within their jurisdiction, following the guidance provided by the project reporting team. The draft reports were submitted to the reporting team for review and will be finalized during the next reporting period. Each individual pilot project report will be included as appendices to the overall project report.

During this reporting period, the PMT revised the overall process and timeline for preparing the final project report to account for the project extension and to allow the TAC an opportunity to provide early feedback on the proposed effectiveness evaluation methods. The reporting team was tasked with developing memoranda for each type of pilot project including the following information:

- Task introduction – the purpose of the task, a brief description of the projects conducted under the task, and a description of the monitoring data that were gathered and/or model data that will be used to evaluate the load reduction effectiveness of each project;
- Methods – a detailed description of the proposed methods that will be used to calculate the load reduction effectiveness for these projects using the available data;
- Limitations – a brief statement of the limitations associated with data quality, data availability, budget and any other relevant constraints.

The project reporting team began preparing the following five memoranda : (1) Task 3 Source Property Identification and Referral Pilot Projects – Proposed Effectiveness Evaluation Methods; (2) Task 4 Municipal Operation and Maintenance Enhancement Pilot Projects - Proposed Effectiveness Evaluation Methods; (3) Task 5 Stormwater Treatment Retrofit Effectiveness Assessment Approach; (4) Task 4 Enhanced Street Sweeping Effectiveness Assessment Approach; and (5) PCB Control Measure Selection Guidance.

B. Status of Achieving Milestones

OVERSIGHT AND COORDINATION

The PMT has continued to meet regularly over the course of the project 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. During this reporting period, the TAC began to review four memoranda prepared by the reporting team which summarized the proposed effectiveness evaluation approaches for the different types of CW4CB pilot projects.

QAPP and SAP

The schedule in the Project Work Plan calls for EPA approval of the QAPP during Year 1 Q3 of the project (January - March 2011). EPA provided final approval of the QAPP and a revision to the QAPP during previous reporting periods. Per ongoing discussions between the PMT and EPA, the PMT developed task-specific SAPs and submitted each to EPA for review and approval prior to commencement of field monitoring activities for a given task. EPA provided final approval of the Task 3 SAP, Task 4 SAP, and

Task 5 Screening Monitoring SAP, and the Task 5 BMP Monitoring SAP during previous reporting periods. Development of the QAPP and SAP is complete.

FINAL PROJECT REPORTING

The schedule in the Project Work Plan calls for the draft and final reports in Q3 and Q4 of the final year of the project (which was initially Year 4, but due to extension of the grant, the final year of the project is now expected to be Year 7 of the project). Reporting is currently on track according to the revised project schedule (Table 1).

Development of the individual pilot project reports began during previous reporting periods and continued during the current reporting period. The reporting team began development of summary memoranda describing the proposed effectiveness evaluation methods, which will be submitted to the TAC for review 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

OVERSIGHT AND COORDINATION

The PMT and its workgroups will continue to meet regularly as needed. One PMT meeting will be scheduled during the next reporting period to discuss and plan for project outreach and early dissemination of project results.

TAC

During the next reporting period, the TAC will review the effectiveness evaluation methods memoranda. The TAC will provide their feedback on these methods to the reporting team and the PMT at the 3rd TAC meeting, which will be held on April 27, 2016 in Oakland, CA.

SAPs

The PMT does not anticipate submission of any new or revised SAPs to EPA for review and approval during the next or future reporting periods, as all planned project SAPs have been developed and approved by EPA during previous reporting periods.

REPORTING

Reporting will continue through the next reporting period according to the schedule in Table 1. Participating partner stormwater programs will finalize all of their Individual pilot project reports and submit to the reporting team for inclusion as appendices in the draft final project report.

Also during the next reporting period, the reporting team will submit the five effectiveness evaluation methods memoranda to the TAC. The TAC will be asked to review these memoranda in preparation for the April 2016 TAC meeting, where they will provide feedback to the reporting team on the proposed approaches. Following the TAC meeting, the reporting team will revise their proposed effectiveness evaluation methods per feedback from the TAC and begin to conduct these evaluations. The reporting team will prepare draft versions of all sections of the final project report per the schedule in Table 1.

Table 1 Task 1: Project Management, Oversight, and Reporting Status Update. Yellow highlight = in-progress or completed tasks; red highlight = planned tasks.

Project Milestones and Deliverables	2010	Year 1 (2010-2011)		Year 2 (2011-2012)		Year 3 (2012-2013)		Year 4 (2013-2014)		Year 5 (2014-2015)		Year 6 (2015-2016)		Year 7 (2016-2017)	
	July-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept
Semi-Annual Progress Reports	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	
PMT Meetings ¹	4/20/2010 7/14/10 8/11/10	10/13/10 11/10/10 12/8/10 2/9/11	4/13/11 6/8/11 9/14/11	11/4/11 3/14/12	6/13/12 8/8/12 9/12/12	2/13/2013	4/10/13 5/8/13	10/9/13 11/12/13	6/11/14 7/9/14	1/14/2015		10/14/2016	PMT Meeting to discuss outreach and early dissemination of results	PMT meeting to discuss overall report conclusions	
Convene Technical Advisory Committee (TAC)	Dr. Tom Mumley & Dr. Lester McKee agreed to be on TAC		Scott Taylor and Dr. Roger Bannerman agreed to be on TAC	TAC Meeting #1: Oct 12, 2011		TAC Meeting #2: Oct 26, 2012						Schedule 3rd TAC meeting	TAC Meeting #3: April 27, 2016		
TAC Reviews of CW4CB project work products and reports						Review of Task 4 Opportunity Analysis; Task 5 monitoring plans	Review of Task 4 monitoring plans; Task 5 monitoring plans	Review of Task 5 Phase 2 Monitoring Plan				Review effectiveness evaluation methods memoranda	Provide feedback on proposed effectiveness evaluation methods	TAC Review of Draft Project Report	
Draft Quality Assurance Project Plan (QAPP) and receive EPA approval of QAPP	ACCWP leads development of QAPP	Draft QAPP reviewed by PMT	Draft QAPP submitted to EPA on 7/29/11		QAPP approved by EPA Sept 12, 2012		Revised QAPP approved by EPA 8/27/13								
Overall Project Reporting								PMT review of initial draft report outline		PMT/EPA review of report outline	Task-specific reporting guidance finalized	Develop proposed effectiveness evaluation methods for each type of pilot project	Revise effectiveness evaluation methods per TAC input; Prepare drafts sections of final project report	Develop executive summary, intro, and conclusions	
Draft Project Report to USEPA															Submit to EPA Mar 15, 2017
Final Project Report to USEPA															Submit to EPA by May 2, 2017

¹Meeting highlights available upon request.

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.

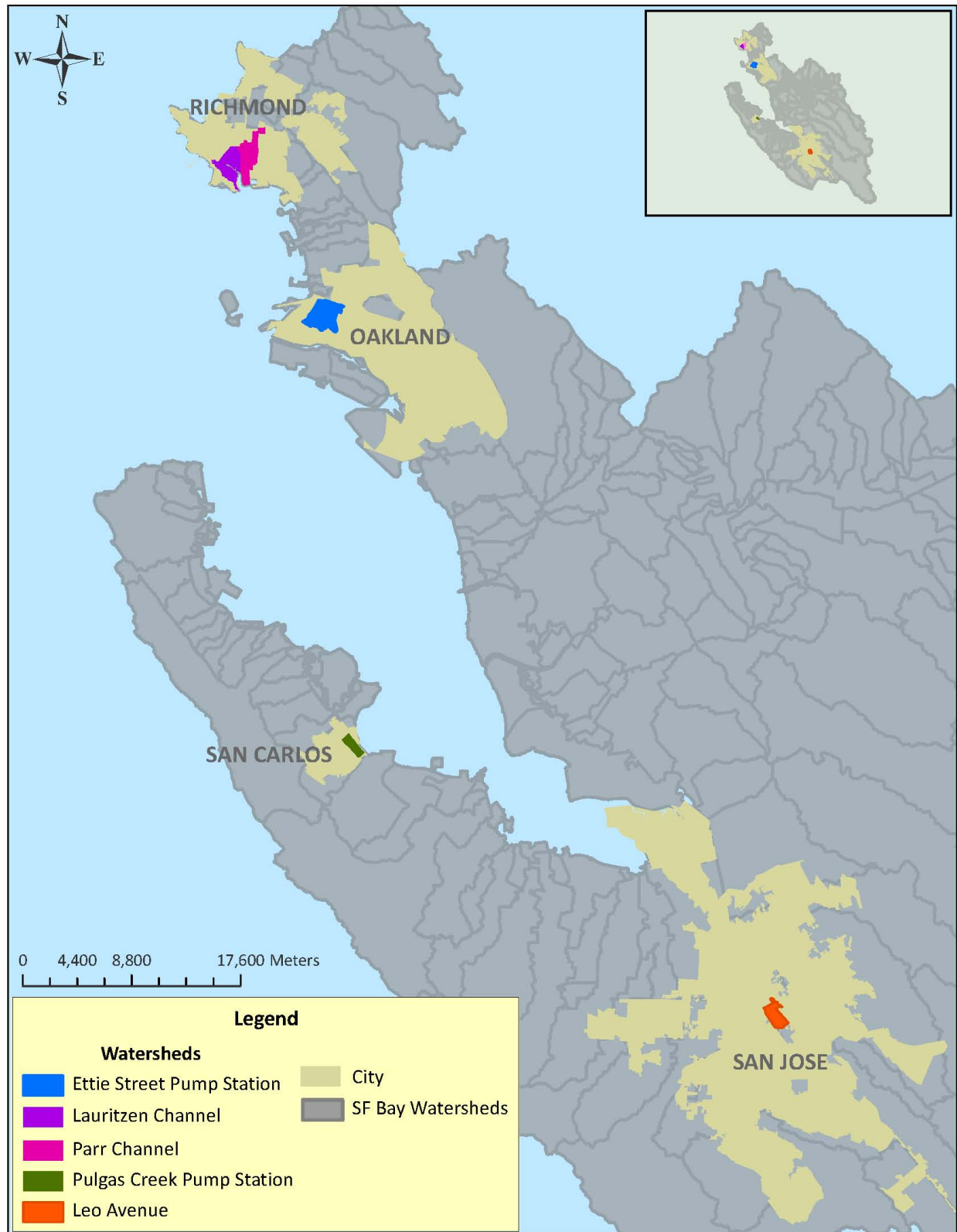


Figure 1 Study Watershed Locations.

Table 2 Task 2 Select Project Watersheds - Status Update. Yellow highlight = in-progress or completed tasks; red highlight = planned tasks.

Project Milestones and Deliverables	2010	Year 1 (2010-2011)		Year 2 (2011-		Year 3 (2012-		Year 4 (2013-		Year 5 (2014-		Year 6 (2015-2016)	
	July-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept
Semi-Annual Progress Reports	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13
Task 2 Review existing data and select project subwatersheds		Final selection of 5 project watersheds											
Task 2 Reporting													Task 2 Report Section Complete

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

Surface soil/sediment testing (Step 4 above) was divided into two phases, with the first phase focusing on sampling in the public right-of-way and the second phase focusing on sampling private properties and/or additional public ROW areas in the pilot watersheds (Tables 3-4). Both phases of sampling occurred during previous reporting periods, as well as the data quality review for all Phase 1 and 2 field and analytical results. During this reporting period, partner stormwater programs completed draft reports of the pilot project(s) conducted within their jurisdiction and identified potential source properties for referral to Regional Water Board staff. Load reduction effectiveness evaluation of these pilot projects will be completed as part of the final project report (see Section 1 on reporting).

Table 3 Phase 1 soil/sediment samples collected in the CW4CB pilot watersheds.

Watershed	Sample Date	Station Code	Latitude	Longitude	Sample Location	Sample Location Type	Property / Site Description
Leo Avenue Watershed	1-Oct-12	LEO1	37.31023	-121.86527	Public ROW	Drop Inlet/Catch Basin	Leo Ave Cul-de-sac catch basin
		LEO1FD	37.31023	-121.86527	Public ROW	Drop Inlet/Catch Basin	Leo Ave Cul-de-sac catch basin
		LEO2	37.31036	-121.86524	Public ROW	Manhole	Leo Ave Cul-de-sac manhole
		LEO3	37.31027	-121.86533	Public ROW	Surface Soil-paved area	Leo Ave cul-de-sac outside Century Tow
		LEO4	37.31117	-121.86394	Public ROW	Manhole	Premier Recycling 260 Leo Ave
		LEO5	37.31126	-121.86375	Public ROW	Manhole	B-2 Auto Dismantlers 245-275 Leo Ave
		LEO6	37.31169	-121.86336	Public ROW	Surface Soil-paved area	American Imports driveway - NW corner Leo Ave/7th St
		LEO7	37.31088	-121.86436	Public ROW	Manhole	Premier Recycling - 260 Leo Ave
		LEO8	37.30974	-121.85373	Public ROW	Surface Soil-paved area	Safe Transportation 505 Burke Street
	2-Oct-12	LEO9	37.30963	-121.85363	Public ROW	Manhole	Safe Transportation 505 Burke Street
		LEO10	37.30619	-121.85678	Public ROW	Surface Soil - unpaved	Railroad ROW near 2070-G S. 7th Street
		LEO11	37.31731	-121.86239	City Property	Drop Inlet/Catch Basin	City of San Jose Corp Yard 1661 Senter Street
		LEO12	37.31701	-121.86031	Public ROW	Surface Soil-paved area	506 Phelan Ave
		LEO13	37.3149	-121.86144	Public ROW	Surface Soil-paved area	Greer Autowreckers 1750 S. 7th Street
		LEO14	37.31456	-121.86135	Public ROW	Manhole	Pacific/Vince's Foreign Auto Wreckers 1777-1781 S. 10th St
		LEO15	37.31766	-121.86376	Public ROW	Surface Soil-paved area	Railroad sediment on 10th street bet Phelan/ E. Alma Ave
		LEO16	37.31572	-121.86652	Public ROW	Surface Soil-paved area	Railroad ROW east side of 7th Street
		LEO17	37.31272	-121.86199	Public ROW	Manhole	Straight Line Steering 1802 Smith Ave
		LEO18	37.31407	-121.86319	Public ROW	Manhole	Auto Dismantler/Wreckers 1731 Smith Ave
Pulgas Creek Pump Station Watershed	24-Sep-12	PUL1	37.50618	-122.25345	Public ROW	Surface Soil-paved area	GC Lubricants, 977 Bransten Rd.
		PUL2	37.50510	-122.25538	Public ROW	Surface Soil-paved area	Cemex Concrete Supply, 1026 Bransten Rd.
		PUL4	37.50024	-122.24389	Public ROW	Manhole	1411 Industrial Rd manhole, drains PG&E also
		PUL5	37.50484	-122.25542	Public ROW	Surface Soil-paved area	Garden Supply Co., 803 Old County Rd./Bransten Rd.
		PUL7	37.50029	-122.24783	Public ROW	Drop Inlet/Catch Basin	Howard & Bayport Ave, drains OK Lumber 1323 Old County Rd.
	25-Sep-12	PUL8	37.49979	-122.24445	Public ROW	Surface soil - unpaved	PG&E Substation, SW corner of Industrial Rd/Center St
		PUL8FD	37.49979	-122.24445	Public ROW	Surface soil - unpaved	PG&E Substation, SW corner of Industrial Rd/Center St
		PUL9	37.49940	-122.24394	Public ROW	Surface Soil-paved area	PG&E Substation, SW corner of Industrial Rd/Washington St.
		PUL10	37.50583	-122.25432	Public ROW	Surface Soil-paved area	AIM Sheet Metal, 1008 Bransten Rd.
		PUL12	37.49697	-122.24599	Public ROW	Surface Soil-paved area	Provence Stone, 1040 Varian Street
		PUL13	37.49748	-122.24727	Public ROW	Surface soil - unpaved	alley behind 1511 Old County Road, bet Center and Washington St
		PUL14	37.49804	-122.24707	Public ROW	Surface Soil-paved area	1062A Center Street
		PUL15	37.50662	-122.25301	Public ROW	Surface Soil-paved area	Ahearn Equipment Rental, 941 Bransten Rd.
	27-Sep-12	ETT121b	37.82355	-122.29024	Pulbic ROW	Street/Curb	Wood Street - West of CA Waste Solutions
		ETT122	37.82552	-122.29101	Pulbic ROW	Street/Curb	Granite Expo - 3430 Wood Street
		ETT121a	37.82418	-122.29042	Pulbic ROW	Street/Curb	Wood Street - West of CA Waste Solutions
		ETT122a	37.82536	-122.291	Pulbic ROW	Street/Curb	Granite Expo - Under 580 Overpass
		ETT121	37.82465	-122.29043	Pulbic ROW	Street/Curb	Granite Expo - At Corner of Wood & 34th Street
		ETT122b	37.82563	-122.29101	Pulbic ROW	Street/Curb	Granite Expo - Between Wood & Granite Expo
	29-Sep-12	ETT29	37.82326	-122.28675	Pulbic ROW	Street/Curb	Precision Casting - Along Hannah Street
		ETT56	37.82272	-122.287	Pulbic ROW	Street/Curb	Former Giampolini - Along Hannah Street
		ETT58ab	37.82291	-122.28653	Pulbic ROW	Street/Curb	Vacant Lot - Along Hannah Street
		ETT29a	37.82317	-122.2866	Pulbic ROW	Street/Curb	Precision Casting - Along Hannah Street
		ETT84	37.81889	-122.28805	Pulbic ROW	Street/Curb	CASS West Facility - Along Peralta Street
		ETT84d	37.82172	-122.28519	Pulbic ROW	Street/Curb	CASS North Facility - Along Poplar St
		ETT84b	37.81985	-122.28493	Pulbic ROW	Street/Curb	CASS East Facility - Along Union Street
	1-Oct-12	ETT124	37.81951	-122.28607	Pulbic ROW	Tree Well	Tree Well - 26th and Poplar
		ETT123a	37.82663	-122.28201	Pulbic ROW	Street/Curb	Dan's Salvage - Along Harlan Street
		ETT66	37.8264	-122.28662	Pulbic ROW	Street/Curb	AMG - Along Helen Street
		ETT85b	37.81938	-122.28612	Pulbic ROW	Tree Well	Tree Well - 26th and Poplar
		ETT123	37.82696	-122.28209	Pulbic ROW	Street/Curb	Dan's Salvage - 3520 Harlan Street
		ETT85	37.82069	-122.28558	Pulbic ROW	Street/Curb	CASS Central Facility - Along Poplar Street
		ETT2a	37.81176	-122.30064	Pulbic ROW	Street/Curb	Nautical Engineering
Ettie Street Pump Station Watershed	2-Oct-12	ETT84f	37.82061	-122.28555	Pulbic ROW	Street/Curb	CASS East Facility - Along Poplar St
		ETT8aa	37.81438	-122.29249	Pulbic ROW	Street/Curb	ISSA Trucking (Former Martinez Brothers) - Along 18th
		ETT85ab	37.8209	-122.28643	Pulbic ROW	Street/Curb	CASS Central Facility - Along Union
	3-Oct-12	ETT2	37.81247	-122.30029	Pulbic ROW	Street/Curb	Cole Brothers - 1797 12th St.
		LAU01	37.92426	-122.36578	Public ROW	Street/Curb	Sims Metal Management
		LAU02	37.92646	-122.36809	Public ROW	Street/Curb	Railroad Track Crossing
Lauritzen Channel Watershed	3-Oct-12	LAU03	37.92559	-122.36807	Public ROW	Street/Curb	Rickert International
		LAU04	37.92542	-122.36829	Public ROW	Street/Curb	Rickert International
		LAU05	37.92557	-122.36907	Public ROW	Street/Curb	PG&E Substation
		LAU06	37.92664	-122.36912	Public ROW	Street/Curb	PG&E Substation
	4-Oct-12	PAR01	37.91955	-122.35605	Public ROW	Street/Curb	Railroad Track Crossing
		PAR02	37.91813	-122.35579	Public ROW	Street/Curb	Railroad Track Crossing
		PAR03	37.91236	-122.35937	Public ROW	Street/Curb	Ford Assembly Plant
		PAR04	37.91703	-122.36024	Public ROW	Street/Curb	California Oils Corp
		PAR05	37.91750	-122.36045	Public ROW	Street/Curb	California Oils Corp
		PAR06	37.92125	-122.36226	Public ROW	Street/Curb	Sims Metal Management
Parr Channel Watershed	4-Oct-12	PAR07	37.92131	-122.36306	Public ROW	Street/Curb	Sims Metal Management
		PAR08	37.92397	-122.36330	Public ROW	Street/Curb	Sims Metal Management

Table 4 Phase 2 Soil/sediment samples collected in CW4CB pilot watersheds.

Watershed	Sample Date	Station Code	Latitude	Longitude	Sample Location	Sample Location Type	Property / Site Description
Leo Avenue Watershed	15-May-13	LEO29	37.3111	-121.86578	Private Property	Drop Inlet/Catch Basin	Century Tow 215 Leo Avenue
		LEO29FD	37.3111	-121.86578	Private Property	Drop Inlet/Catch Basin	Century Tow 215 Leo Avenue
		LEO30	37.31078	-121.86495	Private Property	Drop Inlet/Catch Basin	Century Tow 215 Leo Avenue
		LEO31	37.31014	-121.86518	Public ROW	Drop Inlet/Catch Basin	Golden Granite Cabinet 220 Leo Avenue
		LEO32	37.31022	-121.86543	Private Property	Surface Soil - unpaved	Railroad Tracks - Leo Ave cul-de-sac
		LEO33	37.31005	-121.8649	Private Property	Drop Inlet/Catch Basin	Back parking lot of Golden Granite Cabinets 220 Leo Avenue
		LEO34	37.3112	-121.8644	Private Property	Drop Inlet/Catch Basin	B-2 Auto Dismantlers 245 Leo Avenue
		LEO35	37.31153	-121.86413	Private Property	Drop Inlet/Catch Basin	B-2 Auto Dismantlers 275 Leo Avenue
		LEO36	37.31104	-121.86376	Private Property	Drop Inlet/Catch Basin	Premier Recycling 260 Leo Avenue
		LEO37	37.31177	-121.86356	Private Property	Drop Inlet/Catch Basin	American Import Auto Dismantlers 285 Leo Avenue
Pulgas Creek Pump Station Watershed	14-May-13	LEO38	37.31445	-121.86727	Private Property	Drop Inlet/Catch Basin	Valley Recycling 1615 S. 7th Street
		LEO39	37.31023	-121.86556	Private Property	Surface Soil - unpaved	Railroad Tracks - Leo Ave cul-de-sac
		PUL18	37.50006	-122.24399	Public ROW	Drop Inlet/Catch Basin	SW Corner of Industrial Rd/Center Street
		PUL19	37.49995	-122.24359	Public ROW	Drop Inlet/Catch Basin	NW corner of Industrial Rd/Washington St
		PUL19FD	37.49995	-122.24359	Public ROW	Drop Inlet/Catch Basin	NW corner of Industrial Rd/Washington St
		PUL20	37.49959	-122.24349	Public ROW	Drop Inlet/Catch Basin	SW corner of Industrial Rd/Washington St
		PUL21	37.49897	-122.24209	Public ROW	Manhole	1669-1697 Industrial Rd.
		PUL22	37.50021	-122.24363	Private Property	Drop Inlet/Catch Basin	1411 Industrial Road
		PUL23	37.49852	-122.24898	Public ROW	Surface Soil-paved area	OK Lumber, 1323 Old County Rd
		PUL24	37.49770	-122.24746	Public ROW	Surface Soil-paved area	Composite from Center St near intersection with Old County Rd.
Ettie Street Pump Station Watershed	21-May-13	PUL25	37.49620	-122.24625	Public ROW	Surface Soil-paved area	1653 Old County Rd driveway
		PUL26	37.50653	-122.25444	City Property	Drop Inlet/Catch Basin	City of San Carlos Corp Yard, Bransten Rd.
		PUL27	37.50470	-122.24899	City Property	Pump Station Wet Well	PCPS Wet Well - Industrial Rd.
		PUL28	37.49831	-122.24598	Public ROW	Drop Inlet/Catch Basin	Washing Street near NW corner with Bayport Ave
		ETT130	37.8262	-122.2912	Pulbic ROW	Street/Curb	West side of Wood Street at railroad tracks
		ETT230	37.8262	-122.2912	Pulbic ROW	Street/Curb	West side of Wood Street at railroad tracks
		ETT131	37.8255	-122.2909	Pulbic ROW	Street/Curb	Around entrance to parking lot at Granite Expo
		ETT132	37.826	-122.2911	Pulbic ROW	Street/Curb	East side of Wood Street, north of ETT131.
		ETT133	37.8266	-122.291	Pulbic ROW	Street/Curb	East side of Wood Street, north of ETT132.
		ETT134a	37.8148	-122.2885	Pulbic ROW	Street/Curb	South side of 20th Street, east of Mandela Pkwy
		ETT135	37.8153	-122.2893	Pulbic ROW	Drop Inlet	Two drop inlets on either side of 20th, just east of Mandela Pkwy
		ETT136	37.814	-122.2916	Pulbic ROW	Gutter	Corner of 18th Street, east of Peralta.
		ETT137b	37.82155	-122.29083	Pulbic ROW	Street/Curb	Railroad ROW on 26th Street between Wood and Willow.

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). Surface soil/sediment sample collection and data quality review were completed in all project watersheds during previous reporting periods.

The schedule in the Project Work Plan calls for identifying sites and referring those sites to the Regional Water Board during Q2 Year 2 and Q1 Year 3 (October 2011 through September 2012). The combined Phase 1 and Phase 2 data have been reviewed, and seven potential source properties have been identified for referral to Regional Water Board staff to-date.

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

No problems related to this task were encountered during this reporting period.

D. Activities planned over the next six months

During the next reporting period the partner stormwater programs will finalize their individual Task 3 reports and submit to the CW4CB reporting team for incorporation as appendices in the final project report. The partner stormwater programs will continue to refer properties identified as potential sources to RWQCB staff for follow-up investigation and abatement. The reporting team will conduct the effectiveness evaluation and prepare the draft Task 3 section for the final project report.

The Task 3 individual pilot project reports and all of the Task 3 soil/sediment data will be uploaded to the CW4CB project website during the next reporting period. Following review and finalization of all reports by the PMT and the project partners, access to the reports and the data will be made available to the general public through the CW4CB website.

Table 5 Task 3 Source Property Identification & Referral Status Update. Yellow highlight = in-progress or completed; red highlight = planned tasks

Project Milestones and Deliverables	2010	Year 1 (2010-2011)		Year 2 (2011-2012)		Year 3 (2012-2013)		Year 4 (2013-2014)		Year 5 (2014-2015)		Year 6 (2015-2016)	
	July-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept
<i>Progress Report #</i>	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13
Work Group Meetings ^{1,2}		Establish workgroup		10/12/11 11/9/11									
Pilot Project Work Plans			Finalize work plan										
Records reviews				completed									
Driving/walking reconnaissance surveys				completed									
Facility inspections					completed								
Sampling and Analysis Plan (SAP)			Draft Task 3 SAP submitted to EPA on 7/29/11		Task 3 SAP approved by EPA Sept, 2012								
Monitoring plan				Phase 1 planning		Phase 2 planning							
Competitive bid selection process for monitoring contractor(s)				RFP opened 10/27/11	Monitoring Contractors selected								
Soil/Sediment Monitoring					Monitoring begins	Phase 1 sample #'s: ESPS=28 Lauritzen = 7 Parr = 8 Leo=22 PCPS=13	Phase 2 sample #'s: ESPS=9 Lauritzen = 0 Parr = 0 Leo=12 PCPS=12						
Monitoring Data Quality Review						Phase 1 QA/QC review began		Completed Phase 1 QA/QC review; Begin Phase 2 review	Completed Phase 2 QA/QC review				
Identify sites for referral to Regional Water Quality Control Board (RWQCB)							Discussions of selection criteria and referral process with RWQCB staff	Discuss referrals with EPA at PMT meeting		potential sites for referral identified	potential sites for referral identified		
Submit Property Referrals to RWQCB										Property referrals submitted to RWQCB			Additional property referrals to RWQCB
Draft Reports for Individual Pilot Projects										Stormwater Programs begin individual pilot project reports	Stormwater programs complete draft individual pilot project reports	Stormwater programs finalize individual pilot project reports	
Effectiveness Evaluation											Effectiveness evaluation methods submitted to TAC/EPA	Receive TAC/EPA input on methods; conduct effectiveness evaluation	
Task 3 Section of Final Report													Complete Task 3 Section draft

¹Meeting highlights available upon request.

²Following the November 2011 Task 3 work group meeting, all further Task 3 work was completed through PMT meetings.

Task 4. Enhancements of Municipal O&M Practices

CW4CB Task 4 is evaluating 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 are mainly being conducted within the five Bay Area region watersheds selected for source property identification and referral (CW4CB Task 3) described earlier. The project is working with municipal staff to test enhancing removal of sediments and associated particle-bound pollutants during municipal O&M activities. The municipal O&M enhancements pilot projects that were conducted include the following:

1. Street flush and capture (Pulgas Creek Pump Station watershed, San Carlos, CA)
2. Storm drain line cleanout (Leo Avenue watershed, San Jose, CA)
3. Integrated monitoring/modeling of enhanced street sweeping at four locations:
 - a. Parr Channel Watershed, Richmond, CA
 - b. Lauritzen Channel Watershed, Richmond, CA
 - c. Leo Avenue watershed, San Jose, CA
 - d. East California Avenue, Sunnyvale, CA
4. Enhanced pump station maintenance (Ettie Street Pump Station watershed, Oakland, CA)

A. Description of activities accomplished

All fieldwork and associated monitoring for the O&M enhancement pilot studies were completed during previous reporting periods. Data verification and validation following the procedures outlined in the QAPP for all laboratory data were completed for all Task 4 pilot projects during previous reporting periods, and the stormwater programs and WinSLAMM modeling team began the process of reviewing the data and reporting on the pilot projects. During this reporting period, draft reports of each of the municipal O&M enhancement pilot projects were completed for the street flush and capture, storm drain line cleanout, and enhanced pump station maintenance. The WinSLAMM modeling team and Geosyntec continued development of the draft report for the street sweeping pilot project.

Also during the reporting period, the report team began to develop the effectiveness evaluation methods for the Task 4 pilot projects.

B. Status of Achieving Milestones

The schedule in the Project Work Plan calls for implementing subwatershed strategies and monitoring for Task 4 pilot studies during Q2 of Year 2 and Q1 of Year 4 of the project (October 2011 - September 2013). Implementation of the Task 4 O&M Enhancement Pilot Projects began in May 2013 and all fieldwork and associated monitoring has been completed. Data verification and validation have been completed and the stormwater programs have reviewed the data and developed draft pilot project reports.

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

No problems related to this task were encountered during this reporting period.

D. Activities planned over the next six months

During the next reporting period, the stormwater programs will finalize their individual Task 4 pilot project reports. The reporting team will conduct the load reduction effectiveness evaluations for these

pilot projects and develop the draft Task 4 section of the overall project report.

The Task 4 individual pilot project reports and all of the Task 4 monitoring data will be uploaded to the CW4CB project web portal during the next reporting period. Following review and finalization of all reports by the PMT and the project partners, access to the reports and the data will be made available to the general public through the CW4CB website.

Table 6 Task 4 O&M Enhancements Pilot Projects Status Update. Yellow highlight = in-progress or completed tasks; red highlight = planned tasks.

Project Milestones and Deliverables	2010	Year 1 (2010-2011)		Year 2 (2011-2012)		Year 3 (2012-2013)		Year 4 (2013-2014)		Year 5 (2014-2015)		Year 6 (2015-2016)	
	July-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept
Progress Report #	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13
Prepare proposed subwatershed strategies:													
Sediment Management Work Group ^{1,2}		workgroup established	5/23/2011										
Sediment management practices lit review			completed										
Desktop Opportunity Analysis to inform selection of pilot projects						completed							
Pilot Project Work Plans		Regional plan in: BASMAA 2010-2011 Regional POC Report Sept 2011				Select projects; develop study designs	finalize study designs						
Sampling and Analysis Plan (SAP)							SAP approved 7/8/13						
Competitive bid selection process for contractor(s)				Monitoring contractors selected; Study design team RFQ released 7/12/12; Geosyntec Team									
Implement Pilot Project							projects begin		Field work completed				
Monitoring Data Quality Review								QA/QC review begins		QA/QC review completed			
Draft reports for individual pilot projects											Stormwater Programs develop individual pilot project	Draft individual pilot project reports completed	Final individual pilot project reports completed
Effectiveness Evaluation												Effectiveness evaluation methods submitted to TAC/EPA	Receive TAC/EPA input; conduct effectiveness evaluation
Task 4 Reporting													Complete Task 4 Section

¹Meeting highlights available upon request.

²Following the May 2011 Task 4 work group meeting, all further Task 4 work was completed through PMT meetings.

Task 5. Urban Runoff Treatment Retrofits

This task is evaluating the effectiveness of ten urban runoff treatment facilities that have been or are planned to be retrofitted into existing infrastructure in the Bay Area region. BASMAA (2012) contains additional details about each retrofit project. Nine of these projects have or are planned to be constructed primarily using grant funds; the tenth project (El Cerrito Green Streets) was constructed prior to CW4CB. 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

Construction was completed during previous reporting periods for the following eight projects being evaluated via CW4CB:

- Bransten Road curb extensions, San Carlos, CA – completed in November 2013;
- Leo Avenue HDS unit, San Jose, CA – completed in October 2012;
- West Oakland Industrial Area Tree Well sites, Oakland, CA – completed in November 2013;
- Alameda and High Street HDS unit, Oakland, CA – completed December 2012;
- El Cerrito Green Streets, El Cerrito, CA - completed prior to CW4CB;
- PG&E Substation Bioretention Facilities, 1st and Cutting, Richmond, CA - completed in September 2014;
- Catch Basin Filter, PG&E Substation, Vallejo, CA – completed in September 2014.
- Swale at Broadway and Redwood, Vallejo, CA – completed in September 2015.

During the reporting period, the following progress was made on the remaining two retrofit projects:

- Construction of the Nevin Avenue Improvements project continued in Richmond CA.
- Construction has not yet begun on the Ettie Street Pump Station (ESPS) Media Filter project in Oakland CA pending resolution of procedural issues with the county procurement process. Efforts to resolve these issues were ongoing.

The Geosyntec and Brian Currier study design team continued to provide technical guidance and assistance to the monitoring contractor, as needed, to plan and implement the BMP effectiveness monitoring during WY2016. Water quality monitoring continued through the end of January 2016, while flow monitoring at the Vallejo swale site continued throughout the reporting period. The AMS team prepared for and successfully conducted six stormwater monitoring events at three pilot project sites for water quality and/or flow during the reporting period, with the total number of events completed to date at each project as follows:

- Bransten Road curb extension site, San Carlos, CA – 5 storm events.
- Leo Avenue HDS unit, San Jose, CA – 4 storm events.
- West Oakland Industrial Area Tree Well sites, Oakland, CA – 4 storm events.

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

- El Cerrito Green Streets, El Cerrito, CA – 3 storm events.
- PG&E Substation Bioretention Facilities, 1st and Cutting, Richmond, CA – 9 storm events.
- Catch Basin Filter, PG&E Substation, Vallejo, CA – 3 storm events.
- Broadway and Redwood Swale, Vallejo, CA – 2 storm events (flow monitoring only)

All samples collected this rainy season were submitted to the project laboratories by January 2016, and are currently undergoing chemical analysis or have completed chemical analysis. The samples collected during this reporting period are the final water quality samples that will be collected for Task 5 projects. Additional flow monitoring may continue at the Vallejo swale site until the end of April 2016.

During this reporting period, the partner stormwater programs began the process of reviewing the data and reporting on the pilot projects. The monitoring contractor continued to work with the project laboratories and the partner stormwater program representatives to resolve data quality issues for laboratory data from stormwater samples collected during previous reporting periods. The partner stormwater programs completed draft reports for the retrofit projects that had all monitoring data available.

Also during the reporting period, the report team began to develop the assessment methods for the Task 5 pilot projects.

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). Construction of eight CW4CB projects has been completed, as described in the previous section. Construction continued on the ninth project (Nevin Avenue Improvements in Richmond, CA) during the reporting period. Construction has not yet begun on the tenth project (ESPS Media Filters, Oakland, CA).

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. Screening monitoring began in February 2013 and BMP effectiveness monitoring began in February 2014 and continued through the end of the reporting period. Draft reports were completed for the retrofit projects that had all monitoring data available.

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

In October and November, 2015, in response to nearby business owner complaints about flooding around the Bransten Rd. Bioretention Facilities in San Carlos, City staff and the design team inspected the project and construction documentation and found the project was not constructed per the project plan in two respects. First, the design specified that the soil grade within the bioretention areas should be 6" below street grade; however the soil grades as constructed were approximately at street grade. This and other issues likely contributed to flooding at the facilities. Second, the design specified installation of a liner between the bioretention media and the surrounding subsurface soils to completely seal the media off from the surrounding subsurface soils. During construction, the liner was installed only on one side of the excavation, rather than lining all of the excavation before installing the bioretention media. Preliminary review of the monitoring data indicated there were relatively elevated effluent concentrations of PCBs (compared with influent concentrations), and mobilization of PCBs in

the surrounding subsurface soils into the bioretention media is suspected to be the cause. SMCWPPP, the City of San Carlos, and the CW4CB study design team have been working together to identify both short and long-term options to resolve these issues.

Due to construction delays, two projects were not constructed in time for field monitoring of BMP effectiveness: 1) Nevin Avenue Improvements Project in Richmond, CA; and 2) the media filters at the Ettie Street Pump Station in Oakland, CA.

Construction of the Nevin Avenue Improvements Projects began in March 2015 and is expected to be completed during the next reporting period.

Construction of the ESPS Media Filter project continues to be delayed due to procedural issues with the county procurement process. However, it is expected these issues will be resolved and construction will be begin during the next reporting period.

Because of construction delays, the Geosyntec and Brian Currier Study Design Team developed a revised monitoring plan during a previous reporting period (Geosyntec and Brian Currier, 2015), which reallocated budget that would have been used for field monitoring at the Nevin Avenue and ESPS Media filter projects to other CW4CB retrofit projects, and proposed using desktop modeling to evaluate the effectiveness of these three projects.

Other 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, SMCWPPP, the City of San Carlos, and the CW4CB study design team will continue to work together to select and implement the most appropriate actions to mitigate both the grading issues and the lack of impermeable liner at the Bransten Road bioretention facilities project.

It is anticipated that both the Nevin Avenue Improvements projects and the ESPS media filters will be constructed during the next reporting period. Additional flow only monitoring will continue at the Vallejo swale project through at least April, 2016. All monitoring at all other projects is complete.

It is anticipated the project laboratories will complete all remaining chemical analysis for Task 5 samples and the monitoring contractor will complete all verification and validation of the data following the procedures outlined in the QAPP.

During the next reporting period, the partner stormwater programs will continue to review the monitoring data and finalize the individual Task 5 pilot project reports. The reporting team will work with the PMT and the TAC to refine the effectiveness evaluation methods for these pilot projects and complete a first draft of the Task 5 section of the overall project report.

Table 7 Task 5 Urban Runoff Treatment Retrofit Projects Status Update. Yellow highlight = in-progress or completed tasks; red highlight = planned tasks.

Project Milestones and Deliverables	2010	Year 1 (2010-2011)		Year 2 (2011-2012)		Year 3 (2012-2013)		Year 4 (2013-2014)		Year 5 (2014-2015)		Year 6 (2015-2016)		Year 7 (2016-2017)
	July-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar
<i>Progress Report #</i>	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14
Retrofit Work Group Meetings ¹		workgroup established	4/11/11 4/26/11 6/22/11	11/30/11 1/10/12	4/24/12 8/30/12 9/11/12		5/22/13							
Conceptual Work Plan - retrofit locations and types selected		Preliminary Conceptual Planning Document (BASMAA 2011)												
Competitive RFQ selection process for engineering design services			WRECO and Hyphae selected											
Planning/Engineering Design/Permitting/CEQA								Complete						
Project Construction						Construction complete: Leo Ave HDS; Oakland HDS		Construction complete: Bransten Rd. Bioretention Facilities; W. Oakland tree wells;	Construction Complete: Richmond bioretention facilities; Vallejo catch basin filter.		Construction Complete: Vallejo swale. Construction began on Nevin Ave Project	Construction complete on Nevin Ave Project	Construction expected on ESPS Media Filters	
Competitive bid process for contractor(s)				Monitoring Contractors and Study Design Team selected										
Monitoring Work Plan					Began developing monitoring plan	Phase 1 Screening monitoring plan finalized (Currier 2013)	Draft Phase 2 Monitoring Plan	Phase 2 Monitoring Plan Finalized		Phase 2 Monitoring Plan Updated				
SAP						Phase 1 SAP approved by EPA		Phase 2 SAP approved by EPA 11/6/13						
Retrofit Project Monitoring							Phase 1 Monitoring conducted (WY13)	Phase 2 monitoring began (WY14)	No monitoring due to lack of rainfall	Phase 2 monitoring continued (WY15)		Phase 2 monitoring complete		
Monitoring Data Quality Review							Phase 1 (WY13) QA/QC review began		Phase 2 QA/QC review began			WY14 & WY15 QA/QC review complete	WY16 QA/QC review due Aug 1, 2016	
Draft reports for individual retrofit pilot projects												Draft Reports in progress	Draft Reports complete for projects with all monitoring in WY13-WY15	Finalize all Reports by Nov 2016
Effectiveness Evaluation												Effectiveness evaluation methods submitted to TAC	Conduct Effectiveness Evaluation	Finish Effectiveness Evaluation
Reporting													Draft Task 5 Section	Task 5 Section due Nov 30, 2016

¹Meeting highlights available upon request.

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.

Table 8 Task 6 Risk Communication and Exposure Reduction Status Update. Yellow highlight = in-progress or completed; red highlight = planned tasks.

Project Milestones and Deliverables	2010	Year 1 (2010-2011)		Year 2 (2011-2012)		Year 3 (2012-13)		Year 4 (2013-14)		Year 5 (2014-15)		Year 6 (2015-16)	
	July-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept
Semi-Annual Progress Reports	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13
Convene a risk reduction stakeholder advisory group (SAG)		SAG meetings Dec 2010 and Feb 2011	May 2011 SAG meeting	SAG Meetings: 12/6/11 3/8/12									
Develop a broad risk communication strategy		CDPH developed draft framework	CDPH Framework Finalized										
Award and oversee implementation of mini-grants		RFP released in Feb 2011	4 projects selected for mini-grants; CDPH conducted training for the 4 grantee groups in June 2011										
Conduct evaluation activities		self-evaluations of SAG meetings	continued self-evaluations; training of grantees included evaluation methods and tools and reporting requirements										
Task 6 Reporting				Meeting agendas and other work products posted on project web site: www.sfei.org/sfbfp	Final Report completed by CDPH								Complete Task 6 Section for Final Project Report

Task 7. Outreach and Technology Transfer

This task will document the knowledge and experience gained and the lessons learned during the project and make 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, the PMT discussed the need for assistance in disseminating project results, including the design and development of the project website. Contracting was implemented with the Study Design Team to provide this additional technical support, which included project presentations, and developing technical content for the project website.

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

Development of the web portal had been delayed first because it depended (as the rest of the BASMAA site) on the release of new software that is the content management system (CMS) of the entire BASMAA site, and second more recently on identifying and engaging a new website consultant. The necessary software was finally released and in March 2016 BASMAA engaged a new website consultant who updated the CMS and is now in the process of overhauling the BASMAA website.

D. Activities planned over the next six months

During the next reporting period, the Study Design Team will work with BASMAA to design the project website and populate the site with basic content. As more information is available, it will be added to the web portal during the next reporting period. A draft version of the portal will be made accessible to the PMT for review and comment during the next reporting period.

Table 9 Task 7 Outreach and Technology Transfer Status Update. Yellow highlight = in-progress or completed tasks; red highlight = planned tasks.

	2010	Year 1 (2010-11)		Year 2 (2011-12)		Year 3 (2012-13)		Year 4 (2013-)		Year 5 (2014-)		Year 6 (2015-16)		Year 7 (2016-17)
Project Milestones and Deliverables	July-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar	Apr-Sept	Oct-Mar
<i>Progress Report #:</i>	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14
Task 7 Outreach and Technology Transfer Activities														
Develop written outreach materials		Info on CW4CB project published in San Mateo County Times article on Nov 29, 2010.												
Outreach presentations		CASQA Presentation 11/3/2010	CASQA Presentation Sept 2011			CASQA Presentation Nov 2012	CASQA Presentation Sept 2013						CASQA Presentation Sept 2016	
Develop and update project web portal						Draft work-plan started							Design website and upload content	
Develop Guidance Manual														
Technical Workshop													Conduct Technical Workshop - date/location tbd	
Task 7 Reporting														Complete Task 7 Section by Nov 30, 2016.

IV. FINANCIAL ACCOUNTING

Previous progress reports provided financial accounting covering the time period from the project onset through September 2015. The accounting included costs incurred by the project (i.e., project costs by task for which BASMAA has sought reimbursement from the \$5M grant) and in-kind matching fund contributions, also by task. The project team continued to gather financial information (e.g., timesheets from the various individuals documenting in-kind contributions towards their agency's match) during this reporting period. A summary of costs incurred during this six-month reporting period is provided in Table 1. Table 2 summarizes in-kind matching fund contributions by each of the contributing agencies for each of the project tasks from July 2010 to March 2016. In addition, Table 3 summarizes the project costs by task for which BASMAA has sought reimbursement from the \$5M grant through March 2016.

Table 10 Summary of Costs Incurred during Six Month Reporting Period Ending March 31, 2016.

Task	Description	Costs
1	Project management, oversight, and reporting.	\$0
2	Selecting for pilot investigations five Bay Area region watersheds.	\$0
3	Identifying PCB and mercury source properties within the five pilot watersheds and referring to regulatory agencies for abatement.	\$0
4	Pilot-testing methods to enhance removal of sediment with PCBs and mercury during municipal O&M activities.	\$6,340
5	Retrofitting eight to ten urban runoff treatment facilities into existing storm drainage infrastructure to remove PCBs and mercury.	\$424,753
6	Facilitating development and implementation of a Bay Area regional risk communication and exposure reduction program.	\$0
7	Documenting the knowledge and experience gained during the project and making this information readily available	\$0
Total:		\$431,093

Table 11 Summary of Cumulative In-kind Matching Fund Contributions by Task through March 31, 2016.

Task ¹	Agency								TOTAL All Agencies
	ACCWP	BASMAA	CCCWP	FSURMP	SMCWPPP	SCVURPPP	VSFCD	Wastewater Dischargers	
1	\$177,926	\$76,121	\$35,397	\$8,872	\$69,591	\$326,188	\$3,058	\$0	\$697,153
2	\$3,050	\$0	\$0	\$0	\$16,088	\$25,451	\$0	\$0	\$44,589
3	\$82,005	\$4,308	\$134,491	\$0	\$145,323	\$202,687	\$0	\$0	\$568,813
4	\$44,337	\$4,479	\$50,211	\$0	\$73,081	\$177,864	\$0	\$0	\$349,971
5	\$125,630	\$22,125	\$91,617	\$30,422	\$81,703	\$100,413	\$24,456	\$0	\$476,365
6	\$0	\$14,700	\$0	\$0	\$0	\$0	\$0	\$190,000	\$204,700
7	\$0	\$613	\$0	\$0	\$0	\$8,060	\$0	\$0	\$8,673
Total:	\$432,947	\$122,345	\$311,716	\$39,293	\$385,785	\$840,664	\$27,514	\$190,000	\$2,350,264

¹Task Descriptions:

1. Project management, oversight, and reporting.
2. Selecting for pilot investigations five Bay Area region watersheds.
3. Identifying PCB and mercury source properties within the five pilot watersheds and referring to regulatory agencies for abatement.
4. Pilot-testing methods to enhance removal of sediment with PCBs and mercury during municipal O&M activities.
5. Retrofitting eight to ten urban runoff treatment facilities into existing storm drainage infrastructure to remove PCBs and mercury.
6. Facilitating development and implementation of a Bay Area regional risk communication and exposure reduction program.
7. Documenting the knowledge and experience gained during the project and making this information readily available.

Table 12 Summary of Cumulative CW4CB Grant Fund Expenditures by Task through March 31, 2016.

Task	Description	Grant Funds Requested for Reimbursement through March 2016
1	Project management, oversight, and reporting.	\$0
2	Selecting for pilot investigations five Bay Area region watersheds.	\$0
3	Identifying PCB and mercury source properties within the five pilot watersheds and referring to regulatory agencies for abatement.	\$427,099
4	Pilot-testing methods to enhance removal of sediment with PCBs and mercury during municipal O&M activities.	\$614,529
5	Retrofitting eight to ten urban runoff treatment facilities into existing storm drainage infrastructure to remove PCBs and mercury.	\$2,822,410
6	Facilitating development and implementation of a Bay Area regional risk communication and exposure reduction program.	\$100,000
7	Documenting the knowledge and experience gained during the project and making this information readily available	\$0
Total:		\$3,964,038

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

BASMAA 2013. *Clean Watersheds for a Clean Bay (CW4CB) Retrofit Pilot Study Plan*. Final. Prepared by California State University of Sacramento Office of Water Programs and Geosyntec Consultants, October 22, 2013.

Geosyntec Consultants and Brian Currier, CSUS-OWP, 2015. CW4CB Task 5 Monitoring Plan Update Memorandum. Revised January 22, 2015.