CONTRA COSTA
CLEAN WATER
PROGRAM

Thomas E. Dalziel
Program Manager

September 30, 2016

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

Ms. Pamela Creedon, Executive Officer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Mr. Wolfe and Ms. Creedon:

Enclosed is the Contra Costa Clean Water Program's (CCCWP's) *Fiscal Year 2015/16 Annual Report, Volume I: Group Activities.* This report documents activities conducted collectively by Contra Costa Permittees in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. CAS612008 (Orders R2-2009-0074, R2-2011-0083, and/or R2-2015-0049) issued by the San Francisco Bay Regional Water Quality Control Board (Water Board), and NPDES Permit No. CA0083313 (Order R5-2010-0102) issued by the Central Valley Water Board. This submittal includes by reference the following reports submitted separately by the Bay Area Stormwater Management Agencies Association (BASMAA) to the San Francisco Bay Water Board and by the CCCWP to the Central Valley Water Board on behalf of Contra Costa Permittees:

- *BASMAA Annual Reporting for FY 2015-2016, Regional Supplement for New Development and Redevelopment;*
- *BASMAA FY 2015-16 Annual Report: MRP Provision C.9.f – Track and Participate in Relevant Regulatory Processes; and*
- *BASMAA Annual Reporting for FY 2015-2016, Regional Supplement for Training and Outreach.*

With the approval and direction from each duly authorized representative of each Permittee, I have been authorized to submit and certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who 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,

Thomas E. Dalziel
Program Manager
Contra Costa Clean Water Program

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Enclosures

CONTRA COSTA
CLEAN WATER
PROGRAM

FISCAL YEAR 2015/16
ANNUAL REPORT

VOLUME 1:
GROUP ACTIVITIES

VOLUME 1
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	1.2	Contra Costa Clean Water Program Organizational Structure
	1.3	Management Committee and Subcommittee Participation & Attendance
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VOLUME 1 – List of Acronyms

Acronym	Term
ACCWP	Alameda Countywide Clean Water Program
ACWA	Association of California Water Agencies
AG	Attorney General
AGOL	ArcGIS Online
BASMAA	Bay Area Stormwater Management Agencies Association
BIP	Business Inspection Plan
BMP	Best Management Practice
CALTRANS	California Department of Transportation
CASQA	California Stormwater Quality Association
CCC	Contra Costa County
CCCAC	Contra Costa County Agricultural Commissioner
CCCSD	Central Contra Costa Sanitary District
CCCWP	Contra Costa Clean Water Program
CCWF	Contra Costa Watershed Forum
CGP	Construction General Permit
CMS	Content Management System
CPSC	California Product Stewardship Council
CSAC	California State Association of Counties
CW4CB	Clean Watersheds for Clean Bay
CWSGP	Community Watershed Stewardship Grant Program
DDSD	Delta Diablo Sanitation District
DPR	Department of Pesticide Regulation
EBMUD	East Bay Municipal Utility District
EPR	Extended Producer Responsibility
ERP	Enforcement Response Plan
FSURMP	Fairfield-Suisun Urban Runoff Management Program
FY	Fiscal Year
GBP	Green Business Program
GI	Green Infrastructure
GIS	Geographic Information System
HHW	Household Hazardous Waste
HM	Hydromodification Management
HMP	Hydrograph Modification Management Plan
IDDE	Illicit Discharge Detection and Elimination
IGP	Industrial General Permit
IMP	Integrated Monitoring Plan
IMR	Integrated Monitoring Report
IPM	Integrated Pest Management
LED	Light Emitting Diode
LID	Low Impact Development

Acronym	Term
MOC	Municipal Operations Committee
MRP	Municipal Regional Permit
MS4s	Municipal Separate Storm Sewer Systems
NGOs	Non-Governmental Organizations
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OPP	Oil Payment Program
OWOW	Our Water Our World
PAPA	Pesticide Applicators Professional Association
PBDE	Polybrominated Diphenyl Ether
PCBs	Polychlorinated Biphenyls
PCOs	Pest Control Operators
PG&E	Pacific Gas and Electric Company
PIP	Public Information/Participation Committee
POC	Pollutants of Concern
POTW	Publicly Owned Treatment Works
PSA	Public Service Announcement
RFP	Request For Proposal
RMC	Regional Monitoring Coalition
SB	Senate Bill
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFRWQCB	San Francisco Regional Water Quality Control Board
STOPPP	San Mateo Countywide Stormwater Pollution Prevention Program
SUA	Stormwater Utility Assessment
SWGP	Storm Water Grant Program
SWPPP	Stormwater Pollution Prevention Plan
SWQTF	Stormwater Quality Task Force
SWRP	Storm Water Resource Plan
TMA	Trash Management Area
TMDL	Total Maximum Daily Loads
TWP	The Watershed Project
UC	University of California
UCMR	Urban Creeks Monitoring Report
USEPA	United States Environmental Protection Agency
WCCIWMA	West Contra Costa Integrated Waste Management Authority
WCWD	West County Wastewater District
WMAs	Watershed Management Areas
WY	Water Year

SECTION 1 – INTRODUCTION

Introduction

The Contra Costa Clean Water Program (CCCWP) comprises Contra Costa County (CCC), its 19 incorporated cities/towns[1], and the Contra Costa County Flood Control & Water Conservation District (District). These 21 public agencies are collectively referred to as "Permittees". The Permittees are submitting their CCCWP Fiscal Year (FY) 2015/16 Annual Report to the San Francisco Bay and Central Valley Regional Water Quality Control Boards (Water Boards) as required by the Joint Municipal National Pollutant Discharge Elimination System (NPDES) Permits (see "Municipal Stormwater Permits" discussed further on Page 1-2). The report documents permit compliance activities conducted during the previous FY (July 1, 2015 to June 30, 2016), and consists of the following:

- **Volume I – Group Activities Annual Report**: This Volume I report documents permit compliance activities conducted collectively as a group by all 21 Permittees.
- **Volume II – Individual Municipal Annual Reports**: Volume II is a compilation of the Permittees' Individual Municipal Annual Reports, which document compliance activities conducted by each individual Permittee within their jurisdiction.
- **BASMAA Regional/CASQA Statewide Supplemental Reports**: These reports document compliance activities conducted regionally (Bay Area-wide) in coordination with the Bay Area Stormwater Management Agencies Association (BASMAA)[2] and statewide in coordination with the California Stormwater Quality Association (CASQA)[3]. On behalf of the CCCWP Permittees, BASMAA submitted

1 Cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, and Towns of Danville and Moraga.

2 BASMAA is a consortium of municipal stormwater programs representing over 90 agencies, including 79 cities and 6 counties. BASMAA was started by local governments in the Bay Area to share information and combine resources to develop products and programs that would be more cost-effective if done regionally. In FY 2008-2009, BASMAA reorganized as a 501(c)(3) non-profit organization. This allows BASMAA to enter into contracts and seek grant funds on behalf of its members. BASMAA is focused on regional challenges and opportunities to improving the quality of stormwater that flows to our local creeks, San Francisco Bay and Delta, and the Ocean.

3 Formed in 1989 as the California Stormwater Quality Task Force, the SWQTF was a quasi-governmental organization, which advised the State Water Resources Control Board on matters related to developing stormwater regulations - more specifically, it was intended to help California comply with the municipal and industrial National Pollutant Discharge Elimination System (NPDES) stormwater mandates of the federal Clean Water Act. The Task Force officially became

separately the following regional/statewide supplemental reports directly to the San Francisco Bay Water Board[4]:

1. *BASMAA Annual Reporting for FY 2015-2016, Regional Supplement for New Development and Redevelopment*;
2. *BASMAA FY 2015-16 Annual Report: MRP Provision C.9.f – Track and Participate in Relevant Regulatory Processes; and*
3. *BASMAA Annual Reporting for FY 2015-2016, Regional Supplement for Training and Outreach.*

Municipal Stormwater Permits

The San Francisco Bay Water Board reissued its *Municipal Regional Stormwater NPDES Permit* to 76 Phase I[5] municipalities within the San Francisco Bay Region on November 19, 2015 (NPDES Permit No. CAS612008, Order No. R2-2015-0049). This reissued permit, which took effect on January 1, 2016, is hereinafter referred to as "MRP 2.0". References to the previous permit (NPDES Permit No. CAS612008, Order No. R2-2009-0075), which was superseded by MRP 2.0 on January 1, 2016, is hereinafter referred to as "MRP 1.0". MRP 1.0 and 2.0 exclude the cities of Antioch, Brentwood, and Oakley, and the eastern portions of CCC and Contra Costa County Flood Control & Water Conservation District. These agencies and agency areas are within the jurisdiction of the Central Valley Water Board, and are covered under a separate Joint Municipal NPDES Permit titled "East Contra Costa County Municipal NPDES Permit" (East County Permit), which was last reissued in September 2010 (NPDES Permit No. CAS083313, Order No. R5-2010-0102). Unless specified otherwise, hereinafter all group activities reported below will reference activities conducted by all CCCWP Permittees in accordance with the MRP. Copies of both permits can be downloaded from the CCCWP website

CASQA in September 2002, when its formal 501 (c)(3) non-profit organization status was approved.

4 CCCWP submitted these reports directly to the Central Valley Water Board.

5 Phase I regulations were promulgated in 1990 and requires medium and large cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges.

at: http://www.cccleanwater.org/permits.html. MRP 2.0 is in effect for five years ending on December 31, 2020. The East County Permit expired on September 1, 2015; however, it remains in force and effect until a new permit is reissued by the Central Valley Water Board, which is tentatively planned for December 2016. As has been the case since the inception of the CCCWP, their permit will essentially mirror the permit issued by the San Francisco Bay Water Board. The only exception is the inclusion of any additional specific requirements addressing the Central Valley Water Board's Basin Plan (e.g., the Sacramento San Joaquin Delta Methylmercury Total Maximum Daily Load (TMDL))[6], which are discussed in Section 8 of this Volume I report.

MRP 2.0 Permittees include all Phase I Municipal Stormwater Programs[7] in the San Francisco Bay Region. Each Permittee is individually responsible for complying with the permit mandates; however, MRP 2.0 allows and encourages Permittees to collaborate in the design, development, and/or implementation of certain mandates collectively (countywide, region-wide and/or statewide). Activities conducted collectively are referred to as "group activities" and are documented in this Volume I report and in the supplemental reports noted on Page 1-2.

CCCWP Overview

Program Agreement

The Permittees operate under a "Program Agreement", which was first entered into in 1991 and has been updated several times since. The roles and responsibilities of CCCWP staff and the 21 Permittees are outlined in the Program Agreement, which was last updated in 2010.

6 A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant.

7 Phase I Municipal Stormwater Programs include: 17 public agencies comprising the Alameda Countywide Clean Water Program (ACCWP); 21 public agencies comprising the CCCWP; 15 public agencies comprising the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP); 22 public agencies comprising the San Mateo Countywide Stormwater Pollution Prevention Program (STOPPP); the cities of Fairfield and Suisun City comprising the Fairfield-Suisun Urban Runoff Management Program (FSURMP); and, the City of Vallejo and the Vallejo Sanitation and Flood Control District.

Program Staffing

Staff to the CCCWP is provided by CCC. In FY 2015/16, CCCWP staff consisted of four (4) full-time employees and one (1) part-time employee. CCCWP staffing has yet to return to pre-2010 levels, when there were five (5) full-time employees and one (1) part-time employee. The reduction in CCCWP staffing has been the result of attrition. CCCWP Permittees have elected to maintain reduced staffing levels and to eliminate or reduce funding for some tasks previously conducted as a group. Temporary staff support has been provided, when needed, by consultants/contractors. See Attachment 1.1 for a listing of consultants/contractors retained in FY 2015/16.

Organizational Structure

The Management Committee, which consists of one designated representative from each of the 21 Permittees, is the decision-making body of the CCCWP and provides direction to CCCWP staff and subcommittees. The Management Committee meets monthly, and directs and monitors the implementation of all group activities. Five (5) subcommittees review, research, and make recommendations to the Management Committee. CCCWP staff and designated municipal representatives represent the CCCWP on similar BASMAA subcommittees, which are focused on the implementation of tasks and projects conducted regionally. Attachment 1.2 outlines the CCCWP's organizational structure. Attachment 1.3 shows CCCWP Permittees' participation and attendance on the CCCWP's Management Committee and its subcommittees. In accordance with the Program Agreement, designated Permittee representatives are required to attend at least 80% of the CCCWP's regularly scheduled meetings.

The Program Agreement allows the Management Committee to establish Ad Hoc workgroups for a temporary period, as needed, for the purposes of reviewing, researching and making recommendations to the Management Committee or a subcommittee on specific permit compliance matters. Three (3) Ad Hoc workgroups met throughout FY 2015/16 as follows:

- Ad Hoc GIS Workgroup – In June 2014, an Ad Hoc Geographic Information System (GIS) Workgroup was established to review and research potential needs, costs, benefits and possible methods for developing and managing a CCCWP GIS. In April 2015, the Management Committee approved the Ad Hoc GIS Workgroup's recommendation to retain the services of PSOMAS (and teaming partner Miller Spatial Services LLC) for development and implementation of a countywide stormwater GIS pilot project. The Ad Hoc GIS Workgroup continued to meet throughout FY 2015/16. Further details regarding the CCCWP Ad Hoc GIS Workgroup and the countywide stormwater GIS pilot project are discussed in general below under "*FY 2015/16 Group Program Highlights*", and discussed in detail in Sections 10, 11 and 12 in this Volume I Annual Report.

- Ad Hoc PCBs Workgroup - An Ad Hoc Polychlorinated biphenyls (PCBs) Workgroup was formed in March 2015 to help coordinate and assist Permittees' in identifying potential source properties for PCBs through conducting desktop screening, windshield surveys, and sediment sampling. The Ad Hoc PCBs Workgroup and PCBs source property screening activities continued throughout FY 2015/16. Further details regarding the CCCWP's Ad Hoc PCBs Workgroup and the PCBs source property screening activities is contained in Section 12 of this Volume 1 report.

- Ad Hoc Stormwater Inspector Workgroup - In FY 2014/15 the CCCWP staff created a temporary Ad Hoc Stormwater Inspector Workgroup to address consistency issues for referrals of facilities that may require coverage under the newly adopted Statewide General Permit for Storm Water Discharges Associated with Industrial Activities Industrial General Permit (IGP). The workgroup is composed of inspectors from each of the three contracted POTWs, Contra Costa Hazardous Materials Programs, cities of Brentwood and Richmond, CCC, and CCCWP staff.

In FY 2015/16, the CCCWP's Management Committee formally approved the formation of the Ad Hoc Stormwater Inspector Workgroup. Further detail regarding the CCCWP AD Hoc Stormwater Inspector Workgroup's activities is contained in Section's 4 and 5 of this Volume 1 report.

Funding Stormwater Compliance Programs

With the exception of the cities of Brentwood and Richmond[8], CCCWP Permittees' stormwater programs are funded by a Stormwater Utility Assessment (SUA). The SUA was established in 1993. In FY 2015/16, SUA rates ranged from $25 to $45 a year for a typical single-family home. SUA rates are based on estimates of stormwater runoff based on impervious area.

Revenues from the SUAs are collected by the CCC Tax Collector with the property tax bill. The Flood Control District is responsible for the administration and disbursement of the assessment revenues, which in FY 2015/16 totaled approximately $14,102,433. The assessment revenue may only be used for NPDES program activities including, but not limited to, construction of pollution control improvements and drainage system maintenance. Approximately 20% of these revenues are used to fund permit compliance activities that municipalities choose to conduct collectively (i.e. Group Activities). The remaining 80% of the revenue is "returned-to-source" (i.e., returned to the local jurisdiction from which it originated). The return-to-source revenue pays for permit compliance activities conducted at the municipal level. Each Permittee's cost share of Group Activities is apportioned by population. CCCWP staff, consultants, and contractors assisted Permittees in compliance with MRP 1.0 and MRP 2.0 by providing technical support and guidance, staff training, and implementation of a variety of activities, including public education and outreach and water-quality monitoring. These activities are more effectively and cost-efficiently implemented as Group Activities. The CCCWP's FY

8 Brentwood and Richmond's stormwater pollution prevention activities are funded by other revenues, including the General Fund.

2015/16 budget was $3,480,957 and is available on the CCCWP's website at: http://www.cccleanwater.org/wp-content/uploads/2015/03/Final-Adopted-FY-15-16-Group-Program-Budget-WS.pdf.

Within this budget, the CCCWP pays dues on behalf of the Permittees to BASMAA, to the San Francisco Bay Regional Monitoring Program for Trace Substances, to the California Product Stewardship Council, to the Bay Friendly Landscape Coalition, to the Green Business Program, and to CASQA. These groups provide water quality monitoring and research activities that are mandated under the NPDES permits, and/or provide representation, guidance and/or staff training at the regional or state levels.

Permittees' authority to raise taxes or assessment fees to pay for governmental activities has been sharply constrained by voter initiatives such as Proposition 13[9] and Proposition 218[10]. CCCWP Permittees' SUA rates have a maximum limit, which was established in 1993. All municipalities reached their maximum rate by FY 2009/10, when the San Francisco Bay Water Board adopted MRP 1.0. Since then, Permittees have been supplementing their SUA revenues with funding from other sources, including the General Fund, to finance the ever-increasing stormwater compliance mandates. Municipalities anticipated this scenario (i.e., funding shortfall) following the expiration of a prior Municipal Stormwater Permit in July 2004. In 2005, the CCCWP initiated what became a 6-year planning effort, culminating in the *2012 Community Clean Water Funding Initiative*. Details regarding this initiative, which was ultimately unsuccessful, can be found in the CCCWP's FY 2013/14 Annual Report.

9 Proposition 13 - In 1978 California voters passed Proposition 13, reducing property tax rates by about 57%. The basis for property tax calculation was rolled back to the 1976 assessed value. Reassessment of property value was allowed only upon change in property ownership and the assessment was limited to 1% of the sales price. Revenue for stormwater management agencies, such as a Flood Control Zone, was reduced significantly and the tax rate was locked in at the 1976 adopted rate. As time went on, stormwater management agencies could not raise revenue to keep up with needed construction, major maintenance, or replacement of failed drainage facilities.

10 Proposition 218 - After Proposition 13 was passed, many stormwater management agencies turned to assessments and other measures to help fund services. In 1996, California voters passed Proposition 218, expanding the protection against property tax increases established by Proposition 13. Voter approval was now required for all new or increased assessments, charges or fees proposed by a stormwater management agency. Assessment proponents also had to demonstrate the specific benefit to properties before initiating or increasing the assessment. Fees and charges established or increased by agencies providing water or sewer services were expressly exempted from obtaining voter approval.

Complying with the unfunded federal and state mandated stormwater permit compliance programs continues to be the Permittees' most significant challenge. In the absence of new revenues for stormwater pollution prevention, Permittees have repeatedly advocated for the need to prioritize actions that have proven most beneficial to water quality, and have asked that permit requirements that are less beneficial be eliminated or reduced. However, the Permittees ultimately have no authority over permit conditions, and cannot guarantee that permit conditions are reasonable or implementable, or that the prescribed actions are effective or worthwhile. Those decisions rest entirely with the Water Boards, which generally approve the recommendations of their staff.

CCCWP Permittees continue to explore ways to improve cost recovery and to assign costs for controlling certain pollutant sources that originate on private property. Permittees also continue to seek community partners for trash cleanup and other watershed stewardship activities, and aim to align available stormwater grant funding with transportation funding and grant programs for integrated transportation and drainage infrastructure improvements. In FY 2015/16, Permittees tracked the following statewide stormwater funding initiatives:

- *California Water Conservation, Flood Control and Stormwater Management Act of 2016* - On December 14, 2015, the California State Association of Counties (CSAC), the League of California Cities (the League) and the Association of California Water Agencies (ACWA) filed a proposed Constitutional amendment with the Attorney General (AG), titled "The California Water Conservation, Flood Control and Stormwater Management Act of 2016". The proposed ballot measure would have amended Article X of the California Constitution to create a new, optional funding method that local agencies could use to fund local stormwater services and flood control projects. The Title and Summary, issued by the AG on February 18, 2016, can be found on the AG website as Initiative 15-116. This is the language that would be printed on the ballot for a statewide

election. The League, CSAC, and ACWA conducted follow-up polling on the Title and Summary to obtain a more thorough picture of voter sentiment. The polling results showed the Title and Summary as written would fail to get majority support. As a result, CSAC, the League, and ACWA decided to not move forward with the proposed ballot measure in 2016.

- *Senate Bill (SB) 1298 (Hertzberg)* – This bill is sponsored by the Water Foundation and proposes changes to the Proposition 218 (1996) Omnibus Implementation Act addressing three issues: conservation rates, lifeline rates and storm drainage. With respect to the latter, the bill provides a definition of "sewer" in the Act using the definition of sewer from the Public Utilities Code whereby allowing local agencies to fund stormwater the same as water and sewer. CCCWP Permittees will continue to track this bill in FY 2016/17.

Highlights of Group Program Activities for FY 2015/16

<u>CCCWP Stormwater GIS Pilot Project</u>

In February 2014, the Management Committee received a presentation on the City of San Ramon's retention of a GIS consultant to assist in development of a Geographic Information System (GIS) using ESRI ArcGIS Online (AGOL) for collecting, tracking, managing and reporting San Ramon's trash load reduction data and information. Following this presentation, the Management Committee decided to explore the potential benefits and cost savings of developing a countywide CCCWP stormwater GIS platform. An Ad Hoc GIS Workgroup (GIS Workgroup) was subsequently established and began meeting in June 2014 to review and research potential needs, estimated costs, and possible methods for developing and managing a CCCWP stormwater GIS platform. The GIS Workgroup identified many possible and beneficial uses of GIS; however, it was agreed any initial effort should be limited in scope and implemented as a pilot effort. Should the pilot effort prove to be cost effective, manageable, and beneficial on a countywide basis to all Permittees, the Management Committee could

later decide to expand the GIS platform to include additional beneficial programs. For the initial pilot effort, the GIS Workgroup recommended development of a stormwater GIS platform that serves municipalities' most immediate GIS needs at the time, which was support for trash load reduction plan development and implementation, and screening and mapping potential PCBs source properties/areas.

In December 2014, the Management Committee approved the GIS Workgroup's recommendations and proposed next steps for development of a CCCWP Stormwater GIS Pilot Project Request for Proposal (RFP). With input and direction from the GIS Workgroup, CCCWP staff released a RFP on March 11, 2015.

Based upon a review of the written proposals and interviews with candidate firms, the GIS Workgroup recommended, and the Management Committee approved, retaining PSOMAS and teaming partner Miller Spatial Services LLC to develop and implement the GIS Pilot Project. The Management Committee agreed that should the pilot project prove to be cost effective, manageable, and beneficial on a countywide basis to all Permittees, the Management Committee could later decide to expand the GIS platform to include additional beneficial GIS needs. A two-year contract was executed (July 1, 2015 to June 30, 2017) for a cost not to exceed $115,201.

During FY 2015/16, CCCWP staff and consultants worked closely with the PSOMAS team to develop and implement the pilot. Details regarding development of the CCCWPs stormwater GIS platform in support of the trash load reduction planning and implementation activities and the PCBs planning and implementation activities are provided in Sections 10 and 12, respectively, in this Volume I report.

With the adoption of MRP 2.0 in November 2015, the need to collect, manage, and analyze stormwater information in different spatial and time scales, and the need to produce and report various data on maps has become a stormwater compliance necessity. In April 2016, the Management Committee approved a contract amendment with the PSOMAS team to include additional enhancements to the pilot project for a

cost not to exceed $200,000. This includes tasks associated with identifying and mapping Watershed Management Areas (WMAs) and control measures associated with TMDL planning and implementation activities; and continued updates and refinements to support Permittees trash load reduction control programs. It is also anticipated the CCCWP stormwater GIS platform will be critical in the development of Permittee's Green Infrastructure (GI) Plans and their analysis and quantification of benefits associated with targeted implementation of multi-benefit stormwater management actions designed and projected to achieve water quality goals over different time scales.

Development of the CCCWP's stormwater GIS pilot project has been an enormous undertaking requiring significant financial and staff resources. While it is anticipated that development of a countywide stormwater GIS platform by all Permittees will be an effective and efficient means to manage and maintain countywide stormwater data and information, and to support the Permittees' need to analyze and evaluate that data and information for stormwater management planning and implementation, it should be noted this stormwater GIS capability will require an ongoing and sustained commitment of resources for the foreseeable future. As discussed above, funding the ever-increasing federal and state stormwater compliance mandates continues to be Permittees' most significant challenge.

Contra Costa Watersheds Storm Water Resource Plan (SWRP)

The Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Prop 1) was approved by California voters in the general election on November 4, 2014. Among other funds, Prop 1 provided $200 million for a Storm Water Grant Program (SWGP), which provides matching grants to public agencies, nonprofit organizations, public utilities, state and federally recognized Indian tribes, and mutual water companies for multi-benefit stormwater management projects. Multi-benefit stormwater management projects include GI, rainwater and stormwater capture projects and stormwater treatment facilities. After bond and program administration costs, approximately $186 million will be available for projects.

Prior to the passage of Prop 1 in November 2014, the California Legislature adopted SB 985 entitled the Storm Water Resource Planning Act. SB 985 amended the Water Code to require the development of a SWRP to receive grants from a bond act approved after January 1, 2014 for stormwater and dry weather runoff capture projects. The SB 985 requirement to prepare a SWRP is directed to public agencies. A SWRP must include a prioritized list of projects to address stormwater and dry weather runoff capture on a watershed basis. The SWRP must be developed in accordance with the State Water Board's SWRP Plan Guidelines. On December 15, 2015, the State Water Resources Control Board (State Water Board) adopted the final SWRP Guidelines, and the Prop 1 SWGP Guidelines. The Prop 1 SWGP provides funds for Planning Grants and Implementation Grants, which are briefly described below:

- Prop 1 SWGP Planning Grants - Water Code section 79704 allows up to ten percent of the SWGP Prop 1 grant funds (up to $20 million) for development of a SWRP meeting the requirements of SB 985 and the State Water Board's SWRP guidelines. Priority will be given to those planning projects that include large-scale or regional collaboration to meet the SWRP guidelines. The solicitation for Prop 1 planning grants opened January 19, 2016 and closed on March 18, 2016.

- Prop 1 SWGP Implementation Grants - Approximately $80 million of Prop 1 funds will be available to fund implementation projects during the first solicitation (Round 1) in summer 2016. Approximately $86 million will be available to fund implementation projects during the second solicitation (Round 2). The State Water Board wants to ensure that sufficient time is provided for those requiring time to prepare and complete their SWRPs; therefore, Round 2 for implementation grants will occur approximately two years following Round 1 (tentatively 2018). The solicitation for Round 1 implementation grants opened January 19, 2016 and will close on July 8, 2016.

Prop 1 implementation grants will only be awarded to projects included in a SWRP that is consistent with the SWRP guidelines. For CCCWP Permittee municipalities to compete for Round 2 SWGP implementation grants and any future bond monies for stormwater and dry weather capture projects, they must develop a SWRP. The requirements for development of a SWRP are very similar to the required elements of the GI Plans required in MRP 2.0 Provision C.3.j, which is discussed in detail in Section 3 of this Volume I report. For example, both call for: 1) focusing water quality priorities based on watersheds, management areas or specific drainage areas; 2) identifying and prioritizing projects using quantitative measures or metrics; 3) prioritizing projects that provide multiple benefits; 4) establishing procedures for tracking progress and implementation of performance measures; and 5) conducting outreach and education, and encouraging public participation. Planning grants range from a minimum of $50K to a maximum of $500K and require a 50% match.

In February, the Management Committee affirmed the Administrative Committee's decision to authorize CCCWP staff and consultants to proceed in development and submittal of a countywide planning grant application. On March 18, 2016, the CCCWP submitted a Prop 1 planning grant application for development of a "*Contra Costa Watersheds Storm Water Resource Plan*" (see Attachment 1.4).

On July 8, the State Water Resources Control Board's Division of Financial Assistance announced that its Deputy Director approved the Recommended Funding List for the SWGP's Proposition 1 Planning Grant solicitation. The CCCWP's *Contra Costa Watersheds Storm Water Resource Plan* grant amount is $499,420 and match amount is $500,540. This two-year grant project will begin immediately after grant agreement documents are finalized by the State Water Board, which is anticipated in late 2016.

New CCCWP Website

On March 9, 2016, the CCCWP's Public Information/Participation (PIP) Committee released a "Request for Qualifications and Proposal for Website Design and Content

Management Support Services for the Contra Costa Clean Water Program" (RFQ/RPF) to 25 prospective firms. The CCCWP was seeking a consultant with the necessary resources, expertise and support needed to design, develop and implement a new CCCWP website that would, among other things: 1) be visually appealing; 2) provide easy access to, and navigation of, website content for various target audiences; 3) provide CCCWP staff and consultants with an intuitive and an easy-to-use content management system (CMS); 4) have a common theme/consistent design; 5) provide pages for all CCCWP programs, services and functions; and 6) be optimized for viewing on today's mobile devices.

This effort was long overdue as the CCCWP's current website design and structure was developed over seven years ago. Although, it continues to be maintained with new information, it needs to be redesigned and upgraded with an easy to use CMS.

In April 2016, following interviews with candidate firms, the CCCWP's PIP Committee recommended, and the Management Committee approved, the selection of WebSight Design, Inc. The CCCWP's new website should be completed in early 2017.

A Summary of Other Group Program Activities for FY 2015/16

In addition to some of the highlighted activities and programs summarized above, CCCWP Permittees collectively conducted a broad range of other activities and programs designed to reduce or eliminate the discharge of stormwater pollutants (i.e., anything other than stormwater) into and from our municipal storm drain systems. This Volume I report documents the other activities conducted or coordinated collectively as follows:

Table 1-1: Group Program Activities

MRP 2.0 Provisions	Section
C.2 Municipal Operations – Controls to reduce non-stormwater discharges and polluted stormwater to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.	2
C.3 New Development and Redevelopment - Source controls, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges, and controls to prevent increases in runoff flows from new development and redevelopment projects.	3
C.4 Industrial and Commercial Site Controls – Inspections and enforcement of stormwater pollution prevention measures at businesses to prevent pollutant exposure and discharges into and from municipal storm drain systems.	4
C.5 Illicit Discharge Detection and Elimination – Surveillance, spill and complaint investigations, control of mobile sources, and enforcement and case follow-up.	5
C.6 Construction Site Controls – Inspections and enforcement of construction site stormwater pollution prevention to reduce and eliminate pollutant discharges into and from municipal storm drain systems.	6
C.7 Public Information and Outreach – Information and outreach to increase knowledge and encourage behavior changes of target audiences regarding the impacts of stormwater pollution on receiving water and of pollution prevention solutions to mitigate the problems, respectively.	7
C.8. Water Quality Monitoring – Water quality monitoring activities including, but are not limited to: 1) San Francisco Estuary receiving water monitoring; 2) creek status monitoring; 3) stressor source identification investigations; 4) Pollutants of Concern (POC) monitoring; and, 5) pesticides and toxicity monitoring.	8

MRP 2.0 Provisions	Section
C.9 Pesticide Toxicity Control – Actions to prevent impairment of urban streams by pesticide-related toxicity including implementation of Integrated Pest Management (IPM); outreach and training to municipal employees, pest control operators (PCOs), and residents; and, outreach to consumers on less-toxic methods of pest prevention and control.	9
C.10 Trash Load Reduction – Implementation of control measures and other actions to reduce trash loads discharged into municipal storm drainage systems and receiving water bodies.	10
C.11 Mercury Controls – Implementation of control measures to reduce total mercury and methylmercury loads in accordance with load reduction allocations established for urban runoff in the San Francisco Bay Mercury and the Sacramento San Joaquin Delta Methylmercury TMDLs.	11
C.12 Polychlorinated Biphenyls Controls - Implementation of control measures to reduce PCBs loads in accordance with load reduction allocations established for urban runoff in the San Francisco Bay PCBs TMDL.	12
C.13 Copper Controls – Implementation of source control Best Management Practices[11] (BMPs) to reduce and eliminate discharges containing copper into and from municipal storm drainage systems.	13
C.15 Exempted and Conditionally Exempted Discharges – Implementation of control measures to eliminate any adverse impacts to receiving waters from exempted unpolluted non-stormwater discharges, such as flows from natural springs; and, conditionally exempted non-stormwater discharges that are potential sources of pollutants, such as swimming pools and spas and irrigation water.	15

11 A BMP is defined as any program, technology, process, siting criteria, operating method, measure, or device which controls, prevents, removes, or reduces pollution.

SECTION 2 – PROVISION C.2 MUNICIPAL OPERATIONS

Introduction

CCCWP staff, consultants and municipal staff participate on the Municipal Operations Committee (MOC), which assists in the review and preparation of guidance and training for municipal staff for Provisions C.2 (Municipal Operations), C.4 (Industrial Commercial Site Controls), C.5 (Illicit Discharge Detection and Elimination), C.9 (Pesticide Toxicity Control), C.10 (Trash Load Reduction), C.13 (Copper Controls), and C.15 (Exempted and Conditionally Exempted Discharges). CCCWP staff and designated MOC members also participate in the BASMAA MOC, which coordinates related regional activities. This section of the Annual Report will focus on municipal operation activities (Provision C.2). Reporting related to Provisions C.4, C.5, C.9, C.10, C.13, and C.15, are covered in Sections 4, 5, 9, 10, 13 and 15, respectively, in this Volume I Report.

In FY 2015/16, Rinta Perkins (City of Walnut Creek) and Phil Hoffmeister (City of Antioch) served as Chair and Vice Chair, respectively, of the CCCWP MOC. The MOC met the first Monday of each month in FY 2015/16, except for the months of July, September, February, April, and May. The CCCWP MOC also held special meetings devoted to Provision C.10 Trash Load Reduction (Trash meetings). These meetings were typically held on the third Monday of the month, but also met on other dates when necessary. For FY 2015/16, Trash meetings were held every month except for the months of July, August, and December. The BASMAA MOC did not meet during FY 2015/16.

Perkins, Michele Mancuso (Unincorporated CCC), Dan Cloak P.E., (CCCWP consultant) and Beth Baldwin (CCCWP staff) represented the CCCWP at the BASMAA Trash Subcommittee (an offshoot of the BASMAA MOC). Work undertaken on this committee is discussed in Section C.10.

A listing of Contra Costa municipal representatives on the CCCWP MOC is included in Attachment 1.3. Summary minutes of these meetings are available in the FY 2015/16 Management Committee agenda packets provided on the CCCWP website at http://www.cccleanwater.org/meetings/.

Accomplishments

The monthly MOC meetings provide an opportunity to further train and educate Permittees on subjects that are relevant to municipal operations and permit compliance. The meetings also serve as a forum to discuss municipal operations such as pest management or illicit discharge response. There are also opportunities to hear from guest speakers; share audit findings of stormwater programs relative to municipal operations; or, identify the need for new or updated public outreach material based on findings from stormwater inspections.

Development of a Draft Model Notification Protocol for Discharges into MS4s from Utility Vaults and Underground Structures

As stated in last year's CCCWP Annual Report, a draft notification protocol was reviewed by the MOC in June 2015. The protocol was reviewed and revised in October, November, and December. A final draft version was presented to MOC at the January 2016 meeting and based upon the MOC's recommendation was presented to Management Committee at its February 2016 meeting.

MRP Reissuance

For the first half of FY 2015/16, one of the primary activities of the MOC was reviewing and providing comments on the final draft Tentative Order of MRP 2.0. MOC reviewed those provisions most relevant to municipal operations, including Provision C.2, C.4, C.5, C.9, C.10, C.13, and C.15.

For that draft, CCCWP staff identified proposed changes, reviewed them with Committee members and solicited feedback. Comments were then compiled and included in CCCWP draft comment letters submitted to San Francisco Bay Water Board staff. Oral testimony was provided by CCCWP staff and Permittees at the July 8th public hearing and the November 18th adoption hearing of the MRP 2.0

The second half of the fiscal year was assisting Permittees with understanding the new requirements of the MRP 2.0 and their impact on municipal operations. For example, CCCWP staff discussed with MOC members that by June 30, their municipal website must publicize by a central point of contact for reporting spills and illegal dumping.

FY 2016/17 Planned Activities

In FY 2016/17, the CCCWP MOC will continue to review and provide assistance to municipal maintenance and operations staff, where necessary, to ensure consistent and effective BMPs are implemented during the operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure. This includes, but is not limited to: graffiti removal; implementation of Corporation Yard Stormwater Pollution Prevention Plans (SWPPPs); municipal stormwater pump station inspection, operation, maintenance, and monitoring; implementation of appropriate BMPs during road, parking lot and bridge repair and maintenance work; and, complying with the reporting requirements in Provision C.2.

The CCCWP MOC will also be revising its work plan to help Permittees identify those tasks that must be completed within specified time frames to help ensure compliance with MRP 2.0 requirements. These tasks may include, for example, developing an inventory of mobile businesses operating within CCC and enhancing outreach to them or ensuring that corporation yard SWPPPs accurately reflect activities conducted at the yard with appropriate BMPs being implemented.

SECTION 3 – C.3 NEW DEVELOPMENT AND REDEVELOPMENT

Introduction and Summary

During FY 2015/16, the CCCWP Development Committee participated in negotiating the C.3 Provisions in MRP 2.0 and—following adoption of the permit—began implementation of MRP 2.0 requirements with early compliance dates. Major efforts in early 2016 addressed changes to the Hydromodification Management (HM) requirements (Provision C.3.g.) and assisting initiation of the municipal GI programs required by Provision C.3.j.

The Development Committee oversaw and participated in development of the 7th Edition of the *Stormwater C.3 Guidebook.* As the fiscal year ended, a complete draft was under review. The draft was presented and discussed at a CCCWP-sponsored June 7, 2016 workshop attended by 60 land development professionals and 40 municipal staff.
Throughout FY 2015/16, CCCWP provided direct assistance to municipal staff and to land development professionals regarding C.3 compliance and design, and construction inspection for Low Impact Development (LID) facilities.

FY 2015/16 Objectives

The CCCWP Development Committee's FY 2015/16 work was guided by the following objectives:

- Facilitate member agencies' compliance with MRP Provision C.3;
- Facilitate implementation of permanent controls on new developments in CCC;
- Organize and implement all required C.3 group activities and submittals;
- Integrate MRP requirements and BASMAA MRP submittals into existing training and guidance;
- Negotiate permit requirements and interpretations that protect water quality and are implementable and cost-effective;

- Continuously improve Program outreach and guidance on development controls; and,
- Continue CCCWP's regional and statewide role as an exemplar and leader in implementation of development controls.

FY 2015/16 Accomplishments

The CCCWP's Development Committee, assisted by staff and consultants, facilitated Permittees' implementation of MRP Provision C.3 requirements and provided direction to CCCWP staff and consultants. The Development Committee was chaired by Carlton Thompson (City of Walnut Creek). John Steere (CCC) served as vice-chair. These two individuals also served as CCCWP representatives to BASMAA's Development Committee. Staff from Antioch, Brentwood, Clayton, Concord, Danville, Oakley, Pittsburg, Pleasant Hill, and Walnut Creek actively participated in the Committee.

The CCCWP's FY 2015/16 accomplishments included:

- Initial implementation of minor changes to Provision C.3 in MRP 2.0;
- Upgrades and Improvements to the *Stormwater C.3 Guidebook;*
- Sponsoring a June 7, 2016 LID Design and Construction Workshop;
- Providing design and engineering assistance to municipal staff and to applicants for development project approvals;
- Preparing updates to HM criteria;
- Assisting municipalities with initial implementation of GI requirements; and,
- Participating in BASMAA efforts to update criteria and guidance for bioretention soils, mulch, plantings, and irrigation.

Additional detail on each of these major accomplishments follows.

Initial Implementation of Minor Changes to Provision C.3

The adopted MRP 2.0 includes the following changes to procedures and criteria:

- Grandfathering of projects with earlier development approvals;
- Elimination of the requirement to evaluate the feasibility of stormwater harvesting/use and infiltration for each development project;
- Some changes to criteria for the application of "LID Treatment Reduction Credits" to "Special Projects; and,"
- Addition of a requirement that, prior to granting "LID Treatment Reduction Credits," that Permittees establish the infeasibility of providing 100% treatment with LID facilities either onsite, offsite, or via paying in-lieu fees, or a combination thereof.

The Development Committee prepared a staff report, distributed to and discussed by the CCCWP Management Committee in February 2016, reviewing the changes to grandfathering provisions. The staff report was accompanied included an analysis of the changed permit language and an explanatory flowchart.

An additional February 2016 staff report explained the new requirement related to granting "LID Treatment Reduction Credits," and provided a suggested framework—previously developed in cooperation with the BASMAA Development Committee—for determining the feasibility/infeasibility of LID treatment on a development project.

To ensure that CCCWP guidance to applicants for development approvals was updated timely to be consistent with changes to the permit, the Development Committee created, and the Management Committee approved, a 2-page March 2016 "Stormwater C.3 Update." The *Update* serves as an outreach document and as an addendum to the *Stormwater C.3 Guidebook, 6th Edition.* The *Update* was published to the CCCWP website.

The Development Committee reviewed a new MRP 2.0 requirement that Permittees "...collectively, on a regional or countywide basis, develop and adopt design specifications for pervious pavement systems…. If countywide design specifications have been adopted and are contained in countywide stormwater handbooks, Permittees may reference these documents in the Annual Reports." Noting that such specifications are included on pp. 65-67 of the *Stormwater C.3 Guidebook, 6th Edition* (2012), the Development Committee took no action.

Upgrades and Improvements to the Stormwater C.3 Guidebook

Following completion of the March 2016 "Stormwater C.3 Update," the Development Committee began planning upgrades and improvements to the *Stormwater C.3 Guidebook.* Discussions were held online and at Development Committee meetings. Draft chapters of the 7th Edition were distributed for review at the April 2016 and May 2016 meetings. A complete working draft was compiled and distributed in advance of a June 7, 2016 training workshop.

Completed and planned changes to be incorporated in the draft 7th Edition include the following:

Chapter One—Policies and Procedures - There is more emphasis on the need to plan LID prior to entitlements, particularly for subdivisions:

- The project scope, for the purposes of C.3 compliance, includes impervious surfaces added or replaced within the public right-of-way in connection with the project;
- New grandfathering policies, consistent with MRP 2.0;
- More explicit instructions with regard to tentative maps; and,
- Updated applicability criteria and options for compliance for Hydromodification Management.

Chapter Two. Chapter Two in the 6th Edition, "Concepts and Criteria," has been eliminated. Some of the technical information will be included in an Appendix (to be prepared).

Chapter Two—Preparing Your Plan **-** (was Ch. 3 in the 6th Edition). The Chapter has been rewritten to more explicitly "walk through" preparation of a Stormwater Control Plan using the template provided:

- There are explicit instructions on completing the Project Data Form, with particular attention to correctly reporting new impervious area, replaced impervious area, pre-project impervious area, and post-project impervious area (page 14);
- There are more explicit instructions for preparing the Stormwater Control Plan Exhibit;
- There is more emphasis on the need to integrate facilities into the site plan, landscaping plan, and preliminary grading plan (including transitions); and,
- The 7th Edition will include example Stormwater Control Plans for hypothetical projects (one commercial, one residential subdivision).

Chapter Three—Low Impact Development Site Design Guide **-** The *Guidebook* reorganization has this chapter now focused on site design (Chapter Two is focused on planning and Chapter Four is focused on facility design and construction):

- Notes that municipalities may choose to allow existing impervious areas to be credited toward post-project HM requirements;
- Eliminates the 6th Edition requirement to conduct an analysis of the feasibility of infiltration and of harvesting and use, consistent with MRP 2.0;
- Emphasizes placement of bioretention facilities in high-visibility, well-trafficked areas;

- Emphasizes the need to keep the top of soil elevation close to the elevation of the surrounding grade, by using surface drainage rather than piped drainage, especially on flatter sites;
- Emphasizes the need to avoid draining landscaped areas to treatment facilities;
- Eliminates the calculation formats in the Guidebook and the template and instructs all users to use the Integrated Monitoring Plan (IMP) Sizing Calculator;
- Emphasizes that the minimum square footages for facilities in the calculator and Guidebook do not include area needed for side slopes or transitions; and,
- Includes minor updates to criteria for Special Projects and the use of non-LID treatment facilities.

Chapter 4—Design and Construction of Bioretention Facilities and Other Integrated Management Practices - This Chapter includes more specific instructions for preparing construction plans. The Design Sheets for LID features and facilities are now in this chapter. Some key areas of new or increased emphasis:

- A diagram showing the delineation of drainage management areas should be included in the construction plans;
- Key elevations for bioretention facilities (bottom of excavation, top of gravel layer, top of soil layer, inlets, overflow grate) should be called out;
- Incorporate key instructions, particularly the top of soil elevation, into the landscape plan;
- Pervious pavement installations larger than 3,000 SF (contiguous) on Regulated Projects are now subject to Operations and Maintenance (O&M) Verification per MRP 2.0;
- Ensure pervious pavements are installed by industry-certified professionals according to vendor's recommendations; and,
- Use of flow-through planters is restricted to applications where infiltration is not possible.

The Design Sheet for Bioretention Facilities has been significantly reorganized and revised.

Chapter 5—Operation and Maintenance of Stormwater Facilities (will be renumbered from Chapter 6) **-** Few changes are anticipated to this section:

- The 7th Edition will include a template for preparing an O&M Plan and example O&M Plans for two hypothetical projects (one commercial and one residential subdivision).

June 7, 2016 LID Design and Construction Workshop

Since 2004, the CCCWP Program has sponsored a workshop, approximately annually, on implementation of C.3 requirements. Workshop content typically incorporates an overview of C.3 requirements, implementation procedures, and design guidance in accordance with the most recent edition of the Program's *Stormwater C.3 Guidebook.*

This year's workshop was held June 7 from 8:00 AM to 12:30 PM at the City of Walnut Creek's Shadelands Civic Arts Auditorium (use was donated by the City). 60 private-sector land development professionals and 40 municipal staff attended. About half had previously attended a CCCWP C.3 workshop.

Registrants were provided with a working draft of the *Stormwater C.3 Guidebook, 7th Edition,* and were asked to bring it with them to the workshop. Changes from the 6th Edition were reviewed point-by-point, and questions asked and answered. The participants engaged in a whole-group discussion of seven "Hot Topics in LID Implementation."

Participants were asked to complete a request for feedback. 56 responses were received. The Development Committee held a post-mortem discussion at the June 22

Committee meeting. The following points were drawn from the responses and the Development Committee discussion:

- There is a big demand for C.3/LID/GI training from private-sector land development professionals and from municipal staff;
- The number of participants, and the range of professional expertise and occupations, was impressive;
- The discussion of "hot topics" was a useful addition to the previous years' format. In particular, the conversations between participants that work for land developers and participants working for municipalities helped lend perspective;
- The discussion of changes to C.3 was also useful;
- Some participants found the review of "C.3 Basics" necessary and useful;
- Some participants were interested in learning more about GI;
- There were not enough copies of the draft Guidebook, 7th Edition to provide to those who neglected to bring a copy. The Committee discussed whether additional copies should be provided in future, or whether more encouragement should be provided to registrants to review the material in advance of the workshop;
- There was a good give-and-take on bioretention design and geotechnical concerns; and,
- There are some conflicts between municipal engineering design criteria, as applied, and implementation of LID and GI. In particular, resistance to the use of valley gutters and trench drains seems to be an issue.

The workshop agenda and slides have been posted to the CCCWP website.

<u>Design and Engineering Assistance to Municipal Staff and to Applicants for Development Project Approvals</u>

Throughout the fiscal year, CCCWP made the services of the Program's consultant, Cloak, available to its member Permittees and to the community of land development

professionals for consultation on C.3 compliance and LID design and construction. Cloak provided technical assistance on dozens of development projects during FY 2015/16.

Preparing Updates to HM Criteria

A 2003 permit amendment required CCCWP to prepare a Hydrograph Modification Management Plan (HMP). Similar requirements were added to the Santa Clara permit in 2001. Contra Costa's HMP was developed in 2003-2005, and emphasizes the use of LID to mitigate changes in runoff caused by land development. The process of obtaining Water Board staff's recommendation for approval was long and drawn out. The Water Board approved the HMP in mid-2006. The HMP includes requirements for monitoring of some bioretention facilities and for calibration and verification of the model used to calculate the bioretention sizing factors. The 3rd Edition of the *Stormwater C.3 Guidebook* (October 2006) incorporated HM requirements, including the sizing factors, into criteria for LID design on projects subject to the HM requirements.

Designs for bioretention facilities were further developed and refined in 2006-2008. The *Guidebook* 4th Edition (2009) included variations on bioretention designed and incorporated sizing factors for all facilities based on limiting flow exiting via facility underdrains to two-tenths of 2-year event (0.2Q2). MRP 1.0 (2009) imposed 0.1Q2, but allowed Contra Costa to continue to use 0.2Q2 for the permit term. MRP 1.0 also renewed the requirement for a model calibration and verification study.

The study proceeded in 2011-2012 and 2012-2013. Tony Dubin of Dubin Environmental Consulting conducted the model calibration and verification. Flood Control District staff conducted the monitoring. A report was completed and submitted with the 2013 Annual Report. Monitoring data showed that exfiltration from the bioretention facilities was 0.24 inches per hour, an order of magnitude higher than the rate assumed in the original model. Largely because of this difference, using the calibrated model, sizing factors would not need to increase even if the 0.1Q2 flow limit were to be met.

For MRP 2.0, CCCWP sought to also change criteria in Provision C.3.g. that favors the use of flow duration control basins rather than LID. This effort started with developing potential alternatives to the curve-matching criteria in Provision C.3.g.ii.(2). In early 2015, following discussions with Water Board staff, BASMAA retained Judd Goodman of Geosyntec consultants to develop a memorandum describing how the potential for downstream stream bed and bank erosion (erosion potential, or E_P) could be estimated directly, rather than relying on the matching of flow-duration curves. Goodman collaborated with Dubin. The modeling results from the 2013 CCCWP report were used as input for Goodman's calculations of E_P.

Also in MRP 2.0, the Water Board required Contra Costa Permittees to submit a technical report, due with the 2017 Annual Report, describing how CCCWP's criteria will be updated (to meet the 0.1Q2 standard). The standard is to be met by January 1, 2018.

Following the November 19, 2015 adoption of MRP 2.0, CCCWP began planning to meet this requirement for a technical report. Funding for the project was included in CCCWP's FY 2016/17 budget. In a May 31 letter, CCCWP requested that Dubin Environmental Consulting and Geosyntec Consultants provide a proposal for the work. At a June 20, 2016 meeting, the Management Committee approved the scope of work and directed the Program Manager to negotiate a contract.

The effort will include ongoing interaction with CCCWP staff, consultants, and Water Board staff. The outcomes will include updated sizing factors, which will be incorporated in a future (8th) edition of the *Stormwater C.3 Guidebook*.

MRP 2.0 also requires Contra Costa Permittees to prepare HM applicability maps by September 2017. The maps are to show locations where projects may be exempted because they are in a catchment that drains to pipes or a hardened channel that extend continuously to the Bay, Delta, or a flow-controlled reservoir, or drain to channels that

are tidally influenced, or are located in a catchment or sub-watershed that is 70% or more impervious. In FY 2015/16, CCCWP initiated this work by including the effort in the Program's FY 2016/17 budget and by negotiating a scope with the Program's GIS Consultant, PSOMAS, for completing the work.

Assistance to Municipalities with Initial Implementation of Green Infrastructure

In 2013, CCCWP staff and consultants initiated discussions, within BASMAA, of GI as a unifying theme for the reissued MRP. CCCWP staff and consultants participated in a BASMAA-sponsored GI Work Group that was launched in early 2014. During FY 2014/15, CCCWP staff and consultants helped draft a proposed GI provision. Following discussions within BASMAA and with Water Board staff, some elements of the draft were incorporated into MRP Provision C.3.j.

During FY 2015/16, CCCWP staff and consultants assisted member municipalities with initial implementation of Provision C.3.j.

A preliminary timeline for implementation was provided to the CCCWP Management Committee at the February 17, 2016 meeting. It was recommended that Permittee stormwater coordinators immediately begin discussions with local Capital Improvement Project managers regarding implementation of Provision C.3.j.ii., which requires that each Permittee review current infrastructure (capital improvement) projects, prepare a list of infrastructure projects planned for implementation during the permit term that have potential for GI measures, and submit the list with each Annual Report, beginning with the FY 2015/16 Annual Report.

At the March 16, 2016 Management Committee meeting, Program staff and consultants suggested that Permittee staff provide a staff report on the GI requirements to their local council or board before June 30, 2016. A model staff report and illustrations were provided. This model was also shared with municipalities regionally through BASMAA.

Beginning in January 2016, CCCWP staff and consultants, in cooperation with the CCCWP Development Committee, drafted guidance for identifying GI potential in municipal capital improvement projects. This draft was taken up by BASMAA's Development Committee. CCCWP worked with BASMAA to revise and improve the draft and to integrate it with direction for completing the reporting tables for Provision C.3.j. in the FY 2015/16 Annual Report forms. The final regional guidance by the BASMAA Development Committee is dated May 6, 2016.

Participation in BASMAA efforts regarding Criteria and Guidance for Bioretention Soils, Mulch, Plantings, and Irrigation

During FY 2015/16, CCCWP representatives to the BASMAA Development Committee participated in that Committee's Bioretention Soils, Mulch, Plantings, and Irrigation Work Group. The efforts of that group included initiating and scoping a project to review permit specifications for the sand/compost mix used as bioretention soil, and drafting a letter to the Water Board Executive Officer requesting approval of minor changes to the specification (this approval was given).

CCCWP representatives were able to bring Contra Costa municipalities' extended experience with implementing bioretention to the BASMAA Soils, Mulch, Plantings, and Irrigation Work Group. This experience included an understanding of the technical background and successful practical application of the sand/compost mix specification, which was developed by CCCWP in 2008 and was included, with minor changes, in the 2011 MRP amendment. The BASMAA group's FY 2015/16 efforts culminated in a June 30, 2016 roundtable, which was held at Water Board offices and was facilitated by Christine Boschen of Water Board staff.

SECTION 4 – PROVISION C.4 INDUSTRIAL AND COMMERCIAL SITE CONTROLS

Introduction

During FY 2015/16, CCCWP municipalities implemented their business inspection programs as follows:

- Antioch, Clayton, Concord, Danville, El Cerrito, Hercules, Lafayette, Martinez, Moraga, Orinda, Pittsburg, Pleasant Hill, San Ramon, and Walnut Creek contract for business inspection services with local sanitary district inspectors (or Publicly Owned Treatment Works (POTW) inspectors). This institutional arrangement of using local POTW inspectors to conduct municipal stormwater inspections was initiated soon after the CCCWP was issued its first Joint Municipal NPDES Permit in 1993. This arrangement has been praised by San Francisco Bay Water Board staff, and has served as a model for other municipalities throughout California. Business inspections conducted by POTW inspectors are referred to in this Annual Report collectively as the "Group Inspection Program". The CCCWP provides administrative support to the Group Inspection Program. This includes management of the contracts, agreements, invoices and reporting; and, assistance in review and development of annual inspection lists, plans, and goals.
- Brentwood, Oakley, Pinole and CCC currently conduct their own business inspection programs.
- Richmond and San Pablo use a combination approach to their business inspection programs. These cities split their inspections among their own inspectors and contracted POTWs inspectors.

Accomplishments

During FY 2015/16, CCCWP staff and the CCCWP's MOC assisted Permittees with implementation of Provision C.4 by:

- Administering the CCCWP's Group Inspection Program, and reviewing and updating the model Business Inspection Plan (BIP) and model Enforcement Response Plan (ERP) to support Permittees' business inspection and enforcement response programs;
- Chairing the Ad Hoc Stormwater Inspector Workgroup;
- Hosting one Industrial Commercial Stormwater Inspector Training Workshop;
- Supporting and participating in the Contra Costa Green Business Program; and,
- Providing outreach to the business community.

The following is a detailed account of each activity listed above:

Administering the CCCWP's Group Inspection Program, and Providing Guidance for Municipal Business Inspection and Enforcement Response Plans

CCCWP staff administers and manages the various inspection agreements for the Group Inspection Program involving the 16 municipalities, three local POTWs (Central Contra Costa Sanitary District (CCCSD), Delta Diablo Sanitary District (DDSD), and West County Wastewater District (WCWD)). Administration of the Group Inspection Program includes: 1) coordinating the review of amendments and revisions to the inspection agreements, when necessary; 2) receipt and payment of invoices by the POTWs on behalf of the 16 municipalities; 3) assistance to the Permittees and POTW staff in developing inspection goals; ensuring MRP compliance concerns are integrated into business inspections (e.g., identification and proper management of POC, such as PCBs); 4) training of inspectors to promote consistent inspection services countywide; and, 5) field support to inspectors and municipal staff when needed. CCCWP staff meets with the participating municipalities and POTW staff annually to: assess the services provided; set inspection goals for the upcoming fiscal year; distribute documentation needed for preparation of municipal annual reports; and, review any special issues or enforcement problems that have occurred.

In FY 2015/16, CCCWP staff updated the model BIP and ERP for consistency with

MRP 2.0. The updated model plans were reviewed by the MOC in March and June. The Model ERP was finalized at the June meeting of the MOC and based upon this Committee's recommendation was presented to Management Committee that same month. The model BIP will be revisited at the October 2016 meeting of the MOC and, when finalized, will be presented to Management Committee.

Chairing the Ad Hoc Stormwater Inspector Workgroup

In the previous fiscal year, CCCWP staff created a temporary Ad Hoc Stormwater Inspector Workgroup to address consistency issues for referrals of facilities that may require coverage under the newly adopted Statewide General Permit for Storm Water Discharges Associated with Industrial Activities Industrial General Permit (IGP). The workgroup is composed of inspectors from each of the three contracted POTWs, Contra Costa Hazardous Materials Programs, cities of Brentwood and Richmond, CCC, and CCCWP staff.

In November 2015, Management Committee approved making the Ad Hoc Stormwater Inspector Workgroup a permanent workgroup that will most likely meet on quarterly or semi-annual basis. The workgroup met several times in the first half of the FY 2015/16 and developed a process for inspecting and referring facilities that may need coverage under the IGP including those that have filed a No Exposure Certification. They also developed additional guidance on inventorying PCBs-containing equipment and working with industrial sites to identify any past PCB leaks or spill incidents. As mentioned in Section C.5, the workgroup is also developing a means to identify mobile businesses operating within CCC. They will continue to share their experiences inspecting mobile business, pursing enforcement actions against them as needed, and identifying outreach opportunities.

Stormwater Inspector Training Workshop

The CCCWP hosted one Commercial/Industrial Stormwater Inspection Training Workshops in FY 2015/16. The workshop was held on May 5, 2016 at CCCSD in Martinez. The focus of the workshop was to reinforce MRP 2.0 requirements relative to stormwater inspections. The first presentation discussed stormwater inspections under MRP 2.0. This presentation was followed by a mock inspection of the Contra Cost County's Department of Public Works' corporation yard. The afternoon portion of the workshop included a session on trash load reduction requirements and provided an overview on full trash-capture devices and how they are operated and maintained. The other afternoon session focused on how to inspect mobile businesses and where to look for potential problems such as valve hookups and tank configuration.

The workshop was well attended with almost 60 in attendance. The workshop agendas and presentation materials are available on the CCCWP website at http://www.cccleanwater.org/workshops-and-conferences/.

Green Business Program

During FY 2015/16, the CCCWP provided $6,000 to support the Green Business Program (GBP). The CCCWP is one of the largest contributing partners to the GBP in CCC. The GBP is designed to publicly recognize private businesses and public agencies that take extra steps, beyond baseline compliance with environmental regulations, to prevent pollution and save resources (e.g., conserve water and energy, reduce waste through reuse and recycling, prevent stormwater pollution through good housekeeping practices, etc.). This program encourages and helps business managers and inspectors strengthen and sustain the quality of the environment in the County through a collaborative partnership.

Since its inception, more than 580 businesses have been certified as Green Businesses in the County. There are 336 currently certified businesses, including 16 new businesses that were certified in FY 2015/16, as well as 14 businesses that were recertified. The types of businesses being certified are diverse and include business offices, solar–electric companies, auto repair shops, landscapers, printers, restaurants, small manufacturers, home remodelers and cleaning services, and a. wastewater treatment facility.

Municipal stormwater and POTW inspectors assist the GBP by encouraging business to become Green Business candidates. CCCWP staff serves on the GBP's "Partners Committee," and actively engages in development of the Green Business checklist (i.e., the stormwater pollution prevention section that each business needs to complete before becoming certified as a Green Business).

Providing Outreach and Resources to Businesses

With CCCWP MOC input and direction, CCCWP staff develops and/or updates a variety of business outreach materials, including BMPs brochures and posters, a website, and a telephone hotline. Stormwater inspectors promote these resources during their inspections.

During FY 2015/16, CCCWP staff finalized two public outreach materials. The first was a flyer on BMPs for architectural copper. The draft version was developed in the previous fiscal year and finalized by the MOC in October 2015. It was presented to Management Committee in December 2015 after being reviewed by the PIP Committee in November. Permittees were encouraged to make this flyer available at permit counters and to include them with applicable building permits. It was also recommended that they incorporate the BMPs as conditions of approval for any discretionary projects with architectural copper features.

The second outreach material finalized was the Mandarin translation of the *Water Pollution Prevention for Food Services Facilities* poster. This version was made available to Permittees in December 2015. The original version of this poster (in English) was made available to Permittees in FY 2013/14 with the Spanish version made available to Permittees in FY 2014/15.

Throughout FY 2015/16, CCCWP staff responds to businesses requesting copies of such outreach materials. Business owners use the CCCWP website at http://www.cccleanwater.org/business/ to find information on stormwater pollution prevention practices and how they can make their stormwater inspections as easy as possible. Businesses also use the CCCWP's 1-800-No-Dumping hotline to report illegal dumping in their area to help their business communities prosper from a cleaner environment for their customers. A growing awareness of stormwater BMPs has stemmed from use of these resources. Many direct discharges of pollution have been eliminated by educating businesses in proper stormwater BMPs.

FY 2016/17 Planned Activities

For over 16 years, the CCCWP and local POTWs have consistently maintained a strong Group Inspection Program. Many of the MRP requirements were already part of Permittees' existing business inspection programs. To promote continuous improvement of the municipal inspection programs, the CCCWP MOC established as planned goals for FY 2016/17 the following activities:

- Finalize the draft version of the updated model BIP;
- Conduct an annual training workshop for industrial commercial stormwater inspectors;
- Provide training on POC source identification and management;
- Finalize outreach material for vehicle maintenance and develop other outreach materials as needed;
- Maintain the CCCWP's 1-800-No-Dumping telephone hotline and website for

businesses; and,

- Continue to participate in, and support, the GBP.

SECTION 5 – PROVISION C.5 ILLICIT DISCHARGE DETECTION AND ELIMINATION

Introduction

The majority of MRP requirements related to Illicit Discharge Detection and Elimination (IDDE) are being addressed directly by Permittees. The CCCWP MOC oversees IDDE Group Activities.

Accomplishments

The following IDDE Group Activities were initiated or ongoing during FY 2015/16:

- Managed the 1-800-No-Dumping Hotline and Hazmat Incident Reports;
- BASMAA and CCCWP Activities Related to Mobile Surface Cleaners; and,
- Continued to promote and offer stormwater pollution prevention car washing kits for charity car washing events

Provided below is a brief summary of each activity listed above:

<u>1-800-NO-DUMPING Hotline and Hazmat Incident Reports</u>

The CCCWP continues to operate the 1-800-NO-DUMPING Hotline. The Hotline is used by the public to report illegal dumping and to obtain stormwater information. All Hotline calls are referred to the appropriate municipality for follow-up and, if necessary, enforcement**.** Calls have been logged since FY 2004/05.

Of the 380 hotline calls the CCCWP received during FY 2015/16, the overwhelming majority were to report an illegal dumping incident. This number represents an almost 12% increase in the number of calls from FY 2014/15. The most common dumped materials reported in these calls include garbage, mattresses and box springs, and

other furniture. Other reported dumped materials included sofas, building/construction debris, electronics (i.e., TV, stereos, computer, etc.), tires, household goods and other debris. Each Permittee uses the information from the Hotline to identify problem areas that need to be addressed.

The CCCWP continues to collaborate with the CCC Hazmat Division. Hazmat's countywide 24-hour spill response is a vital component of Permittees' IDDE programs. Each month, the CCCWP disseminates the Hazmat spill response reports (also known as "Incident Reports") to Permittees. These reports inform each Permittee of Hazmat incident responses within their jurisdiction. Permittees use this information to track the type and locations of spills and dumping incidents, and to conduct appropriate follow-up. More information on each Permittee's IDDE program is provided in the individual Municipal Annual Reports compiled in Volume II of this Report.

BASMAA and CCCWP Activities Related to Mobile Surface Cleaners

BASMAA's Mobile Surface Cleaner Program is a training and certification program for mobile surface cleaners. BASMAA has continued to work on these efforts and has made some progress in FY 2015/16 including updating of its website. For a list of activities and accomplishments and additional details, see BASMAA's "*Annual Reporting for Fiscal Year 2015/16 Regional Supplement for Training and Outreach.*"

To augment BASMAA's efforts to address mobile businesses, the CCCWP worked with members of the Ad Hoc Stormwater Inspector workgroup to develop means to identify mobile surface cleaners operating within CCC. While these businesses are required to obtain business licenses in the cities they operate, some choose not to meet this requirement and to further compound matters, there are municipalities within CCC that do not issue business licenses. In addition, mobile cleaners may operate outside of regular work hours and this represents yet another challenge to creating a meaningful inventory. The Ad Hoc Stormwater Inspector workgroup suggested obtaining the

names and addresses of mobile cleaners conducting work at restaurants, hospitals, and other businesses to develop this inventory.

In FY 2016/17, it is the intent of the CCCWP to implement this process and have stormwater inspectors submit contact information of mobile businesses to CCCWP staff. Targeted outreach would then be conducted to these businesses. Other methods to inventory mobile businesses and provide outreach to them is also being considered; including the use of trade organizations and obtaining copies of business licenses of mobile cleaners for those municipalities who do issue them.

Charity Car Wash Kits

In FY 2007/08, the CCCWP created and implemented a charity car wash pilot campaign to help charity car wash sponsors avoid illegal discharges of wash water to storm drains. The charity car washing campaign included the creation of a brochure and several car washing kits containing: one submersible pump; one 50' electrical extension cord; one 3' X 4' rubber mat; one 50' garden hose; one metal spray nozzle; three collapsible safety cones, and tape. The brochure instructs charity car wash organizers on how to conduct a car washing event without discharging wash water into the storm drain system. The brochure instructs organizations to: 1) contact the CCCWP; 2) make sure that charity car washes are legal within their municipality; and, 3) use the car washing kit in accordance with the instructions provided.

The charity car wash kits were not used in FY 2015/16. In the previous fiscal year, it was used only once. The drop in usage of the kit may be in response to the ongoing drought or that organizations may have transitioned to other types of fundraising activities. The CCCWP will continue to promote and track the use of these charity car wash kits in FY 2016/17.

FY 2016/17 Planned Activities

The CCCWP will continue to support the 1-800-No-Dumping Hotline and distribution of the CCC Hazmat Division's incident response reports to the Permittees. CCCWP will continue to provide input and support for BASMAA's expanded mobile surface cleaners program. In addition, CCCWP will continue to build upon the countywide inventory of mobile cleaning businesses created in FY 2014/15, and conduct outreach activities to these businesses on an annual basis.

The CCCWP's MOC will continue to review and assist in the development of guidance and training, as may be requested, to help improve Permittee IDDE programs. As part of this training, the CCCWP is considering sponsoring a workshop on spill response that could include a number of regulatory agencies from local stormwater inspectors and CCC Hazardous Materials Programs personnel to state agencies such as California Department of Fish and Wildlife.

SECTION 6 – PROVISION C.6 CONSTRUCTION SITE CONTROLS

Introduction

The CCCWP's Development Committee facilitates Permittees' implementation of MRP Provision C.6 requirements and provides direction to CCCWP staff and consultants. During FY 2015/16, the Development Committee was chaired by Thompson. Steere served as vice-chair. These two individuals also served as CCCWP representatives to BASMAA's Development Committee. Staff from Antioch, Brentwood, Clayton, Concord, Danville, Oakley, Pittsburg, Pleasant Hill, and Walnut Creek actively participated in the Committee. The Development Committee's FY 2015/16 goals were:

- Facilitate member agencies' compliance with MRP Provision C.6;
- Facilitate member agencies' efforts to reduce erosion and sedimentation, and discharge of pollutants, from construction sites;
- Continuously improve Program outreach and guidance on construction-phase controls; and,
- Facilitate member agencies' compliance with the Construction General Permit (CGP) (for agency-sponsored projects).

Accomplishments

<u>Revisions to Construction Inspection Requirements in MRP 2.0</u>

During FY 2015/16, CCCWP staff, consultants, and Permittee representatives continued to participate in negotiation of construction inspection requirements in Provision C.6 of MRP 2.0. Substantive changes to these requirements in the final order were:

- Updated a requirement that Permittees have an Enforcement Response Plan for Construction Inspections, with ERPs to be submitted in September 2017;

- Added “hillside projects” disturbing 5,000 square feet or more to the types of construction projects that must be inspected monthly during the wet season; and,
- Changed reporting of inspection findings from “violations” (in MRP 1.0) to “enforcement actions” or “potential and actual discharges.”

Construction Inspector Training

To assist Permittees to comply with MRP Provision C.6.f.ii., CCCWP sponsors training for Permittee construction inspection staff biannually.

CCCWP sponsored a June 14, 2016 workshop for municipal stormwater construction site inspectors at the City of Walnut Creek’s Shadelands Civic Arts Center (use was donated by the city). Workshop presenters were Water Board Water Resources Control Engineer Elyse Heilshorn, Sandy Mathews of Larry Walker Associates, and Thompson. Participants included inspectors from Antioch, Clayton, Concord, Contra Costa County, Danville, El Cerrito, Martinez, Moraga, Oakley, Pittsburg, Pleasant Hill, Orinda, Richmond, San Pablo, San Ramon, and Walnut Creek. Some private consulting firms were also represented.

The workshop provided an overview of the MRP’s Construction Site Control (Provision C.6) requirements and highlighted new requirements, in MRP 2.0, related to construction inspections and reporting. Presenters also compared and contrasted the requirements of the MRP and the CGP, discussed available BMPs resources, and reviewed the inspection documentation and annual reporting process.

Materials from the workshop were made available to Permittees for use in in-house training.

Pre- and post-workshop surveys showed an improvement from 66% to 77% in correct answers to the survey questions.

SECTION 7 – PROVISION C.7 PUBLIC INFORMATION AND OUTREACH

Introduction

The CCCWP Public Information/Participation Committee, with assistance from CCCWP staff and consultants, is responsible for overseeing the development of materials and products, information dissemination, marketing and public outreach. Most of the public information and outreach requirements in the MRP are contained in Provision C.7; however, additional outreach activities are required or encouraged in other MRP provisions. The CCCWP PIP Committee works to identify and coordinate these public information and outreach mandates conducted as a group and/or regionally through BASMAA's PIP Committee. Attachments 1.2 and 1.3 provide a list of CCCWP representatives to BASMAA's PIP Committee, and participation and attendance at CCCWP PIP Committee meetings, respectively. In FY 2015/16, Dan Jordan (Flood Control District) and Julie Haas-Wajdowicz (City of Antioch) served as Chair and Vice-Chair, respectively, of the CCCWP PIP Committee.

The CCCWP's public information and outreach budget for FY 2015/16 was $246,318. This was supplemented by CalRecycle Oil Payment Program (OPP) Grant funds totaling approximately $74,000 for a combined budget of approximately $320,318.

CCCWP representatives participated in BASMAA's PIP meetings and outreach efforts. For further details of the CCCWP's outreach activities implemented regionally, see *BASMAA's "Annual Reporting for FY 2015/16 Regional Supplement for Training and Outreach"*.

The remainder of this section documents public education and outreach activities conducted collectively in CCC.

Accomplishments

C.7.b – Outreach Campaigns

The CCCWP built on the pesticides outreach foundational research collected in FY 2012/13 that resulted in conducting three distinct pesticide reduction campaigns tailored around the regional differences within the County. In FY 2013/14, the CCCWP focused on creating and starting the implementation of the three-pronged approach. In FY 2014/15, the three campaigns continued implementation, as well as focused on gathering the surveys. The Petstrcides campaign was completed during FY 2014/15. In FY 2015/16, the CCCWP continued with the two remaining campaigns.

1. MyGreenGarden.org Website - The My Green Garden website was created to give County residents a resource for non-toxic pest control in gardening.

   During this reporting period, the My Green Garden website was used to engage high school students in non-toxic pest control methods. The CCCWP created partnerships with Olympic Continuation High School (Concord), Pittsburg High School, and Richmond High School, as well as community gardening events. Academic presentations about the negative efforts of toxic pesticides were made to 113 high school seniors in those schools. Feedback from the presentations resulted in at least one direct behavior change and two students gaining interest in environmental studies. Surveys were conducted to gauge presentation effectiveness with the results as follows:

Table 7-1: Effectiveness of School Presentations

School	Pre-Presentation Awareness Average	Post-Presentation Awareness Average
Olympic	47.7%	67.6%
Pittsburg	68.8%	81.0%
Richmond	51.5%	72.5%

Students were encouraged to attend any of three outreach gardening events to learn what types of questions local residents ask about pest-related gardening issues. Many of these students attended the events, and collected 100 questions or tips, which were subsequently researched by Antioch Environmental Academy students (Antioch High School) for non-toxic solutions. Their answers were subsequently posted on the website.

For more information on this campaign activity, see Attachment 7.1 of this Volume 1 report.

2. Pesticides Linger - The Pesticides Linger campaign continued its goal of encouraging residents to hire eco-certified PCOs through four strategic public outreach efforts, digital ads through the Pesticides Linger website and Google, and six targeted e-mail marketing blasts. County residents learned about the benefits of using non-toxic/eco-friendly pesticides, instead of toxic pesticides. Outreach included partnering with five local eco-certified PCOs, and offering a 25% discount coupon to use their services. The Pesticides Linger website and e-mail marketing served to keep interested residents engaged in the campaign. The campaign also collected 352 pledges to "go eco" and use eco-friendly pest control.

For more information on this campaign activity, see Attachment 7.1 of this Volume 1 report.

C.7.c – Stormwater Pollution Prevention Education

The CCCWP's website provides a "Municipality Contact List" (i.e., each Permittee's stormwater point of contact, including the stormwater representative's phone number and e-mail, and a link to the Permittee's website) under the "Resources" table at: http://www.cccleanwater.org/municipality-contact-list/. CCCWP staff updates the Municipality Contacts List page when notified of a change by a Permittee

representative. The CCCWP website is also accessible from the "Links" page on the BASMAA website at http://www.basmaa.org/links. Information on stormwater issues can be found under the CCCWP Stormwater Issues 101 page at http://www.cccleanwater.org/stormwater-issues-101/. Information on watershed characteristics can be found under the CCCWP Watersheds page at http://www.cccleanwater.org/watersheds/, as well as at the Watershed Maps page at http://www.cccleanwater.org/watersheds/watershed-maps/. Information on stormwater pollution prevention alternatives can be found under the CCCWP Prevent Pollution page at http://www.cccleanwater.org/prevent-pollution/.

In addition, the CCCWP provides a "1-800-No Dumping" Hotline where people can call and report illegal dumping, as well as obtain stormwater information. Calls regarding illegal dumping are forwarded to the appropriate Permittee for follow-up as needed. Further details regarding these calls are provided in Section 5 of this Volume I report.

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

CCCWP Permittees conducted several public outreach efforts and citizen involvement events as a group in order to reach a broad spectrum of the community with both general and specific stormwater runoff pollution prevention messages. Several public outreach efforts were conducted countywide, and are described below:

- **Bringing Back the Natives Garden Tour** – This event promotes the idea of water-saving, pesticide-reduced gardening through planting native species. CCCWP Permittees sponsored the 12th Annual Bringing Back the Natives Garden Tour, which took place on Sunday, May 1, 2016, showcasing 36 gardens located in 18 cities and unincorporated areas of Alameda and Contra Costa counties. This year's event included giving tour participants, during registration, the option to pledge to take at least one of several beneficial environmental actions, such as reducing or eliminating pesticide use (which garnered 68%) or not using insecticides (64%).

For a detailed report about the Tour, see Attachment 7.2 of this Volume 1 report.

- **Our Water Our World (OWOW)** – As in past years, CCCWP Permittees partnered with the OWOW Program to help raise awareness of the connection between pesticide use and water quality, and to provide information to consumers (at the point of purchase) about IPM and less-toxic alternatives that reduce or eliminate impacts to water quality. Twenty-nine stores participated, with 91 store staff receiving formal trainings, and more than 70 additional staff trained in-aisle during informal, mentoring visits. Eleven outreach/tabling events reached over 575 people. Seven additional outreach/community events reached over 5,540 people.

  For a detailed report on this year's efforts, see Section 9 of this Volume 1 report.

- **Facebook** – During the reporting period, the CCCWP conducted an 18-week targeted effort on its Facebook page to increase awareness of, and engage the public in, stormwater pollution prevention. This included an average of four posts each week. Through this effort, the site gained 1,046 new viewers, resulting in an average of 58 new viewers per week for the target period.

  For additional information about this awareness effort, see Attachment 7.1 of this Volume 1 report.

- **Website** - In FY 2015/16, the CCCWP continued to improve its website with periodic updates. The website is used to help educate residents, community organizations, watershed stakeholders, businesses, schools, and the general public about the CCCWP's programs and activities, stormwater quality requirements, pollution prevention practices, and water quality-related community events. To further improve the website, the CCCWP conducted a Request for

Proposal for website redesign services. A consultant was selected, and work is expected to begin in FY 2016/17.

C.7.e – Watershed Stewardship Collaborative Efforts

Below is a summary of several watershed stewardship collaborative efforts supported and/or conducted collectively by CCCWP Permittees in FY 2015/16:

- **Pesticide Applicators Professional Association –** During FY 2015/16, the CCCWP promoted a Pesticide Applicators Professional Association (PAPA) training held in Concord during July 2015. For additional information, see Section 9 of this Volume 1 report.

- **California Products Stewardship Council (CPSC)** – CCCWP continued to support CPSC through its annual membership fees. As a member of CPSC, the CCCWP is part of a network of local governments, non-governmental organizations (NGOs), businesses, and individuals supporting policies and projects where producers share in the responsibility for managing problem products at end of life. Product stewardship creates incentives for producers to "design it green and take it back," thereby reducing the environmental impact of product waste. By diverting products from the waste stream, resources are conserved, demand for landfills is ultimately reduced, and the potential for waste products to end up in local creeks, the Delta and bay is reduced. For more details regarding CPSC activities and accomplishments, see Section 10 of this Volume 1 report.

- **Green Business Program** – CCCWP continued to provide staff support and financial assistance to the GBP to help with its outreach activities to the business community, including the certification and recertification of Green businesses. CCCWP continues to be a major contributor to the GBP. Strategic meetings are

held quarterly. For more details on the GBP, see Section 4 of this Volume 1 report.

- **Contra Costa Watershed Forum (CCWF)** – CCCWP staff attends and participates in CCWF meetings, an open committee of some 50 organizations, including state and local agencies, local non-profit environmental and education organizations, community volunteer groups, and private citizens. The CCWF operates on the premise that actions in a watershed are inter-related, and that broad participation and cooperation is needed to affect change. CCWF members work together in an effort to find common approaches to making water resources healthy, functional, attractive, and save community assets. The CCWF impacts the community, environment, and decision makers in Contra Costa. Concerned with urban, suburban, and rural areas in the San Francisco Bay Delta area, the CCWF facilitates local agency and citizen collaboration, fosters innovative strategies for stewardship and protection of watershed resources, and encourages regional capacity building in Contra Costa and neighboring areas.

- **CCCWP Community Calendar** – CCCWP promotes watershed-related community events, activities and volunteer opportunities on the CCCWP Community Calendar webpage at www.cccleanwater.org/community-calendar/. A secondary goal in maintaining the Community Calendar is to increase traffic to, and use of, the CCCWP website and its information resources to increase awareness of stormwater quality and pollution prevention practices.

- **Community Car Wash Kits** – As reported in Section 5 of this Volume I report, the CCCWP provides community car wash kits to various groups and organizations for charity/fund raising car washing events. The kit allows a group to hold a charity/fund raising car wash event, while also teaching them how to protect local creeks and become better stewards of their watershed. There were no requested uses for the kits during the fiscal year. We believe there may be three reasons for this decrease: (1) water use restrictions from the declared

State drought emergency; (2) increased use of commercial car wash facilities, and (3) a previous non-profit user decided to create its own kit for use whenever they wished.

- **Community Watershed Stewardship Grants** - For the fifth consecutive year, CCCWP Permittees and CCC Watershed Program partnered with The Watershed Project (TWP) to administer the Community Watershed Stewardship Grant Program (CWSGP). The goal of the CWSGP is to benefit County watershed groups, environmental nonprofit organizations, and grassroots organizations in their efforts to prevent water pollution and help restore the health of local watersheds and creeks around the County. A total of $100,000 in grant funds were awarded to seven different organizations implementing seven separate projects (see Attachment 7.3 for the list of organizations and projects).

C.7.f – School Age Children

This provision requires Permittees to individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed messages in school-age children. In FY 2015/16, the Permittees, individually and collectively, implemented four youth-oriented outreach programs, which are discussed below:

1. Oil Payment Program Grant & Mr. Funnelhead – The OPP strives to reach across all age groups, but places particular emphasis on youth for two reasons: (1) teaching beneficial behaviors to young children early can result in the behavior being a part of their daily lives; and (2) children can, by example, influence behavior change in their parents and other adults.

Several CCCWP Permittees provided their allocation of OPP grant funds to the CCCWP for implementation of an ongoing, countywide comprehensive effort in FY 2015/16.

There are several components of the OPP: 1) certifying and recertifying used-oil recycling centers throughout the County; 2) providing educational programs targeted to

elementary schools throughout the County; 3) providing outreach at community events countywide; 4) providing programming to educate and entertain people about the importance of recycling used motor oil; and, 5) providing outreach through a cable advertising component. A "Mr. Funnelhead" website exists as an additional outreach tool at www.funnelhead.com. A summary of OPP activities are reported below.

- **Used Oil Collection Center Certification** - A total of eight new oil collection centers were certified. Nine centers did not recertify, resulting in a net loss of one oil collection centers. Of the nine, three went out of business. There are now a total of 101 certified oil collection sites in CCC. Additionally, one additional person was trained during the year to conduct oil collection center certifications.

  During FY 2015/16, the CCCWP's Used Oil Recycling Program created seven Public Service Announcements (PSAs). Four PSAs entitled "The Filter Crush" were done in cooperation with the West Contra Costa Integrated Waste Management Authority (also known as RecycleMore). These spots were done in both English and Spanish. They focused on oil filter recycling and featured Ruby Lopez, a bilingual Spanish-speaking professional actress who has worked throughout the Bay Area, and hosts in-house TV spots for the Golden State Warriors. In the PSAs, Ms. Lopez plays an auto mechanic showing how much oil can be left in an oil filter after draining, followed by a shot of an oil filter being crushed in a clear filter crusher to show the amount of residual oil. The spots were well received at public events, and were even featured on Fox Sports during the Copa Cup Soccer Tournament. These PSAs can be seen at https://youtu.be/PqpfbJqv1CQ (English version) and https://youtu.be/M1Pzk-Opaog (Spanish version)

- **Mr. Funnelhead** - Matt Bolender is CCCWP's OPP Grant consultant, using the Mr. Funnelhead character to provide educational outreach. Now in its 20th year, the Mr. Funnelhead School Education Program visited 17 schools educating 6,110 students about the importance of used oil and filter recycling. These

appearances continue to have a long-lasting effect on the children who recount their experience years later when they see Mr. Funnelhead at community events.

Many teachers commented on the educational shows being professionally done and entertaining, with very good production quality values going into each show. The Mr. Funnelhead School education program continues to be the heart of the Used Oil Education Project.

In addition to school education events, three PSAs were done involving Slimer and Dastardly Dan, characters in the school education shows. As in past years, winners from the Mr. Funnelhead Annual Art Contest participated as "Oil Busters" in the PSAs. To view one of these PSAs, please visit https://www.youtube.com/watch?v=EnlYb_KgXww.

- **Mr. Funnelhead Annual Art Contest -** Mr. Funnelhead also holds an annual art contest where children incorporate Mr. Funnelhead into their own message about recycling used oil. To see this year's contest winners and their artwork, visit http://www.funnelhead.com/previous-winners.html. Prizes are given to the top three artists with the winners appearing in a Mr. Funnelhead Oil Buster PSA, which airs on premium cable television.

2. **My Green Garden Website** – As discussed under the Outreach Campaigns section above, three County high schools were involved in a project promoting non-toxic pest control methods. Details regarding the project are included in the noted section and in Attachment 7.1 of this Volume 1 report.

3. CCCWP Watershed Diorama - The CCCWP's Watersshed Diarama is provided to, and used by, Permitteees and stakeholder organizations for youth-education programs and various public outreach events. The Watershed Diorama shows how rain becomes stormwater runoff carrrying dirt, garbage, and any other pollutants found in the urban environment into storm drains, which flow untreated to local creeks, the Delta,

and the Bay. In FY 2015/16, the diorama was seen by more than 2,154 people and used seven times as follows:

Table 7-2: Watershed Diorama Use

Use Date	Entity	Event
7/16/15	County Watershed Group	Teen Garden Class
2/25/16	Morello Park Elementary	Science Fair
3/25/16	Contra Costa County	Career Day
4/20/16	City of El Cerrito	Earth Day
4/27/16	Town of Danville	Earth Day
5/18/16	City of Brentwood	Brentwood Public Works Open House
5/31/16	Mr. Funnelhead	Kid Fest

4. "Be Classy Not Trash" – The CCCWP continued providing the use of its green screens and user-generated photographic content. Large green screen components are set up at an event, and then attendees are invited to get their pictures taken in front of the green screen. Youth in middle and high schools appear to be particularly eager to have their picture taken and the backdrop transposed.

Maintaining the concept of "Be Classy Not Trashy" encourages the idea of posing in front of clean environments, rather than trashy ones. It initiates conservations about trash as well as provides municipalities with digitally uploaded pictures of youth "doing the right thing." These pictures are then shared across multiple social media platforms in an effort to develop a perceived social norm that the majority of people are participating in a clean, non-littered environment. In general, youth consider social media to be one of the main avenues to sending and receiving important information and messages.

FY 2016/17 Planned Activities

Planned public information and outreach activities for FY 2016/17 include:

- Strategic planning for the next outreach campaign, including a potential partnering opportunity with the Caltrans' (California Department of Transportation) statewide *Protect Every Drop* campaign;
- Redesign and implementation of an improved CCCWP website;
- Planning additional public outreach events, citizen involvement events, and watershed stewardship activities consistent with the MRP;
- Continued outreach to school-age children with the OPP/Mr. Funnelhead programs;
- Showcasing the watershed diorama; and,
- Continued enhancement to the CCCWP's Facebook page with current and valuable information.

SECTION 8 – PROVISION C.8 WATER QUALITY MONITORING

Reporting on implementation of the Provision C.8 Water Quality Monitoring requirements is provided in the *Urban Creeks Monitoring Report, Water Year 2015 (UCMR)* submitted to the Water Boards on March 31, 2016. This report is available on the CCCWP's website at: http://www.cccleanwater.org/surveys-studies-annual-report/.

Provision C.8.h.iv requires a Pollutants of Concern Monitoring Report which is due and will be submitted in October 15, 2016 describing the allocation of sampling effort for POC monitoring for the forthcoming Water Year (WY) 2017 beginning October 1, 2016, and what was accomplished for POC monitoring during WY 2016 (i.e., October 1, 2015 to September, 30, 2016). The report will include monitoring locations, number and types of samples collected, purpose of sampling (management question addressed), and analytes measured for WY 2016 and projected for WY 2017 as stated in Provision C.8.f Pollutants of Concern Monitoring. Data from the monitoring efforts in WY 2016 will be included in the UCMR due annually on March 31.

SECTION 9 – PROVISION C.9 PESTICIDES TOXICITY CONTROLS

Introduction

BASMAA and CCCWP staff, consultants and MOC members provided the following assistance to Contra Costa Permittees' efforts to reduce pesticide toxicity in local creeks during FY 2015/16:

- Tracking and participating in pesticide regulatory initiatives;
- Promoting opportunities for training events for municipal employees and contractors on IPM and similar programs;
- Providing outreach to residents and the general public on less-toxic pesticides, and proper pesticide use and disposal; and,
- Coordinating with, and reporting to, the CCC Agricultural Commissioner (CCCAC) on improper pesticide use.

FY 2015/16 Activities

BASMAA and the CCCWP's MOC provide a forum for Permittees to share information on common issues and lessons learned related to reducing pesticide toxicity in the County's urban creeks. A summary review of activities conducted as a Group Activity are discussed below.

C.9.b. – Train Municipal Employees on IPM Practices

The CCCWP sponsored a one-day workshop for municipal staff and their contracted employees on *How Pesticides Affect Soil Quality – A One-Day Bay Friendly Course*. The workshop was held on April 6 in Pittsburg and included presentations on pesticides toxicity in urban creeks, IPM for landscapes, and regulatory update on the artificial turf and the Model Water Efficient Landscape Ordinance. Attendees were given a tour of

the recently certified Bay-Friendly garden at the Pittsburg's City Hall. The workshop was well received with 25 municipal staff and contracted employees in attendance.

C.9.d – Interface with CCCAC

CCCWP staff contacted Larry Yost; Deputy Commissioner of the CCCAC and reviewed MRP 2.0 permit requirements related to communications regarding pesticide toxicity controls. In FY 2015/16, Deputy Commissioner Yost reported fining one company for violation of the surface water protection regulations. A pest control business was inspected without advanced notice and was found applying pyrethroid insecticides on impervious horizontal surfaces in excess of the 1 inch pin stream restriction. CCCAC issued a Notice of Proposed Action to the company and fined them $500, which was paid without contest.

C.9.e – Public Outreach

- Point of Purchase Outreach: The CCCWP funds and participates in the OWOW Program, which provides educational outreach directly to the consumer/user at the point of purchase (i.e., in the store). The OWOW Program is implemented both regionally and locally. Further details regarding the OWOW Program regional implementation are provided in the BASMAA's *"Annual Reporting for FY 2015-2016 Regional Supplement for Training and Outreach,"* submitted separately by BASMAA on behalf of Contra Costa Permittees.

  Locally, the CCCWP distributes OWOW educational literature to schools and at community events, in addition to the general public when requested. CCCWP staff promotes OWOW through its website and direct interactions with citizens, schools, and businesses.

  A total of 29 Contra Costa stores participated in the OWOW Program in FY 2015/16. All 29 were set up with literature racks, fact sheets, and shelf talkers.

- Store Staff Training: Training on the OWOW Program was provided to staff at 18 key stores in FY 2015/16. Trainings included information on:

    - The connection between pesticide pollution and water quality; how pesticides enter water through storm drains and sewers; pesticides of particular concern; how and where to dispose of pesticide products no longer wanted;
    - Common beneficial insects in the landscape; resources for identifying pests/beneficial insects and how to use them; incorporating insectary plants into the landscape to attract beneficial insects; and new and invasive pests/diseases;
    - The benefits of organic fertilizers (especially during drought years), compost and mulch; nutrient run-off; chemical salt build-up from fertilizers and the importance of building up the soil food web;
    - Techniques and resources for managing specific pest problems; tips for working with customers on how to use products; basic less-toxic chemical ingredients and how they work on pests; and tips for using/selling the less-toxic products and working with customers; and,
    - Using online resources, including the OWOW 'Ask the Expert' feature and the University of California (UC) IPM website.

  Each training participant receives a packet of information and resources, including: background on the OWOW store partnership program; IPM basic techniques; information on how products work and how to read a pesticide label; a laminated bug identification guide; information on lawn reduction projects; a chart for identifying pest damage; OWOW fact sheets; *The 10 Most Wanted Bugs in Your Garden* brochure, and a list of resources and helpful websites. Trainees also receive pre- and post-training surveys to determine effectiveness of training on the connection of pesticides to water quality and proper disposal of pesticides.

Stores that participated in trainings were also given a hand lens, *Landscape Pest Identification Cards*, and a set of cards to help customers on identifying pests, diseases and beneficial insects.

- Outreach to Consumers: When in stores, customers see or experience several components of the OWOW Program, which include:
    - Store staff or OWOW representatives answering questions in store aisles during and after store set ups;
    - Recently redesigned shelf-talkers (labels) placed next to product price labels, promoting less-toxic products;
    - Display racks containing the OWOW Fact Sheets for general distribution;
    - End caps (end of aisle displays) featuring less-toxic products; and,
    - In-store OWOW table events that provide: help with identifying and solving pest problems; advice on less-toxic products, including the proper way to use and dispose them; and other informational materials.

- Increased Involvement/Interest: OWOW was able to increase its involvement in the stores that Sloat Garden Centers recently acquired from Navlet's, as Sloat is very supportive of the OWOW Program.

  Also this year, OWOW created and distributed a new *Fall and Winter Garden Checklist*, with information on the best time to apply dormant spraying to minimize chemical use.

  Due to awareness of the Zika virus and growing interest in managing mosquitos, OWOW's *Fight the* Bite handout has seen increased distribution.

For additional information on this year's OWOW activities, see Attachment 9.1 in this Volume 1 report.

- Pest Control Contracting Outreach

  In FY 2015/16, CCCWP continued with its two remaining pesticide reduction campaigns. The Pesticides Linger campaign specifically targeting Contra Costa residents who contract for pest control services and encouraged them to hire eco-certified PCOs who practices environmentally sound pest management practices. The ongoing campaign focuses on residents in South, East and Central areas of the County, as these areas were discovered in foundational research to be most likely to hire PCOs. The campaign strategy seeks to address the most common motivators and barriers to hiring eco-certified PCOs. For further details on the CCCWP's two pesticide reduction campaigns, including the Pesticides Linger campaign, see Section 7 in this Volume I report.

- Outreach to Pest Control Operators

  During FY 2015/16, the CCCWP promoted the PAPA training workshop held in Concord on July 28, 2015. The CCCWP sent a letter promoting the workshop to approximately 135 pesticide applicator businesses licensed in CCC, and also promoted the workshop to Permittee staff.

C.9.f – Track and Participate in Relevant Regulatory Processes

In recent fiscal years, the CCCWP, along with other BASMAA members and stormwater programs statewide, invested considerable efforts in tracking and participating in the United States Environmental Protection Agency (USEPA) and Department of Pesticide Regulation (DPR) actions related to urban uses of pesticides to reduce the amount of toxic pesticides impacting urban waterways.

The most recent efforts in this area may be found in CASQA's "*Pesticides Subcommittee Annual Report and Effectiveness Assessment 2015-2016"* submitted separately by BASMAA on behalf of Contra Costa Permittees.

FY 2016/17 Planned Activities

Planned activities for FY 2016/17 may include:

- Providing a one-day training workshop specifically aimed for municipal employees and their contractors on structural IPM;
- Supporting a Bay Friendly Landscaping Certification and Training Workshop for landscape businesses and municipal staff (if needed);
- Continuing to support BASMAA and CCCWP's OWOW Programs; continuing to track and participate in relevant pesticide-related regulatory processes and initiatives through BASMAA and CASQA; and,
- Continuing the countywide pesticide reduction campaign targeting a broad audience.

SECTION 10 – PROVISION C.10 TRASH LOAD REDUCTION

Introduction

In FY 2015/16, CCCWP directed its efforts to address Provision C.10 requirements in three areas. These efforts included continuing to negotiate and work with Water Board staff on draft and final draft Tentative Order of MRP 2.0; developing the Countywide GIS Pilot Program; and addressing trash requirements at the regional level.

CCCWP also continued to engage Caltrans on trash load reduction actions that could potentially benefit both the agency and those Permittees who have identified trash originating from Caltrans properties as substantially contributing to their overall trash loads.

Finally, as in past years, CCCWP continues to provide input on development of the FY 2015/16 Annual Report format and assist Permittees with completion of the form and supporting the work of the CPSC.

The remainder of this section will discuss those efforts in greater detail.

FY 2015/16 Activities

<u>Provision C.10 and MRP 2.0</u>

In the first half of FY 2015/16, CCCWP spent considerable staff time and resources negotiating provisions for MRP 2.0 with San Francisco Bay Water Board staff. In regards to Provision C.10, CCCWP staff worked closely with the MRP Steering Committee and BASMAA Trash Subcommittee, and identified highly problematic issues in the draft Tentative Order released in May 2015 and the final draft Tentative Order released in October 2015. These issues largely centered on the accelerated timeline for meeting trash load reduction milestones; reduction credits for litter-prone items and

additional creek and shoreline cleanups; addressing trash impacts of homeless encampments and chronic illegal dumping, trash management requirements on private lands that drain to Municipal Separate Storm Sewer Systems (MS4s) and mapping private drainage systems; receiving water observations as it pertains to Permittee compliance; and, developing means to acknowledge or credit control measures that removed significant volumes of trash but did not result in a change in the trash generation rate category.

To address these issues, CCCWP provided alternative language, submitted comments on the draft Tentative Order and final draft Tentative Order, offered verbal feedback at numerous meetings with San Francisco Bay Water Board staff, and testified at the July 8, 2015 Water Board public hearing and the November 18, 2015 Water Board adoption hearing. More detailed information on CCCWP activities as related to MRP 2.0 negotiations is presented in Section 1 of this Volume I report.

Developing a Countywide GIS Pilot Program to Address Trash Load Reduction Requirements

In FY 2014/15, CCCWP created an Ad Hoc GIS Workgroup to develop a scope of work, followed by a RFP, for creating a countywide GIS Pilot Project that would assist Permittees with C.10/11/12 compliance in MRP 2.0 and beyond. The workgroup reviewed RFP submittals, interviewed applicants, and awarded the contract to PSOMAS and their sub-consultant Miller Spatial with a July 1, 2015 start date. ESRI's AGOL was chosen as the GIS platform. The AGOL was set up under the CCCWP organization and users became members of CCCWP's AGOL organization or if they were already members of another AGOL organization, were invited to join the Trash and PCBs Groups established under the CCCWP AGOL.

With respect to Provision C.10 requirements, the Pilot Project allowed Permittees to make corrections to baseline trash generation rates of select parcels, add trash capture devices and associated drainage areas, designate sampling sites for conducting visual

assessments, and record assessment results and inspections of trash capture devices. Most importantly, Permittee's were able to monitor their progress towards meeting percent reduction requirements as assessments were recorded and trash capture drainage areas were added. As part of the AGOL platform, Permittee used ESRI's Collector application (app) to record visual assessments and inspections of trash capture devices.

In FY 2015/16, CCCWP and its consultant had a kick off meeting of the Countywide GIS Pilot with the GIS Workgroup in September 2016. Subsequent GIS meetings were held on roughly a monthly basis for the rest of the fiscal year.

The Pilot Project essentially consisted of three phases. The first phase required incorporating GIS data layers from the previous consultant and CCC GIS into the CCCWP AGOL organization. To do this, PSOMAS modified the database design to comply with standard naming structures, provided the ability to track edits by person and time, and defined standard values for data field to enforce consistency throughout the database. PSOMAS then performed a cleanup of attributes to conform to standards and corrected a significant amount of geometric errors (gaps and overlaps). These activities resulted in improved data consistency and quality necessary to support uniform reporting using automated reports for each Permittee. Geometric editing resulted in more accurate and reliable calculations represented in the reports.

A GIS requirements and specifications document was also developed during this first phase. The document included project background, outlined roles and responsibilities, and specified Pilot Project application and data needs. In conjunction with development of the specifications document, CCCWP staff set up user accounts for municipalities with each municipality assigned two accounts and provided guidance on how to log in to the CCCWP AGOL and download the Collector app.

As the Pilot Project transitioned from the first phase to the second, CCCWP staff worked with Permittees through the MOC Trash Group to develop a standard visual

assessment protocol and provide guidance to Permittees on how to establish a sampling plan for visual assessments based on the sampling frame provided by EOA, Inc. that PSOMAS had incorporated into the CCCWP AGOL. The sampling frame included randomly generated sample points located approximately 250 ft. apart on a line network. To accompany this sampling frame, Permittees were provided with an Excel spreadsheet that contained linear curb feet per trash generation rate per Trash Management Area (TMA) for each Permittee and the list of sampling points.

The second phase was testing of the Trash Reporting and Analyses app (as part of the CCCWP AGOL) and Collector app. CCCWP staff provided training on both apps which included PowerPoint presentations and live demonstrations. Permittees had the ability to record visual assessments, add trash capture devices and associated drainage areas, and change trash generation rates or jurisdictional status of parcels. As the testing progressed, Permittees and CCCWP staff identified the need to modify existing attributes or add new ones and modify or define the domain values of certain attributes. Prior to entering the next phase of the project, PSOMAS deleted all “dummy” data.

The Pilot Project was officially launched in the third phase. Permittees began to use CCCWP AGOL to correct baseline trash generation rates of parcels where necessary and add newly installed trash capture devices and their respective drainage areas. Permittees also activated their assessments points so they could begin to record visual assessments using the Collector app. They also used AGOL’s Reporting widget to generate the Annual Report form for FY 2015/16.

As CCCWP staff and Permittees became more accustomed to using the Trash Reporting and Analysis app and Collector app, a number of issues were identified. These issues mostly related to parcel boundary lines, permissions relative to user roles, and certain limitations of ESRI’s AGOL and Collector. In FY 2016/17, CCCWP staff will began the process of refining and correcting parcel boundaries and address other issues.

Additional information regarding the countywide GIS Pilot Project may be found in Section 1 and 10 of this Volume I report.

CCCWP and Regional Efforts to Address Trash

In January 2016, CCCWP staff began serving as Chair of the BASMAA Trash Committee. As Chair, CCCWP helped to set the agenda and runs the meetings. One of the agenda items discussed at several of the BASMAA Trash meetings was whether public schools (K-12, community college, and universities) should be removed from the list of jurisdictional land uses. The primary reason for the reclassification is that municipalities do not have any jurisdiction on public school properties. All development and redevelopment on public school properties is processed through California's Department of General Services, Division of the State Architect. Public schools are not required to obtain building permits or any type of conditions of approval from municipalities.

After further deliberations, including those with Water Board staff, the BASMAA Trash Committee made the decision to remove public schools from the list of jurisdictional land uses. It should be clarified, however, that while public school parcels would be removed, the public right of way surrounding the parcels would stay jurisdictional. Before a parcel was eligible for reclassification, it has to satisfy two conditions. The parcel had to be owned by the school district and more importantly, it had to have a public school on it. Once this decision was made, Permittees went through a process to identify parcels that met the criteria.

The Chair of the BASMAA Trash Committee also serves as the coordinator for developing RFPs for regional projects. With the adoption of the MRP 2.0, Permittees were required to develop a receiving water monitoring program by July 1, 2017. After conferring with each of the respective stormwater programs, the BASMAA Trash Committee reached the consensus that this requirement would best be met as a regional project. As such, CCCWP created an RFP workgroup to develop the proposal

and a selection committee to review proposals. After reviewing submissions and conducting interviews, the selection committee recommended to the BASMAA BOD that the team of Larry Walker and Associates, Inc. and Geosyntec be awarded the contract. After some refinement of the LWA's initial proposal, the BASMAA BOD approved the recommendation. The project will begin in earnest in FY 2016/17 with CCCWP is a member of the Project Management Team that will oversee this regional project.

One other regional project was also undertaken in FY 2015/16 with CCCWP serving as co-project manager. The goal of this project is to develop a performance standard for on land cleanups that would not require Permittees to rely on the results of visual assessments in order to take reduction credits. There are two primary reasons Permittees would like to see this standard developed. First, in many cases, even daily on land cleanups fail to result in a generational rate change and therefore Permittees cannot claim any reductions despite collecting large volumes of trash. Second, there is an interest in obtaining additional data regarding proportionality of volume of trash on land with volume of trash conveyed to the MS4s. Working primarily with an Alameda County Permittee, a RFP was developed and the contract was awarded to the team of EOA, Inc. and Geosyntec.

As one of the project managers overseeing this work, CCCWP met with the consultants to develop a conceptual study design. Once the draft version was finalized, the consultants, CCCWP, ACCWP Program Manager, and Permittees presented the conceptual model to Water Board staff. An additional meeting and one conference call was held with Water Board staff to address their concerns about the study. The final version of the study design was approved by Water Board staff in August 2016.

As part of the deliverables for the project, the consultants provided a cost estimate to implement the project. In FY 2016/17, the associated costs with implementing this study will be further evaluated. Whether this project is implemented will depend on a number of factors and has yet to be determined.

Coordinating Trash Reduction Efforts with Caltrans

Most Contra Costa Permittees identified state highways, interstates, and associated entrance and exit ramps as high-trash generating areas. In many instances, trash from these areas ultimately contributes to Permittees overall trash loads and yet Permittees have no authority to implement control measures on these lands. For this reason, CCCWP staff reached out to the Caltrans to discuss its trash reduction efforts, and identify strategies that could be undertaken to improve coordination of efforts between Permittees and Caltrans.

CCCWP staff has regularly communicated with Caltrans staff assigned to oversee the trash reduction requirements of Caltrans' statewide stormwater permit. At the request of CCCWP staff, Caltrans District 4 personnel gave a presentation to Management Committee at its December 2015 meeting. The presentation entitled *Caltrans Trash Reduction Workplan* was an overview of Caltrans' field visual survey findings for CCC and the criteria and mechanisms that will be used for evaluating and funding cooperative implementation opportunities.

Some Contra Costa Permittees have contacted Caltrans to discuss collaborating on mutually beneficial trash load reduction projects. These discussions are on-going and have not yet resulted in any cooperative agreements.

Preparing Annual Report Format and Submission

CCCWP staff and consultants participated in BASMAA Trash Subcommittee meetings to develop the format for Section C.10 in the FY 2015/16 Annual Report. The final format included much of the same data requirements as the previous year's form but had two noted differences. First, the form had to address the new requirement of visually assessing a minimum of 10% of street miles within a TMA in order to claim any reduction. Second, the decision was made to have Permittees report on implementation of control measures in one section and report on assessments and

assessment results in another section. This decision helped to streamline some of the reporting since Permittees did not have to report on each and every TMA if no new actions were undertaken.

CCCWP staff worked closely with GIS consultants to automate the process of calculating percent reduction from trash capture and results of visual assessments. As part of the Countywide GIS Pilot Project, Permittees are now able to obtain real time results for percent reductions. Permittees can print their trash load reduction reports, view their trash management area maps, and view all data and calculations that are used to generate values included in the Annual Report.

For Permittees who had not met the performance guideline of 60% reduction in trash loads for FY 2015/16, CCCWP staff developed a model *Plan and Schedule of Implementation* template in Word format that Permittees could submit with their annual reports. In the template, Permittees describe the control measures they intend to implement along with the anticipated percent reduction afforded to those measures and how these actions will meet the mandated 70% reduction in trash loads for FY 2016/17. CCCWP staff also contracted with a consultant to develop a trash load reduction calculator that Permittees could use to generate various trash reduction scenarios. The calculated values could then be entered into the template. Results from the calculator allowed Permittees to craft a reduction strategy that would best address their unique trash management challenges.

Trash Source Control Initiatives

CPSC's mission is to promote Extended Producer Responsibility (EPR), which is based on shifting California's product waste management system from one focused on government-funded and ratepayer-financed waste diversion, to one that relies on producer responsibility, in order to reduce public costs and drive improvements in product design that promote environmental sustainability. The CPSC's position is that the producers should have the primary responsibility to establish, fund, and manage

end-of-life systems for their products. The CCCWP supports the CPSC financially through membership fees equaling $2,500 a year and through direct participation in their associate meetings. CPSC has an impressive record of past accomplishments. For a detailed account of accomplishments in FY 2015/16, please see CPSC's website at http://calpsc.org/

Despite this organization's impressive record, the CCCWP has chosen not to contribute funds for FY 2016/17. While CPSC's success in promoting EPR may reduce trash in the environment, CCCWP believes this organization's work is more closely aligned with municipalities' solid and hazardous waste authorities. In FY 2016/17 CCCWP will try to continue to participate with CPSC's mission and efforts where appropriate.

FY 2016/17 Planned Activities

CCCWP staff and consultants will continue to coordinate and support Contra Costa Permittees in refining and implementing their Long-Term Trash Load Reduction Plans. CCCWP staff and consultants will also continue to work with San Francisco Bay Water Board staff, stakeholders and Permittees in further development and refinement of effective trash management actions and assessment methods used to demonstrate progress towards achieving trash load reduction goals. This work will include providing oversight of the countywide GIS Program that has now entered into an expanded stage and is no longer a pilot project. Permittees will continue to rely on the GIS Program in meeting Provision C.10/11/12 requirements under MRP 2.0. The expanded program may also be used to assist Permittees with Provision C.3.j requirements and other areas of permit compliance.

As part of this support to Permittees, CCCWP staff will continue to engage Caltrans at the state and local level, and expand its outreach efforts to other agencies, potentially including the Contra Costa Transportation Authority and Bay Area Rapid Transit.

SECTION 11 PROVISION C.11 MERCURY AND METHYLMERCURY CONTROL PROGRAMS

Introduction

The majority of MRP 1.0 and East County Permit provisions C.11.b. d, and k requirements related to mercury and methylmercury were addressed regionally through BASMAA and the Regional Monitoring Coalition (RMC) until MRP 2.0 became effective on January 1, 2016. Reporting on these elements can be found in the Integrated Monitoring Report (IMR) submitted to the Water Boards on March 15, 2014 and UCMR submitted to the Water Boards on March 30, 2015. Some of that work was completed through the Clean Watersheds for a Clean Bay (CW4CB) grant, for which a final report will be submitted in 2017. The following addresses MRP 2.0, with some elements on Mercury Collection and Recycling from MRP 1.0.

MRP 1.0 and East County Permit Provision C.11.a. Mercury Collection and Recycling Implemented Throughout the Region

During FY 2015/16, the CCCWP continued to coordinate with Permittees and local household hazardous waste (HHW) collection facilities to implement mercury collection and recycling in accordance with MRP Provisions C.11.a.i and C.11.a.ii. These efforts are no longer required to be reported in MRP 2.0, but will be tracked for mercury loads reduced through implementation of pollution prevention measures.

CCCWP Permittees collect HHW at three regional facilities in the County:

- CCCSD;
- DDSD; and,
- West Contra Costa Integrated Waste Management Authority (WCCIWMA).

CCCSD serves the communities of Concord, Clayton, Martinez, Pleasant Hill, Orinda, Lafayette, Moraga, Walnut Creek, Danville, San Ramon and Unincorporated County. DDSD serves Pittsburg, Antioch and Bay Point. WCCIWMA serves Richmond, Pinole, El Sobrante, El Cerrito and San Pablo.

Seventy five (75) lbs. (34.02 kg) of elemental mercury in one container and additional smaller amounts collected, equaling 88 lbs. (39.97kg) to a total of 163.11 pounds (73.99 kg) this year alone.

The types of data collected at each facility are slightly different as is the level of differentiation between types of mercury containing devices and the level of specificity in reporting the data. In addition to the above mercury collection activities, as of the end of July 2016, all Pacific Gas & Electric Company (PG&E)-owned and County-owned street lights in CCC (roughly 7,300 lamps) have been converted from mercury and/or high pressure sodium vapor street lights to Light Emitting Diode (LED) street lights. Each street lamp is reported to have from 1 to 22 mg of mercury, with an average of 16 mg/bulb for a 100 Watt bulb. Using the 16 mg average per bulb, this street light replacement project resulted in the removal of 117 grams of mercury from the environment.

C.11.i Methylmercury Exposure Reduction Program

CCCWP contributes funding and participation in both regional efforts for an Exposure Reduction Program for Methylmercury in the Central Valley Region and Mercury (and PCBs) in San Francisco Bay Regions. This fulfills requirements of C.11.i in the East County Permit and C.11.e in MRP 2.0.

C.11.1.i Methylmercury Control Study

CCCWP has been conducting a Methylmercury Control Study in response to Provision C.11.l.i of the East County Permit, which states: “Permittees shall conduct

methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and shall develop and evaluate additional BMPs as needed to reduce mercury and methylmercury discharges to the Delta and meet methylmercury waste load allocations…"

The Methylmercury Control Studies Progress Report was submitted on schedule to the Central Valley Water board on October 30, 2015 and can be found on the CCCWP website http://www.cccleanwater.org/surveys-studies-annual-report/ .

MRP 2.0 Provision C.11.a Implement Control Measures to Achieve Mercury Load Reductions

MRP 2.0 Provisions C.11.a.iii.(2) and C.12.a.iii.(2) requires reporting a list of the watershed/management areas where mercury and PCBs control measures are currently being implemented and those in which new control measures will be or have the potential to be implemented during the term of this permit, along with the specific control measures and an implementation schedule. Although many of the control measures may be selected primarily for the purpose of achieving PCBs load reductions during this permit term, substantial mercury load reductions may result as a tangential benefit and will be accounted for in tracking mercury load reductions.

A "*Mercury and PCBs Watershed Management Areas and Control Measures"* report was prepared by the CCCWP per Provisions C.11.a.iii.(2) and C.12.a.iii.(2) and is provided as Attachment 11.1. Section 2.6.1 in this report describes the control measures that are currently being implemented or will be implemented by the Permittees during this and future permit terms to control mercury and PCBs.

C.11.b. Assess Mercury Load Reductions from Stormwater

MRP Provision C.11.b requires the Permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads

reduced through implementation of pollution prevention, source control, and treatment control measures. The Permittees are required to use this assessment methodology to demonstrate progress towards achieving the load reductions required in this permit term. This assessment methodology is outlined in the *"Final Interim Accounting Methodology for TMDL Loads Reduced,"* report developed by BASMAA through a regional project and is provided as Attachment 11.2.

C.11.c. Plan and Implement Green Infrastructure to Reduce Mercury Loads

Permittees are working to implement GI projects during the term of the permit to achieve the mercury load reductions performance criteria in Table 11.1 in the MRP 2.0. GI projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr will be achieved by 2040 through implementation of GI throughout the permit-area.

The Permittees will submit in their 2018 Annual Report, as part of reporting for C.11.b.iii.(2), the quantitative relationship between GI implementation and mercury load reductions.

SECTION 12 – PROVISION C.12 Polychlorinated Biphenyls Controls

Introduction

Since April 2014, the CCCWP, with approval of the Water Boards, has been implementing a proposed alternative approach to pollutants of concern and long term trends monitoring for PCBs and mercury. This approach allowed the Permittees to turn their focus from fixed loads monitoring stations, to conducting PCB source identification studies, following the approach proposed in the IMR, Part C (CCCWP, 2014). This was an attempt to get a head start on the C.8 monitoring to inform provisions for the implementation of the mercury and PCBs source identification and control measures in MRP 2.0. Provision C.12 in MRP 2.0 requires that the Permittees implement PCBs control measures (source control, treatment control, and pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to the provisions.

The majority of requirements related to PCBs are being addressed regionally through BASMAA and the RMC. MRP Provision C.12.a.iii.(2), similar to Provision C.11.a.iii(2) discussed in Section 11, requires reporting a list of the watershed/management areas where PCB control measures are currently being implemented and those in which new control measures will be or have the potential to be implemented during the term of this permit, along with the specific control measures and an implementation schedule. Attachment 11.1: *Mercury and PCBs Watershed Management Areas and Control Measures* report was prepared by the CCCWP per the MRP 2.0, and fulfills the requirements of Provisions C.11.a.iii.(2) and C.12.a.iii.(2). The report describes the Control Measures that are currently being implemented or will be implemented by the Permittees during this and future permit terms to control both mercury and PCBs.

The East County Permit does not contain a provision on PCBs as MRP 2.0 does; however, the East County Permittees are conducting the same level of effort to control

mercury and PCBs as the MRP Permittees under MRP 2.0 for regional consistency and because their discharges also enter the San Francisco Bay Delta Estuary.

FY 2015/16 Activities

Provision C.12.a. Implement Control Measures to Achieve PCBs Load Reductions

For fulfillment of MRP 2.0, Provision C.12.a.: *Implement Control Measures to Achieve PCBs Load Reductions,* CCCWP is continuing the source property identification process until all Old Industrial areas are screened and characterized for the likelihood of pollutant load removal, and potential referral to the San Francisco Regional Water Quality Control Board (SFRWQCB) for further action. Screening results provided by the Permittees are being incorporated into the CCCWP's GIS database to create and revise data layers and source area maps for development and tracking of Watershed Management and GI Plans. CCCWP expects to use its new GIS platform for data management and analysis determining actual and potential load reductions, and as a tracking and reporting tool for Provisions C.11 and C.12 implementation work.

Applying the information gleaned from the screening process, the CCCWP, with assistance from Permittees, prepared the *Mercury and PCBs Watershed Management Areas report* (see Attachment 11.1).

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

MRP Provisions C.11.b and C.12.b require the Permittees to develop and implement an assessment methodology and data collection program to quantify mercury and PCBs loads reduced through implementation of pollution prevention, source control, and treatment control measures. The Permittees will use this assessment methodology to demonstrate progress towards achieving the load reductions required in this permit term.

This assessment methodology is outlined in the *"Final Interim Accounting Methodology for TMDL Loads Reduced"* report was developed by BASMAA through a regional project and is provided as Attachment 11.1.

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

Permittees are working to implement GI projects during the term of the Permit to achieve the PCBs load reductions performance criteria in Table 12.2. GI projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr will be achieved by 2040 through implementation of GI throughout the permit-area.

The Permittees will submit in their 2018 Annual Report, as part of reporting for C.12.b.iii.(2), the quantitative relationship between GI implementation and PCBs load reductions.

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

The CCCWP will be participating in a BASMAA Regional Project to evaluate PCBs presence in caulks/sealants used in storm drains and roadway infrastructure, and to quantify the potential PCB load reduction benefits that may result from public infrastructure improvements. A project report due in the 2018 Annual Report and will be prepared by BASMAA as a BASMAA Regional Project.

C.12.f Manage PCB-containing Material and Wastes during Building Demolition Activities so that PCBs do not Enter Municipal Storm Drains

Provision C.12.f. requires that Permittees develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs

concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition, so that PCBs do not enter municipal storm drain systems. Applicable structures include, at a minimum, non-residential structures constructed or remodeled between the years 1950 and 1980 with building materials such as masonry and concrete with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt. A Permittee is exempt from this requirement if it provides evidence acceptable to the Executive Officer in its 2016/17 Annual Report that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures. Permittees are required to develop a protocol by June 30, 2019 that includes each of the following components, at a minimum:

1. The necessary authority to ensure that PCBs do not enter municipal storm drains from PCBs-containing materials in applicable structures at the time such structures undergo demolition;
2. A method for identifying applicable structures prior to their demolition; and
3. Method(s) for ensuring PCBs are not discharged to the municipal storm drain from demolition of applicable structures.

By July 1, 2019 and thereafter, Permittees are required to:

- Implement or cause to be implemented the PCBs management protocol for ensuring PCBs are not discharged to municipal storm drains from demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff.
- Develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

On behalf of MRP Permittees, BASMAA is conducting a multi-year regional project to develop an implementation framework, guidance materials, and tools to assist Bay Area

Permittees in developing protocols to manage PCBs-containing materials and wastes during building demolition, in compliance with Provision C.12.f. During FY 2015/16, BASMAA made substantial progress towards completing the first phase of the regional project, which was developing a scope-of-work and budget for developing the regional framework, guidance, and tools. Accomplishments during FY 2015/16 included:

- Convened the BASMAA PCBs in Building Materials Workgroup to provide project oversight and guidance, including review of draft materials. The workgroup is composed of Permittee staff from various relevant municipal departments, countywide stormwater program representatives, and industry representatives. The workgroup held an initial meeting on June 20, 2016 to discuss all aspects of the project and has reviewed and provided comments on the project materials described below.

- Completed a list of barriers to implementation of the PCBs in building materials management protocol and summarized opportunities to overcome the identified barriers. For example, to address funding barriers, the project is examining opportunities for grant funding. BASMAA submitted an application for grant funding to the USEPA (S.F. Bay Water Quality Improvement Fund) to develop the regional framework, guidance, and tools, but the proposed project was not selected for funding.

- Prepared a preliminary first draft of a scope-of-work for developing the regional framework, guidance, and tools. The draft was reviewed by the BASMAA PCBs in Building Materials Workgroup members and other BASMAA representatives. As part of this process, certain legal/liability issues (e.g., CEQA compliance) and the pros and cons of various approaches to certain aspects of developing the PCBs in building materials management protocol (e.g., developing guidance for identification of PCBs in building materials) were extensively vetted by countywide stormwater program and Permittee staff.

The draft scope-of-work is currently being revised and finalized. It is anticipated that the next phase of the regional project, which entails implementing the scope-of-work to develop the actual framework, guidance and tools, will commence during the first half of FY 2016/17.

CCCWP Stormwater GIS Pilot Program to Address PCBs/Hg TMDLs

In FY 2014/15, the CCCWP initiated development of a countywide GIS Pilot Project for maintaining, analyzing, interpreting, displaying and reporting relevant municipal stormwater program data and information, for compliance with Provisions C.10 and C.11/12. This project was initiated in FY 2015/16. One main purpose of the CCCWP GIS project was to assist with the screening and mapping of potential PCBs source properties/areas. The CCWP GIS project was used to compile the potential high-opportunity PCBs site information IMR 2014, which was in an Excel Spreadsheet, with desktop and field screening data and sediment sampling results conducted in FY 2015/16 into a GIS platform. This information can then be displayed on maps, which will be used to analyze and help develop the GI plans required in MRP 2.0, including identification of potential opportunities for early implementation.

SECTION 13 – PROVISION C.13 COPPER CONTROLS

Introduction

Under MRP 1.0, one of the most significant actions to reduce copper in stormwater was the passage of legislation addressing copper in vehicle brake pads. A detailed summary of the regulation and how its passage has assisted Permittees was presented in FY 2014/15 Annual Report.

Under MRP 2.0, the requirement to address copper from vehicle brake pads is no longer needed. However, Permittees still need to report on efforts to control copper discharges from architectural copper; pools, spas, and fountains that contain copper-based compounds; and industrial sources.

A review of these efforts specific to the CCCWP is provided here. Copper control activities conducted at the local level are reported in the Individual Municipal Annual Reports compiled in Volume II of this Report.

FY 2015/16 Activities

Architectural Copper

As reported in Section 4, CCCWP's MOC developed a flyer addressing the management of wastewater from architectural copper as it relates to stormwater. The draft version of the flyer was finalized by the MOC in October 2015. It was presented to the PIP Committee in November and, based upon the PIP's recommendation, was presented to Management Committee in December 2015. CCCWP staff recommended that Permittees make the flyer available at permit counters and to include them with applicable building permits. It was also recommended that they incorporate the BMPs as conditions of approval for any discretionary projects with architectural copper features.

It should be noted that Contra Costa Permittees have indicated that the use of architectural copper in new development projects is extremely rare. In addition, under MRP 1.0, Permittees established the legal authority to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features.

Pools, Spas and Fountains

Since many of the community pools within CCC are included in the inventory of facilities that have the potential to have non-stormwater discharges, these facilities are inspected on a regular basis as required by Provision C.4. During the inspection process, stormwater inspectors convey the requirements for managing discharges from pools relative to stormwater and wastewater regulations.

For this reason, CCCWP has not had to devote significant resource to address this potential source of copper. On occasion, as part of the 1-800-No Dumping line or other complaint hotlines, municipal staff or their contracted stormwater inspectors have had to counsel residential owners of pools to instruct them on the proper procedure for discharging their pool water or cleaning of their filters. CCCWP has made available to municipal staff and their contracted inspectors the *Draining Pools and Spas* brochure to provide guidance to homeowners on managing their pool discharges.

Industrial Sources

The CCCWP has provided training to stormwater inspectors on industrial sources of copper. This training has been included in past annual stormwater inspection workshops. As inspectors have been well trained in this area, CCCWP has not had to devote significant resources to address these particular sources but will continue to touch base with stormwater inspectors on these sources to ascertain any changes in

business types who have copper or enforcement actions taken stemming from industrial sources of copper.

FY 2016/17 Planned Activities

CCCWP will continue to assist Permittees with meeting Copper Control requirements. CCCWP will be working with Permittees to ensure they have established a robust procedure within their municipalities' planning and building departments to adequately address new potential sources of copper from architectural features, pools, spas, and fountains.

In addition CCCWP may work with Permittees to inventory residential pools and once inventoried, send outreach material to the pools owners to ensure they understand maintenance, filter cleaning, and draining requirements relative to stormwater regulations.

CCCWP will continue to work with stormwater inspectors to address industrial sources of copper identified during inspections and ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains.

SECTION 14 – PROVISION C.14 PBDE, LEGACY PESTICIDES AND SELENIUM CONTROLS

Reporting on implementation of Provision C.14, *PBDE, Legacy Pesticides, and Selenium Controls*, was provided in the "*Regional Annual Report Supplement for POCs and Monitoring*" submitted by BASMAA on September 15, 2013. A copy of this report can be made available upon request.

SECTION 15 – PROVISION C.15 EXEMPTED AND CONDITIONALLY EXEMPTED DISCHARGES

Introduction

As outlined in Section 2, the CCCWP's MOC is tasked with the review, development and coordination of any countywide and/or regional tasks conducted to assist Permittees with implementation of the mandates in Provision C.15. However, with the adoption of the Statewide NPDES Permit for Drinking Water System Discharges (Drinking Water Discharge Permit) in February 2015 and the removal of reporting on planned and unplanned discharges in MRP 2.0 for Permittees that are also water purveyors, CCCWP resources on this provision will be minimal.

In FY 2015/16, as follow up to the last year's presentation on the newly adopted Drinking Water Discharge Permit given in January 2015, CCCWP staff arranged for the same guest speaker from East Bay Municipal Utility District (EBMUD) to discuss the agency's experience with implementing this new permit. This March 2016 presentation was entitled *Statewide Drinking Water Discharges NPDES Permit – Honeymoon Year in Review.* The presentation included a slide reminding Permittees that are also water purveyors to file a Notice of Intent (NOI) by September 1, 2015 to obtain coverage under the new Drinking Water Discharge Permit.

FY 2016/17 Planned Activities

In FY 2016/17, it is anticipated that Group Program activities related to Provision C.15 will be minimal since the Permittees who are also water purveyors are now reporting their planned and unplanned discharges under the Drinking Water Discharge Permit instead of MRP 2.0.

CCCWP staff may work with Permittees to improve upon outreach to address potable water discharges to the MS4s arising from landscape irrigation especially large-scale

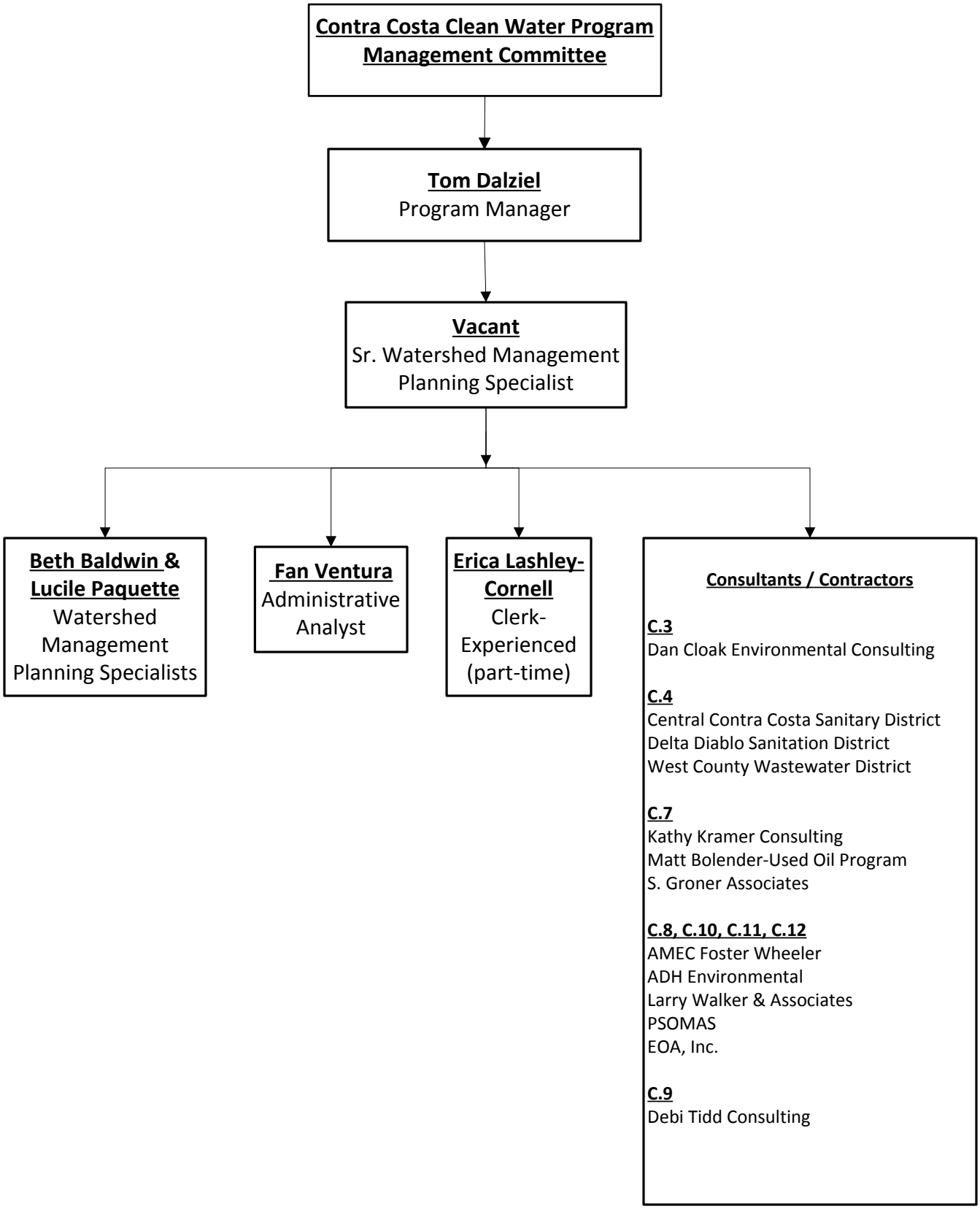
irrigation projects. This outreach may include working more closely with Contra Costa Water District and EBMUD. Other issues under this provision will be addressed as needed.

Attachment 1.1

Contra Costa Clean Water Program, Staffing and Consultants/Contractors

Contra Costa Clean Water Program, Staffing and Consultants/Contractors

Attachment 1.1



Att 1.1-CCCWP Program Managment 15-16 (Visio format).vsd
Last Updated: June 30, 2016

Attachment 1.2

Contra Costa Clean Water Program Organizational Structure

CONTRA COSTA CLEAN WATER PROGRAM
ORGANIZATIONAL STRUCTURE

Attachment 1.2

Participants -- Antioch, Brentwood, Clayton, Concord, Danville, El Cerrito, Hercules, Lafayette, Martinez, Moraga, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, Walnut Creek, Contra Costa County, and Contra Costa County Flood Control & Water Conservation District

ADMINISTRATIVE COMMITTEE

DUTIES

- Administration
- Strategic Planning
- Personnel
- Budget
- Conflict Resolution

MANAGEMENT COMMITTEE

DUTIES

- Decision Making Body
- Strategic Planning
- Sets Policies / Directives
- Program Manager Evaluation
- Approves / Appropriates Budget

STAFF

Tom Dalziel, Program Manager
Beth Baldwin, Watershed Management Planning Specialist
Lucile Paquette, Watershed Management Planning Specialist
Fan Ventura, Administrative Analyst
Erica Lashley-Cornell, Clerk - Experienced Level

MONITORING COMMITTEE

DUTIES

- C.8 - Water Quality Monitoring
- C.9 - Pesticides Toxicity Control
- C.11 - Mercury Controls
- C.12 - Polychlorinated Biphenols (PCBs) Controls
- C.13 - Copper Controls
- C.14 - PBDEs, Legacy Pesticides and Selenium

DEVELOPMENT COMMITTEE

DUTIES

- C.3 - New Development and Redevelopment
- C.6 - Construction Site Control

PUBLIC INFORMATION / PARTICIPATION COMMITTEE

DUTIES

- C.7 - Public Information and Outreach
- C.9 - Pesticides Toxicity Control

MUNICIPAL OPERATIONS COMMITTEE

DUTIES

- C.2 - Municipal Operations
- C.4 - Industrial and Commercial Site Controls
- C.5 - Illicit Discharge Detection and Elimination
- C.9 - Pesticides Toxicity Control
- C.10 - Trash Load Reduction
- C.15 - Exempted and Conditionally Exempted Discharges

BASMAA MONITORING/ POC COMMITTEE

PROGRAM REPRESENTATIVES
Lucile Paquette, Program Staff
Cece Sellgren, Contra Costa County

BASMAA DEVELOPMENT COMMITTEE

PROGRAM REPRESENTATIVES
Tom Dalziel, Program Staff
Dan Cloak, Program Consultant
John Steere, Contra Costa County
Carlton Thompson, City of Walnut Creek

BASMAA PUBLIC INFORMATION/ PARTICIPATION COMMITTEE

PROGRAM REPRESENTATIVES
Fan Ventura, Program Staff
Steven Spedowfski, City of San Ramon
Julie Wajdowicz, City of Antioch

BASMAA TRASH COMMITTEE

PROGRAM REPRESENTATIVES
Beth Baldwin, Program Staff
Rinta Perkins, City of Walnut Creek
Michele Mancuso, Contra Costa County

Attachment 1.3

Management Committee and Subcommittee Participation and Attendance

Management Committee FY 2015-16

MUNICIPALITY	REPRESENTATIVE	JUL	AUG	SEP	OCT[3]	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	INDIV% ATT	MUNI % ATT
City of Antioch	**Phil Hoffmeister**		1	1			1	1	1	1	1	1	1	82%	**82%**
	Ron Bernal													0%	
City of Brentwood	**Jack Dhaliwal**	1		1		1			1	1				45%	**73%**
	Jeffrey Cowling		1											9%	
	Steve Hunn										1		1	18%	
City of Clayton	**Laura Hoffmeister**			1		1		1	1	1	1	1	1	73%	**73%**
	Mindy Gentry													0%	
	Rick Angrisani													0%	
City of Concord	**Robert Ovadia**	1	1			1	1	1	1	1	1		1	82%	**100%**
	Frank Marstall			1										9%	
	Frank Kennedy											1		9%	
Town of Danville	**Chris McCann**	1		1		1	1	1	1	1	1	1	1	91%	**91%**
	Steve Lake													0%	
	Michael Stella													0%	
City of El Cerrito	**Stephen Prée**	1	1	1		1	1	1		1	1	1	1	91%	**91%**
	Yvetteh Ortiz													0%	
	Maria Sanders													0%	
City of Hercules	**Mike Roberts**													0%	**55%**
	Jeff Brown	1												9%	
	Jose Pacheco			1		1		1		1			1	45%	
City of Lafayette	**Donna Feehan**	1	1			1	1	1	1	1	1	1	1	91%	**100%**
	Mike Moran			1										9%	
City of Martinez	**Khalil Yowakim**	1	1	1		1		1	1	1	1	1	1	91%	**91%**
	Tim Tucker													0%	
Town of Moraga	**Edric Kwan**	1				1		1				1	1	45%	**91%**
	Frank Kennedy		1	1			1		1		1			45%	
City of Oakley	**Keith Coggins**													0%	**100%**
	Frank Kennedy			1										9%	
	Billilee Saengchalern	1	1			1	1	1	1	1	1	1	1	91%	
City of Orinda	**Kelli Capka**									1	1	1		27%	**91%**
	Wendy Wellbrock	1	1	1		1								36%	
	Daniel Chavarria		1											9%	
	Larry Theis						1	1	1	1	1		1	55%	
	Charles Swanson													0%	
City of Pinole	**Tamara Miller**													0%	**73%**
	Dean Allison													0%	
	Frank Kennedy		1	1		1	1	1	1		1	1		73%	
	Al Petrie													0%	
	Michelle Fitzer													0%	
City of Pittsburg	**Jolan Longway**[1]	1	1	1		1	1	1		1	1	1		82%	**82%**
	Laura Wright													0%	
	Keith Halvorson													0%	
City of Pleasant Hill	**Rod Wui**													0%	**73%**
	Frank Kennedy		1	1		1	1	1	1		1	1		73%	
	Mario Moreno													0%	
City of Richmond	**Joanne Le**	1	1	1		1	1	1	1		1	1		82%	**82%**
	Ryan Smith													0%	
City of San Pablo	**Amanda Booth**	1	1	1		1	1	1	1	1	1	1	1	100%	**100%**
	Karineh Samkian													0%	
	Barbara Hawkins													0%	
City of San Ramon	**Steven Spedowfski**	1	1	1		1	1	1	1	1	1	1	1	100%	**100%**
	Robin Bartlett													0%	
	Maria Fierner													0%	
City of Walnut Creek	**Rinta Perkins**		1	1		1	1	1	1	1	1	1	1	91%	**100%**
	Steve Waymire													0%	
	Carlton Thompson	1												9%	
Contra Costa County	**Cece Sellgren**[2]	1	1	1		1	1	1	1	1	1	1	1	100%	**100%**
	Julie Bueren													0%	
	Mike Carlson													0%	
Flood Control	**Mike Carlson**	1	1			1	1			1		1	1	64%	**64%**
	Tim Jensen													0%	
PROGRAM STAFF															
Tom Dalziel		x	x	x		x	x	x	x	x	x	x	x		
Beth Baldwin		x	x	x		x	x	x	x	x	x	x	x		
Lucile Paquette		x	x	x		x	x	x	x	x	x		x		
Fan Ventura												x	x		
Deanna Constable		x	x	x		x	x	x	x	x	x				
Erica Lashley-Cornell		x	x	x		x	x	x	x	x	x	x	x		
Lisa Austin	Consultant						x					x	x		
Austin Orr	Consultant											x			
Dan Cloak	Consultant			x		x	x		x	x		x			

(1) Chairperson (2) Vice- Chairperson (3)Meeting Cancelled

ADMINISTRATIVE COMMITTEE FY 15-16

MUNICIPALITY	REPRESENTATIVE	JUL	AUG	SEP[3]	OCT	NOV [3]	DEC	JAN	FEB	MAR	APR	MAY	JUN[3]	INDIV% ATT	MUNI % ATT
Contra Costa County	**Cece Sellgren**	1	1		1		1	1	1	1	1	1		100%	**100%**
	Michele Mancuso													0%	
Contra Costa County FC	**Mike Carlson**[2]	1	1		1		1	1	1	1	1	1		100%	**100%**
	Tim Jensen													0%	
City of Pinole	**Tamara Miller**													0%	**56%**
	Dean Allison	1	1											22%	
	Frank Kennedy				1				1		1			33%	
City of Pittsburg	**Jolan Longway**[1]	1			1		1	1	1	1	1	1		89%	**89%**
City of Richmond	**Joanne Le**	1	1		1		1	1	1	1	1	1		100%	**100%**
	Ryan Smith													0%	
City of San Ramon	**Steven Spedowfski**	1	1		1		1	1	1	1	1	1		100%	**100%**
	Robin Bartlett													0%	
City of Walnut Creek	**Rinta Perkins**		1		1		1		1	1	1	1		78%	**100%**
	Carlton Thompson	1						1						22%	
NON-VOTING															
Town of Danville	Chris McCann														
PROGRAM STAFF															
	Tom Dalziel	x	x		x		x	x	x	x	x	x			
	Beth Baldwin	x	x		x			x		x		x			
	Lucile Paquette	x	x		x		x	x	x	x	x	x			
	Erica Lashley-Cornell	x	x		x		x	x	x	x	x	x			

[1] Chairperson [2] Vice-Chairperson [3] Meeting cancelled

DEVELOPMENT COMMITTEE FY 2015-16

MUNICIPALITY	REPRESENTATIVE	JUL[3]	AUG[3]	SEP	OCT [3]	NOV [3]	DEC	JAN	FEB	MAR	APR	MAY	JUN	INDIV % ATT	MUNI % ATT
City of Antioch	**Phil Hoffmeister**			1			1	1	1	1	1			75%	**75%**
	Julie-Haas-Wajdowicz													0%	
City of Brentwood	**Dee Boskovic**			1			1	1	1	1	1	1	1	100%	**100%**
	Craig Drafton													0%	
City of Clayton	**Laura Hoffmeister**											1		13%	**13%**
	Mindy Gentry													0%	
City of Concord	**Robert Ovadia**													0%	**100%**
	Kevin Marstall			1			1	1	1	1	1	1	1	100%	
	Frank Kennedy													0%	
Contra Costa County	**John Steere [2]**			1			1	1	1	1		1	1	88%	**88%**
	Cece Sellgren									1				13%	
City of Danville	**Chris McCann**			1			1	1	1		1	1	1	88%	**88%**
	Michael Stella													0%	
City of Oakley	**Keith Coggins**													0%	**100%**
	Billilee Saengchalern			1			1	1	1	1		1		75%	
	AJ Kennedy												1	13%	
	Frank Kennedy										1			13%	
City of Pittsburg	**Devina Uribe**							1	1		1	1		50%	**63%**
	Jolan Longway						1							13%	
City of Pleasant Hill	**Ann Page**													0%	**63%**
	Mario Moreno													0%	
	AJ Kennedy												1	13%	
	Frank Kennedy						1		1	1	1			50%	
City of Walnut Creek	**Carlton Thompson [1]**			1			1	1		1	1	1		75%	**88%**
	Elisa Sarlette											1	1	25%	
	Rinta Perkins													0%	
Non-Voting Members															
City of Lafayette	Chris Juram						1								
City of Martinez	Khalil Yowakim							1							
City of San Ramon	Theresa Peterson						1		1	1	1				
Contra Costa County	Gary Faria						1								
Contra Costa County	Nestor Baligod						1					1			
PROGRAM STAFF															
Dan Cloak				1			1	1	1	1	1	1	1		
Tom Dalziel								1	1				1		

(1) Chairperson, (2) Vice-Chairperson, (3) Meeting Cancelled

MONITORING COMMITTEE FY 15-16

MUNICIPALITY	REPRESENTATIVE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN[3]	INDIV %	MUNI %
City of Antioch	**Phil Hoffmeister(1)**		1	1	1	1		1	1	1		1		73%	**73%**
	Julie Haas-Wajdowicz													0%	
County Flood Control	**Cece Sellgren**	1	1	1	1	1	1	1	1	1	1	1		100%	**100%**
	Michele Mancuso			1			1	1	1	1	1	1		64%	
City of Lafayette	**Alexandra Majoulet**	1		1		1	1	1		1	1	1		73%	**73%**
	Mike Moran													0%	
City of Pittsburg	**Jolan Longway(2)**	1		1	1		1	1		1	1			64%	**91%**
	Alfredo Hurtado		1			1			1					27%	
City of San Pablo	**Amanda Booth**	1	1	1	1	1	1	1	1	1	1	1		100%	**100%**
	Karineh Samkian	1												9%	
NON-VOTING															
PROGRAM STAFF															
Lucile Paquette		x	x	x	x	x	x	x	x	x	x	x			
Tom Dalziel			x	x	x		x	x	x	x	x				
Erica Lashley-Cornell		x	x	x	x	x	x	x	x		x	x			
Consultants															
(Geosyntec/LWA)	Lisa Austin						x								
(Geosyntec/LWA)	Sandy Mathews														
(Geosyntec/LWA)	Donna Bodine							x							
(Geosyntec/LWA)	Kristine Corneillie		x						x						
ADH	Christian Kocher							x	x						
Armand Ruby & Associates	Armand Ruby						x								
AMEC	Khalil Abusaba		x	x	x					x	x				

(1) Chair (2) Vice Chair (3) Meeting Cancelled

G:\NPDES\Monitoring Committee\Minutes & Attendance 15-16

MUNICIPAL OPERATIONS COMMITTEE FY 15-16

MUNICIPALITY	REPRESENTATIVE	JUL[3]	AUG	SEP[3]	OCT	NOV	DEC	JAN	FEB[3]	MAR	APR[3]	MAY[3]	JUN	INDIV% ATT	MUNI % ATT
City of Antioch	**Cleveland Porter**													0%	**86%**
	Phil Hoffmeister [2]		1		1	1		1		1			1	86%	
City of Brentwood	**Jeff Cowling**				1			1		1			1	57%	**71%**
	Kelly Martinez		1											14%	
City of Concord	**Jeff Rogers**									1			1	29%	**86%**
	Justin Ezell				1	1	1	1						57%	
	Kevin Marstall													0%	
	Jesse Crawford						1							14%	
Contra Costa County	**Michele Mancuso**				1	1	1	1		1			1	86%	**86%**
	Margie Valdez		1		1	1	1			1				71%	
City of Hercules	**Jeff Brown**				1	1	1	1		1			1	86%	**86%**
	Glenn Moniz													0%	
City of Martinez	**Bob Cellini**				1	1	1	1		1				71%	**100%**
	Khalil Yowakim		1							1			1	43%	
City of Pittsburg	**Jolan Longway**				1	1	1	1					1	71%	**71%**
	Jorge Esparza													0%	
City of Richmond	**Joanne Le**				1	1	1	1		1			1	86%	**86%**
	Ryan Smith													0%	
City of Walnut Creek	**Rinta Perkins [1]**		1			1	1						1	57%	**71%**
	Michael Hawthorne									1				14%	
Non-Voting Members															
Town of Danville	Chris McCann		x		x			x		x					
City of El Cerrito	Stephen Pree				x			x		x					
City of Lafayette	Donna Feehan												x		
City of Martinez	Bill Regan				x										
City of Pinole	Kim Odom		x		x										
City of San Pablo	Amanda Booth						x								
Contra Costa County	Jerry Fahy						x								
Contra Costa County	Robert Falconer														
Contra Costa County	Peter Gollinger														
Contra Costa County	Tim Brown														
Contra Costa County	Joe Yee						x								
PROGRAM STAFF															
Beth Baldwin			x		x	x	x			x			x		
Tom Dalziel							x								

[1] Chairperson, (2) Vice-Chairperson, (3) Meeting Cancelled

PUBLIC INFORMATION/PARTICIPATION COMMITTEE FY 15-16

MUNICIPALITY	REPRESENTATIVE	JUL	AUG	SEP	OCT	NOV [3]	DEC	JAN	FEB	MAR	APR	MAY	JUN	INDIV % ATT	MUNI % ATT
City of Antioch	**Julie Haas-Wajdowicz** [2]	1	1	1	1		1	1	1	1	1	1		91%	**91%**
	Phil Hoffmeister													0%	
CCC Flood Control District	**Dan Jordan** [1]	1	1		1		1	1	1	1	1			73%	**73%**
City of El Cerrito	**Stephen Prée**	1		1	1		1	1	1	1	1	1	1	91%	**91%**
	Maria Sanders													0%	
Town of Moraga	**Edric Kwan**	1					1	1	1					36%	**64%**
	KC Bowman									1	1	1		27%	
City of Orinda	**Kelli Capka**									1	1	1	1	36%	**82%**
	Wendy Wellbrock	1		1	1									27%	
	Larry Theis						1	1	1					27%	
	Daniel Chavarria													0%	
City of Pittsburg	**Laura Wright**	1	1	1	1			1	1			1	1	73%	**73%**
	Jolan Longway													0%	
City of San Ramon	**Steven Spedowfski**	1	1	1	1		1		1	1	1	1	1	91%	**100%**
	Rod Wui							1						9%	
NON-VOTING															
Town of Moraga	Matt Trieu (Intern)		x	x	x										
CCC Flood Control District	Vaibhav Sutrave			x											
PROGRAM STAFF															
	Deanna Constable	x	x	x	x		x	x	x	x	x				
	Fan Ventura											x	x		
	Erica Lashley-Cornell										x	x	x		
	Beth Baldwin				x										
	Tom Dalziel	x	x		x			x	x	x	x	x	x		

(1) Chairperson, (2) Vice-Chairperson, (3) Meeting Cancelled

Attachment 1.4

Proposition 1 Stormwater Program-Planning

Welcome **Tom Dalziel** of **Contra Costa County Flood Control & Water Conservation District on behalf of CC Clean Water Program - Contra Costa County Public Works Department**. If this is not your Account, please log out. Contact Us | Logout

Main Menu > **Application Preview**

Application Preview

This is a preview of your application. Please review and confirm the information is accurate before submitting the application. FAAST will perform a check to verify whether required fields are completed and/or required attachments are uploaded.
Once you have verified the information, please read the certification statement and enter your initials to submit the application to the State Water Board.
Note: To print the application, please use the "FILE -> PRINT" menu option on the browser.

PIN 34799 - Contra Costa Watersheds Storm Water Resource Plan - IN PROGRESS

Application Preview

RFP Title: Prop 1 Storm Water Grant Program (SWGP) - Planning

Submitting Organization: Contra Costa County Flood Control & Water Conservation District on behalf of CC Clean Water Program

Submitting Organization Division: Contra Costa County Public Works Department

Project Title: Contra Costa Watersheds Storm Water Resource Plan

Project Description: The Contra Costa Watersheds Storm Water Resource Plan (CCWSWRP), a regional collaboration between the Contra Costa County Flood Control and Water Conservation District on behalf of the Contra Costa Clean Water Program (representing 21 stormwater permittees), water resource agencies, watershed and creek groups, to develop a watershed-based planning approach designed to yield long-term multiple benefits in water quality, water supply, flood control, habitat restoration, social involvement, and community enhancement throughout Contra Costa County. With broad stakeholder involvement and the adaptive framework created by multi-benefit quantification modeling, GIS resource mapping, project identification and evaluation methods, the CCWSWRP will respond to regulatory requirements, water quality stressors, and community and creek-specific priorities, resulting in prioritized, watershed-based implementation projects that will provide multiple resource and community benefits region-wide.

Water System ID:

District Office:

APPLICANT DETAILS

Applicant Organization: Contra Costa County Flood Control & Water Conservation District on behalf of CC Clean Water Program

Applicant Organization Division: Contra Costa County Public Works Department

Applicant Address: 255 Glacier Drive , Martinez , CA - 94553

PROJECT LOCATION

Latitude : 37.98797920 **Longitude:** -122.089070

Watershed: Walnut Creek Watershed

County: Contra Costa

Responsible Regional Water Board: Multiple Regional Water Boards

PROJECT BUDGET

Funds Requested($): 499,420.00

Local Cost Match($): 500,540.00

Total Budget($): 999,960.00

Funding Program	Applied	Amount Recommended by State Water Board
Prop 1 Storm Water Grant Program - Planning	Yes	$0.00

Project Management Role	First Name	Last Name	Phone	Fax	Email
Project Director: Authorized Representative	Tom	Dalziel	925-313-2392	925-313-2301	Tdalz@pw.cccounty.us
Project Manager: Day to day contact	Tom	Dalziel	925-313-2392	925-313-2301	Tdalz@pw.cccounty.us

Applicant Information

Name: Contra Costa County Flood Control & Water Conservation District on behalf of CC Clean Water Program

Division: Contra Costa County Public Works Department

Address: 255 Glacier Drive Martinez, CA , 94553

Federal Tax ID: 946000509 **DUNS Number:** 050345883

Person Submitting Information

Submitter Name: Tom Dalziel

Submitter Phone: 925-313-2392

Submitter Fax: 925-313-2301

Submitter Email: Tdalz@pw.cccounty.us

Legislative Information	Primary	Additional District(s)
Senate District	07	03,09,
Assembly District	14	11,15,16,
US Congressional District	11	05,09,15,

Contacts	Name	Phone	Email
San Francisco Bay Regional Water Quality Control Board	Thomas Mumley	510-622-2395	thomas.mumley@waterboards.ca.gov
San Francisco Bay Regional Water Quality Control Board	Keith Lichten	510-622-2380	Keith.Lichten@waterboards.ca.gov
Central Valley Regional Water Quality Control Board	Elizabeth Lee	916-464-4787	Elizabeth.Lee@waterboards.ca.gov
Central Valley Regional Water Quality Control Board	Chris Day	916-464-4686	Chris.Day@waterboards.ca.gov

California State Water Quality Control Board	Sean Maguire		916-341-5877	Sean.Maguire@waterboards.ca.gov
Cooperating Entities	Role	Name	Phone	Email
City of Brentwood	Project Partner	Jack Dhaliwal	925-516-5128	jdhaliwal@brentwoodca.gov
City of Clayton	Project Partner	Laura Hoffmeister	925-673-7308	lhoffmeister@ci.clayton.ca.us
City of Concord	Project Partner	Robert Ovadia	925-671-3470	robert.ovadia@cityofconcord.org
City of El Cerrito	Project Partner	Stephen Prée	510-559-7685	spree@ci.el-cerrito.ca.us
City of Hercules	Project Partner	Mike Roberts	510-799-8241	mikeroberts@ci.hercules.ca.us
City of Lafayette	Project Partner	Donna Feehan	925-256-1864	dfeehan@ci.lafayette.ca.us
City of Martinez	Project Partner	Tim Tucker	925-372-3562	ttucker@cityofmartinez.org
City of Oakley	Project Partner	Keith Coggins	925-625-7155	coggins@ci.oakley.ca.us
City of Orinda	Project Partner	Larry Theis	925-253-4260	ltheis@cityoforinda.org
City of Pinole	Project Partner	Al Petrie	510-724-9010	apetrie@ci.pinole.ca.us
City of Pittsburg	Project Partner	Jolan Longway	925-252-4803	jlongway@ci.pittsburg.ca.us
City of Pleasant Hill	Project Partner	Mario Moreno	925-671-5252	mmoreno@ci.pleasant-hill.ca.us
City of Richmond	Project Partner	Joanne Le	510-621-1214	Joanne_le@ci.richmond.ca.us
City of San Pablo	Project Partner	Amanda Booth	510-215-3066	amandab@sanpabloca.gov
City of San Ramon	Project Partner	Steven Spedowfski	925-973-2653	spedowfski@sanramon.ca.gov
City of Walnut Creek	Project Partner	Rinta Perkins	925-256-3511	perkins@walnut-creek.org
Town of Danville	Project Partner	Christine Christine	925-314-3342	cmccann@danville.ca.gov
Town of Moraga	Project Partner	Edric Kwan	925-888-7025	ekwan@moraga.ca.us
Friends of Alhambra Creek	Project Partner	Shirley Skaredoff	925-229-1371	friendsofac@gmail.com
Contra Costa County Flood Control and Water Conservation District	Project Partner	Tom Dalziel	925-313-2392	Tdalz@pw.cccounty.us
Contra Costa County Watershed Program	Project Partner	Cece Sellgren	925-313-2296	cece.sellgren@pw.cccounty.us
American Rivers	Project Partner	Jeffrey Odefey	530-478-0206	jodefey@americanrivers.org
City of Antioch	Project Partner	Phil Hoffmeister	925-779-6169	phoffmeister@ci.antioch.ca.us

Pre Submission Attachment Title	Phase	Submission Period	Date & Time
Att 1 - CCWSWRP Work Plan	PHASE1	PRE SUBMISSION	3/16/2016 6:12:55 PM
Att 2 - CCWSWRP Budget and Narrative	PHASE1	PRE SUBMISSION	3/16/2016 6:14:02 PM
Att 3 - CCWSWRP Schedule and Narrative	PHASE1	PRE SUBMISSION	3/16/2016 6:15:33 PM
Att 4 - CCWSWRP Support Letters and Agreements	PHASE1	PRE SUBMISSION	3/16/2016 6:16:39 PM
Att 5 - CCWSWRP Studies/Reports/Plans Summary	PHASE1	PRE SUBMISSION	3/16/2016 6:18:31 PM
Att 7 - DAC and Stakeholder Benefits	PHASE1	PRE SUBMISSION	3/16/2016 6:22:19 PM

Download all Pre Submission Attachments

Post Award Attachment Title	Phase	Date & Time Attached
No Post Award Attachments Available to Display		

Questionnaire - Phase1

Prop 1 SWGP Planning Proposal Application Questionnaire

Note: A copy of the *General Terms and Conditions of the Grant Agreement* can be found under the Reference Material section at Proposition 1 SWGP Website. (This will open a separate webpage)

B. Background Information

1A. Eligibility Requirements - All Applicants

1 **Select the applicant's organization type from the drop-down menu. In order to be considered eligible, the applicant must be a public agency, nonprofit organization, public utility, federally recognized Indian tribe, state Indian tribe listed on the Native American Heritage Commission's Tribal Consultation List, mutual water company, or eligible Groundwater Sustainability Agency.**

Answer: I Public Agency

2 **Do you need grant funds because you do not have a Storm Water Resource Plan (SWRP) or sets of plans that meet the Water Code and Storm Water Resource Plan Guideline requirements? Do you have a functionally equivalent plan (FEP) or plans that meet the Water Code and Storm Water Resource Plan Guidelines requirements, but are requesting grant funds to improve upon the FEP? Are you applying for project-specific planning funds?**

Answer: I Prepare a New SWRP

3 **For Storm Water Resource Planning Applications: Select from the drop-down menu whether the application represents a large-scale collaboration, regional-sized group, or other. If "Other", use the text box to explain why the application does not represent one of the other two categories and justification for completing a Storm Water Resource Plan independently of a watershed or regional scale. If a large-scale or regional group is represented, please use the text box to identify the lead agency and why they were chosen to represent the group.**

For Project Specific Planning Applications: Choose "Other" and discuss whether collaboration occurred for the completed Storm Water Resource Plan.

Answer: I Regional-Sized Group

Answer: The Contra Costa Clean Water Program (CCCWP) consists of Contra Costa County Flood Control and Water Conservation District (District); the cities of Antioch, Brentwood, Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, Walnut Creek; the towns of Danville and Moraga; and, the County of Contra Costa (Permittees). Established in 1991 to comply with the NPDES Permit Program, the CCCWP implements many of the mandated NPDES Permit Group Activities, such as water quality monitoring, special studies, and public education. The roles and responsibilities of the CCCWP and Permittees are outlined in the Program Agreement (Attachment 4.B.), last updated and adopted by all Permittees in June 2010. The CCCWP administers and implements the Group Activities as directed by the CCCWP's Management Committee, which is responsible for setting policies, providing directions, approving contracts and agreements, and authorizing expenditures. The CCCWP

will coordinate the participation of Permittees and other stakeholders, such as non-governmental organizations (NGOs) including community, environmental, watershed and creek groups in the development of the Contra Costa Watersheds Storm Water Resource Plan (CCWSWRP).

4 **Select whether the applicant is a Disadvantaged Community (DAC) or Economically Distressed Areas (EDA), whether the project directly benefits a DAC or EDA, or Not Applicable.**

Answer: I Not Applicable

Answer: Disadvantaged communities located within the CCWSWRP boundaries include portions of the Cities of North Richmond, Martinez and Concord, the Beacon West community on Bethel Island, as well as portions of Bay Point, and the Cities of Antioch and Pittsburg. These communities will directly benefit from the multi-benefit water resource and community enhancement implementation projects that will be considered and prioritized in the plan. However, as the CCWSWRP encompasses all of Contra Costa County the category of disadvantaged community is not applicable for the development of the CCWSWRP.

5 **Are you an Urban Water Supplier, Agricultural Water Supplier, or local groundwater user? If yes, have you adopted and submitted to DWR an Urban Water Management Plan, an Agricultural Water Management Plan, or a Groundwater Management Plan? If not applicable, please explain:**

Answer: I Urban Water Supplier

Answer: The Contra Costa Clean Water Program is not an Urban Water Supplier, Agricultural Water Supplier, or Local Groundwater User. However, the Cities of Antioch, Brentwood, Martinez and Pittsburg, which are project partners in the CCWSWRP, are Urban Water Suppliers, owning and operating potable water systems. Each of these cities has adopted and submitted to DWR an Urban Water Management Plan in 2010.

6 **What percent funding match will be provided? If less than 50% is proposed, provide the required attachments (Attachments 6 and 7) and supporting DAC/EDA documentation in the application. See Appendix A for further details.**

Answer: I 50% or more

Answer: Over 50% matching funds will be provided to complete the CCWSWRP and will include CCCWP and project partner funds, as well as in kind match.

7 **If the applicant or any cooperating entity has received funding from the State Water Board previously, did the applicant or cooperating entity complete the project(s) in accordance with the funding agreement and demonstrate its ability to competently manage the project? Has the applicant or any cooperating entities entered into a contract or grant agreement with the State Water Board: (1) that was terminated; (2) in which funds were withheld by the State Water Board; (3) in which the grantee was notified of a Breach of Agreement; or (4) that has been the subject of an audit in which there were findings regarding management of the project or funds by the applicant or cooperating entity? If so, explain the actions taken to address the problems.**

Answer: The Contra Costa County Flood Control and Water Conservation District was awarded funds through the 2005-06 Consolidated Grants Program to complete the Sacramento-San Joaquin Delta Watersheds Boating Program(DBP). The program was successfully completed on schedule and on budget in accordance with the funding agreement.

1B. Eligibility Requirements - Project Specific Planning Applications Only

8 **Is the proposed project included within a Storm Water Resource Plan that addresses the requirements of the Water Code and the Storm Water Resource Plan Guidelines? Is the proposed project in an ASBS compliance plan? Provide a copy of the Plan(s) as Attachment 8 along with the completed Storm Water Resource Plan Self-Certification Checklist provided in the Storm Water Resource Plan Guidelines. If a Storm Water Resource Plan is not provided, please explain the status of the Plan, steps needed to complete the Plan, contact information for the lead entity preparing the Plan, and assurances that the Plan will be completed and submitted along with the completed self-certification checklist within 90 days of the grant award. If the applicant is a small DAC that is exempt from the Water Code requirements for a Storm Water Resource Plan, is the project included and implemented in an adopted IRWMP? Provide documentation in Attachment 8 showing the project is included and implemented in an adopted IRWMP.**

Answer: I

Answer:

9 **Is the project type consistent with the eligible project types described in the Prop 1 SWGP Guidelines (Eligibility Requirements; Part B)? Please explain.**

Answer: I

Answer:

10 **Is the proposed project consistent with the applicable Basin Plan, including any TMDLs, and any applicable NPDES permit or WDRs? For projects that address discharge of storm water or dry weather runoff to an ASBS, is the project consistent with or identified in the applicable ASBS compliance plan? Please Explain:**

Answer: I

Answer:

11 **Is the project a multi-benefit project that contains a minimum of two program preferences listed in the Guidelines Section G - Storm Water Management Benefits? List the multi-benefits the proposed project addresses. Backup documentation justifying these claims will be required in the Workplan attachment and quantified in the Benefit attachment.**

Answer: I

Answer:

C. Planning Proposal

2A. Workplan - Storm Water Resource Plan Application

12 **Prepare a workplan (Attachment 1, 10 pages maximum, not including maps and figures) that describes the project and how it meets requirements of the Water Code and is in accordance with the Storm Water Resource Plan Guidelines. The workplan must:**

Question 12 Part 1:

a) Identify the watershed boundaries included in the proposed Storm Water Resource Plan and why those boundaries were chosen. Describe the local land use(s) within the watershed. Explain the types of water quality and water quantity issues present in the watershed. Provide a description of ongoing efforts taken to address those issues.

b) If applicable, describe the type(s) of agreement(s) the applicant has or will have with the cooperating entities included in the application. Explain the roles and responsibilities of each entity in the project. If agreements or memorandum of understandings (MOUs) have not been executed, explain when you will expect those to be completed. If agreements or MOUs are not included, the applicant must have letters of support outlining the future intent of the entity to enter into an agreement with the applicant. If the applicant does not have cooperating entities included in the application, justify why an effort of collaboration was not chosen or not feasible.

c) Describe the outreach effort and collaboration with non-profits, DACs, and EDAs. Explain the stakeholder involvement with the project selection and plan preparation, how the stakeholders will be involved in implementing the plan, and how the stakeholders will be involved in project completion.

d) For those applicants that are not representing an IRWMP, identify how the development of the Storm Water Resource Plan will be coordinated with and submitted to the local IRWM group. Will the applicant coordinate development of the Storm Water Resource Plan with the local IRWM region?

12

Question 12 Part 2:

e) Provide a scope of work outlining the specific work task(s) required to complete the Storm Water Resource Plan(s).

f) Describe other plans within the watershed boundaries identified in 11(a) that address storm water resource management and describe whether your project is meant to supplement those existing plans or will be a "stand alone" Storm Water Resource Plan.

g) Identify each of the required elements of the Water Code and the elements of the Storm Water Resource Plan Guidelines that will be included in the Storm Water Resource Plan. Provide a description of how those elements will be addressed.

h) Identify any assessment, monitoring, or study tasks necessary to complete the Storm Water Resource Plan and provide the rationale for the need for those tasks.

i) List any total maximum daily load (TMDL), national pollutant discharge elimination system (NPDES) permit, waste discharge requirement permits (WDRs), and municipal storm water (MS4) permits that apply to your watershed(s) boundaries. Identify how the Storm Water Resource Plan will assist in compliance with these permits.

j) List and discuss county and city ordinances or laws that are applicable to projects listed in the Storm Water Resource Plan and may prevent or hinder implementation of those projects. Discuss steps you will take in addressing any incompatibilities between the local ordinances or laws and potential projects.

2B. Workplan - Project Specific Plan Application

13

Prepare a workplan (Attachment 1, 10 pages maximum, not including maps and figures) that describes the project in detail and how it meets the eligible project types outlined in Part B of the Eligibility Requirements. Describe the tasks for the project with enough detail and completeness that it is clear the project can be implemented. The workplan should include, but is not limited to:

Question 13 Part 1:

a) Goals and Objectives: a brief description of how the planning, study, or investigation will help to finalize the project development and how the project, as a whole, will protect or improve water quality, help water infrastructure systems adapt to climate change, provide incentives for water agencies throughout each watershed to collaborate in managing the region's water resources and setting regional priorities for water infrastructure, improve regional water self-reliance, and provides multiple benefits;

b) Purpose and Need: a description of how this planning, study, or investigation will help the overall project support long-term water quality of the storm water or dry weather runoff and the known sources of storm water contamination; the approximate quantity of storm water flow to be captured by the completed project; the water supply offset as a result of the overall project; and a description of the other benefits expected from the project;

c) Site Investigation: for those who have completed necessary investigations, please discuss research completed to select the site, soils reports, depth to groundwater, historical aerial photo research, and onsite geotechnical and environmental investigations. For those needing investigations, please discuss how the proposed application will help to obtain the knowledge necessary to properly site, size, and design the final project;

13

Question 13 Part 2:

d) Regional Map: a figure with a discussion of the project location including the current site conditions and land use identification of the applicable IRWM group boundaries, and identification of any Areas of Special Biological Significance or Beaches;

e) Project Timing and Phasing: a discussion of whether this is a part of a phased project or part of a larger project effort; how this planning, study, or investigation will fit into the overall project timing;

f) Work Tasks: a detailed description of the work tasks with adequate detail and completeness to clarify the project can be implemented;

g) Procedures: a discussion on coordination with cooperating entities, agencies, and/or organizations;

h) Implementation: a detailed description of the proposed approach, including a thorough discussion of the practices the project is proposing to use to solve the problem, and the technical basis for the selected approach;

i) Stakeholder Involvement: a discussion on how stakeholders were involved in the Storm Water Resource Plan(s) development and prioritization of projects and how they will be involved in the implementation of the project(s);

j) Deliverables: a list of deliverables and reporting for each task (e.g. for Administration - quarterly invoices, draft final report, final report, final project summary);

13

Question 13 Part 3:

k) Permitting and Environmental Review: a list of required permits, environmental documentation, and landowner/access agreements required to implement the project. Provide a status of each of these required items; a discussion of any implications with respect to conflict between water users, water rights disputes, and/or water rights issues; a discussion of whether the applicant and/or cooperating entities is in violation of any water right permit requirements including payment of fees;

l) Plans and Specifications: the status of the plans and specifications and a copy of the current plan set or engineer's concept drawings; and

m) Education and Outreach: a description of the type of education and community outreach proposed for the project.

3. Budget

14 Provide a summary budget table (Attachment 2) that describes the budget for the completion of all known work tasks. Include a written narrative (one page maximum) that describes each line item task in the summary budget to explain how the cost estimates were determined. Describe the status and source of all other funding that

will be used to complete the project. Describe the anticipated sources and amount of proposed funding match for the project. Discuss whether the applicant will be requesting a match reduction. If a request for a match reduction is expected, provide the amount of match reduction and the basis for the request as outlined in Appendix A.

4. Schedule

15 **Provide a schedule table or Gantt Chart (Attachment 3) that documents the steps needed to accomplish the goals and deliverables described in the workplan, and include a narrative description (one page maximum) describing the pacing and scheduling of the project. The schedule should include the start and end dates, completion dates for major milestones, and project administration (preparation of invoicing, reporting, and deliverables).**

5. DAC/EDA And Stakeholder Involvement

16 **Describe how DACs/EDAs, non-governmental organizations and other key stakeholders will be involved in the development and directly benefit from the completion of the Storm Water Resource Plan or the project-specific planning activities.**

Answer: The CCWSWRP provides multiple stakeholder benefits. The plans watershed-based planning approach will yield long-term benefits to water quality, water supply, flood control, habitat restoration, social involvement, and community enhancement throughout Contra Costa County.
The CCWSWRP will provide extensive public engagement through Contra Costa County's well-organized and empowered community groups to hear, organize, and document concerns, priorities, and potential project ideas to create direct water quality water quality benefits that are augmented by water supply, flood control, habitat restoration, social involvement, and community enhancement benefits based on community input.
The CCSWRP will support multi-benefit urban greening efforts in DACs, where a lack of community resources can impact quality of life, including having access to parks, open spaces, stream trails, sports fields etc. The CCWSWRP will create a pathway for identification, development and potential future grant funding of green infrastructure projects that are a critical component of broader urban greening initiatives, particularly important in Contra Costa Watersheds as many DACs overlap with older industrial areas that are also known high opportunity areas for pollutant load reductions. DACs include areas in unincorporated County such as North Richmond, the Beacon West community on Bethel Island, and portions of Bay Point, as well as in the Cities of Martinez, Concord, Antioch and Pittsburg.
Efforts include the County's start of an urban greening initiative in the North Richmond community, in coordination with County service providers and community-based NGOs, to fund and develop a plan to identify potential green infrastructure projects, as well as trash removal strategies. The CCSWRCP will be the vehicle to enable this green infrastructure plan development and to later apply for implementation grant funding.
See Attachment 1. Work Plan and Attachment 7. Stakeholder Benefits.

17 **Describe the level of detail and planning that the applicant(s) will facilitate outreach and support to the DACs/EDAs, non-governmental organizations and other key stakeholders within the watershed(s) boundaries.**

Answer: The CCWSWRP will provide extensive public engagement through Contra Costa County's well-organized and empowered NGO community, watershed and creek groups to hear, organize, and document concerns, priorities, and potential project ideas to create direct water quality water quality benefits that are augmented by water supply, flood control, habitat restoration, social involvement, and community enhancement benefits based on community input.
Public meetings, outreach to local jurisdictions, and community stakeholders will be coordinated at key points in the development of the CCWSWRP to solicit community comments, feedback, and suggestions for local projects.
A Technical Advisory Group (TAG) will be established of representatives from the cooperating agencies and stakeholders. The TAG will provide direction to the project team developing the CCWSWRP, review preliminary work projects, and assist in coordinating efforts between the plan development and related stormwater permit compliance efforts.
A strategy for engaging stakeholders will be developed working with cooperating partners and established watershed groups through the Contra Costa Watershed Forum, the East Contra Costa IWRMP, and the San Francisco Bay Area IRWMP. In developing the strategy, particular attention will be placed on providing opportunities for DACs to participate and input projects to the SWRP. The strategy will identify the key points in the process when focused outreach will occur, such as at the initiation of the SWRP development, following the development of draft evaluation criteria and initial project concepts, and to review the draft SWRP. The proposed budget includes grant and matching funds to be distributed to watershed coordinators and creek groups to compensate their facilitation of outreach events and project identification.
Community feedback and concerns will be reflected in outreach materials developed (flyers, web content, brochures, etc.).
See Attachment 1. Work Plan.

6A. Certification - Storm Water Resources Plan Applications

18 **By initialing the box below, the Project Director is certifying that:**

a) The applicant is an eligible entity;

b) The project, when completed, will address all requirements stated in the Water Code and is in accordance with the Storm Water Resource Plan Guidelines;

c) He/she is aware that any attachment exceeding the page limit listed above will not be reviewed beyond the page limit (e.g., a workplan exceeding 10 pages maximum will be reviewed up to Page 10 only; any subsequent pages will be eliminated from the review process);

d) He/she is aware that, once the proposal has been submitted in FAAST, any privacy rights as well as other confidentiality protections offered by law with respect to the application package and project location are waived; and

e) He/she has read and agrees to the General Terms and Conditions of the draft Grant Agreement. If the Applicant and the State Water Board does not agree upon the terms and conditions, then a grant award may be denied.

(All Storm Water Plan applicants are required to check the box and initial next to the statement for their application to be reviewed. All applications missing the Certification will be deemed incomplete and ineligible.)

Answer: I

Answer:

6B. Certification - Project Specific Planning Applications

19 **By initialing the box below, the Project Director is certifying that:**

a) The applicant is an eligible entity;

b) The project is listed and implemented in an adopted IRWMP and Storm Water Resource Plan, or equivalent, that has been submitted to your local IRWM group OR that a Plan(s) will be completed within 90 days of grant award;

c) He/she is aware that any attachment exceeding the page limit listed above will not be reviewed beyond the page limit (e.g., a workplan exceeding 10 pages maximum will be reviewed up to Page 10 only; any subsequent pages will be eliminated from the review process). Maps and figures are not including in the page limit.

d) He/she is aware that, once the proposal has been submitted in FAAST, any privacy rights as well as other confidentiality protections offered by law with respect to the application package and project location are waived; and

e) He/she has read and agrees to the General Terms and Conditions of the draft Grant Agreement. If the Applicant and the State Water Board does not agree upon the terms and conditions, then a grant award may be denied.

(All Project Specific Plan applicants are required to check the box and initial next to the statement for their application to be reviewed. All applications missing the Certification will be deemed incomplete and ineligible.)

Answer: I

Answer:

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Attachment 1 – Contra Costa Watersheds SWRP Work Plan

1. WATERSHED BOUNDARIES

The 31 major watersheds and sub-watersheds within Contra Costa County (County) are linked by similar water quality stressors and regional water quality impairments of the Bay Delta Estuary as a result of increasing urbanization. **Figure 1** provides an overview of the watersheds and creeks in the County. In addition, all the watersheds need to address regional TMDLs and water quality requirements for control measures to address the loading of PCBs, mercury, pesticides, trash, and other pollutants. The Contra Costa Clean Water Program (CCCWP) coordinates the efforts of the County, the 19 incorporated cities and towns, and the Contra Costa County Flood Control and Water Conservation District (District). The CCCWP with its long standing record of successful regional, cross-jurisdictional collaboration that spans the county's multiple watersheds is the logical leader for this regional planning process that will meet the needs of the Proposition 1 Guidelines for regional planning, local watersheds, jurisdictions, and facilitate the development of the tools needed for jurisdictions to comply with requirements of the stormwater permits.

Green infrastructure (GI) , including dry weather runoff and stormwater capture and use projects that will be identified in the Stormwater Resource Plan (SWRP), is recognized as an essential strategy for the region to mitigate the effects of urbanization on water quality and reduce loading of pollutants. By infiltrating water, GI infrastructure restores a more natural water cycle replenishing base flows of creeks or groundwater to augment water supply. Other projects may result in dry weather flow diversion to municipal wastewater plants where the flows may be recycled to supplement water supplies.

In order to reflect differences in regulatory requirements across the County, and to incorporate community- and creek-specific values into the planning process, the SWRP will be organized into five planning units. The planning units will be based on watershed boundaries and will aggregate watersheds by geographic proximity, and similar regulatory requirements, and local values. **Figure 2** shows the watersheds within the planning units. **Figure 3** shows the local jurisdictions within the watershed planning units.

Creeks in the western portions of the County flow towards the San Francisco Bay, while those in the eastern portion of the County flow towards the Sacramento-San Joaquin Delta. The eastern and western portions of the County are in different regions, the Region 5 and Region 2, respectively. The largest watersheds in the County are the Walnut Creek (93,556 acres) and Marsh Creek (60,066 acres) watersheds, which span multiple jurisdictions; however many of the watersheds are "community-sized" and are important features of those communities. The planning units will allow for and encourage specific multi-benefit projects in each planning unit.

East County Planning Unit

This planning unit consists of all watersheds within Region 5, which include the East and West Antioch Creek Watersheds, Marsh Creek Watershed (the second largest watershed in the County), Kellogg and Brushy Creek Watershed and the East County Delta Drainages. These watersheds are distinguished from the rest of the County by a greater proportion of agricultural land uses, high soil infiltration capacity, and different regulatory requirements from the rest of the County. This planning unit contains many recently developed areas or areas planned for development. This planning-unit will facilitate development projects to address water quality issues specific to the Sacramento-San Joaquin Delta and Region 5, including the Delta Methylmercury TMDL.

Central County Planning Unit

This planning unit consists of the Walnut Creek, Mount Diablo Creek, Willow and Kirker Creek Watersheds. Walnut Creek is the largest watershed in the county, at 93,556 acres. These watersheds contain important open space areas, including Mount Diablo State Park, and generally drain from the Mount Diablo foothills through suburban areas to the Suisun Bay (Walnut Creek and Mount Diablo Creek) or the Sacramento-San Joaquin Delta (Willow and Kirker Creeks).

North County Planning Unit

This planning unit consists of the Alhambra Creek, Peyton Slough, and Refugio, Rodeo, and Carquinez area watersheds. These watersheds consist of diverse land uses, including rural, open space areas in the upper watersheds, and urbanized and industrial areas in the lower watersheds flowing toward the Carquinez Straight. This unit also consists of very active watershed focused non-governmental organizations (NGOs), including the Alhambra Creek Watershed Council, which has a long-standing reputation of promoting watershed management and restoration in the area.

South County Planning Unit

This planning unit includes watersheds that do not drain directly from the County to the San Francisco Bay, including Upper Alameda Creek, which flows south into Alameda County, and Upper San Leandro and Moraga Creeks, which flow into Upper San Leandro Reservoir, which outlets south of the Alameda County Line. Protection of water supply (quantity and quality) is a key factor in this planning unit.

West County Planning Unit

This planning unit includes the Pinole Creek, Wildcat Creek, Garrity and Rheem Creeks, Baxter Creek, Cerrito Creek, San Pablo Creek, and West Richmond watersheds, which drain to San Pablo Bay, the northeast portion of San Francisco Bay. The Baxter and Cerrito Creek, the West Richmond, Garrity Creek and Rheem Creek watersheds are heavily urbanized, while the Pinole and Wildcat Creek watersheds are less developed in the upper watersheds and become more urbanized as they flow towards the San Francisco Bay. The San Pablo Creek watershed includes the San Pablo and Briones Reservoirs, which are potable water supply reservoirs.

2. AGREEMENTS/MOU(S)

The CCCWP consists of all 21 municipal stormwater Permittees within the County. Established in 1991 to comply with the stormwater permits, the CCCWP implements many of the mandated permit activities, such as water quality monitoring, special studies, and public education. The roles and responsibilities of the CCCWP and Permittees are outlined in the Program Agreement (**Attachment 4.b**). The District, on behalf of the CCCWP, administers and implements the CCCWP activities as directed by the Management Committee. The District will coordinate the participation of other Permittees as well as non-governmental organizations (NGOs), in the development of the SWRP.

The Management Committee submitted a signed letter of support (**Attachment 4.a**), where the CCCWP Permittees committed grant match funding for this project. American Rivers' signed letter of support (**Attachment 4.c**) reflects the NGO's commitment to participate in Plan development. American Rivers and District will complete necessary agreements when the grant financing agreement is completed.

3. OUTREACH EFFORT AND COLLABORATION WITH NGOS, DACS, AND EDAS

Extensive stakeholder involvement will take place throughout the development and implementation of the SWRP. Over 15 NGO creek and watershed groups have already offered their enthusiastic support (**Attachment 4**) for the SWRP project. Further stakeholder collaboration in the development, identification, and prioritization of projects will be accomplished through hosting outreach events and participating in stakeholder meetings. See **Section 5** of this Work Plan and the tasks identified under Community Engagement and **Attachment 7**. This engagement will ensure that watershed stakeholders have the opportunity to include projects. Further, the SWRP will provide a methodology for stakeholders to propose and add projects to the SWRP in the future. The SWRP stakeholder process will build upon the work done to date by the Integrated Regional Water Management (IRWM) groups and local watershed groups to prioritize outreach to Disadvantaged Communities (DACs).

4. SUBMISSION OF SWRP TO LOCAL IRWM GROUP

There are two IRWM groups within the planning area for the SWRP: the East Contra Costa County IRWM Group and the San Francisco Bay Area IRWM Group. Both groups were consulted in preparation for applying for planning grant funding, and have provided letters of support and statements of intent to incorporate the SWRP into the IRWMP (see **Attachment 4**).

5. WORK TASKS

Project tasks are divided into three main categories, consistent with the SWRP guidelines and templates: Project Administration, Planning/Design, and Community Engagement. The project tasks are designed to create a SWRP that recognizes incorporates community and watershed values while developing the fundamental tools needed by Permittees to meet GI Plan requirements and position them to perform the Reasonable Assurance Analysis (RAA) required by the GI planning (C.3) and TMDL (C.11 and C.12) provisions of the MRP.

a. Project Administration Tasks

Administrative needs, including communication between cooperating entities, scheduling, and project management are included to facilitate the successful development of a SWRP that satisfies the guidelines and meets local goals according to the budget and schedule.

Work Plan Task 1. Project Administration

Quarterly progress reports will be prepared to summarize activities during the reporting period, activities planned for the next quarter, identification of issues that may affect budget and schedule, any schedule adjustments that may affect final deliverables, and a summary of expenditures. Annual status reports consistent with the grant requirements will be submitted each year by November 15th. A final project report will be prepared that compiles the overall progress on the project and identifies lessons learned to inform future grant funded planning projects.

Monthly meetings will be held with the project director and the project staff (public agency and consultants) to coordinate work efforts and communicate progress and information flow between the project team and the cooperating partners.

- *Deliverable 1.1: Quarterly progress reports and invoice for submittal to the State.*
- *Deliverable 1.2: Monthly coordination meeting agenda and summaries, participant lists.*
- *Deliverable 1.3: Annual status reports for submittal to the State*
- *Deliverable 1.4: Final project report.*

b. Planning/Design/Engineering/Environmental Tasks

The work tasks and deliverables included in this section outline the necessary technical steps to develop and prioritize projects that will be included in the SWRP.

Work Plan Task 2. Identify Existing Plans

The first task will be to catalog planning previous efforts to identify opportunities and develop project concepts for dry weather runoff and stormwater capture and use. Existing plans developed by stakeholders including IRWM plans; creek restoration or watershed enhancement plans created by creek groups; Municipal Regional Permit (MRP) and TMDL compliance efforts such as PCBs and mercury source area identification, GI opportunities in Permittee Capital Improvement Plans (CIP), monitoring plans; and other watershed management planning and low impact development (LID) or GI planning efforts by the Permittees, as identified in **Section 6** of this Work Plan, will be reviewed. Projects and background information from these existing plans that support the SWRP goals will be included in the SWRP.

- *Deliverable: 2.1 Annotated table of existing plans that will inform the SWRP development.*
- *Deliverable: 2.2 Annotated table of identified projects for inclusion in the SWRP.*

Work Plan Task 3. Model Selection and Justification

A hydrologic and pollutant load reduction model will be used to quantify multiple benefits, such as water supply, pollutant reduction and flood control benefits of project concepts developed during the SWRP planning process. An appropriate modeling approach will be selected that is capable of producing quantitative results for these benefits in a manner that is consistent with SWRP guidelines and provide the information needed to conduct the RAA for pollutant load reductions required by the GI Planning provisions of the MRP. The selection process will consider the knowledge gained and work done to date in the Bay Area on the GreenPlan-IT Tool and other quantitative approaches to provide a tool to efficiently use resources while meeting the technical needs of the GI planning process and RAA.

- *Deliverable 3.1: Technical memorandum describing the results of the model selection process, and the justification for the selected modeling approach.*

Work Plan Task 4. Develop Criteria to Prioritize Publicly-Owned Parcels

Under this task, criteria will be developed to screen publicly-owned parcels within each planning watershed for GI suitability. The process to identify the screening criteria will inform ~~the critical~~ the mapping resources that will be developed in **Work Plan Task 5**. Criteria for privately owned lands may also be included as potential locations for public-private partnerships and to identify areas for potential alternative or in-lieu compliance control measures. The criteria will reflect the potential of a given set of projects to achieve multiple benefits consistent with SWRP and GI Plan goals and community watershed values. The prioritization process is further described in **Study Task 1** in **Section 8**.

- *Deliverable 4.1: Technical memorandum describing selection of the prioritization criteria.*
- *Deliverable 4.2: Table of the key mapping information (parcel attributes) needed to implement the screening process.*

Work Plan Task 5. Develop Digital Mapping Resources

A fundamental need of the planning process is a GIS platform for the mapping resources. Maps (storm drainage, land use, etc.) have been developed over the years in different formats by each jurisdiction. The format of current maps range from paper maps to Auto CAD to GIS maps.

The following data will be collected from governmental data sources, consolidated, and published in the online SWRP GIS viewer.

Attribute	Effort
Storm Drain infrastructure	Compile
Drainage areas – watershed, sub basins	Compile
Parcels, publicly owned parcels, current land use,	Compile
Project plans / CIP project locations	Compile
Flood inundation areas / flood risk	Compile
Planning units	Compile
Rainfall mean seasonal isohyet map	Compile
Contours	Compile
PCBs source areas	Existing
Trash priority areas	Existing

A GIS based web mapping application will be developed and published to allow authorized users to perform screening and prioritization of sites. Aerial imagery and other existing GIS base map information will be presented along with the data layers identified above. A multi benefit project sketch tool will allow users to define project mitigation areas to compute areas and produce information to assist in quantification of project impacts.

- *Deliverable 5.1: Technical memorandum summarizing the existing map resources and identifying digital maps needs (gaps) to create GIS tools.*
- *Deliverable 5.2: Digital Maps of critical parts of the planning watershed units.*
- *Deliverable 5.3: Online GIS map service*
- *Deliverable 5.4: SWRP screening web application, GIS tools, files, and layers of key criteria for screening and prioritization.*

Work Plan Task 6. Develop GI BMP Concepts for Priority Parcels and Quantify Benefits

Under this task, the parcels will be screened based on the criteria developed in **Work Plan Task 4** and conceptual projects will be developed for selected priority parcels for each watershed planning unit, reflecting input from local jurisdictions and stakeholders. The stakeholder outreach process is further described in **Work Plan Task 9**. Project concepts will provide enough detail to support preparation of funding requests and grant applications, including project goals, benefits, site and project characteristics, conceptual design and cost information.

Conceptual designs will be used to quantify water supply, water quality and flood management benefits using the modeling method selected in **Work Plan Task 3**. The benefit quantification will be used to evaluate and prioritize concept projects in **Work Plan Task 7**.

- *Deliverable 6.1: Process flow chart summarizing approach to quantifying benefits.*
- *Deliverable 6.2: Draft project concepts for each watershed planning unit.*

Work Plan Task 7. Evaluate Multiple Benefits Concept Projects to Prioritize Projects

Under this task, the prioritization criteria will be refined to incorporate final concept designs. For each project, metrics based on quantified benefits will be developed for water supply, water quality, and flood control benefits. Additional benefits will be assessed quantitatively or qualitatively as appropriate, such as environmental (habitat protection, stream restoration, increased urban green space) and community benefits (enhancement or creation of recreational areas, opportunities for community involvement, and employment opportunities).

For each benefit category, a scaled scoring system will be applied based on the results of quantitative and qualitative analysis. A weighting system will be developed based on planning-unit specific priorities, such as opportunities for groundwater supply augmentation, addressing load reductions for pollutants with TMDLs (PCBs, mercury, methylmercury), opportunities for environmental enhancement, that will be applied to each benefit's score to reflect local priorities and values. The total weighted score for each project will be used to prioritize concept projects within planning units to meet the MRP's GI Plan requirements in each jurisdiction and may include County-wide goals including pollutant load reductions, as appropriate. Weights allocated to water supply benefits will reflect the Proposition 1 goals of treating stormwater and dry weather runoff as a resource. Weight allocated to community values will reflect the values of the local community and needs of the watershed.

The multi-benefit evaluation process will provide a robust system that will allow jurisdictions and stakeholders from the watershed planning units to add projects into the SWRP in the future.

- *Deliverable 7.1: Table of final project concepts.*
- *Deliverable 7.2: Final project concepts for each watershed planning unit.*
- *Deliverable 7.3: Map exhibits showing locations of final project concepts.*

Work Plan Task 8. Prepare Draft and Final SWRP

Under this task, the SWRP will be written. An annotated outline designed to meet the SWRP guidelines will be developed early in the project and vetted through the stakeholder process described in **Work Plan Task 9**. The SWRP will include an adaptive management process to allow update of the Plan, especially changes and additions to the project list. Stakeholders and local jurisdictions will be able and encouraged to use the tools developed to add projects into the Plan. The draft SWRP will be developed for review by stakeholders and the public. The final SWRP document will be prepared in time to allow stakeholders to seek project implementation grants in Round 2.

- *Deliverable 8.1: Annotated SWRP Outline.*
- *Deliverable 8.2: Draft SWRP for stakeholder and public review.*
- *Deliverable 8.3: Final SWRP.*
- *Deliverable 8.4: Response to comments table.*

c. Community Engagement Tasks

Opportunities to engage community stakeholders (local residents, businesses, watershed groups, NGOs, regulators) in the development, identification, and prioritization of projects and to solicit comments from local stakeholders will be completed under the tasks in this section.

Work Plan Task 9. Community Engagement

Effective community engagement is essential to the success and acceptance of GI projects that reflects local values and needs within the watershed planning units. Public meetings, outreach to local jurisdictions, and community stakeholders will be coordinated at key points in the development of the SWRP to solicit community comments, feedback, and suggestions for local projects.

A Technical Advisory Group (TAG) will be established of representatives from the cooperating agencies and stakeholders. The TAG will provide direction to the project team developing the SWRP, review preliminary work

projects, and assist in coordinating efforts between the SWRP development and related stormwater permit compliance efforts (e.g., the BASMAA GI Work Group). Quarterly TAG meetings are anticipated for the project duration.

A strategy for engaging stakeholders will be developed working with cooperating partners and established watershed groups through the Contra Costa Watershed Forum, the East Contra Costa IWRMP, and the San Francisco Bay Area IRWMP. In developing the strategy, particular attention will be placed on providing opportunities for DACs to participate and input projects to the SWRP. The strategy will identify the key points in the process when focused outreach will occur, such as at the initiation of the SWRP development, following the development of draft evaluation criteria and initial project concepts, and to review the draft SWRP.

Community feedback and concerns will be reflected in outreach materials and content and outreach materials developed (flyers, web content, brochures, etc.).

- *Deliverable 9.1: List of TAG members.*
- *Deliverable 9.2: TAG meeting agenda, notes, attendance lists.*
- *Deliverable 9.3: Stakeholder Engagement Strategy.*
- *Deliverable 9.4: List of stakeholders.*
- *Deliverable 9.5: Presentations and outreach materials for stakeholder meetings and events.*
- *Deliverable 9.6: List of Stakeholder outreach meetings and events.*

6. STAND-ALONE PLAN OR SUPPLEMENTAL PLAN

The Contra Costa Watersheds SWRP is a stand-alone Plan. The Plan will be built upon work that has been or continues to be conducted by various watershed groups working to protect and enhance local creeks and watersheds and the collaborative stormwater management program, the Contra Costa Clean Water Program. Below is a listing of some of the existing work that will be used in developing the Plan and an annotated list is provided in **Attachment 5**.

7. WATER CODE AND SWRP GUIDELINE ELEMENTS.

Table 1. Water Codes and SWRP Guidelines met by the Contra Costa Watersheds SWRP

Guideline Section	Description of Water Code Elements and Guidelines	How the SWRP will meet Water Code and Guidelines
Watershed Identification (VI.A)	**CWC Section 10565(c), 10562(b)(1), and 10565(c)**: Plan identifies watershed and subwatershed(s) for storm water resource planning **SWRP Guidelines**: Plan is developed on a watershed basis, using USGS, CalWater or IRWM group boundaries, includes an explanation of why watershed(s) and subwatershed(s) are appropriate, describes internal boundaries within the watershed, and describes surface and groundwater resources within the watershed. Plan describes water quality priorities, natural watershed processes within sub-watersheds and how those processes have been disrupted, and potable water suppliers and the estimated volume of potable water provided by the suppliers. Plan includes maps(s) showing watershed and subwatershed boundaries, other internal boundaries, surface and groundwater resources, native habitats, parks, open space and other features relevant to the SWRP.	The SWRP will be developed for watersheds of Contra Costa County, as described in **Section 1**. Planning units will be used to reflect local concerns. Water quality priorities, including TMDLs and 303(d) listed waterbodies, potable water suppliers within the County, and other issues within watersheds that may be addressed by projects included in the SWRP, such as natural watershed processes that have been disrupted, will be identified and in order to develop weighting criteria prioritize projects as part of **Study Task 3**, described in **Section 8**. **Figure 1** shows the County boundaries, planning units. The SWRP will include additional maps, surface water bodies, relevant internal boundaries within the watershed, and land use areas including public lands and open space. GIS resources developed in **Work Plan Task 5** will fill gaps in mapping resources required to complete the SWRP.
Water Quality Compliance (V)	**CWC Section 10562(d) (7)**: Plan identifies activities that generate or contribute to the pollution of storm water or dry weather runoff, or impair the effective beneficial use of storm water or dry weather runoff. **CWC Section 10562(b)(5) and (6)** : Plan describes how it is consistent and assists in compliance with TMDL implementation plans, NPDES permits and WDR requirements	Pollutant sources and activities contributing beneficial use impairments will be identified in order to prioritize projects as part of **Study Task 3**, described in **Section 8**. **Section 9** of this Work Plan identifies applicable TMDLs and NPDES permits and describes how the SWRP will assist in compliance with TMDLs and NPDES permits and WDR requirements

Guideline Section	Description of Water Code Elements and Guidelines	How the SWRP will meet Water Code and Guidelines
Organization, Coordination and Collaboration (VI.B)	**CWC Section 10565(a), 10562(b)(4)**: Local agencies and NGOs in were consulted in Plan development, and community participation was provided for in Plan development. **SWRP Guidelines:** Plan includes identification and coordination with agencies and organizations that need to participate to implement their own authorities and mandates in order to address SWRP objectives, non-profit organizations working on storm water and dry weather resource planning, a discussion of public engagement efforts and community participation in Plan development, descriptions of the existing IRWM groups, identification of the required decisions that must be made by regulatory agencies, and planning and coordination with existing local government agencies. Plan describes the relationship of the Plan to other existing planning documents, ordinances and programs established by local agencies. (If applicable) Plan explains why individual agency participation in various isolated efforts is appropriate.	**Sections 2, 3** and **4** of this Work Plan describe efforts undertaken during the application process to reach out to local agencies, NGOs, jurisdictions within the watershed, IRWM groups, and regulators. **Work Plan Task 9** describes how community stakeholders will be consulted during the SWRP planning process. **Section 6** of this Work Plan describes existing planning documents, including storm water and dry weather resource planning efforts undertaken by nonprofit organizations. **Section 10** describes local ordinances relevant to the planning process. The SWRP for Contra Costa County will be a collaborative effort among multiple agencies and jurisdictions, so individual agency participation is not anticipated.
Quantitative Methods (VI.C)	**SWRP guidelines:** Plan includes an integrated metrics-based analysis to determine that proposed projects will meet SWRP objectives and achieve multiple benefits, and complies with applicable NPDES permits. Plan describes data collection and management.	**Section 5** of this Work Plan describes the metrics-based process that will be used to evaluate projects' ability to meet SWRP goals, including quantification of water supply, water quality, storm water capture potential and flood control benefits using a GIS based model, as well as methods to assess environmental and community benefits. Data from existing monitoring programs will be reviewed as part of **Work Plan Task 2** to identify existing opportunities for projects that can be incorporated into the SWRP.
Identification and Prioritization of Projects (VI.D)	**CWC Section 10562(d)(1), 10562(d)(2), 10562(d)(3), 10562(d)(4), 10562(d)(5), 10562(b)(8), 10562(b)(2), 10562(d)(8):** Plan identifies opportunities to augment local water supply, source control for pollution and dry weather runoff volume, onsite and local infiltration and use of storm water or dry weather runoff, reestablish or mimic natural watershed processes, develop, restore or enhance habitat and open space, use existing publicly owned lands. **SWRP guidelines:** Each project contributes at least two or more Main Benefits and the maximum number of Additional Benefits as listed in Table 4 of the guidelines. Plan prioritizes projects and programs using a metric-driven approach and a geospatial analysis of multiple benefits of maximize water supply, water quality, flood management, environmental and community benefits within the watershed.	**Study Task 3** of this Work Plan describes the metrics-based process that will be used to identify and prioritize projects that will be included in the SWRP, which will focus on a projects' ability to meet SWRP goals, including consideration of quantified benefits related to water supply, water quality, storm water capture potential and flood control benefits using a GIS based model, as well as assessments of environmental and community benefits. Projects that incorporate at least two or more Main Benefits and the maximum number of Additional Benefits as listed in the Guidelines will be prioritized for inclusion in the SWRP.
Implementation Strategy and Schedule (VI.E)	**CWC Section 10562(d)(6)**: For new development and redevelopments (if applicable), identification of design criteria and BMPs to prevent storm water and dry weather runoff pollution and increase effective storm water and dry weather runoff management for new and upgraded infrastructure and residential, commercial, industrial, and public development. **CWC Section 10562(d)(8)** Plan identifies the development of appropriate decision support tools and the data necessary to use the decision support tools. **CWC Section 10562(b)(7):** Plan will be submitted, upon development, to the applicable integrated regional water management (IRWM) groups for incorporation into the	Concept projects will be developed in **Work Plan Task 6** that include sufficient detail to provide design criteria for GI projects incorporated into new development and redevelopment projects. Decision support tools that will be utilized during the development of the SWRP are identified in this Work Plan, and will be developed during the planning process, including mapping resources identified in **Work Plan Task 4,** modeling tools described in **Work Plan Task 6** and prioritization methodologies or tools identified in **Work Plan Tasks 5 and 7**. The Bay Area IRWM Group and East Contra Costa County IRWM Group have both provided letters of intent to incorporate the SWRP into the existing IRWMPs, presented in **Attachment 4**.

Guideline Section	Description of Water Code Elements and Guidelines	How the SWRP will meet Water Code and Guidelines
	IRWMPs. **Division 3, Chapter 1, Health and Safety Code Article 2000 et seq.:** Vet Plan with Mosquito Abatement District. **SWRP guidelines**: Plan identifies resources for Plan implementation, including projection of additional funding needs and sources and schedule for arranging and securing needed financing. Plan describes implementation strategy, including: 1.Timeline for submitting Plan into existing plans 2. Specific actions by which Plan will be implemented; 3. All entities responsible for project implementation; 4. Description of community participation strategy; 5. Procedures to track status of each project; 6. Timelines for all active or planned projects; 7. Procedures for ongoing review, updates, and adaptive management of the Plan; and 8. A strategy and timeline for obtaining necessary federal, state, and local permits. Plan also describes how implementation performance measures will be tracked.	The SWRP will include a process to vet project concepts with the Mosquito Abatement District. Currently, Permittees provide information on LID projects to the Mosquito Abatement District. An implementation strategy will be included in the SWRP describing the timeline, procedures for obtaining relevant permits, tracking procedures, and responsible entities for each project. The Plan will be developed to facilitate adaptive management, specifically to accommodate the inclusion of new projects. Implementation performance measures will be assessed through use of a GIS based runoff model to quantify water supply, water quality and flood control benefits, described in **Work Plan Task 6**.
Education, Outreach and Public Participation (VI.F)	**CWC Section 10562(b)(4)** Community participation is provided for in Plan implementation. **SWRP guidelines**: Plan describes the public education and public participation process that will be followed during Plan development and implementation and includes a schedule for initial public engagement and education. Plan identifies specific audiences including local ratepayers, developers, locally regulated commercial and industrial stakeholders, nonprofit organization and the general public. Plan describes strategies to engage disadvantaged and climate vulnerable communities and efforts to identify and address environmental injustice issues.	**Section 3** and **Work Plan Task 9** describe the process by which community participation will be solicited during planning and implementation of the SWRP. A strategy to engage the public will be developed, which will include a schedule for public engagement, mechanisms to engage the public, identification of specific audiences, including specific strategies to engage DACs.

8. ASSESSMENT, MONITORING, AND STUDY TASKS

The following study tasks are necessary to develop the SWRP.

Study Task 1. Parcel Prioritization

To select locations for concept projects developed in **Work Plan Task 6**, screening will consider factors relating to feasibility of the GI projects that include:

- Land uses/development on parcel amenable to GI
- Drainage area consisting of urban land uses
- Parcel size
- Proximity to storm drain infrastructure
- Proximity to water users for capture-use projects
- Areas with high soil imperviousness
- Areas with low slopes
- Underlying groundwater supplies

The screening process will eliminate parcels with characteristics that are prohibitive to implementation of GI project. Following the screening process, other factors will be developed and evaluated to identify and prioritize parcels for BMP concept development. The process of prioritizing parcels will utilize metrics established for multiple benefits metrics to identify prioritization of project opportunities within planning units or opportunities to meet County-wide goals, as appropriate. These metrics include evaluating the potential for augmentation of local

water supplies, water quality improvement, flood management, environmental and community benefits. In particular the metrics will consider wasteload reductions required by the PCBs, mercury, and methylmercury TMDLs and related permit provisions. Quantifiable metrics will be developed to the extent feasible prior to the development conceptual project designs.

Study Task 2. Quantification of water supply, water quality, and flood control benefits for concept projects

For project concepts developed in **Work Plan Task 6,** the model, selected in **Work Plan Task 3,** will be used to quantify the following factors for the selected design storm:

- Volume captured for water supply benefits
- Pollutant load reduction/volume treated for water quality benefits
- Peak flow rate/volume mitigation for flood management

Model results will be used to quantify these benefits and prioritize concept projects in **Work Plan Task 7**.

Study Task 3. Develop project prioritization criteria evaluating multiple benefits

In **Work Plan Task 7**, project concepts will be prioritized through a scaled scoring system based on the results of quantitative and qualitative analysis. A weighting system will be developed based on planning-unit specific priorities, such as opportunities for groundwater supply augmentation, addressing pollutants with TMDLs, opportunities for environmental enhancement and others, that will be applied to each benefit's score to reflect these local priorities and values. An evaluation of the following benefits based on a review of existing plans and stakeholder input will be used to develop the weighting factors for each planning unit:

- Identified water quality priorities, including TMDLs and 303(d) listings
- Pollutant sources and disruption of natural watershed processes that can be addressed
- Potable water suppliers within the planning unit and volume supplied, as well as water supply concerns that can be addressed through the development of the SWRP
- Local flood risk
- Current efforts or recognized needs for environmental restoration
- Local priorities for community resources

9. TMDLS, NPDES, WDRS, AND MS4

TMDLs and NPDES Permits within Watershed Boundaries

The County is subject to several TMDLs in Regions 2 and 5, listed in **Table 2.** NPDES permits relevant to the SWRP include the Municipal Separate Storm Sewer (MS4) permits regulating municipal stormwater discharges, shown in **Table 3**. As The SWRP could include projects diverting dry weather runoff and/or storm water to the sanitary sewer for treatment at a municipal wastewater treatment plant, the permitted municipal wastewater facility within the County are also listed in **Table 3**.

Table 2. TMDLs applicable to Contra Costa County

San Francisco Bay Region TMDLs (Region 2)	Central Valley Region TMDLs (Region 5)
San Francisco Bay Mercury TMDL	Sacramento-San Joaquin Delta Methylmercury TMDL
San Francisco Bay PCBs TMDL	Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL
Bay Area Urban Creeks TMDL for Diazinon and Pesticide-Related Toxicity	

Table 3. Municipal Storm Water and Wastewater NPDES permits in Contra Costa County

San Francisco Bay Region (Region 2)	Central Valley Region (Region 5)
MS4 Permits	
San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP) (Order R2-2015-0049, NPDES Permit No. CAS612008)	East Contra Costa County Municipal NPDES Permit (East Contra Costa County Permit) (Order R5-2010-0102, NPDES Permit No. CAS083313)

San Francisco Bay Region (Region 2)	Central Valley Region (Region 5)
Municipal Wastewater Permits	
Central Contra Costa Sanitary District Wastewater Treatment Plant	City of Brentwood Wastewater Treatment Plant
Port Costa Wastewater Treatment Plant	Byron Wastewater Treatment Facility
Delta Diablo Sanitation District Wastewater Treatment Plant	Discovery Bay Wastewater Treatment Plant
Mt. View Sanitary District Wastewater Treatment Plant	Ironhouse Sanitary District Water Recycling Facility
Pinole-Hercules Water Pollution Control Plant	
Rodeo Sanitary District Water Pollution Control Facility	
West County Agency Combined Outfall West County Wastewater District	

Compliance with Permits through the SWRP

Compliance with TMDLs and MS4 permits will be a major driver to select projects along with opportunities to augment water supply. The MRP requires jurisdictions to develop a GI Plan. The Permittees must provide reasonable assurance that a portion of the Waste Load Allocations for the San Francisco Bay mercury and PCBs TMDLs will be met using GI. The SWRP will identify projects that will also meet GI Plan goals, and will develop project details necessary to perform the RAA required by the GI planning (C.3) and TMDL (C.11 and C.12) provisions. It is anticipated that the soon to be reissued East Contra Costa County Permit will include GI planning provisions that will be equivalent to the requirements in the MRP. The East Contra Costa permittees will additionally need to address the methylmercury load reduction requirements stipulated by the Delta Methylmercury TMDL.

In addition to GI planning requirements that are driven by TMDL load reductions, the projects identified by the SWRP will include LID features that will assist MS4 permittees with compliance with Trash Load Reduction requirements in both MS4 permits.

10. LOCAL ORDINANCE(S) AND LAW(S)

The CCCWP issued its first LID-oriented technical guidance (the Stormwater C.3 Guidebook) in 2005. As part of the development of the Guidebook, the municipalities reviewed local standards and guidance for site design measures. The assessments found that "Municipalities generally have considerable flexibility to require new or changed designs through discretionary review, even without a general revision of standards." Implementation of LID is consistent with the local ordinances and codes of the Permittees and is consistent with the requirements of the stormwater permits.

The Permittees have experience implementing GI through a variety of pilot projects. Similar to the findings noted for LID, no broad policy or ordinance barriers were found to exist. The pilot project experience did show 1) that barriers are largely project specific (such as working with transportation agencies, addressing flooding concerns, effects on traffic flow in a complete-streets context), 2) there is a lack of familiarity by engineering staff with GI to be comfortable in choosing to incorporate GI into projects; and 3) there are challenges to funding the incremental costs of GI.

Projects currently underway, within the Bay Area (Bay Area GI Master Planning Project; FAAST PIN 24029) and California (Removing Barriers to LID in Local and State Codes: Technical Assistance for Municipal Code Updates and Evaluation of the California Building Standards Code (CALGreen) – PHASE 1; FAAST PIN 23969), are exploring barriers to GI and addressing the potential barriers. Additionally, USEPA has published several factsheets aimed at changing perceptions of barriers and providing resources to identify and address barriers.

Contra Costa Watersheds SWRP Work Plan Figures

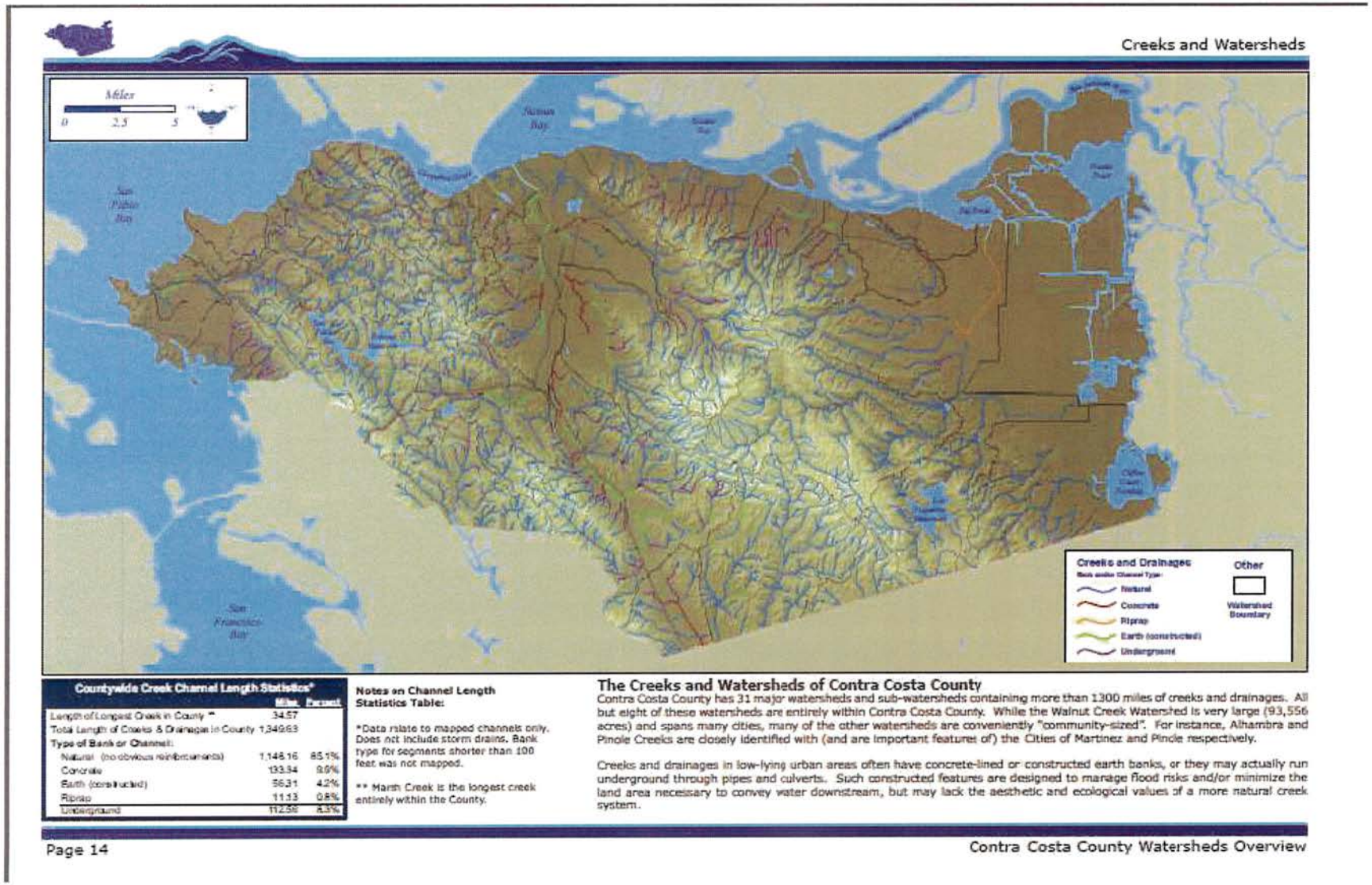


Figure 1. The Creeks and Watersheds of Contra Costa County Overview (Source: pg. 14 Watershed Atlas)

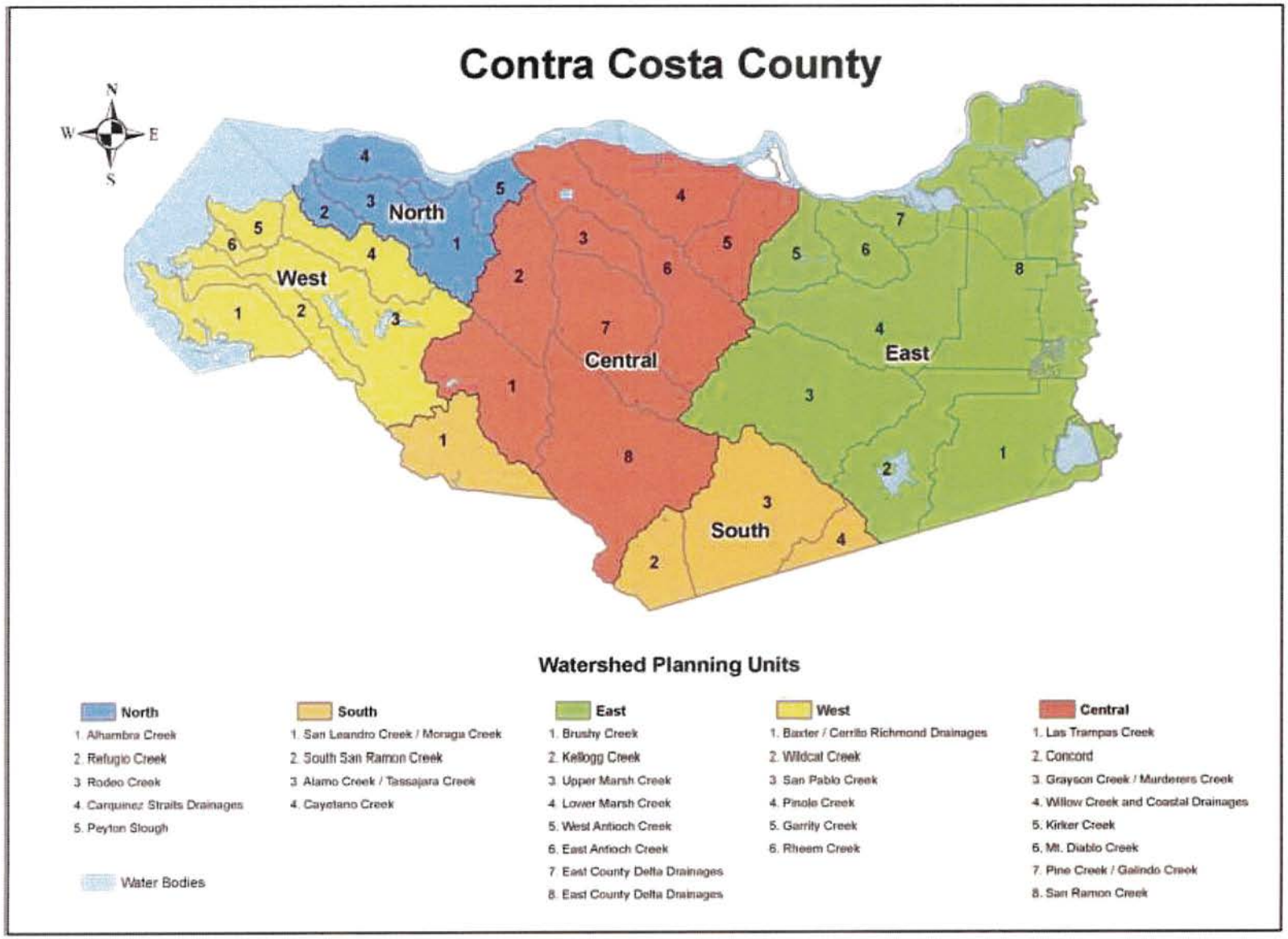


Figure 2. Contra Costa County Watershed Planning Units and Major Watersheds

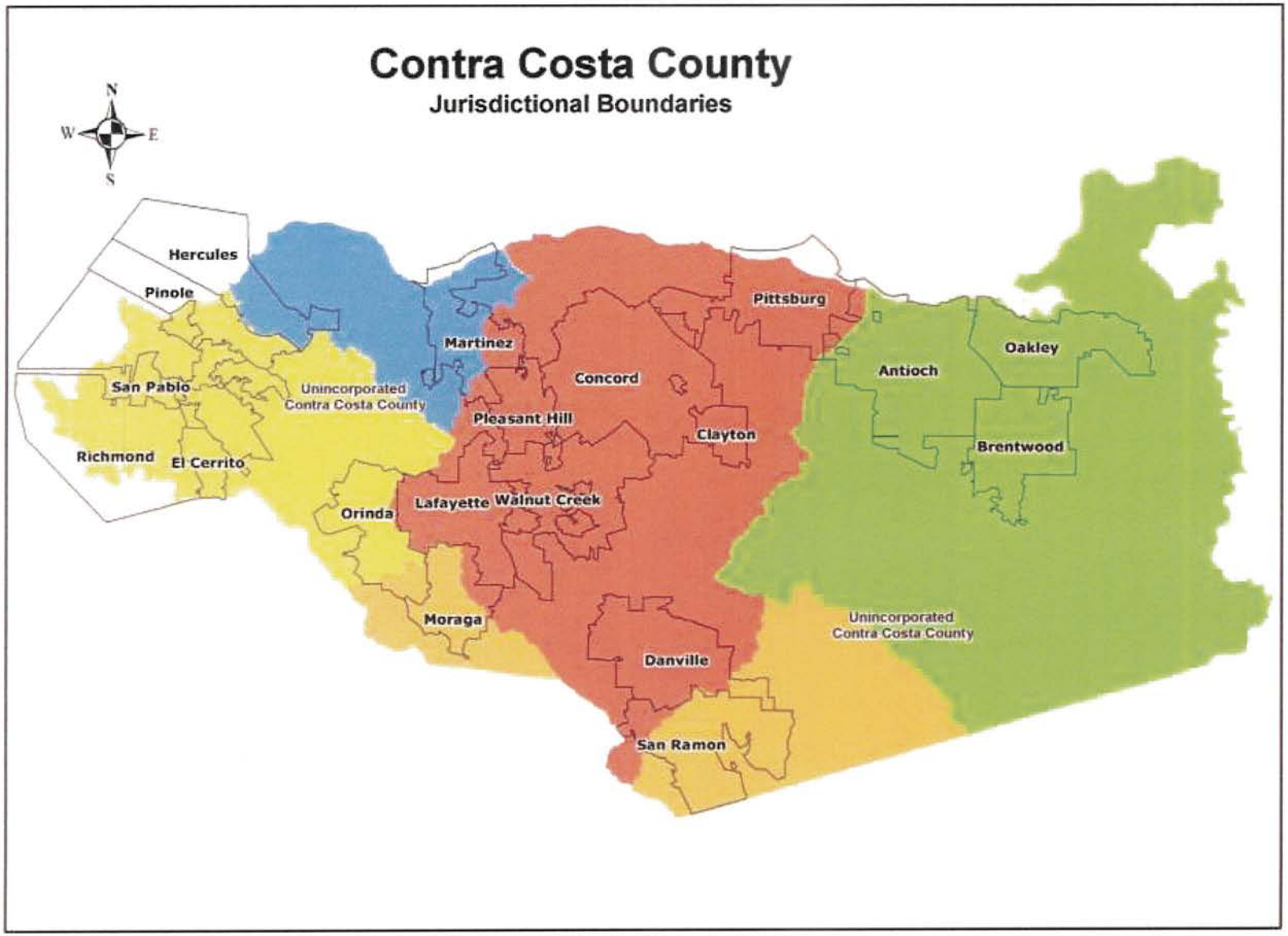


Figure 3. Contra Costa County Local Jurisdictions and Watershed Planning Units

FAAST PIN 34799

Attachment 2 – Contra Costa Watersheds SWRP Budget Narrative

The budget for the Contra Costa Watersheds SWRP was developed based upon the proposed work effort, recognizes in-kind and monetary contributions from contributing partners, and provides for a robust stakeholder process. **Table 1** provides the Budget Summary and **Table 2** provides the Budget Detail. Project tasks are divided into three main categories, consistent with the SWRP guidelines and templates: Project Administration, Planning/Design, and Community Engagement. No match reduction is being sought.

The CCCWP, Permittees, and contributing partners will provide value – added match in the form of direct fiscal contributions and in-kind labor. The CCCWP's budget planning process is completed annually in March. The CCCWP's Management Committee has approved this planning grant submittal and is aware of the fifty percent match requirement. A significant portion of the required match will come directly from CCCWP's annual budget, and will be used to fund consultants for technical tasks such as GIS analysis, drainage delineation, and other associated project development tasks.

CCCWP staff and Permittees will be directly involved in project identification and development, and review and comment on the draft and final SWRP. The budget detail provided identifies labor categories, burdened hourly rates, and estimated hours for tasks that will be funded in part as in-kind labor hours from municipal and CCCWP staff.

Consultant support has been estimated as a level of effort (hours) at the highest likely billing rate. Specific consultants and disciplines are not determined at this time. The actual work will involve a variety of billing rates and commensurate increase in hours. The goal of this estimate is to provide a ceiling, not to exceed value for the grant budget planning.

Contributing partners are currently involved in project development activities that will be submitted as match. American Rivers has completed a design charrette for projects in the East County Planning unit. Contra Costa County, as a Permittee and in partnership with the CCCWP and the West County Wastewater District, has recently completed a stormwater diversion pilot project. The costs and outcomes of some of the planning and reporting activities from that diversion project will also be documented to count as match.

Contra Costa County also has an existing program to fund creek friends groups and other watershed-based community organizations. That program has historically distributed implementation grants to fund watershed coordinators who organize creek cleanups, outreach events, and other activities. Community organizations will be integral to providing input on project concepts and priorities for developing this SWRP. The County's existing grant program and contractual relationships with community organizations will be the mechanism for engaging community group leaders, funding participation in the planning process, and providing accountability for progress and fulfillment of commitments.

Project Administration tasks accounts for 7% of the project budget.

Planning and Design tasks account for 56% of the budget.

Community Engagement tasks account for 37% of the budget. While this percentage may seem high for a planning grant, the proposed costs reflects the effort needed for a meaningful engagement in a Green Infrastructure planning process that will ~~process will~~ significantly affect development and redevelopment of the community infrastructure.

Table 1. Contra Costa Watersheds SWRP Budget Summary

Prop 1 STORMWATER GRANT PROGRAM - BUDGET SUMMARY

Applicant: Contra Costa Flood Control and Water Conservations District on Behalf of CCCV FAAST PIN: 34799
Project: Contra Costa Watersheds Stormwater Resource Plan

	Requested Grant	Local Match	Other Funding	Total	% Local Match
a. Direct Project Administration Costs	**$44,600**	**$15,290**	**$10,000**	**$69,890**	**36%**
Task 1 Project Administration	$44,600	$15,290	$10,000	$69,890	
b. Planning/Design/Engineering/ Environmental	**$281,720**	**$139,650**	**$140,000**	**$561,370**	**50%**
Task 2 Identify Existing Plans	$10,920	$13,100		$24,020	
Task 3 Quanitification Tool (Model) Evaluation & Sele	$20,800	$8,150		$28,950	
Task 4 Develop Criteria to Prioritize Parcels	$20,800	$16,400		$37,200	
Task 5 Develop Digital Mapping Resources	$74,200	$21,000	$35,000	$130,200	
Task 6 Develop GI BMP Concepts and Quantify Benefits	$56,000	$28,200	$35,000	$119,200	
Task 7 Evaluate Multiple Benefits Prioritize Projects	$43,000	$28,200	$35,000	$106,200	
Task 8 Prepare Draft and Final SWRP	$56,000	$24,600	$35,000	$115,600	
c. Community Engagement	**$173,100**	**$195,600**	**$0**	**$368,700**	**53%**
Task 9 Community Engagement	$173,100	$195,600		$368,700	
Grand Total:	**$499,420**	**$350,540**	**$150,000**	**$999,960**	**50%**

Other Funding Sources: Other funding includes $150,000 contribution, over two fiscal years from the CCCWP. Source of funding is member agencies dues. Local match includes anticipate local agency in-kind staff labor.
Item 9 includes the following: $1,000 cash contribution from Alhambra Creek group; $96,000 in-kind stakeholder outreach work conducted in 2015 by American Rivers in the Marsh Creek Watershed (East County Planning

Note: CHECK YOUR NUMBERS! Do NOT assume this Excel spreadsheet is correct. Please refer to the READ ME tab.

Does the Budget Summary Total match the Budget Details Total? **YES**

Table 2. Contra Costa Watersheds SWRP Budget Detail

Prop 1 STORMWATER GRANT PROGRAM - BUDGET DETAIL

Applicant: Contra Costa Flood Control and Water Conservations District on Behalf of CCCWP FAAST PIN: 34799

Project: Contra Costa Watersheds Stormwater Resource Plan

Budget Category	Percent of Cost	Discipline/Consultant/ Description	Labor Costs			Consulting/Materials/Equipment				TOTALS
			Rate	# of Hours	Total Labor	Unit Cost	Units	# of Units	Total Cost	
a. Direct Project Administration Costs	7.0%									$69,890
Task 1 Project Administration										
1.1 Quarterly Progress Reports										
		FCD Contract Administrator	$75.00	38	$2,850				$0	$2,850
		CCCWP Program Manager	$150.00	16	$2,400				$0	$2,400
		Consultant Support				$260.00	Hours	70	$18,200	$18,200
1.2 Coordination Meetings										
		CCCWP Program Manager	$150.00	30	$4,500				$0	$4,500
		Program Staff	$80.00	48	$3,840				$0	$3,840
		Consultant Support				$260.00	Hours	70	$18,200	$18,200
1.3 Annual Status Report										
		CCCWP Program Manager	$150.00	2	$300				$0	$300
		Program Staff	$80.00	2	$160				$0	$160
		Consultant Support				$260.00	Hours	30	$7,800	$7,800
1.4 Final Project Report										
		CCCWP Program Manager	$150.00	4	$600				$0	$600
		Program Staff	$80.00	8	$640					$640
		Consultant Support				$260.00	Hours	40	$10,400	$10,400
b. Planning/Design/Engineering/ Environmental	56.1%									$561,370
Task 2 Identify Existing Plans										
		CCCWP Program Manager	$150.00	10	$1,500				$0	$1,500
		Program Staff	$80.00	20	$1,600				$0	$1,600
		PWD/Pgm Mgr	$200.00	20	$4,000				$0	$4,000
		Local Staff	$150.00	40	$6,000				$0	$6,000
		Consultant Support				$260.00	Hours	42	$10,920	$10,920
Task 3 Quanitification Tool (Model) Evaluation										
		CCCWP Program Manager	$150.00	5	$750				$0	$750
		Program Staff	$80.00	5	$400				$0	$400
		PWD/Pgm Mgr	$200.00	20	$4,000				$0	$4,000
		Local Staff	$150.00	20	$3,000				$0	$3,000
		Consultant Support				$260.00	Hours	80	$20,800	$20,800
Task 4 Develop Criteria to Prioritize Parcels									$0	$0
		CCCWP Program Manager	$150.00	12	$1,800					$1,800
		Program Staff	$80.00	20	$1,600					$1,600
		PWD/Pgm Mgr	$200.00	20	$4,000				$0	$4,000
		Local Staff	$150.00	60	$9,000				$0	$9,000
		Consultant Support				$260.00	Hours	80	$20,800	$20,800

Prop 1 STORMWATER GRANT PROGRAM - BUDGET DETAIL

Applicant: Contra Costa Flood Control and Water Conservations District on Behalf of CCCWP **FAAST PIN: 34799**

Project: Contra Costa Watersheds Stormwater Resource Plan

Budget Category	Percent of Cost	Discipline/Consultant/ Description	Labor Costs			Consulting/Materials/Equipment				TOTALS
			Rate	# of Hours	Total Labor	Unit Cost	Units	# of Units	Total Cost	
Task 5 Develop Digital Mapping Resources										
		CCCWP Program Manager	$150.00	8	$1,200				$0	$1,200
		Program Staff	$80.00	20	$1,600				$0	$1,600
		County GIS Specialist	$80.00	40	$3,200				$0	$3,200
		PWD/Pgm Mgr	$200.00	30	$6,000				$0	$6,000
		Local Staff	$150.00	60	$9,000				$0	$9,000
		Consultant Support				$260.00	Hours	420	$109,200	$109,200
Task 6 Develop GI BMP Concepts and Quantify Benefits										
		CCCWP Program Manager	$150.00	20	$3,000				$0	$3,000
		Program Staff	$80.00	40	$3,200				$0	$3,200
		PWD/Pgm Mgr	$200.00	20	$4,000				$0	$4,000
		Local Staff	$150.00	120	$18,000				$0	$18,000
		Consultant Support				$260.00	Hours	350	$91,000	$91,000
Task 7 Evaluate Multiple Benefits Prioritize Projects										
		CCCWP Program Manager	$150.00	20	$3,000				$0	$3,000
		Program Staff	$80.00	40	$3,200				$0	$3,200
		PWD/Pgm Mgr	$200.00	20	$4,000				$0	$4,000
		Local Staff	$150.00	120	$18,000				$0	$18,000
		Consultant Support				$260.00	Hours	300	$78,000	$78,000
Task 8 Prepare Draft and Final SWRP										
		CCCWP Program Manager	$150.00	20	$3,000				$0	$3,000
		Program Staff	$80.00	20	$1,600				$0	$1,600
		PWD/Pgm Mgr	$200.00	40	$8,000				$0	$8,000
		Local Staff	$150.00	80	$12,000				$0	$12,000
		Consultant Support				$260.00	Hours	350	$91,000	$91,000
c. Community Engagement	**36.9%**									**$368,700**
Task 9 Community Engagement										
9.1 Quarterly TAG Meetings										
		CCCWP Program Manager	$150.00	20	$3,000				$0	$3,000
		Program Staff	$80.00	40	$3,200				$0	$3,200
		Admin Staff	$50.00	20	$1,000				$0	$1,000
		PWD/Pgm Mgr	$200.00	160	$32,000				$0	$32,000
		Local Staff	$150.00		$0				$0	$0
		NGO Staff			$0	$10,000.00	Groups	4	$40,000	$40,000
		Consultant Support				$260.00	Hours	200	$52,000	$52,000

Prop 1 STORMWATER GRANT PROGRAM - BUDGET DETAIL

Applicant: Contra Costa Flood Control and Water Conservations District on Behalf of CCCWP **FAAST PIN: 34799**

Project: Contra Costa Watersheds Stormwater Resource Plan

Budget Category	Percent of Cost	Discipline/Consultant/ Description	Labor Costs			Consulting/Materials/Equipment				TOTALS
			Rate	# of Hours	Total Labor	Unit Cost	Units	# of Units	Total Cost	
9.2 Stakeholder Engagement Strategy					$0					$0
		CCCWP Program Manager	$150.00	16	$2,400				$0	$2,400
		Program Staff	$80.00	16	$1,280				$0	$1,280
		Admin Staff	$50.00		$0				$0	$0
		PWD/Pgm Mgr	$200.00	21	$4,200				$0	$4,200
		Local Staff	$150.00		$0				$0	$0
		Consultant Support				$260.00	Hours	20	$5,200	$5,200
9.3 Stakeholder Meetings and Outreach										
		CCCWP Program Manager	$150.00	60	$9,000				$0	$9,000
		Program Staff	$80.00	80	$6,400				$0	$6,400
		Admin Staff	$50.00	24	$1,200				$0	$1,200
		County GIS Specialist	$80.00	24	$1,920				$0	$1,920
		PWD/Pgm Mgr	$200.00	60	$12,000				$0	$12,000
		Local Staff	$150.00	140	$21,000				$0	$21,000
		Marsh Creek Outreach					Campaign		$96,000	$96,000
		NGO Staff				$1,100.00	Groups	17	$18,700	$18,700
		Alhambra Creek Support				$1,000.00	Donation	1	$1,000	$1,000
		Consultant Support				$260.00	Hours	220	$57,200	$57,200
Grand Total:	**100%**									**$999,960**

Note: CHECK YOUR NUMBERS! Do NOT assume this Excel spreadsheet is correct. Please refer to the READ ME tab.

Does the Budget Summary Total match the Budget Details Total? **YES**

FAAST PIN 34799

Attachment 3 – Contra Costa Watersheds SWRP Schedule Narrative

The project schedule assumes award of the grant in April 2016 with contract start date of June 1, 2016. Completion of the Stormwater Resource Plan (SWRP) is planned for December 2017 to allow jurisdictions and watershed groups to seek project implementation funding in Round 2. Final project reports and invoicing are projected to be completed by May 2018. Project tasks are divided into three main categories, consistent with the SWRP guidelines and templates: Project Administration, Planning/Design, and Community Engagement. Tasks in the three categories will occur concurrently throughout the project as shown.

In the second quarter of 2016, activities are focused on grant contracting and startup. Technical work and project coordination will commence in the third quarter 2016 and continue through the second quarter of 2017 when the drafting of the SWRP will commence. A robust stakeholder engagement has been designed to allow for meaningful participation by watershed groups, local jurisdictions and the public. Stakeholder participation will begin with the formation of the Technical Advisory Group (TAG) early in the project (August 2016), and will continue through the TAG meetings as wells as planned engagement campaigns at key points in the project (at the kick off following development of annotated SWRP outline; following the drafting of the prioritization criteria and draft GI BMP concepts; and following the development of the draft SWRP).

Table 1 provides a narrative listing of the planned project deliverables and **Table 2** provides a project schedule in bar chart format.

FAAST PIN 34799

Attachment 3 – Schedule Tables

Table 1. Contra Costa Watersheds SWRP Project Deliverables

Task and Deliverable Description	Deliverable Due Date
Task 1 Project Administration	
Deliverable 1.1: Progress Reports	Prepared within 45 days of end of quarter.
Deliverable 1.2: Agenda, Notes, Participants	Coincident with meetings, in progress report
Deliverable 1.3: Annual Status Reports	November 15, 2016 and 2017
Deliverable 1.4: Final Report	March 31, 2018
Task 2 Identify Existing Plans	
Deliverable 2.1: Table of Existing Plans	August 31, 2016
Task 3 Quantification Tool (Model) Evaluation	
Deliverable 3.1: TM of Model Approach	August 31, 2016
Task 4 Develop Criteria to Prioritize Parcels	
Deliverable 4.1: Tech Memo of Prioritization Criteria	December 23, 2016
Deliverable 4.2: Table of Key Mapping Attributes	December 23, 2016
Task 5 Develop Digital Mapping Resources	
Deliverable 5.1: TM Existing Resources and Gaps	August 31, 2016
Deliverable 5.2 Digital Maps of Key Areas	December 23, 2016
Deliverable 5.3 Online GIS Service	April 30, 2017
Deliverable 5.4 Online Web screening application	July 31, 2017
Task 6 Develop GI BMP Concepts and Quantify Benefits	
Deliverable 6.1: Process Flow Chart	January 31, 2017
Deliverable 6.2: Draft Project Concepts	March 31, 2017
Task 7 Evaluate Multiple Benefits Prioritize Projects	
Deliverable 7.1: Table of Final Project Concepts	September 30 2017
Deliverable 7.2: Final Project Concepts	September 30 2017
Task 8 Prepare Draft and Final SWRP	
Deliverable 8.1: Annotated Outline	September 30, 2016
Deliverable 8.2: Draft SWRP	August 31, 2017
Deliverable 8.3: Final SWRP	December 23, 2017
Deliverable 8.4: Response to Comments	January 31, 2018
Task 9 Community Engagement	
Deliverable 9.1: List of TAG Members	August 31, 2016
Deliverable 9.2: TAG Agenda, Notes, Participants	Coincident with meetings, in progress report
Deliverable 9.3: Engagement Strategy	October 31, 2016
Deliverable 9.4: List of stakeholders	October 31, 2016
Deliverable 9.5: Presentations/Materials	Coincident with meetings, in progress report
Deliverable 9.6: List of Stakeholder Events	March 31, 2018

Table 2. Contra Costa Watersheds SWRP Project Schedule

Prop 1 STORMWATER GRANT PROGRAM - SCHEDULE - DRAFT

Applicant: Contra Costa Flood Control and Water Conservation District

Project: Contra Costa Watershed Stormwater Resource Plan

+ Deliverable
♦ Meeting
Project Task
Grant Contracting

Project Tasks	2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			1st Qtr 2017			2nd Qtr 2017			3rd Qtr 2017			4th Qtr 2017			1st Qtr 2018			2nd Qtr 2018		
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Notice of Award																											
Grant Award and Contracting			+																								
Task 1 Project Administration																											
1.1 Qtrly Progress Reports					+			+			+			+			+			+			+			+	
1.2 Coordination Meetings			♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦						
1.3 Annual Status Reports								+												+							
1.4 Final Project Report																								+			
Task 2 Identify Existing Plans and Mapping					+																						
Task 3 Quantification Tool (Model) Evaluation					+																						
Task 4 Develop Criteria to Prioritize Parcels									+																		
Task 5 Develop Digital Mapping Resources					+				+				+			+											
Task 6 Develop GI BMP Concepts and Quantify Benefits										+			+														
Task 7 Evaluate Multiple Benefits Prioritize Projects															+												
Task 8 Prepare Draft and Final SWRP						+											+				+	+					
Task 9 Community Engagement																											
9.1 List of TAG Members					+																						
9.2 Qtrly TAG Meetings					♦			♦			♦			♦			♦			♦							
9.3 Stakeholder Engagement Strategy							+																				
9.4 List of Stakeholders							+																				
9.5 Presentations and Outreach Materials								♦				♦						♦									
9.6 List of Stakeholder Events																								+			

Attachment 4. Support Letters and Agreements

4-1. Contra Costa Clean Water Program Letter of Support
4-2. Contra Costa Clean Water Program Agreement (Representing Permittees: Contra Costa County Flood Control and Water Conservation District, County Watershed Program, City of Antioch, City of Brentwood, City of Clayton, City of Concord, City of El Cerrito, City of Hercules, City of Lafayette, City of Martinez, City of Oakley, City of Orinda, City of Pinole, City of Pittsburg, City of Pleasant Hill, City of Richmond, City of San Pablo, City of San Ramon, City of Walnut Creek, Town of Danville, Town of Moraga)
4-3. American Rivers Letter of Support
4-4. Friends of Alhambra Creek Letter of Support
4-5. Walnut Creek Watershed Council Letter of Support and Letter of Understanding (Representing East Bay Regional Parks District, Central Contra Costa Solid Waste Authority, Central Contra Costa Sanitary District, East Bay Municipal Utility District, Sustainable Contra Costa, Diablo Valley Fly Fishermen, Friends of San Ramon Creek, Friends of the Creeks, Greenbelt Alliance, Mount Diablo Audubon, Muir Heritage Land Trust, Save Mount Diablo, Sustainable Walnut Creek, Walnut Creek Open Space Foundation)
4-6. Wildcat-San Pablo Creeks Watershed Council Letter of Support
4-7. Friends of Marsh Creek Watershed Letter of Support
4-8. West County Wastewater District Letter of Support
4-9. Knightsen Community Services District Letter of Support
4-10. San Francisco Bay Area Integrated Regional Water Management Letter of Support (Representing the Contra Costa area members: the Contra Costa Water District, East Bay Municipal Utility District, Association of Bay Area Governments, Bay Area Clean Water Agencies, Bay Area Water Supply and Conservation Agency, as well as the project lead, the Contra Costa County Flood Control and Water Conservation District).
4-11. East Contra Costa County Integrated Regional Water Management Letter of Support (Representing members: City of Antioch, City of Brentwood, Byron-Bethany Irrigation District, Contra Costa County Flood Control, Contra Costa Water District, Delta Diablo, Diablo Water District, Discovery Bay Community Services District, , East Contra Costa Irrigation District, Ironhouse Sanitary District, City of Pittsburg, and East Contra Costa County Habitat Conservancy)
4-12. Contra Costa Resource Conservation District Letter of Support
4-13. East Bay Regional Parks District Letter of Support
4-14. San Francisco Bay Regional Water Quality Control Board Letter of Support
4-15. Central Valley Regional Water Quality Control Board Letter of Support

Attachment 5 – Studies/Reports/Plans

The Contra Costa Watersheds SWRP will be built upon work that has been or continues to be conducted by various watershed groups working to protect and enhance local creeks and watersheds and the collaborative stormwater management program, the Contra Costa Clean Water Program. Below is a summary of some of the existing work that will be used in developing the Plan.

Watershed Atlas. The atlas is a tool for people with all levels of expertise in watershed management and planning, the Contra Costa Watershed Atlas is an important document for people concerned about watersheds in the county. The 150-page, full-color book includes maps, photographs, statistics and information about the Contra Costa watersheds.

Data From the Creeks. Dedicated Contra Costa County residents who care about their local creeks have spent thousands of hours of the weekend and weeknight hours in the classroom learning monitoring techniques or knee-deep in the creeks collecting data. Data from these studies is summarized in the Data From the Creeks book.

East Contra Costa County Historical Ecology Study. San Francisco Estuary Institute (SFEI) conducted a historical ecology assessment of natural resources in East Contra Costa County in partnership with Contra Costa County and the Contra Costa Watershed Forum. Through the study, SFEI collected and analyzed data to build understanding of the historical alignments of creeks, the natural pattern of riparian and dryland habitat types, and the locations of former seasonal and perennial wetlands.

San Francisco Bay IRWMP. The San Francisco Bay Area Integrated Regional Water Management Plan (IRWMP or Plan) presents a collective vision presented to address the major challenges and opportunities related to managing water and associated natural resources within the Bay Area IRWM region. The IRWMP outlines the Region's water resources management needs and objectives, and presents innovative strategies and important actions to help achieve these objectives. The IRWMP was first completed and adopted in 2006 (2006 IRWMP), and the most recent update was completed in 2013.

East Contra Costa County IRWMP. The East Contra Costa County (ECCC) Integrated Regional Water Management (IRWM) planning effort is a formal collaborative process convened to support all aspects of regional water management. This includes integrated planning for water supply, water quality, watershed and habitat protection, and flood and stormwater management. The ECCC IRWM members have a long history of cooperation across political and jurisdictional boundaries that spans almost two decades. The 2015 IRWMP update revised 2013 Plan and articulates the challenges the ECCC region faces and defines the water resource management objectives it hopes to accomplish. The framework defined in the IRWM Plan is a living process the region can rely on to meet its current and future water management challenges.

Walnut Creek Watershed Inventory. Describes the watershed and creates a shared understanding of it. The intent of the inventory is to provide the Watershed Council and other interested parties with an overview of the status of the Walnut Creek Watershed and its management opportunities and constraints. The inventory is based on interviews of experts identified by the Watershed Council and a review of select materials. The report serves as a broad overview rather than a detailed, thorough accounting of the watershed with sections on the

history of the watershed, flood control efforts, water quality, and wildlife and habitat, including a major section on salmonids in the watershed.

Urban Creeks Monitoring Reports. Under the Municipal Regional Permit and East Contra Costa County MS4 Permit, the CCCWP prepares the Urban Creeks Monitoring report annually. These reports summarize water quality monitoring undertaken to fulfill the requirements of the two stormwater permits. The UCMR provides monitoring and study results from the several monitoring programs including: the Regional Monitoring Program; Creek Status Monitoring; Stressor/Source Identification Projects, Pollutants of Concern and Long-Term Trends Monitoring; and Citizen Monitoring coordinated through the Contra Costa Watershed Forum.

Revised Methylmercury Control Study Work Plan. The Work Plan characterizes concentrations of methylmercury in urban runoff discharges within eastern Contra Costa County and evaluates attainment of the implementation goal of 0.06 ng/L methylmercury established by the TMDL for Methylmercury in the Sacramento and San Joaquin River Delta (Resolution No. R5-2010-0043). This Work Plan defines monitoring and assessment to be carried out to support a Methylmercury Control Study to evaluate methylmercury concentrations in tributary flows from East Antioch Creek, West Antioch Creek, and Marsh Creek. The Work Plan approach also includes an effectiveness evaluation to determine how stormwater treatment by Low Impact Development (LID) can benefit mercury and methylmercury reductions in stormwater.

Managing Stormwater for the Future of the Marsh Creek Watershed: An Action Plan from the 2015 Marsh Creek Stormwater Workshop. American Rivers convened a community workshop in 2015 to explore improvements to the Marsh Creek watershed and opportunities for Green Infrastructure projects in the lower watershed. Community workshops were held that generated a list of projects and an action plan to seek Prop grant funding for development of a SWRP and project funding. The list of projects identified by the community will be incorporated into the SWRP. (Subsequently American Rivers decided to form the plan cooperatively with the CCCWP.)

North Richmond Urban Greening and Resiliency Program/Plan. North Richmond has historically been one of the most economically-challenged communities and as result, the most "trash challenged" community in Contra Costa County. It meets the California definition of a "Disadvantaged Community". There is growing interest at both the grassroots and among County officials in developing a Cleaning and Urban Greening Program in North Richmond to focus on green infrastructure as a method toward multi-benefit improvements through a community-based approach that fosters social cohesion, community engagement, supporting local employment while improving neighborhoods and water quality. The conceptual plan identifies potential projects that will be incorporated into the SWRP.

Urban Water Management Plans. The water suppliers within Contra Costa County have adopted Urban Water Management Plans that among other things identify water conservation goals and plans to augment water supply through recycled water and encouragement of stormwater management practices that infiltrate water.

Attachment 7.1

Campaign and Other Outreach Report FY 2015/16

PROGRAM SUMMARY

The following report covers Contra Costa Clean Water Program's six-month extension dating from July 13th to December 31st, 2015.

CCCWP FACEBOOK

The goal of the Contra Costa Facebook page was to successfully identify the appropriate content, messaging, and voice to encourage engagement from residents of Contra Costa County. The strategy included publishing 4 posts every week for 18 weeks, and tracking the performance in the form of likes, comments, and shares. We exceeded our goal of 750 Facebook fans by 67% and obtained 617 total engagements.

Strategy

- Understand the appropriate voice to reach audience;
- Create strong editorial content with high engagement;
- Track and report performance,
- Publish 4 posts per week; and
- Create content for 18 weeks.

Goals for Extension

- Reach 750 total fans by obtaining 547 new fans; and
- Publish 4 posts per week for 18 weeks.

Results for Extension

- Reached 1,249 total fans by obtaining 1,046 new fans;
- Obtained 660 total interactions for the extension;
- Obtained a total reach of 9,804; and
- Published a total of 87 posts, averaging about 4 posts a week.

MY GREEN GARDEN

The goal of the My Green Garden website was to become an online resource for Contra Costa residents to actively engage, and respond to the content of non-toxic pest control solutions for the garden. After securing partnerships with local high schools and community gardening events, we expanded school integration by presenting on the dangers of toxic chemicals in the garden. Julia Tubert, a SGA Outreach Specialist, presented in each of the three schools, and encouraged students to attend a gardening event to learn first-hand the questions local residents had about pest-related gardening issues. With the help of the volunteer students from Richmond, Pittsburg, and Olympic High School, one-hundred gardening questions were

collected. The non-toxic answers were researched by the Environmental students at Antioch High School.

Strategy

- Grow MGG community through Facebook presence;
- Support and expand school integration through presentations and dedicated support activities; and
- Solidify community by integrating campaign presence throughout program.

Goals for Extension

- Increase engagement with the My Green Garden campaign;
- Integrate and expand the role of students with My Green Garden;
- Collect 100 resident questions/tips from outreach events; and
- Provide residents with resources to solve gardening issues using organic methods.

Results for Extension

- Secured partnerships with three Contra Costa high schools and three gardening events;
- Conducted academic presentations at three schools about the negative effects of toxic pesticides to a total of 113 Contra Costa 12th grade students;
- Gave students a pre- and post- quiz to gauge effectiveness of presentations;
    - Richmond: Pre Test Average: 51.5% Post Test Average: 72.5%
    - Olympic: Pre Test Average: 47.7% Post Test Average: 67.6%
    - Pittsburg: Pre Test Average: 68.8% Post Test Average: 81%
- Invited students to attend three outreach events including Our Garden, Urban Tilth, and Rodgers Ranch;
- Attended three outreach events with volunteer students and collected gardening questions from local residents;
- Collected 100 questions/tips from outreach events;
- Sent questions collected at outreach event to Antioch High School to be researched; and
- Assisted Antioch Environmental Academy as they researched and posted answer to resident's pest-related questions and managed site content.

Feedback from Presentation

Richmond High School

- "I liked the whole presentation. I learned a lot of important information."
- "I liked how you talked about the insect sprays, because we use that a lot and we never really paid attention to what it really does to us."
- One girl told us that the presentation made a strong impact on her because her uncle sprays Raid directly on her dog to handle fleas. She said she is going to make sure her family becomes more aware of the dangers of these chemicals for pets and the environment.

- A few weeks after the Richmond presentation, a student contacted us asking for a copy of the presentation and college advice. She said SGA's Julia Tubert had sparked her interest in environmental studies.

Olympic Continuation School

- "I liked learning about how much fertilizer and pesticides are used."
- "I liked the way you presented. Thank you for coming to Olympic High School!"
- Holly Pitts, Biology teacher: "My students learned a lot. I had several that went to their next classes talking about what they learned and how outraged they were to know the toxins going into the water supply. This is a great opportunity for our students to get real world work experience."

Pittsburg High School

- "I liked learning about the effects of pesticides for health factors."
- "A+++++ Great presentation!"
- One student told us that she is considering studying environmental engineering more since seeing the presentation.

PESTICIDES LINGER

The primary goal of Pesticides Linger was to encourage residents to hire eco-certified pest control operators (PCOs). Through strategic public outreach, digital ads, and email marketing to relevant environmentally-conscious communities in the area, Pesticides Linger was able to engage Contra Costa County residents and educate them about the benefits of nontoxic/eco-friendly pesticides as an alternative to toxic pesticide use. Pesticides Linger partnered with local eco-certified PCOs and offered a 25% discount coupon to these partners' services. The Pesticides Linger website and email marketing network served as touchpoints for engaged residents to continue connecting and participating in the campaign. To measure impact on residents, Pesticides Linger collected pledges from residents to "go eco" and use eco-friendly pest control.

Strategy

- Integrate messaging to bring all existing communities into one outreach network;
- Grow the community and encourage new residents to opt in to email outreach network;
- Form partnerships with current eco-certified PCOs to offer promotions (i.e. coupons);
- Deliver targeted messaging to encourage redemption of promotion and hiring of eco-certified PCOs; and
- Track the numbers of people who reach out and use eco-certified PCOs.

Goals for Extension

- Increase the number of residents hiring eco-certified PCOs;
- Receive 400 pledges to go eco;

- Distribute 500 coupons;
- Build an email marketing network for organic and environmentally minded Contra Costa residents; and
- Foster engagement between residents and the program.

Results for Extension

- Formed partnerships with 5 eco-certified PCOs in Contra Costa County;
    - Pestec
    - Atco Pest Control
    - Applied Pest Management
    - Leading Edge Pest Management
    - Performance Pest Management
- Received 352 pledges to go eco;
- Received 1 redeemed discount coupon;
- Made 525 impressions at 4 outreach efforts;
- Distributed 362 hard coupons to residents of Contra Costa County;
- Sent out 6 automated eblasts to a list of 234 Contra Costa County resident subscribers;
    - 35.4% open rate (industry average= 21.1%)
    - 7.1% click through rate (Industry average= 2.5%)
- Website and Google ads: 625,700+ impressions, 3,718 clicks, average visit on site of 1 minute 18 seconds.

REPORTING / SURVEYING

A research survey was conducted in order to measure the effectiveness of SGA's outreach campaign. Fifty participants who reside within Contra Costa County and its surrounding counties were randomly selected through a third party survey recruitment company and were tasked to take our survey. Their scores represented perspectives on pesticides of individuals who were not impacted by our campaigns. Three participants from the baseline were excluded from the analysis as they stated to be familiar with pesticideslinger.org and or mygreengarden.org previous to taking the survey. An additional 40 participants were recruited through the Facebook groups and email lists that are associated with the Contra Costa Clean Water Program. These participants' scores represented perspectives on pesticides of individuals who had some degree of contact with our outreach efforts.

Strategy

- Measure and observe differences in attitudes towards pesticides between individuals who engaged with our outreach campaign and those who had not.

Goals for Extension

- Implement baseline survey through third party survey company among 50 individuals; and
- Implement internal survey through relevant campaign email lists among 40 individuals.

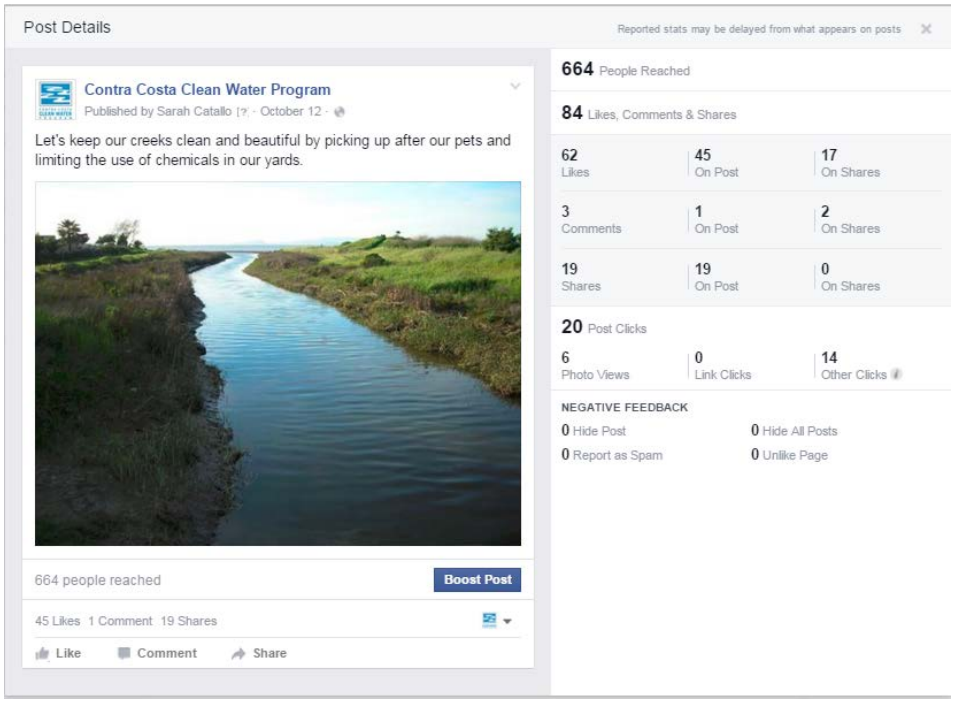
Results for Extension

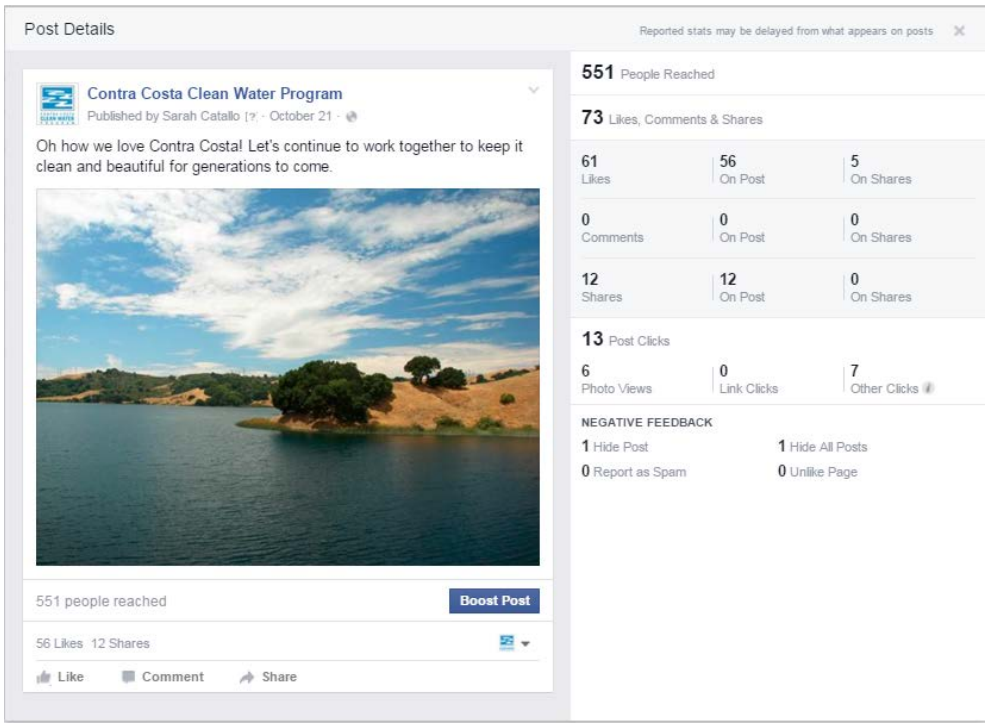
- Observed statistically significant difference between the two groups whereby participants who came in contact with our outreach efforts were more likely to try non-toxic pest control methods within their homes before resorting to conventional pesticides;
- Observed statistically significant difference between the two groups whereby participants who came in contact with our campaigns were more sensitive to the harmful nature of conventional pesticides to children and pets
- Observed moderate effect size in both accounts;
- Observed no statistically significant difference between the two groups' likelihood to try non-toxic pest control methods outside of their homes before resorting to conventional pesticides; and
- Wilcoxon rank-sum test was used to test for difference in all three accounts at a significance level of 5%.

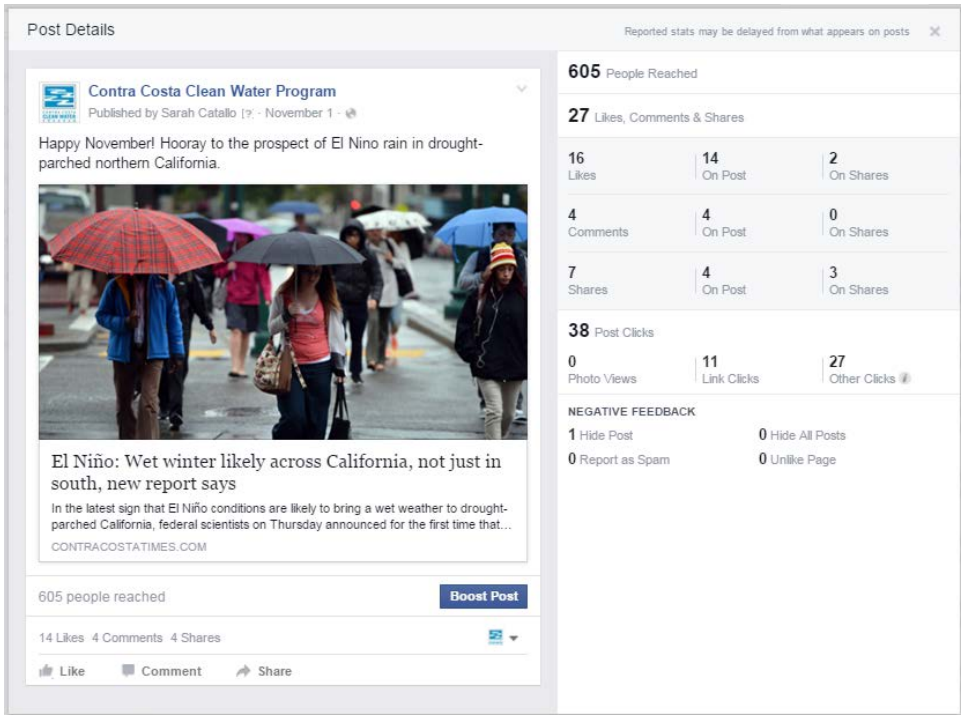
FACEBOOK

Facebook Page

Facebook Posts Examples




Post Details
Reported stats may be delayed from what appears on posts
Contra Costa Clean Water Program
Published by Sarah Catallo · October 21 ·
Oh how we love Contra Costa! Let's continue to work together to keep it clean and beautiful for generations to come.
551 people reached
Boost Post
56 Likes 12 Shares
Like
Comment
Share
551 People Reached
73 Likes, Comments & Shares
61 Likes
56 On Post
5 On Shares
0 Comments
0 On Post
0 On Shares
12 Shares
12 On Post
0 On Shares
13 Post Clicks
6 Photo Views
0 Link Clicks
7 Other Clicks
NEGATIVE FEEDBACK
1 Hide Post
1 Hide All Posts
0 Report as Spam
0 Unlike Page


Post Details
Reported stats may be delayed from what appears on posts
Contra Costa Clean Water Program
Published by Sarah Catallo · November 1 ·
Happy November! Hooray to the prospect of El Nino rain in drought-parched northern California.
El Niño: Wet winter likely across California, not just in south, new report says
In the latest sign that El Niño conditions are likely to bring a wet weather to drought-parched California, federal scientists on Thursday announced for the first time that…
CONTRACOSTATIMES.COM
605 people reached
Boost Post
14 Likes 4 Comments 4 Shares
Like
Comment
Share
605 People Reached
27 Likes, Comments & Shares
16 Likes
14 On Post
2 On Shares
4 Comments
4 On Post
0 On Shares
7 Shares
4 On Post
3 On Shares
38 Post Clicks
0 Photo Views
11 Link Clicks
27 Other Clicks
NEGATIVE FEEDBACK
1 Hide Post
0 Hide All Posts
0 Report as Spam
0 Unlike Page

My Green Garden

School Presentations and Outreach

Julia Tubert, an SGA Outreach Specialist, giving a presentation on the dangers of toxic pesticides at Richmond High School.

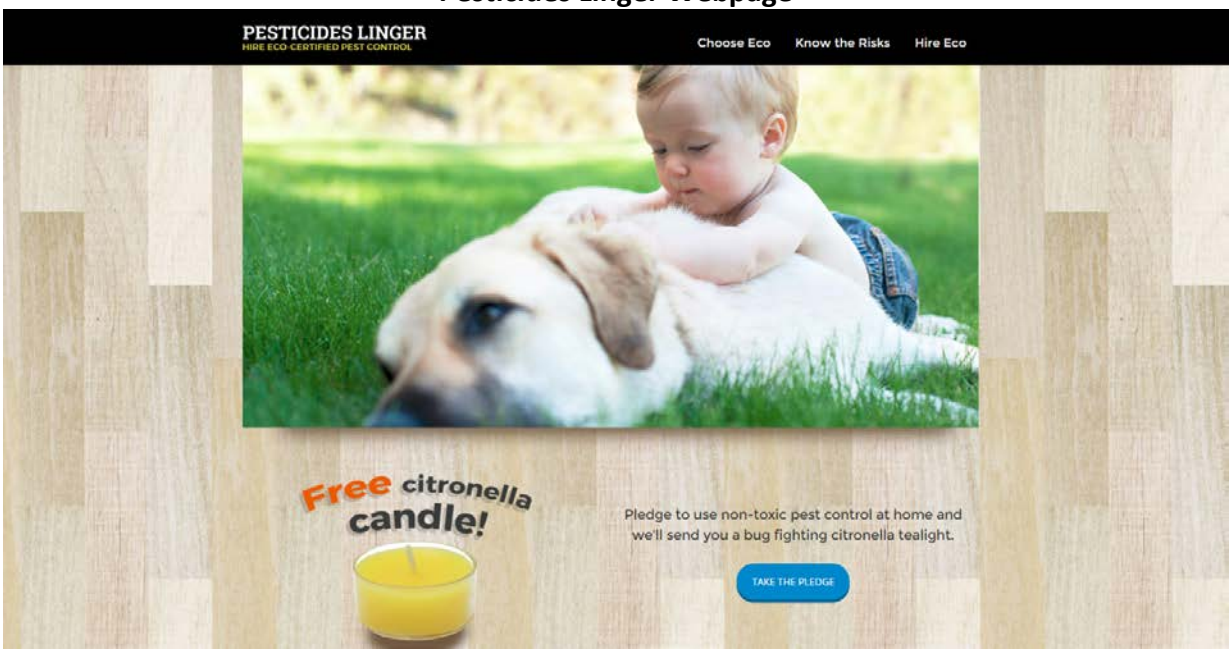
Students from Pittsburg High School working in the garden at the Rodgers Ranch community event.

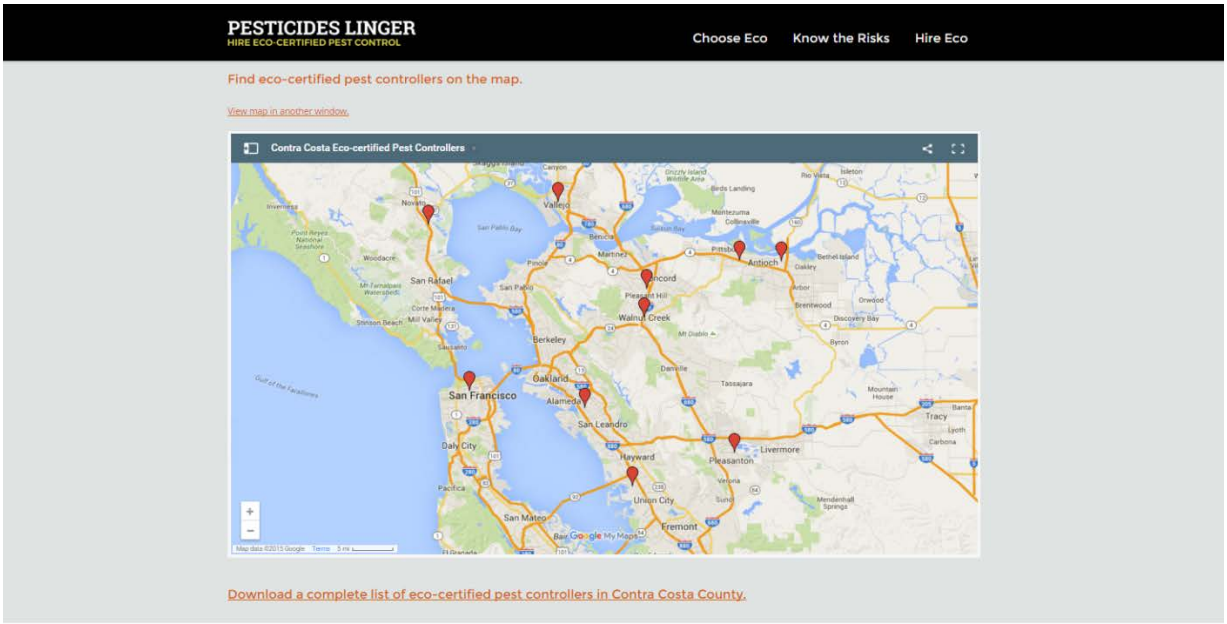
Questions collected at community events (100 in total)

1	How do I get rid of ants naturally?	Popular question
2	How do I deal with rats?	Popular question
3	How can I tell the difference between rats and mice?	
4	How can I deal with bed bugs naturally?	
5	How should I deal with spiders like daddy long legs in the house?	
6	What are some good natural mosquito repellants?	
7	Is deet, the chemical in mosquito spray, dangerous for human health?	
8	How can I prevent mosquitos?	Popular question
9	What can I do about termites?	Popular question
10	What is deer resistant? (Tip: Usually the most aromatic plants)	Popular question
11	Mealie bugs are a big issue.	
12	White flies are a big issue, especially in the greenhouse because of the limited circulation.	
13	Ground squirrels have been a problem for residents, even in "Our Garden." (Tip: That's why there's the eletric wire here. It just gives them a shock; it doesn't kill them)	Popular question
14	Crickets are a common problem. We've lost a lot of plants to crickets, especially the tender new shoots. (Tip: that's why we covered some of the plants with netting.)	
15	Birds can be a problem. The netting helps with that, but we had some get into the greenhouse.	
16	Rats and gophers are big pest problems (Tip: We use traps for them).	Popular question
17	Gophers and ground squirrels seem to be top issues in Walnut Creek.	Popular question
18	Many people want to know: What should I do about the drought? What should I plant?	Popular question
19	Flies in the compost can be an issue.	
20	Aphids are a common problem. (Tip: Most of the time, you can just wash them off.)	Popular question
21	Many residents are unsure how much to water their plants, especialy since we're in a drought.	
22	Coddling moth is something our apples can get.	

PESTICIDES LINGER

Pesticides Linger Webpage





Eblast sent to Contra Costa County residents who pledged to go eco

Subject Line: Thank you for going green!

Thanks for stopping by our booth!

Contra Costa Clean Water Program is grateful for your pledge to make our community's water cleaner and residents healthier by the use of nontoxic pesticides.

Our goal is to have **450** Contra Costa County residents pledge to use nontoxic pest control by December 1, 2015. At City of Oakley's Harvest Festival, we received 43 pledges--a good start, but we want *more*.

Help us reach our goal by forwarding this email to your friends and asking them to pledge to go eco. In return for their support, we'll send them a *complimentary bug-repelling citronella tealight* in the mail. A win-win!

Click Here to Pledge To Go Eco

Sincerely,
the Contra Costa Clean Water Program team

eBlast sent to Contra Costa County residents

Subject Line: Make a friend. Give eco pest control.

PESTICIDES LINGER View this email in your browser

Share the love!

Did you know that more than 78% of homeowners who hire pest control professionals ask for an eco-friendly option? Think about it. Roughly three out of every four of your bug-zapping friends, work colleagues, fellow parents and dog-park buddies are asking to go eco.

Why not give them a hand? Forward this coupon and let them know that they can get 25% off eco-certified pest control. They can even pledge to go eco and receive a free citronella candle!

Contra Costa Clean Water Program

wants to help YOU go eco!

Visit one of our partner eco-certified pest control operators for 25% off your first service.

OUR PARTNERS

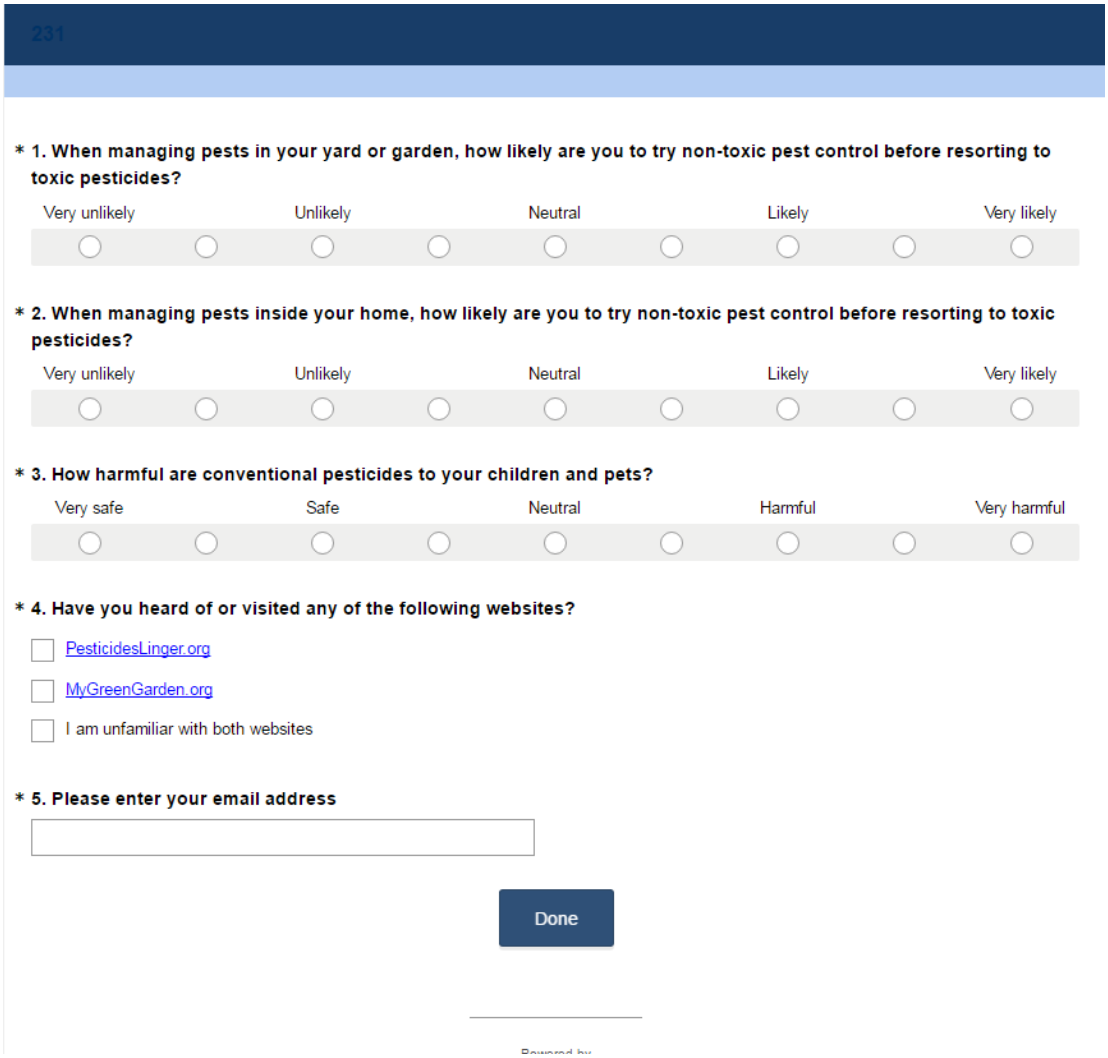
- Pestec
- Atco Pest Control

25% OFF

Receiving email addresses and pledges from Contra Costa County residents at local outreach events

REPORTING / SURVEYING

Survey questions for Contra Costa County residents



231

* 1. When managing pests in your yard or garden, how likely are you to try non-toxic pest control before resorting to toxic pesticides?

Very unlikely | Unlikely | Neutral | Likely | Very likely

* 2. When managing pests inside your home, how likely are you to try non-toxic pest control before resorting to toxic pesticides?

Very unlikely | Unlikely | Neutral | Likely | Very likely

* 3. How harmful are conventional pesticides to your children and pets?

Very safe | Safe | Neutral | Harmful | Very harmful

* 4. Have you heard of or visited any of the following websites?

- [ ] PesticidesLinger.org
- [ ] MyGreenGarden.org
- [ ] I am unfamiliar with both websites

* 5. Please enter your email address

Done

Attachment 7.2

Bringing Back the Natives Garden Tour - 2016 Final Report

Bringing Back the Natives Garden Tour

1718 Hillcrest Road
San Pablo CA 94806
(510) 236-9558

mailto:Kathy@KathyKramerConsulting.net

http://www.BringingBackTheNatives.net

2016 Final Report

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

from City of Santa Monica garden/garden

Why a Native Plant Garden Tour?

The spring, 2016, Bringing Back the Natives Garden Tour was held in order to showcase pesticide-free, water-conserving gardens that provide habitat for wildlife, reduce solid waste, and contain 60% or more native plants.

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

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

A nine-year study of water use, green waste generation, maintenance hours, and maintenance labor costs between a traditional garden and a California native plant garden was conducted by the City of Santa Monica between 2004 and 2013.

The results of this study showed that the native garden uses 83% less water; generates 56% less green waste, and requires 68% less maintenance than the traditional garden.

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

2016 Bringing Back the Natives Garden Tour events: Tour; Native Plant Sale Extravaganzas; and Workshops

The Bringing Back the Natives Garden Tour has now expanded its offerings to include not only the spring Tour, but also three Native Plant sales (October, Valentines Day, and the week-end of the Tour), as well as a series of workshops that are offered in both the fall and spring. These are described below.

Garden Tour
The Twelfth Annual Bringing Back the Natives Garden Tour, which took place on Sunday, May 1, 2016, showcased thirty six gardens and nurseries located in eighteen cities and unincorporated areas in Alameda and Contra Costa counties (Alameda, Albany, Berkeley, Concord, Danville, El Cerrito, Lafayette, Livermore, Martinez, Moraga, Oakland, Piedmont, Pleasant Hill, Pleasanton, Richmond, San Leandro, San Lorenzo, and Walnut Creek).

A variety of gardens were featured on the tour. The gardens ranged from Al Kyte's forty year old wildlife habitat to a number of gardens that had been recently installed, and from large lots in the hills to small front gardens in the flats. Tour gardens contained everything from local native plants to the horticulturally available suite of natives from throughout California. Twelve of the gardens were designed and installed by owners, and the rest were designed and installed by professionals. Most the gardens were landscaped with between 80% and 100% native plants.

The tour received overwhelming interest from the public; 5,127 people pre-registered for the Tour. Same-day registration sites were set up at ten gardens, and accommodated 373 walk-in registrants, for a total of 5,500 registrants. The walk-in registration sites were set up in Berkeley, El Cerrito, Livermore, Martinez, Moraga, Oakland, Pleasant Hill, Pleasanton, Richmond, and San Lorenzo.

On the day of the tour 10,644 garden visits were made. See the end of this report for a list of the number of visitors counted at each garden.

More than 120 volunteers either worked at gardens for a half-day shift on the day of the tour, or helped with tour preparation and clean-up, contributing more than 400 hours of time to the tour. The 29 hosts put in countless hours preparing for the tour, and more than 200 hours on the day of the event.

Native Plant Sale Extravaganzas
More than $12,000 worth of native plants were sold in the spring Native Plant Sale Extravaganza, which took place on April 30 and May 1, 2016. Nearly $7,000 worth of natives were sold during the Spring 2016 Valentines Day sale.

Workshops
In the fall of 2015 and the spring of 2016 a series of workshops were coordinated. These included hands-on sheet-mulching workshops; how to install drip irrigation workshops; two workshops on how to design a native plant garden that will provide color and interest throughout the year; two workshops on how to replace a lawn with water-conserving alternatives; and four tours of a large organic garden that stores 10,000 gallons of rainwater on-site, has chickens, and contains extensive native and edible gardened areas. This year all but two of the workshops filled, early.

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

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

In order to attract hosts and volunteers, and to thank them for their time, two Garden Soirees—free, private tours of native plant gardens—were held in 2016. Garden Soirees offer host gardeners and volunteers the opportunity to see tour gardens that they would otherwise miss. They also create a feeling of camaraderie between hosts and volunteers, and provide a venue for people who are both knowledgeable and passionate about gardening with natives to meet and exchange information.

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

Sponsors of the 2016 tour

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

$10,000
Contra Costa Clean Water Program

$7,500
Jiji Foundation

$4,000
Contra Costa Water District

$3,000
East Bay Municipal Utility District

$1,500
California Native Plant Society (East Bay Chapter)
City of El Cerrito
City of Pittsburg

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

$500
Netafim

Host Gardeners
The gardens selected to take part in the tour are chemical-free and water-conserving landscapes that provide habitat for wildlife. Hosts were chosen because of their willingness to be on site on the day of the tour to talk with visitors about their gardens, and their enthusiasm for, and commitment to, educating others about how to garden in environmentally sensitive ways.

Host gardener recruitment began in the spring of 2015 for the 2016 tour. Potential candidates completed an application, and applicants who met the criteria received a site visit. Host criteria were as follows:

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

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

Host Comments from the 2016 evaluations:

- Had many great conversations with those on the tour and it was so very heartening to talk with like minded people!
- I talked to many people who were concerned about water use. And many of them were interested in learning more.
- Lots of people asked me how I use so little water.
- Many people asked about how much water was used; our water bill {which was posted] was a great way to show the water use reduction.
- People are eager to learn how to work better with nature and to nurture wildlife. People want to conserve water, and garden without pesticides.
- Kathy K's organization and support was key to a well-run, pleasure-filled, non-stressful (even with 500 + visitors) experience. She is clear, thoughtful, well-organized, and articulates the goals of the tour in clear language. Kathy is reliable, and encouraging. Her love for this work, and sense of the value and purpose in it, are clear and inspiring. The tour guidebook is beautiful, well-organized, and informative..... very helpful. The ticket system is clear. Kathy's help with making plant labels was excellent – and people really want to know the plant names.
- Still a wonderful and important and ambitious idea and so wonderfult o see people's eyes light up at the idea that natives are sooo beautiful.

- Thank you for putting together this to tour; I am honored to be chosen as a garden host, and really loved the feedback we got from our guests.
- Thanks for the year-long effort it takes to organize the tour. It continues to be a valuable resource for the community!
- The book is a fantastic resource. There were lots of complements on the book, as a great resource for throughout the year. The majority of the people who visited were people who WANT to convert their gardens as opposed to people who already have native gardens. They were very appreciative of any information they could get.
- The garden tour is a great event. Through it, thousands of people are influenced, and learnt to garden with nature's principles.
- You are a marvelous organizer. Our day was a great success.
  Over 400 people came through our garden. People loved the garden, and appreciated the natives, the wildflowers in bloom, the caterpillars and bees in evidence, the music, the talks, and the plant sale. The Tour has a widespread influence in making people aware of the beauty and value of native plants, and giving them the knowledge and resources to act on that awareness by incorporating native plants into their lives. Having our garden on the tour brings us great happiness, and a feeling of helping to make the world better. We would love to be on the tour next year.
- It was a great surprise to have Kathy and Mike visit our garden at the end of a beautiful Tour day. Thank you, Kathy, for organizing this great garden show. Thanks to Kathy, we discovered beautiful native California drought tolerant plants and gardens years ago, before the official drought. Inspired, we made plans to change our own garden. Thanks to her, we figured out how and with whom to design and install our own back garden in 2012, and after that the front garden in 2014. Yes, a garden can look good without a lawn and, no, It does not take more time than mowing the lawn, but it still can look better. Today, with help from multiple volunteers, including lovely neighbors at our greeting table, it was great to share our garden. In all, we mostly enjoyed hearing that the 643 people that came through our garden had a great day; that made our day.

Volunteer Comments from the 2016 evaluations:

- As in previous years, the tour is extremely well organized and executed. Thank you, Kathy, for making this such a pleasurable experience.
- It's a fabulous day. Well-organized, instructive, and fun.
- Love, love, love this Tour! I look forward to it every year.

Pledges

This year, for the first time, during the registration process tour participants had the opportunity to pledge to undertake one or more environmental action.

Research has shown that people who pledge to take an action are very likely to follow up and do it. The text on the website read:

> Might you be willing to take a healthy lawn and garden pledge?
>
> Garden chemicals can be harmful to humans, pets, wildlife, creeks, and the Bay. The good news is there are many surprisingly easy ways to care for your lawn and garden that avoid putting your family, pets, and neighbors at risk.
>
> All of the beautiful Bringing Back the Natives Garden Tour gardens are managed without the use of pesticides. If these hosts can garden without the use of pesticides, you can, too!
>
> Are you ready to join Bringing Back the Natives Garden Tour hosts in pledging to restore the Earth one garden at a time? Your family, pets, neighbors, and the birds and bees will thank you.
>
> If a pledge to eliminate pesticide use is too big a step to take right away, you can pledge to reduce your pesticide use instead.
>
> * I pledge to reduce or eliminate pesticides like "weed and feed" on my lawn. *(Weed and feed products are persistent, bioaccumulative toxic substances linked to cancers and to reproductive, immunological, and neurological problems. Some of the herbicides in chemical weed and feeds—especially 2, 4-D—have been linked to increased rates of cancer in people and animals.)*
>
> * I pledge to reduce or eliminate the use of rodenticides. *(Anticoagulant mouse and rat poison also kills dogs and cats, hawks and owls, and many other species of wildlife.)*
>
> (I pledge not to use insecticides. *(A garden and lawn ecosystem in balance is home to birds, native plants, and insect life, which support each other and keep one another in check. Lawns and gardens free of synthetic chemicals provide much-needed habitat for wildlife, and they are much safer for you, your family, and your pets.)*
>
> * I pledge to remove part or all of my lawn, eliminate pesticide and herbicide use, and create a wildlife habitat in part of my garden.

"I pledge to" results:

reduce or eliminate pesticide use	68%
reduce or eliminate the use of rodenticides	68%
not to use insecticides	64%

remove part or all of my lawn, eliminate pesticide and herbicide use, and create a wildlife habitat in part of my garden	60%

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

Responses by Tour year

What do you want to learn from the tour?	**2012**	**2013**	**2014**	**2015**	**2016**
How to select native plants	72%	83%	69%	71%	69%
How to reduce water use	51%	58%	57%	62%	49%
How to garden for wildlife	51%	56%	45%	46%	49%
How to reduce or eliminate pesticide use	30%	33%	25%	25%	24%
How to replace a lawn with a garden	30%	33%	30%	33%	26%
How to compost	19%	23%	18%	17%	16%

Evaluations
There was a return of 342 registrant evaluations, with 99% of those filling out the evaluations rated the tour "Excellent" or "Good."

86% of those who completed the evaluations were interested in entering the drawing for the free front yard garden design. (The free front yard garden design was won by Mona Hansche, of Martinez.)

95% percent of the people who completed the evaluation said they felt the Tour did inspire them to garden without pesticides, and while using less water.

This year 60% of the registrants were repeat visitors, and 40% were attending the tour for the first time.

Motivation and Behavior Change

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

Registrants commented:

- The Tour is THE BEST tool out there right now to inspire people to change their landscape.
- I'm totally inspired. I feel the native gardens are so much more attractive than lawns, as well as being water conserving and attracting birds, bees, and butterflies.
- There were very knowledgeable volunteers and home owners at every stop, and it is very inspiring to save water with natives!
- Yes! Simply by showcasing gardens where natives comprise a large percentage of the plants is inspiring and teaching how to use less or no pesticides and less water because natives require less of both.
- Can't think of a better way to get the message across than showcasing the beautiful gardens and hearing the heartfelt stories by the owners.
- The information provided and seeing real gardens that follow these principles was terrific.
- It is so helpful to see how beautiful and low maintenance native plant gardens are.
- My husband and I were very impressed with all of the "green" garden ideas. We have been trying to come up with ideas on our own to do more, and this really inspired us! We are transforming our backyard as we write this!
- For me, the biggest "aha" was how native plants expand the population of native bugs, which then feed native birds & other wildlife.
- Seeing is believing. When you see what people have done you can translate some of their ideas to your own garden.
- The shear beauty of the gardens is inspirational, and the guides are knowledgeable and enthusiastic.
- The gardens spoke for themselves!
- The tour provides a variety of gardens for viewing that inspire and educate the public to join in the movement. I feel very inspired to begin the process!
- The tours provide lots of examples of plants and designs to fit different needs.

- There were homes of all types, all committed to principles of sustainability. I also very much like the tips in the book. There is good information in it!

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

Repeat Registrants
85% of registrants who had attended a previous Bringing Back the Natives Garden Tour, and who filled out the evaluation form, said they had changed their gardening practices because of their participation in the Bringing Back the Natives Garden Tour.

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

This table shows that repeat visitors were highly motivated to make changes in their gardens.

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

ITEM	Began after participation in a previous BBTN Tour	Plan to do this
1. Incorporate native plants into our garden.	20%	25%
2. Group plants of similar water needs.	17%	36%
3. Encourage birds, butterflies, etc. with plant choices, food, shelter, and water.	15%	24%
4. Increase the density of plantings to out-compete weeds.	14%	47%
5. Incorporate drought-resistant plants into our garden.	13%	20%
6. Tolerate some insect damage to pla	10%	13%
7. Mulch with leaves, grass, wood chips, etc.	10%	16%
8. Install efficient irrigation (such		

as drip, timers, soaker hoses).	9%	32%
9. Reduce/eliminate insecticide/ herbicide use.	8%	6%
10. Reduce the size of our lawn.	6%	26%
11. Amend soil with compost.	6%	17%
12. Minimize hardscapes (patios, decks).	4%	12%
13. Compost yard waste and kitchen scraps at home.	4%	11%
14. Grasscycle (leave grass clippings on the lawn).	2%	8%

First-time registrants
The tour was highly motivating to the first time registrants who completed the evaluation.

The question was, "How do you manage your garden?" The following are the percent of people who responded that they planned to begin managing their garden in this way.

ITEM	Plan to
1. Incorporate native plants into our garden.	56%
2. Group plants of similar water needs.	54%
3. Increase the density of plantings to out-compete weeds.	52%
4. Encourage birds, butterflies, etc. with plant choices, food, shelter, and water.	46%
5. Incorporate drought-resistant plants into our garden.	44%
6. Install efficient irrigation (such as drip, timers, soaker hoses).	36%
7. Amend soil with compost.	33%
8. Reduce the size of our lawn.	30%
9. Tolerate some insect damage to plants.	22%
10. Mulch with leaves, grass, wood chips, etc.	20%
11. Reduce/eliminate insecticide/herbicide use.	19%

12. Compost yard waste and kitchen scraps at home.	17%
13. Grasscycle (leave grass clippings on the lawn).	13%
14. Minimize hardscapes (patios, decks).	13%

Number of visits made to each garden

BAYSIDE CITIES

Alameda

Cyrus Musiker and Andi Duncan	176
Williams Family	203

Albany

Leslie Zander	341

Berkeley

California Native Bee Garden	304
Mardi and Jeff Mertens	403
Glen Schneider	341

El Cerrito

Donna Bodine	290

Oakland

Carol Baird and Alan Harper	345
Friends of Sausal Creek's Native Plant Demonstration Garden	309
Sue Duckles and Cherie Donahue	361
Joan Lohman and Jenn Biehn	444
Lorraine Mann	512

Piedmont

Jean Hansen	602
Nancy McKee-Jolda and Robert Jolda	545

Richmond

Paul Carman and Anita Pereira	454
Dave Drummond	454

San Lorenzo

San Lorenzo High School	190

INLAND CITIES	
Danville	
Maria Sargent	316
Lafayette	
Richard and Sandy Brehmer	545
Livermore	
Ed and Liz Folsom	247
Martinez	
Chris and Marianne Dundon	363
Jean Halford	523
Nancy Salsig	412
Moraga	
Al and Barbara Kyte	351
Pleasant Hill	
Gaston and Ariane Habets	643
Pleasanton	
Melinda and Steve Ballard	247
Ward and Pat Belding	223
Walnut Creek	
Erik and Shellie Jacobson	500
	10,644

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

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

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

It's an inspiring tour! We loved it so much last year that we dug up our back yard and planted a mostly native garden. Now we are real plant geeks. Thanks so much for what you do. We hope to enter our garden for the tour next year.

This has been a spring highlight for many years. And, the result is my own new landscaping. The Tour offers great encouragement to see what can be done. Thanks!!!

It was really a wonderful way to get motivated to do more with natives, and the variety of garden examples was outstanding! Thanks to all of you for all of the planning and hard work that went into this very large scale event. We can hardly wait for next year!

It's fantastic. So well organized. The booklet and website are useful. The ggarden hosts are friendly. Really: I'm in awe. Thanks for all the countless hours of work that clearly went into this.

I love this tour! It is so well-organized and the gardens are superior to many I've seen on other tours. I always learn many things that I can put to use right away in my garden. We are so lucky to have this tour in the East Bay, right at our doorsteps, which showcases natives, a very important endeavor in this day and age of climate change and drought.

This was GREAT! I liked that I could buy seeds at Paul Carman's place. The enormous amount of work you all put into this event really shows; it is well-organized, the information went out with plenty of time to study the garden guide, and thegardens offered wildly different approaches. Thank you, thank you, thank you. Enjoy your rest now!

This tour has been wonderful in the level of awareness it has brought to the concept of gardening with natives.

Beautifully designed tour booklet. Thank you for educating the public via tours - most interesting and informative in presenting design & plant options.

This is a great tour! Thank you for all of the time and effort that goes into planning and implementing this event. It is a wonderful opportunity to be able to visit so many gardens and get ideas on how to create a native garden and wildlife habitat. Thankyou!!!

The tour book was impressive, with garden descriptions, directions, lectures, use of discounts, and the quality of the booklet itself.

Wonderful tour!! The organization is excellent and the enthusiasm of participants inspirational!

The tour is a great way to educate the Bay Area about the importance of native plants for wildlife preservation and drought tolerance.

This tour is well-run, well-organized, very educational, and fun. Really wonderful. Every one is so nice at the gardens. We enjoy it a lot.

I appreciate the garden owners for spending the whole day answering people's questions!

Excellent event. The gardens were great, and the improved labels were fabulous. I talked to friendly owners at many gardens and it makes a lot of difference. The volunteers were fabulous and knowledgeable also.

Always inspiring!

This is a wonderfully organized event; my hat goes off to you. Thanks to all the hosts who opened their gardens to the public. Great plant sale options this year, too!

Very well-organized. This was my first time and I was impressed!

Amazing tour and knowledgeable hosts/presenters

Beautiful gardens. I love those that are more than 90% native.

Congratulations on such a beautiful and informative, well-organized tour.

We learned a lot during the tour and really enjoyed it. We really appreciate that these homeowners were willing to open their gardens to us! Thank you so much for organizing this event.

Excellent catalogue. Obviously a great deal of love and hard work go into this tour. Keep it up. It is wonderful!

Great job on organizing the tour. The guide is amazing and gives all details needed to get to and enjoy the gardens. Thank you for all the hard work.

Great variety of gardens. Accurate descriptions with particulars noted so you could choose based on your interests. Thanks!

Hosts and volunteers were great. Really appreciated native plant sales at some of the gardens, too.

I appreciate all the work and planning that made this day a success. Thank you!!

I commend you for all the work you do in setting up this tour annually. You provide a great service to the community.

I know of no other event that is so well-organized, and so representative of the native plant movement. It allows people of all income and educational brackets to attend, which is very rare. I am very grateful for the opportunity to visit native gardens.

The volunteers were all so welcoming; it was a pleasure. This must take an incredible amount of effort and attention to detail, but comes off so smoothly!

Well-organized! Easy to find places, warm and friendly owners and volunteers. Wonderful day!

Wonderful event, will be telling neighbors.

I loved it.

Kathy, we want to commend you on a wonderful day. My husband and I enjoyed the Tour immensely. It was so amazingly well-organized. We thought the booklet was superb! We lost service on our iPhone at the beginning of the tour (don't ask…our phone was hacked…all ok now) so we found your great written "old fashioned" driving instructions invaluable! I know you work very hard on this event, so just know that it all paid off magnificently. Good luck for next year.

I so appreciate your working all year to make this a delightful, informative, and interesting day.

I think it is really a great thing that you have so many volunteers who are willing to participate and to display their gardens.

The garden guide was very informative. I liked knowing which gardens were professionally designed, and which were done by the owner.

I'm a new homeowner, just planning my first real garden, and your resources and the opportunity to visit these beautiful gardens have been very helpful. I really appreciate the incredible amount of work that must go into organizing such an extensive and well-planned day!

The tour is amazing, and the classes fabulous! Thank you for all of your hard work!

It's nice to have the friendly volunteers at the sites.

It's really nice to be able to self guide the tour. It's always an enjoyable day for me and I always learn new things and find things Iwant to go home and research. I really like to be able to purchase plants at the gardens, it just adds more fun to the tour. You do a great job with the tour and I appreciate being able to attend every year!

Just loved the gardens this year. Before and after photos were very helpful. Thought the owner's talk about affordability and how he did it and available rebates was fabulous.

Love the fact that the book is mailed well in advance so it gives time to figure out an itinerary. All the homeowners and volunteers are very gracious.

Love the tour! Look forward to it every year!

Loved the tour. Really great brochure. Very organized. Nice people. Educational and inspirational.

Lovely experience—enjoyed the variety of gardens available. Gives good ideas on how to improve one's garden.

So inspirational. I can really see and appreciate the beauty and need for going native and drought tolerant. Inspired by the great work people have put into their properties. Thank you to all for putting this together for the enjoyment of many visitors. A fun day. Looking forward to next year already.

Special praise and thanks to all who participate in putting on this event. I look forward to it all year long, every time learning more about native gardening. I am now propagating some of my natives to expand my plantings and share with friends and neighbors.

Superb, professional booklet. Very well-organized, and the plant lists are very helpful. The plant labels at the gardens are extremely useful.

Thank you for your hard work putting this together.

Thank you to all the families who opened their private gardens.

Attachment 7.3

Watershed Grant Awards 2016

Watershed Grant Awards 2016

Applicant	Project Name and Objective	Requested	Awarded
Save Mount Diablo	Marsh Creek Water Quality and Riparian Stewardship Project	$10,000	$10,000
Citizens for a Greener El Sobrante	Planning grant for LID: Rain Garden installation and capacity building	$20,000	$10,000
CCRCD – Alhambra Watershed	Watershed coordination for Alhambra Creek/ Peyton Slough Watersheds and Friends of Pinole Creek	$17,500	$20,000
SPAWNERS	San Pablo Creek Watershed Stewardship Program	$20,000	$20,000
Earth Team	Aqua Team, Pinole Valley High School	$14,010	$0
Friends of Marsh Creek Watershed	Friends of Marsh Creek Watershed Program	$20,000	$20,000
CCRCD – Rodeo Creek	Rodeo Creek Community Watershed Stewardship Program	$19,787	$20,000
Total		**$121,317**	**$100,000**

Attachment 9.1

Contra Costa Clean Water Program Our Water Our World Store Partnership Program Report, 2015-2016

OUR WATER — OUR WORLD

Contra Costa Clean Water Program

Our Water Our World Store Partnership Program Report

2015 - 2016

Report prepared by Debi Tidd

"The information will be what I will be telling customers".
From training evaluation, Ace, Pleasant Hill

"Definitely don't want to keep selling extremely toxic pesticides."
From training evaluation, Ace, Martinez

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OUR WATER — OUR WORLD

PROGRAM OVERVIEW

Twenty-nine stores throughout Contra Costa participated in the OWOW Store Partnership Program this year. Two Richmond stores (Annie's Annuals and Urban Farmer) that were part of a limited-visit contract extension last year, were added back into this year's contract. Debi Tidd was the lead on the contract, with sub-contractors Steve Griffin, Patrice Hanlon, and Annie Joseph working at some stores and events.

Tasks for the program included:

- Store-set ups with shelf talkers and fact sheet racks.
- Store trainings for staff.
- Store mentoring – replacing shelf talkers and fact sheets, working with staff and customers, following up on staff questions and bringing in new resources.
- Outreach: tablings at stores for customers and presentations/booths at public events.
- End Cap Displays: Developing and/or labeling end caps and less-toxic product displays, including working with vendors on their displays.
- Program assessment through evaluations and surveys.

NUMBERS AT A GLANCE

- 29 stores participating in the partnership.
- 29 store set-ups with shelf talkers, fact sheet racks and supplemental materials.
- 15 store trainings provided to 18 key stores.
- 91 staff trained at formal staff trainings; 70+ additional staff trained in-aisle during informal, mentoring visits.
- 11 outreach/tabling events for stores (approximately 575 people reached at tablings plus an additional 500+ customers we worked with in-aisle while mentoring stores).
- 7 additional outreach/publicity events (5540 people reached; see locations and numbers of additional programs below).

PARTICIPATING STORES – CHANGES AND STORE LIST

This year, we had some important changes in our stores:

- The Navlet's Garden Center chain was purchased by Sloat Garden Centers. In our County, all of the stores remained open and in the same locations. Sloat is extremely supportive of the OWOW program and this change has allowed us to have a greater presence in their five stores.

- Two of our OSH stores changed locations. The San Ramon OSH moved from Bollinger Canyon to Crow Canyon Place. The Concord OSH on Monument moved to Pleasant Hill, and is now on Crescent Plaza.

Here is the complete roster of stores participating in the 2015 – 2016 program:

- Home Depot, 11939 San Pablo Ave., El Cerrito
- Home Depot, 2090 Meridian Park Blvd., Concord
- Home Depot, 2750 Crow Canyon Road, San Ramon
- Home Depot, 2300 N Park Blvd., Pittsburg
- Home Depot, 5631 Lone Tree Way, Brentwood
- Home Depot, 1624 Sycamore Ave., Hercules
- Ace Hardware, 1530 Contra Costa Blvd., Pleasant Hill
- Ace Hardware, 3610 Pacheco Blvd., Martinez
- Ace Hardware, 4451 Clayton Rd., Concord
- Ace Hardware, 3211 Danville Blvd., Alamo
- Ace Hardware, 8900 Brentwood Blvd., Brentwood
- Ace Hardware, 510 Sunset Drive, Antioch
- Ace Hardware, 10057 San Pablo Ave., El Cerrito
- Ace Hardware, 3100 Main Street, Oakley
- OSH, 3181 Crow Canyon Place, Suite B, San Ramon
- OSH, 155 Crescent Plaza, Pleasant Hill
- OSH, 5400 Ygnacio Valley Rd., Concord
- OSH, 1440 Fitzgerald Dr., Pinole
- Sloat Garden Center, 1555 Kirker Pass Rd., Concord
- Sloat Garden Center, 2895 Contra Costa Blvd., Pleasant Hill
- Sloat Garden Center, 800 Camino Ramon, Danville
- Sloat Garden Center, 6740 Alhambra Valley Rd., Martinez
- Sloat Gardens, 828 Diablo Rd., Danville
- Orchard Nursery and Florist, 4010 Mt. Diablo Blvd., Lafayette
- Moraga Garden Center, 1400 Moraga Rd., Moraga
- McDonnell Nursery, 196 Moraga Way, Orinda
- Morgan's Home and Garden, 2555 E. 18th Street, Antioch
- Urban Farmer Store, 2121 Joaquin St., Richmond
- Annie's Annuals, 740 Market Ave., Richmond

PROGRAM COMPONENTS

PROGRAM ADMINISTRATION AND DEVELOPMENT

Tasks here include inventorying materials, ordering and picking up training materials, making copies for training packets and handouts, collating and creating training packets, preparing

materials and powerpoints for store trainings and special events, making labels for shelf talkers, researching pests & products and following up on questions and concerns from store staff, working with store management to get new stores into the program, and writing up reports.

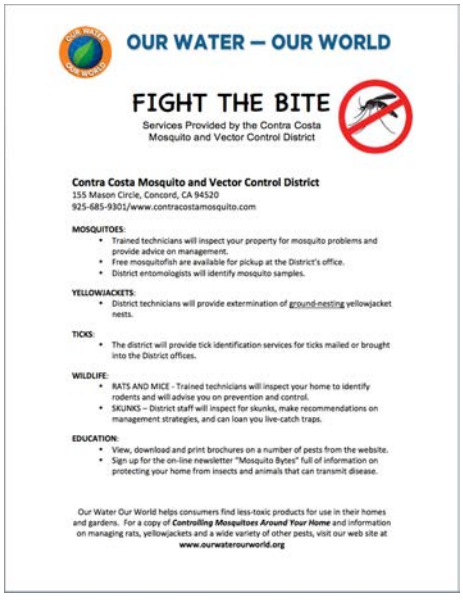
This year, a lot of work went into revising the look of the program and the materials that go into stores. I worked as part of a committee to re-design/revise the logo, shelf talkers, the fact sheets, the fact sheet rack sides and header, and the pocket guides. The shelf talkers are already in place, and the new fact sheets and pocket guides will go into the stores this summer.

Each year I also develop and provide stores with a variety of supplemental materials in response to staff and customer question and concerns. Here are some of the materials written and/or revised that were provided to stores:

- Fall and Winter Garden Checklist – this new handout included a reminder about the correct timing for dormant spraying to reduce the use of chemicals when they are not effective.

- Fight the Bite: Services Provided by the Contra Costa Mosquito and Vector Control District: this Contra Costa specific handout provides information to residents about free services such as mosquito and yellowjacket management provided by the County. There is a lot of interest in stores on managing mosquitoes because of the Zika virus, so we are concentrating on less-toxic management techniques.

- Monthly Pest Calendar: We have three pest calendars, one for OSH, one for Home Depot and one general version. All of the calendars were revised to reflect each store's new products and pests of concern.



OUR WATER – OUR WORLD

FIGHT THE BITE

Services Provided by the Contra Costa Mosquito and Vector Control District

Contra Costa Mosquito and Vector Control District
155 Mason Circle, Concord, CA 94520
925-685-9301/www.contracostamosquito.com

MOSQUITOES:
- Trained technicians will inspect your property for mosquito problems and provide advice on management.
- Free mosquitofish are available for pickup at the District's office.
- District entomologists will identify mosquito samples.

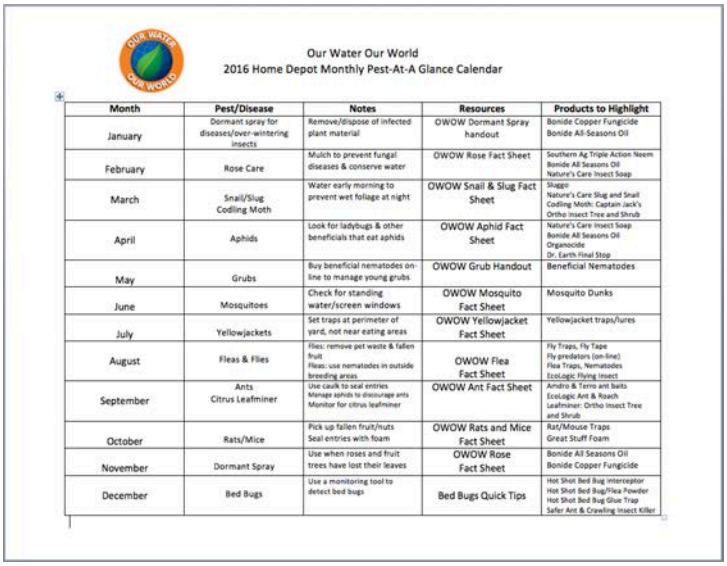
YELLOWJACKETS:
- District technicians will provide extermination of ground-nesting yellowjacket nests.

TICKS:
- The district will provide tick identification services for ticks mailed or brought into the District offices.

WILDLIFE:
- RATS AND MICE - Trained technicians will inspect your home to identify rodents and will advise you on prevention and control.
- SKUNKS – District staff will inspect for skunks, make recommendations on management strategies, and can loan you live-catch traps.

EDUCATION:
- View, download and print brochures on a number of pests from the website.
- Sign up for the on-line newsletter "Mosquito Bytes" full of information on protecting your home from insects and animals that can transmit disease.

Our Water Our World helps consumers find less-toxic products for use in their homes and gardens. For a copy of ***Controlling Mosquitoes Around Your Home*** and information on managing rats, yellowjackets and a wide variety of other pests, visit our web site at **www.ourwaterourworld.org**



Our Water Our World
2016 Home Depot Monthly Pest-At-A Glance Calendar

Month	Pest/Disease	Notes	Resources	Products to Highlight
January	Dormant spray for diseases/over-wintering insects	Remove/dispose of infected plant material	OWOW Dormant Spray handout	Bonide Copper Fungicide Bonide All-Seasons Oil
February	Rose Care	Mulch to prevent fungal diseases & conserve water	OWOW Rose Fact Sheet	Southern Ag Triple Action Neem Bonide All Seasons Oil Nature's Care Insect Soap
March	Snail/Slug Codling Moth	Water early morning to prevent wet foliage at night	OWOW Snail & Slug Fact Sheet	Sluggo Nature's Care Slug and Snail Codling Moth: Captain Jack's Ortho Insect Tree and Shrub
April	Aphids	Look for ladybugs & other beneficials that eat aphids	OWOW Aphid Fact Sheet	Nature's Care Insect Soap Bonide All Seasons Oil Organocide Dr. Earth Final Stop
May	Grubs	Buy beneficial nematodes on-line to manage young grubs	OWOW Grub Handout	Beneficial Nematodes
June	Mosquitoes	Check for standing water/screen windows	OWOW Mosquito Fact Sheet	Mosquito Dunks
July	Yellowjackets	Set traps at perimeter of yard, not near eating areas	OWOW Yellowjacket Fact Sheet	Yellowjacket traps/lures
August	Fleas & Flies	Flies: remove pet waste & fallen fruit Fleas: use nematodes in outside breeding areas	OWOW Flea Fact Sheet	Fly Traps, Fly Tape Fly predators (on-line) Flea Traps, Nematodes EcoLogic Flying Insect
September	Ants Citrus Leafminer	Use caulk to seal entries Manage aphids to discourage ants Monitor for citrus leafminer	OWOW Ant Fact Sheet	Amdro & Terro ant baits EcoLogic Ant & Roach Leafminer: Ortho Insect Tree and Shrub
October	Rats/Mice	Pick up fallen fruit/nuts Seal entries with foam	OWOW Rats and Mice Fact Sheet	Rat/Mouse Traps Great Stuff Foam
November	Dormant Spray	Use when roses and fruit trees have lost their leaves	OWOW Rose Fact Sheet	Bonide All Seasons Oil Bonide Copper Fungicide
December	Bed Bugs	Use a monitoring tool to detect bed bugs	Bed Bugs Quick Tips	Hot Shot Bed Bug Interceptor Hot Shot Bed Bug/Flea Powder Hot Shot Bed Bug Glue Trap Safer Ant & Crawling Insect Killer

STORE SET-UPS

Once stores receive their pesticide products for the year and have re-organized their shelves, we come in and do a complete store set-up. OWOW has developed a master "Less-Toxic Product List" which is used to determine which products will receive labels. In addition to pesticides and fertilizers, other sustainable products are labeled including weed block, mouse/rat traps, mulch, etc. During store set-ups we also have the opportunity to work with store staff and customers in-aisle to answer pest management and sustainable landscaping questions.

This year, all of the stores were set up with the new shelf talkers. This new design has brighter colors, a new logo, and is slightly smaller in size. For each shelf talker, we print out a label with the name of the product so that when products are moved around on shelves, the label does not end up under a product not considered less-toxic. In addition, the front and back of the shelf talkers have different logos. This is extremely helpful, because when we have to put a shelf talker behind a tag or on a peg, we can still have the "eco-friendly less-toxic" logo information displayed.

New shelf talkers, front and back sides

Shelf talkers at Home Depot

Fact Sheet Rack

Shelf talker behind store label

Shelf talkers at OSH

STORE TRAININGS

As part of the OWOW program, stores are offered trainings for their staff with detailed information about pesticides and water pollution, identification of beneficials and pests, pest management strategies, and tips for using less-toxic products and working with customers. Trainings are held in-aisle or off the floor in a training room.

With the changeover from Navlet's to Sloat, I was able to increase the number of trainings we usually give since these stores are very involved in OWOW. But In some of our stores where they have cut down on staff, it can be challenging to provide a training. So, in stores where I was not able to do an off-the-floor training, I gave a training in the aisle, or I spoke with individual staff as they became available. Even when I was not able to give a formal training, I made sure the store received training packets so that they could pass the information on to new employees, or use the packets as in-store reference guides.

In most of the stores, the inventory of less-toxic products has grown significantly. During trainings we were able to familiarize staff with the new products, how they work, and how to introduce them to customers. Also, much of the training information included tips on how to keep up their sales of products during a dry year. This included information on avoiding run-off, efficient irrigation systems, organic fertilizers, and the importance of mulch. We also discussed how dry weather impacts plants and pest populations, and the pests they were more likely to see during a drought year. The training packets included two handouts on landscaping during a drought that stores can copy to give out to customers: *Ten Tips for Water-Wise Gardening*, and *Protecting Landscapes During a Drought*.

We provided formal trainings to 18 key stores this year. Each training include information on:

- The connection between pesticide pollution and water quality; how pesticides enter water through storm drains and sewers; pesticides of particular concern; how and where to dispose of pesticide products no longer wanted.
- Common beneficials in the landscape, resources for identifying pests/beneficials and how to use them; incorporating insectary plants into the landscape to attract beneficials; new and invasive pests/diseases.
- The benefits of organic fertilizers (especially during drought years), compost and mulch; nutrient run-off; chemical salt build-up from fertilizers; the importance of building up the soil foodweb.
- Techniques and resources for managing specific pest problems; tips for working with customers on how to use products; basic less-toxic chemical ingredients and how they work on pests; tips for using/selling the less-toxic products and working with customers
- Using on-line resources, including the OWOW 'Ask the Expert' feature and the UC IPM website.

OSH in-aisle training

Sloat, Pleasant Hill training

STORE TRAINING PACKETS

All of the handouts in the training packets were updated this year, and some new handouts were included. In addition to the materials in the packets, stores were provided with laminated bug guides to post, newsletters for retail stores from the UC Statewide Integrated Pest Program, and information on new pests and seasonal concerns.

Each store that participated in a training was also given a hand lens and a copy of *Landscape Pest Identification Card,* a laminated set of cards to help identify pests, diseases and beneficials. In a few stores, managers and staff asked for some additional information or copies of some of my training materials, which I provided.

Here are the contents of the store training packets:

- An Introduction to the OWOW Store Partnership Program
- IPM Basics
- Reading a Pesticide Label
- How Less-Toxic Products Work
- *Ten Tips for Water-Wise Gardening* and *Protecting Landscapes During a Drought*
- Applying Beneficial Nematodes
- Laminated Good Bug/Bad Bug ID
- Lose Your Lawn the Bay-Friendly Way (sheet mulching instructions for lawn reduction projects)
- Monthly Pest-At-A-Glance Calendar
- *Pests Bugging You Pocket Guide*
- Sucking – Chewing Insect Damage
- *10 Most Wanted Bugs in Your Garden* brochure
- Samples of some of the fact sheets
- Additional pest management information sheets on: citrus leaf miner, codling moth, dormant spraying, whitefly, beneficial nematodes, and bed bugs.
- OWOW Resources (websites, books, and the location of local Household Hazardous Waste Collection Sites.)

STORE MENTORING AND RETURN VISITS

On continued visits to stores, we add or replace shelf talkers, refill fact sheet racks, set-up end caps and displays, talk with store staff about new products and pests, make recommendations about new products, research and answer any staff questions, and work with customers in-aisle. These return visits are essential for maintaining our relationship with the stores and keeping the materials stocked. Some stores completely redesign their shelves during the year, and this means that we sometimes have to re-label all of the products. This also allows us time to informally train any new staff in-aisle.

STORE DISPLAYS AND END CAPS/PARTNERSHIPS WITH VENDORS

During our mentoring visits, we work with stores to help choose products for end caps. These end-caps help customers identify seasonal pest problems, and highlight less-toxic products. In a couple of stores we are provided with a dedicated end-cap space that we can stock with less-toxic products. Some of the larger pesticide vendors, such as Scotts, Bayer and Kellogg, alert us to new products, and we work with them to put shelf talkers up on their new wingstack displays and end caps and help promote their new less-toxic product lines.

Yellowjacket end-cap, OSH, San Ramon

Less-toxic product end-cap, Ace, Martinez

IN-STORE OUTREACH EVENTS

This year we participated in 11 in-store outreach events. These tablings/events allow us to work with the public at the point of purchase, to help them identify and solve pest/disease problems, to advise them on less-toxic products and how to use them, and to provide a wide variety of informational materials. It is also an opportunity to remind staff about the program and to answer their questions about pest management and products.

OSH, Pinole tabling

Outreach workshop for customers, McDonnell's Nursery, Orinda

WORKING ON THE BIG PICTURE – INCREASING PROGRAM AWARENESS

Each year we work with store managers and corporate offices to make changes on a large scale. These meetings offer us a chance to recommend new less-toxic products and to point out toxic products that should be phased out. This past year has seen a huge rise in the less-toxic alternatives offered by our stores. Here are some changes we have been working on:

- Meeting with Sloat Garden Center Store Buyer – Each year, we meet with the buyer for all of the Sloat stores to recommend new less-toxic products to carry, and to make recommendations about products that should be discontinued because of toxicity. We also recommend (and sometimes write) articles for their public newsletter and website.

Meeting with the buyer for Sloat stores

- Working with Ace Stores – This year, the owner of three of our Ace stores called for advice on less-toxic products. They were looking for alternatives to toxic herbicides, so I was able to meet with them and advise them on new less-toxic lines to carry. At their request we met again so that I could identify the products they carry that contain imidacloprid, and to make recommendations for replacement products. The owner of these stores, Bill Wygel, was able to get permission from his corporate office to discontinue some toxic products and carry new, less-toxic lines.

- Working with Home Depot Corporate – We have been working with the Sustainability Office of Home Depot Corporate to recommend products to carry and products to phase out. For example this year we were able to recommend they bring in Mosquito Bits, Captain Jack's and Rat X. They have been impressed with the work OWOW has done in their stores, and sent us a letter this year in support of the program. (A copy of this letter is included at the end of this report.) We were also able to meet briefly with Ron Jarvis, the Home Depot's Vice-President of Sustainability, when we attended a UC Davis conference on the use of neonicitinoids.

- Working with OSH Corporate – We continue to work with OSH corporate to help advise them on product choices and to provide training materials to corporate staff.

ADDITIONAL OUTREACH EVENTS

In addition to our regular outreach, a number of special events come up each year that allow us to publicize the OWOW Store Partnership program. Most of these events are not charged to the contract. These events help us to promote and strengthen the OWOW program in several ways. They allow us to:

- Influence the choices store managers and buyers make in placing orders for less-toxic products for their shelves.
- Promote the stores that are part of the partnership in the community for more visibility.
- Work with the public to disseminate fact sheets and information on less-toxic products.
- Provide additional information and training to store managers and staff that have not gone through a formal training.
- Network with stores that would like to become a part of the store partnership program.

Here are some of the outreach events that we were able to be part of this year:

- L & L Trade Show (3,000+ participants)
  This is one of the largest trade shows for the West Coast where many Bay Area stores order their pesticide products for the year. Again this year, we were the only non-vendor allowed to participate. The OWOW booth included fact sheets and handouts, photos of partner stores, samples of less-toxic products and information on less-toxic products. In addition, this year we were asked to make a presentation to attendees on less-toxic pest management.

OWOW booth at the L&L Trade Show

Less-toxic pest management presentation

- NorCal Trade Show (1000+ participants)
  Another large trade show, this one is held is San Mateo every year. Many Bay Area nurseries and hardware stores attend to place orders for pesticide and fertilizer products. We set up an OWOW booth to direct attendees to less-toxic products and to provide pest management solutions.

- C&L Trade Show (1000+ participants)
  This large trade show held is Las Vegas every year. Many Bay Area nurseries and hardware stores attend to place orders for pesticide and fertilizer products. The OWOW booth highlighted new less-toxic products and provided handouts and information to store buyers.

- Sloat Garden Center –Vendor Night (60 participants)
  Each year we set up a tabling at Sloat's vendor night where managers and staff from all of the Sloat stores have the opportunity to meet and learn about new products. We now have five Sloat stores in Contra Costa, so it is a great opportunity to have an impact on what products staff are recommending to customers.

Sloat vendor night

- Home Depot Water-wise Events (5 events - 250 participants)
  Northern California Home Depot stores sponsored a series of water-wise events for the public this year, and OWOW was asked to participate. We set up tables at a number of these events where the emphasis was on protecting water quality. We were able to talk about less-toxic products and strategies for protecting and conserving water.

Tabling at a Home Depot Waterwise public event

- Bay-Friendly Landscape Maintenance Training (3 trainings - 200 participants)
  Bay-Friendly provides a series of classes on sustainable landscaping techniques to professional landscapers. This year we were able to provide speakers on the topic of IPM at three trainings where they provided OWOW materials and taught about IPM basics, water quality issues, using less-toxic products and pest management solutions.

- Sloat Garden Center Speaker Series (30 participants)
  Each year we provide a speaker for local Sloat stores on topics such as beneficial insects and sustainable pest management. At these talks we provide OWOW materials, promote the use of less-toxic products, and introduce customers to shelf talkers and fact sheets.

GROWTH OF LESS-TOXIC PRODUCTS IN STORES

This year we saw a huge increase in the number of less-toxic alternatives carried by our stores. When Sloat Garden Centers bought out the Navlet's stores, they immediately brought in a large selection of eco-friendly products and began phasing out some of the more toxic products. Home Depot stores began carrying a large selection of Dr. Earth products, and the OSH stores are now carrying a good selection of EB Stone products. In addition, many of our Ace stores now offer alternatives to toxic herbicides.

Some of our stores have expanded on their outreach to customers to provide less-toxic alternatives. For example, Annie's Annuals have posted signage to let customers know they are not using neonicotinoids on their plants, and Home Depot has brought in a line of "pollinator plants" to attract beneficial insects.

Annie's Annuals 'no neonicotinoids' signage

Home Depot's new selection of pollinator plants

PROGRAM ASSESSMENT METHODS

We continue to look for ways to assess the program to help us learn what changes to make, which products/pests we need to promote, and how effective the program is at disseminating information to store staff and reaching the public. Here are some of the tools we use:

- Pre-Surveys:
  Store staff that attend trainings are asked to fill out a brief pre-survey before the training begins. This survey is designed to measure their level of knowledge about less-toxic products and water quality issues before the information is covered in the training. We can compare these results to the answers on the final evaluations to help us determine if we are presenting the information clearly in trainings. A summary of this year's pre-survey results is included below.

- Final Evaluations:
  At the close of each training, attendees are asked to fill out a final evaluation form. This survey includes some of the same questions they were asked on the pre-survey along with questions to help us determine how effective the training was, and how it can be improved. The results of these evaluations can be seen below, and were overwhelmingly positive.

- Numbers of customers reached by tablings and special events:
  We keep track of the number of customers we reach through tablings, events and classes at stores, which product/pests we are asked about the most, and which products most often recommended in-aisle. This year we reached about 575 customers at in-store tablings, and provided outreach at events where more than 5540 people were in attendance. In addition, we work with a large number of customers in-aisle whenever we are visiting stores, which adds another 500+ contacts.

- Changing behavior around product purchases:
  There are two ways we can have an impact on behavior around the purchase of products in the stores. First, when working with customers in-aisle, we are often able to convince people to put toxic pesticide choices back and to select a less-toxic alternative. Second, once we are able to train or work with staff in-aisle, they begin recommending less-toxic products to their customers instead of the more toxic choices that they previously recommended.

- Trends/Sales of less-toxic products:
  Each year we can see definite trends in the less-toxic products offered by stores. Numbers of less-toxic choices grew again this year in almost all of our stores, especially in rat/mouse management, neem oils, bio-pesticides and organic fertilizers. In addition, whenever possible we try to get an idea of sales numbers from participating stores so that we can see where there have been increases in less-toxic product sales. Past years

have shown substantial rises in product sales. This year we are hoping to get some numbers from Home Depot stores. Once those numbers become available, I will send in that information.

PROGRAM RECOMMENDATIONS

Here are last year's goal/recommendations, and how we followed up on them:

- Continue to pursue contacts with the Lowe's corporate office to include these stores in the OWOW store partnership program: We continue to pursue partnering with the Lowe's stores, but the high level manager we have been working with is no longer with the company. We will be working with new contacts this year to see if we can pilot a program in one of their Contra Costa stores.
- Update all OWOW materials in stores with new shelf talkers, and new fact sheet headers, and add pocket guides to in-store materials. All of the materials were updated this year. The new shelf talkers are already up in stores. The pocket guides, fact sheets and new rack headers are now available and will go up this summer.
- Continue to look for ways to promote the program and create greater visual awareness of the OWOW logo and shelf talkers. This year we participated in a large number of public events to promote the OWOW program and increase visual awareness of program materials.
- Look into the possibility of including two additional stores that have a large customer base: Home Depot in Martinez and OSH in Moraga. For the 2016 – 2017 contract, we will be adding new stores including OSH in Moraga, Home Depot in Martinez, and Ace in Lafayette.
- Continue to revise/develop OWOW materials: Several new materials were developed in response to customer needs and questions including information on local vector control services, new pest management calendars, and checklists for Fall and Winter garden maintenance.

Here are some recommendations for the 2016 to 2017 program:

- Continue to pursue contacts with the Lowe's corporate office to include these stores in the OWOW store partnership program.
- Continue to update and develop all OWOW materials in stores to reflect changes in products carried by stores and seasonal pest management.
- Continue to look for ways to promote the program and create greater visual awareness of the OWOW logo and shelf talkers.
- Review and revise training evaluation forms.

CLOSING

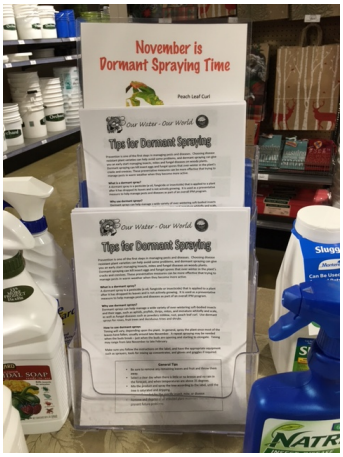
This was a great year in our stores. With so much information about drought in the media, and so many customers coming in and requesting eco-friendly products, the stores really relied on us for recommendations and information. We saw the selection of less-toxic products in stores increase substantially, and with the addition of the Sloat stores, we were able to increase our number of staff trainings.

Stores are enthusiastic about the program, and have really appreciated the extra seasonal handouts and information we have been providing. With smaller staff size, the stores are grateful to have our staff in-aisle answering questions on products and sustainable landscaping practices. I am looking forward to bringing the new fact sheets and pocket guides into stores and hope that this new look will increase our visibility.

Thanks for the opportunity to work with such a wonderful group of people!

Debi Tidd
dragonfly2010@hotmail.com
925-360-5425

Customer at Ace, Oakley tabling



Seasonal handouts at OSH tabling

Nor-Cal Trade Show, San Mateo

APPENDIX

PRE AND POST SURVEY FORMS

A NOTE ON TRAINING ASSESSMENT FORMS

This year, we piloted new pre- and post survey forms. While these new forms provided us with important information, they proved to be challenging to use in the field. Most of our stores have cut way back on their staff, so we have to give trainings in-aisle where staff can remain on the floor. Because the forms take longer to fill out, staff often had to leave to work with customers before they completed the forms. In addition, for many of the staff we work with, English is a second language. They often had trouble with the wording or complexity of the questions. Hopefully we will have a chance to take another look at these surveys and make some revisions before the next set of trainings take place.

One other note: Because the training forms were changed in the middle of the year, some of the evaluations recorded were in the original format. Since there are significant differences between the old and new surveys, I have included a separate summary of the older evaluations below.

Summary of Pre-Training Surveys

A total of 74 Pre-Training surveys were returned.
Here are the results of those surveys.

Survey Question	Yes	No	I Don't Know
When water enters a storm drain, does it go to a treatment plant before it reaches a creek?	8%	81%	11%
When water enters a sanitary sewer from a house drain like your sink or toilet, are pesticides removed at the sewage treatment plant before the treated water reaches a creek or Bay?	37%	52%	11%
Do you think it's more effective to treat an ant infestation with a bait station rather than a spray?	79%	14%	7%
Where is your local household hazardous waste collection facility located	46% know location (Street address and/or City)		54%

Check all that are methods that are used in Integrated Pest Management (IPM)

a. Use of beneficial insects and bacterial based products to control pests: 93%
b. Forbidding the use of pesticides: 32%
c. Not over or under watering plants: 55%
d. Use of traps or barriers to control pests: 78%

What is the solution to control fleas that is safest for pets and best for the creeks, bays, and ocean?

a. Use room foggers, closing off areas where pets eat: 14%
b. Use sprays outdoors and/or indoors: 14%
c. Wash pet with warm soapy water, use flea comb, wash bedding in hot soapy water, vacuum carpets: 78%
d. Spot on flea treatments applied to the pet's skin: 46%

Of the following, which is the least toxic (IPM) method of controlling aphids?

a. Apply fast acting fertilizers: 7%
b. Spray insecticidal soaps and/or prevent ants from vegetation with tanglefoot or bait stations: 69%
c. Prune plants vigorously: 27%
d. Use products with pyrethroids: 8%

Summary of End of Training Evaluation Forms

A total of 68 final evaluations were returned.
Here are the results of those surveys

Survey Question	Yes	No	I Don't Know
When water enters a storm drain, does it go to a treatment plant before it reaches a creek?	12%	88%	0%
When water enters a sanitary sewer from a house drain like your sink or toilet, are pesticides removed at the sewage treatment plant before the treated water reaches a creek or Bay?	12%	88%	0%
Do you think it's more effective to treat an ant infestation with a bait station rather than a spray?	87%	10%	4%
Where is your local household hazardous waste collection facility located	93% know location (Street address and/or City)		7%

Check all that are methods that are used in Integrated Pest Management (IPM)

e. Use of beneficial insects and bacterial based products to control pests: 97%
f. Forbidding the use of pesticides: 25%
g. Not over or under watering plants: 85%
h. Use of traps or barriers to control pests: 96%

What is the solution to control fleas that is safest for pets and best for the creeks, bays, and ocean?

e. Use room foggers, closing off areas where pets eat: 3%
f. Use sprays outdoors and/or indoors: 3%
g. Wash pet with warm soapy water, use flea comb, wash bedding in hot soapy water, vacuum carpets: 94%
h. Spot on flea treatments applied to the pet's skin: 41%

Of the following, which is the least toxic (IPM) method of controlling aphids?

e. Apply fast acting fertilizers: 3%
f. Spray insecticidal soaps and/or prevent ants from vegetation with tanglefoot or bait stations: 90%
g. Prune plants vigorously: 13%
h. Use products with pyrethroids: 7%

Training Evaluation Questions	Disagree	Neutral	Agree
I learned at least one less-toxic management method today.	0%	0%	100%
The training will help me recommend and/or sell less-toxic products.	0%	3%	97%
I can comfortably share what I learned with customers and/or co-workers.	0%	4%	96%
I can easily use the Our Water Our World shelf-tags and fact sheets to inform customers about less-toxic pest management.	0%	6%	94%
	Too much info	Just right	Not enough info
Printed resource materials from this training were….	0%	100%	0%

Please use the back side of this survey and evaluation for additional comments or explanation.

What part of the Training was most helpful?

- Beneficial bug info/id: 26%
- Product knowledge: 15%
- Handouts: 12%
- All was helpful: 10%
- Pictures/photos: 9%
- Discussion/able to ask questions: 4%
- Reinforcing IPM: 3%
- How to manage specific pests: 3%
- Info on OMRI/organic alternatives: 3%
- Presentation: 1%
- Understanding active ingredients: 1%
- Learning about what is toxic: 1%
- Info on slugs: 1%

Comments:

- Great info for the brief period allowed.
- It was pretty thorough.
- Debi is very informative.
- Most helpful - learning what products are used for each specific problem.
- Learned a lot.
- Great job.
- Perfect.
- It was good, short, sweet and to the point.
- Clear, concise.

What part of the Training could be improved?

- Everything was good/nothing to improve: 41%
- Don't see any way to improve: 3%
- More time for training: 3%
- Need in-store one-on-one training: 1%
- More live bugs: 1%
- Explain more about all info given: 1%

Summary of Store Training
Pre-Training Surveys

These surveys are from a training given before the format of the pre-training survey forms changed. Because these questions differ from the revised forms, I have summarized the responses separately. A total of 10 forms were returned.

Survey Question	Yes	No	Don't Know
When water runs into a storm drain in the street, is it treated before it reaches a stream or the Bay?	0%	90%	10%
When water enters the sewer system from a house drain, are pesticides removed at the sewage treatment plant before the treated water enters the Bay?	60%	30%	10%
How do you dispose of leftover pesticides after you finish applying them, or when you no longer need the pesticides? (Number indicates number of answers for each method of disposal.) • Take to Household Hazardous Waste Sites: 60% • Don't know: 10% • Use them until they are gone: 10% • Don't know: 10%			
Do you know where your local Household Hazardous Waste facility is located? YES: 90% NO: 10%			

Summary of End-of-Training Evaluation Forms

These evaluations are from a training given before the format of the evaluation forms changed. Because these questions differ from the revised forms, I have summarized the responses separately. A total of 9 forms were returned.

Survey Question	Disagree	Neutral	Agree
The information was well organized and interesting.	0%	22%	88%
I learned at least one new thing by coming today.	0%	0%	100%
The instructor was responsive to questions.	0%	0%	100%
The training will help me recommend and/or sell less-toxic products.	0%	0%	100%
I intend to share at least some of what I learned with friends and/or co-workers.	0%	0%	100%
The resources from this training will be useful to me in the future.	0%	0%	100%
I understand the connection between “runoff” of pesticides/fertilizers and water Pollution.	0%	0%	100%
I knowhow to dispose of leftover pesticides that are no longer needed	0%	0%	100%

Did the information change your views about pesticides? How? Or, were you already recommending less-toxic products?

YES – changed views: 67%

NO - already recommending less-toxic: 33%

NO – did not change views: 0%

What part of the training was most helpful?

- Good bug/bad bug identification: 22%
- Interactive nature of training: 11%
- All was helpful: 11%
- Gopher information: 11%
- All the pamphlets and explanations: 11%
- Ways to kill/prevent pests: 22%

Is there anything that could be done to improve the training?

NO: 55%

N/A or no answer: 44%

Additional Comments:

- Thank you, class was very informative and interesting.
- It was great.
- Changed my views about pesticides – didn't know about non-toxic.
- The info will be what I will be telling customers.
- Definitely don't want to keep selling extremely toxic pesticides.
- I wouldn't say changed by views, but definitely broadened my outlook on safer and organic.

Letter of Support from Home Depot Corporate Office

2455 Paces Ferry Road • Atlanta, Georgia 30339-4024

September 7, 2015

Geoff and Annie,

We wanted to thank you for your efforts again this year with The Home Depot San Francisco Bay and Sacramento area stores participating in the Our Water Our World Store Partnership Program.

The program has worked closely with many of our suppliers, has helped communicate the importance of less toxic lawn and garden care products, and has educated our customers about the products we carry. In addition, your store training and mentoring program has helped our Associates become more familiar with these products and how to use them to manage local pests and diseases.

Demand for these products continues to grow due to drought and the program's efforts to increase consumer awareness. As a result, we have adjusted our market assortment to increase alternative products for our customers. We look forward to working with you in the coming year and seeing how The Home Depot and OWOW can continue to aid the State of California in this difficult time.

Sincerely,

Ron Jarvis

Ron Jarvis
Merchandising Vice President Sustainability/SER
The Home Depot
2455 Paces Ferry Road C8
Atlanta, GA. 30339

Attachment 11.1

Mercury and PCBs Watershed/Management Areas and Control Measures

CONTRA COSTA CLEAN WATER PROGRAM

MERCURY AND PCBS WATERSHED/MANAGEMENT AREAS AND CONTROL MEASURES

Submitted in Compliance with Provision C.11.a.iii.(2) and C.12.a.iii.(2)

Municipal Regional Stormwater Permit
NPDES Permit No. CAS612008
Order No. R2-2015-0049

September 26, 2016

The Contra Costa Clean Water Program – A Municipal Stormwater Program consisting of Contra Costa County, its 19 Incorporated Cities/Towns, and the Contra Costa County Flood & Water Conservation District

This report is submitted by the agencies of the

CONTRA COSTA CLEAN WATER PROGRAM

Program Participants:

- Cities of: Antioch, Brentwood, Clayton, Concord, Danville (Town), El Cerrito, Hercules, Lafayette, Martinez, Moraga (Town), Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon and Walnut Creek
- Contra Costa County
- Contra Costa County Flood Control & Water Conservation District

Contra Costa Clean Water Program
255 Glacier Drive
Martinez, CA 94553-482

Tel (925) 313-2360
Fax (925) 313-2301

Website: www.cccleanwater.org

Report Prepared By:

Geosyntec Consultants

on behalf of the
Contra Costa Clean Water Program

LIST OF ACRONYMS

BASMAA	Bay Area Stormwater Management Agencies Association
BMP	Best Management Practices
CCCWP	Contra Costa Clean Water Program
GI	Green Infrastructure
GIS	Geographic Information System
mg/kg	milligram per kilogram
MPC	Monitoring and Pollutants of Concern Committee
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
POC	Pollutants of Concern
POTW	Publicly Owned Treatment Works
ROW	Right-of-Way
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SFEI	San Francisco Estuary Institute
TMDL	Total Maximum Daily Load
W/MA	Watershed / Management Area
WY	Water Year

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1 INTRODUCTION

1.1 Purpose

This *Mercury and PCBs Watershed/Management Areas* (W/MAs) *and Control Measures* report was prepared by the Contra Costa Clean Water Program (CCCWP) per the Municipal Regional Permit (MRP) for urban stormwater issued by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB; Order No. R2-2015-0049). This report fulfills the requirements of MRP Provisions C.11.a.iii.(2) and C.12.a.iii.(2) for reporting a list of the watershed/management areas where mercury and PCBs control measures are currently being implemented and those in which new control measures will be or have the potential to be implemented during the term of this permit, along with the specific control measures and an implementation schedule. Although many of the control measures may be selected primarily for the purpose of achieving PCBs load reductions during this MRP permit term, substantial mercury load reductions may result as a tangential benefit and will be accounted for in tracking mercury load reductions.

The following MRP reporting requirements are addressed within this report:

- The list of W/MAs where control measures are currently being implemented or will be implemented during the term of the Permit;
- The number, type, and locations and/or frequency (if applicable) of control measures;
- A cumulative listing of all potentially PCBs-contaminated sites Permittees have referred to the SFBRWQCB to date, with a brief summary description of each site and where to obtain further information;
- The description, scope, and start date of PCBs control measures;
- For each structural control and non-structural best management practice (BMP), interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement; and
- Clear statements of the roles and responsibilities of each participating Permittee for implementation of identified control measures.

This report is organized into the following sections:

1. Introduction and Background

2. Control Measures Overview
3. Watersheds/Management Areas, Control Measures, and Schedule for each Permittee.

1.2 Background

1.2.1 Mercury and PCBs Total Maximum Daily Loads

Fish tissue monitoring in San Francisco Bay (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 SFBRWQCB 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.

Municipal separate storm sewer systems (MS4s) are one of the PCBs and mercury source/pathways identified in the TMDL plans. Local public agencies (i.e., Permittees) subject to requirements via National Pollutant Discharge Elimination System (NPDES) permits are required to implement control measures in an attempt to reduce PCBs and mercury from entering stormwater runoff and the Bay. These control measures, also referred to as BMPs, are the tools that Permittees can use to assist in restoring water quality in the Bay.

1.2.2 Municipal Regional Permit

NPDES permit requirements associated with Phase I municipal stormwater programs and Permittees in the Bay area are included in the MRP, which was issued to 76 cities, counties and flood control districts in 2009 and revised in 2015. Consistent with the TMDL plans, Provisions C.11.a. and C.12.a. of the MRP require the implementation of source and treatment control measures and pollution prevention strategies to reduce mercury and PCBs in urban stormwater runoff to achieve specified load reductions throughout the permit area. Specifically, the MRP requires the Permittees to:

1. Identify the watersheds or portions of watersheds (management areas) in which PCBs control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit;
2. Identify the control measures that are currently being implemented and those that will be implemented in each watershed/management area;
3. Submit a schedule of control measure implementation; and
4. Implement sufficient control measures to achieve the mercury and PCBs load reductions stated in the permit.

1.3 Approach

1.3.1 Control Measures

The urban stormwater runoff wasteload allocation for PCBs represents a 90 percent reduction from the estimated existing load. The TMDL implementation plans set roughly 20-year timelines for achieving the reductions but also incorporate an adaptive implementation planning approach. The adaptive approach consists of the development of a plan that includes early implementation actions based on existing knowledge that have a reasonable probability of success and an overview of options for future actions. For PCBs and mercury in the Bay, the immediate or early implementation actions are not expected to completely eliminate the Bay impairment. Therefore, future actions must be evaluated based on continued monitoring and response to the early implementation actions, as well as based on well-designed studies used for model refinement.

The MRP Fact Sheet notes that the initial focus of provisions C.11/12 is on measures designed to reduce PCBs, while also evaluating opportunities for mercury reduction. Implementation actions may fall into four categories depending on the available knowledge and confidence in a control measure's effectiveness (listed in decreasing order of confidence):

- Full-scale implementation throughout the region.
- Focused implementation in areas where benefits are most likely to occur.
- Pilot-testing in a few specific locations.
- Other: This may refer to experimental control measures, research and development, desktop analysis, laboratory studies, and/or literature review.

During the previous MRP term, Permittee effort was largely focused on gathering necessary information about control measure effectiveness through pilot projects and some focused implementation of the most effective control measures. In this term of the MRP, the emphasis has shifted towards focused and some full-scale implementation of the most effective control measures. Progress will be measured through accounting for specific load reductions as described in the report: *Interim Accounting Methodology for TMDL Loads Reduced* (BASMAA, 2016).

The Permittees, countywide stormwater programs, Bay Area Stormwater Management Agencies Association (BASMAA), SFBRWQCB, and other interested parties (e.g., the Regional Monitoring Program) began gathering data and developing an understanding of the sources and pathways for mercury and PCBs in the Bay in the late 1990's. These same parties developed a framework to address these pollutants throughout the following decade.

The Regional Stormwater Monitoring and Urban BMP Evaluation: A Stakeholder-Driven Partnership to Reduce Contaminant Loadings project funded by a State of California Proposition 13 grant and conducted by the San Francisco Estuary Institute (SFEI) defined conceptual models of sources and pathways of mercury and PCBs in Bay Area urban watersheds (McKee et al., 2006). The SFEI Proposition 13 project compiled PCBs and mercury chemical analysis results from about 600 sediment samples collected at over 360 locations throughout the Bay Area from roadways and stormwater drainage infrastructure (e.g., storm drain inlets, pump house wet wells, piping beneath manholes, and open channels) (Yee and McKee, 2010). These data supported the general hypothesis that concentrations of PCBs and mercury are elevated in specific parts of the urban landscape and showed that:

- Pollutant concentrations are highly patchy, even at moderate to small spatial (sub-kilometer) and temporal (approximately annual) scales. This patchiness reflects the episodic nature of many release and transport events and processes.
- Concentrations at sites within three kilometers of one another showed similarities in concentration, which may be due to similarities in land use, activities, or transport of shared pollutant sources.
- Individual sites and areas most contaminated with PCBs are often not those with high mercury, which is a logical finding given the different use histories and original pollutant sources.

Another outcome of the SFEI Proposition 13 project was a desktop evaluation of control measures for PCBs and mercury load reductions (Mangarella et al., 2010).

Building upon the efforts of the SFEI Proposition 13 project, BASMAA conducted an EPA grant-funded project called Clean Watersheds for a Clean Bay (CW4CB). The CW4CB project, which began in May 2010 and will be complete in May 2017, is a collaboration among the MRP Permittees designed to evaluate the effectiveness of stormwater controls for PCBs and mercury. The CW4CB Project implemented a number of pilot projects for various control measures called for by the Bay PCBs and mercury TMDLs and the first-term MRP. The CW4CB work products included:

- Selecting five high priority subwatersheds that discharge urban runoff with PCBs and other pollutants to the Bay;
- Identifying PCBs and mercury source areas within the project subwatersheds and referring these sites to regulatory agencies for cleanup and abatement;
- Developing methods to enhance removal of sediment with PCBs and other pollutants during municipal sediment management activities;
- Retrofitting 8 to 10 urban sites with stormwater treatment facilities;
- Facilitating development and implementation of a 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 high levels of PCBs and mercury; and
- Creating public education outreach materials, project web portal, guidance manual, and technical workshops.

The Permittees are using the information gathered and lessons learned through the CW4CB project and the earlier projects as the basis to identify the W/MAs and control measures listed in this report.

In Fiscal Year (FY) 2015/16, the CCCWP began development of a countywide Geographic Information System (GIS) pilot project focused on maintaining, analyzing, interpreting, displaying, and reporting relevant municipal stormwater program data and information related to Provisions C.10 (i.e., trash load reduction activities) and C.11/C.12 (i.e., PCBs source property identification and abatement screening activities).

With the adoption of the current MRP, the CCCWP is now in the process of expanding the countywide GIS pilot project to support additional compliance activities related to: 1)

the C.3.j Green Infrastructure Planning and Implementation provisions; 2) the C.11 Mercury Controls and C.12 PCBs Controls provisions; and possibly, 3) the C.8 Water Quality Monitoring provisions. This expansion of the CCCWP's countywide GIS pilot project is critical to Permittees' ongoing work to identify watersheds and management areas where multiple-benefit control measure implementation opportunities will be identified and prioritized for implementation during this permit term and over the coming decades. Additionally, this GIS database will be used to track and map existing and future C.3 projects, allow ease of ongoing review of opportunities for incorporating GI into existing and planned Capital Improvement Projects (CIPs), and assist in the development of GI plans.

The CCCWP's stormwater GIS platform features web maps and applications created using Esri's ArcGIS Online for Organizations environment, which access GIS data, custom web services and reports that will be hosted within an Amazon cloud service running Esri's ArcGIS Server technology. The CCCWP anticipates its expanded stormwater GIS platform will be an important tool for maintaining relevant stormwater data; reviewing, analyzing and displaying data geography; accounting for and assessing compliance with load reduction performance goals; and reporting. The data used for this platform originates from many sources over the last decade and will be reviewed and updated as needed to reflect current land uses and implementation of C.3 projects as new and redevelopment occurs.

1.3.2 Watershed /Management Area Delineation

Each Permittee has created a list of W/MAs and control measures (i.e., a control measure plan that describes what, where, and when control measures will be implemented) for PCBs and mercury, provided in the sections below. The ultimate goal for the listed control measures is to achieve the Contra Costa countywide PCBs load reductions listed in MRP Tables 12.1 and Table 12.2 during this MRP term:

- 90 g/yr PCBs by 6/30/18,
- 560 g/yr PCBs by 6/30/2020, and
- 23 g/yr PCBs using green infrastructure by 6/30/2020.

A W/MA is an area where load reduction credit will be sought for PCBs or mercury control measures. The W/MAs cover all Old Industrial and Old Urban areas, but may include some New Urban areas where appropriate. W/MAs were delineated using the maps showing the 2015 PCBs source property screening results (i.e. high, moderate, and

low/no likelihood), known PCBs source properties (from the CW4CB Task 3 referrals, DTSC EnviroStor, and the State Water Board Geotracker), and land uses (i.e., Old Industrial, Old Urban, New Urban, and Open Space) from the Mercury and PCBs Control Measures Implementation Status Report (CCCWP, 2016). These factors were used to create approximate delineations based on the geography within each Permittee's jurisdiction. If applicable, a city's General Plan, Specific Plans, and/or Redevelopment Plans were used to form a W/MA boundary. Categorical W/MAs were also created for the non-municipally owned electrical utility (i.e., PG&E) and railroad properties (note, the categorical W/MAs can exist within or create "holes" in the other geographically-based WM/As). The categorical W/MAs shown on the figures are preliminary and may change over time.

The W/MAs and identified control measures may also evolve over time as the Permittees learn more about these areas through implementation of the control measures. The Permittees will be developing Green Infrastructure Plans per MRP Provision C.3.j and the delineations of W/MAs in this report may also be revised as part of that planning process. Additionally, the Permittees may use results from the CW4CB project (which will be available at the end of 2016) to adjust preliminary control measure selections in the coming year.

1.3.3 Roles and Responsibilities for Implementation of Control Measures

Table 1-1 below summarizes, for each control measure, the roles and responsibilities of the Permittees, CCCWP, and BASMAA. In a general sense, screening/sampling will primarily be conducted by the CCCWP, establishment of regional frameworks will be conducted by BASMAA, and adoption and implementation of control measures will be conducted by the Permittees.

Table 1-1: Control Measure Roles and Responsibilities

Control Measure Category	Roles and Responsibility		
	Permittee	**Program**	**BASMAA**
Source Property Identification and Abatement	• Work with Program to design monitoring program. • Prepare referral forms, including identification of enhanced O&M. • Implement enhanced O&M for referred properties.	• Design and conduct POCs monitoring. • Compile and submit referrals to SFBRWQCB in Region 2 and the CVRWQCB in Region 5. • Coordinate with BASMAA on ongoing control measure adaptive management.	• Discuss ongoing control measure implementation and adaptive management at Monitoring / Pollutants of Concern (MPC) Committee.
Green Infrastructure / Treatment Control Measures	• Prepare a GI Plan. • Implement GI projects. • Gather data on C.3 projects.	• Support GI planning. • Compile data on C.3 projects.	• Coordinate GI planning at Development Committee. • Discuss control measure implementation and adaptive management at MPC Committee.
Managing PCBs in Building Materials	• Participate in BASMAA Regional Project. • Adopt Framework.	• Assist BASMAA Regional Project.	• Develop Framework through Regional Project.
Managing PCBs in Infrastructure	• Participate in BASMAA Regional Project.	• Assist BASMAA Regional Project. • Conduct monitoring.	• Develop monitoring plan and report monitoring results via Regional Project.
Enhanced O&M	• Implement enhanced O&M where identified.	• Coordinate with BASMAA on ongoing control measure adaptive management.	• Discuss ongoing control measure implementation and adaptive management at MPC Committee.
Diversion to POTW	• Implement diversion where identified.	• Coordinate with BASMAA on ongoing control measure adaptive management.	• Discuss ongoing control measure implementation and adaptive management at MPC Committee.
Mercury Load Avoidance and Reduction	• Conduct collection events.	• Compile and track data.	• Discuss ongoing control measure implementation and adaptive management at MPC Committee.
Illegal Dumping Cleanup	• Identify illegal dumping sites. • Conduct/coordinate cleanup.	• Compile and track data.	• Discuss ongoing control measure implementation and adaptive management at MPC Committee.
Stockpiles, Spills, and Disposal of PCBs	• Identify facilities through routine inspections. • Conduct/coordinate cleanup. • Track OES reports and follow-up on spills with PGE.	• Compile and track data. • Coordinate w/ Permittees, BASMAA partners, SFBRWQCB, and PGE as needed.	• Discuss ongoing control measure implementation and adaptive management at MPC Committee.

In addition, the Permittees will be tracking control measure implementation and reporting load reductions using the Interim Accounting Tool developed by a BASMAA regional project. The CCCWP will compile and report the county-wide list of site referrals and overall load reductions. BASMAA will compile and report the MRP permit area-wide list of site referrals and overall load reductions.

Although each Permittee's administrative structure is unique, Table 1-2 summarizes, in general, the roles and responsibilities of the various city, town, or county departments that may be related to implementation of selected control measures:

Table 1-2: Permittee Department Roles and Responsibilities

Department	Typical Role / Responsibility
Public Works	• Creeks, watersheds, and stormwater management • Public facility services and maintenance • Engineering and construction services • Capital improvement projects
Community Development / Planning Department	• Planning/zoning/General Plan development • Development project review & approvals • Construction and building inspections

2 DESCRIPTION OF CONTROL MEASURES

This section provides a general description of the types of control measures that are currently being implemented or will be implemented by the Permittees during this and future permit terms to control PCBs and mercury.

2.1 Source Property Identification and Abatement

Source property identification and abatement involves investigations of properties located in historically industrial land use or other land use areas where PCBs were used, released, and/or disposed of and where sediment concentrations have been found at levels significantly above urban background levels. The source property identification and abatement control measure begins with performing investigations of these “High Likelihood” areas to identify PCBs sources to the municipal storm drain system. Once a source property is identified, the source of PCBs on the property may be abated or caused to be abated directly by the Permittee or the Permittee may choose to refer the source property to the SFBRWQCB for investigation and abatement by the SFBRWQCB or another appropriate regulatory agency with investigation and cleanup authority. Source properties may include sites that were previously remediated or are currently being remediated but have PCBs soils cleanup levels that are elevated above urban background levels or may be newly identified source properties.

The Permittees will validate the existence of significantly elevated PCBs concentrations through surface soil/sediment sampling in the right-of-way or stormwater sampling in the storm drain system where visual inspections and/or other information suggest that a specific property is a potential source of significantly elevated PCBs concentrations. Where data confirm significantly elevated PCBs concentrations (e.g., a sediment concentration equal to or greater than 1.0 mg/kg or a concentration greater than 0.5 mg/kg plus other lines of evidence) are present in soil/sediment from a potential source property or in stormwater samples, the Permittees will take actions to cause the property to be abated or will refer that property to the SFBRWQCB to facilitate the issuance of orders for further investigation and remediation of the subject property.

For each confirmed source property, the Permittee will implement or cause to be implemented, where appropriate, one or a combination of interim enhanced operation and maintenance (O&M) measures in the street or storm drain infrastructure adjacent to the source property during the source property abatement process to remove historically deposited sediment and/or to prevent further contaminated sediment from entering the storm drain. These enhanced O&M measures will be described in the source property

referral that is sent to the SFBRWQCB. If the Permittee finds that enhanced O&M measures are not justified based on the results of the soil/sediment investigation, the Permittee must discuss these findings with the SFBRWQCB prior to submitting the source property referral. The SFBRWQCB will review the source property referral and provide comments to the Permittee within 30 days (if needed).

The CCCWP, in collaboration with the Permittees, are conducting ongoing targeted investigation and monitoring for known or suspected source properties. Source identification is one of five priority POC management information needs required by MRP provision C.8.f. The allocation of sampling effort for POC monitoring will be described in the POC Monitoring Report, due October 15 of each year, as required by MRP provision C.8.h.iv.

The properties that have been referred to the SFBRWQCB as of September 2016 are listed in Table 2-1 below. The first two referrals were developed as an outcome of efforts conducted in Task 3 of the CW4CB Project in 2015. Descriptions of the referral properties are provided in the report sections for Richmond and Pittsburg.

Table 2-1: Contaminated Sites Referred to the SFBRWQCB

SITE NAME	LOCATION	YEAR REFERRED
Rickert International Trading Co., Inc.	135 Cutting Blvd, Richmond	2015
Sims Metal Management Richmond Facility	600 S 4th Street, Richmond	2015
Former Molino Enterprises, Inc.	1215 Willow Pass Road, Pittsburg	2016

2.2 Green Infrastructure / Treatment Control Measures

This control measure includes new development and redevelopment projects on private and public properties regulated by Provision C.3, as well as retrofit of existing infrastructure in public ROW areas and on public properties not subject to Provision C.3.

Permittees will account for implemented C.3. projects and may implement green infrastructure (GI) projects over this permit term to achieve the PCBs load reductions shown in MRP Table 12.2 and mercury load reductions shown in MRP Table 11.1. Permittees may also choose to include potential GI projects that may be implemented over this permit term. As an example, these may include a project that has been planned or identified; however, funding sources for implementation have not been secured at the time of this report.

Permittees will be identifying existing C.3 projects as part of this control measure and, in compliance with the requirement of MRP Provision C.3.b.i.(2), will be tracking development projects that are subject to C.3. over this permit term.

In addition, the Permittees will be conducting an ongoing review of opportunities for incorporating GI into existing and planned capital improvement projects over this permit term (a.k.a., no missed opportunities) and developing a GI Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements, in compliance with MRP Provision C.3.j.

2.3 Managing PCBs In Building Materials and Infrastructure

2.3.1 PCBs in Building Materials

During the first three years of the permit term, the Permittees will develop and implement (or cause to be developed and implemented) an effective protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition, so that PCBs do not enter the MS4. PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, stormwater runoff, or improper waste disposal. Applicable structures include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 and with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt. A Permittee is exempt from this requirement if the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures. The PCBs management framework will be implemented by the start of the fourth year of the permit term (i.e., July 1, 2019).

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

1. The necessary authority to ensure that PCBs do not enter municipal storm drains from PCBs-containing materials in applicable structures at the time such structures undergo demolition;
2. A method for identifying applicable structures prior to their demolition; and
3. Method(s) for ensuring PCBs are not discharged to the municipal storm drain from demolition of applicable structures.

By July 1, 2019 and thereafter, Permittees are required to:

- Implement or cause to be implemented the PCBs management protocol for ensuring PCBs are not discharged to municipal storm drains from demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff.
- Develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures. This should be reported on in the 2020 Annual Reports at the regional level on behalf of all Permittees.
- In their 2016, 2017, and 2018 Annual Reports, Permittees are required to summarize the steps they have taken to begin implementing this requirement. In their 2020 Annual Reports and thereafter, Permittees are required to provide documentation of each of the number of applicable structures that applied for a demolition permit during the reporting year and a running list of the applicable structures that applied for a demolition permit (since the date the PCBs control protocol was implemented) that had material(s) with PCBs at 50 ppm or greater, with the address, demolition date, and brief description of PCBs control method(s) used.

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials. This Regional Project will develop an implementation framework, guidance materials, and tools for local agencies to ensure that PCBs-containing materials and wastes are properly managed during building demolition. This Regional Project will also include developing training materials and conducting trainings for municipal staff and outreach workshops for the industry on implementing the framework/protocols developed via the project. The tools and materials developed as part of the project will build upon materials and outputs developed in 2010-2011 by the San Francisco Estuary Partnership with State Water Board grant funding, called the “PCBs in Caulk Project”, as well as subsequent and parallel activities by BASMAA.

2.3.2 PCBs in Infrastructure

PCBs may also be found in storm drain or roadway infrastructure in public rights-of-way such as caulk and sealants used in storm drains and between concrete curbs and street pavement. Permittees will investigate whether PCBs are present in such materials and in what concentrations. These results will be reported no later than the 2018 Annual Report.

The results of these investigations will inform further investigations of PCBs in infrastructure and the development of Permittees' GI Plans.

The Program and Permittees will be participating in a BASMAA Regional Project to develop a Quality Assurance Project Plan (QAPP) and Sampling and Analysis Plan (SAP) to characterize the levels of PCBs in caulks/sealants used in storm drains and roadway infrastructure to quantify the potential PCBs load reduction benefits that may result from public infrastructure improvements. The monitoring program and laboratory analysis per the QAPP and SAP may be conducted by the Program in coordination with BASMAA or via a BASMAA Regional Project. A project report to be included in the 2018 Annual Report will either be prepared by the Program in coordination with BASMAA or via a BASMAA Regional Project.

2.4 Enhanced Operation and Maintenance

Routine MS4 O&M activities include street sweeping, drain inlet cleaning, and pump station maintenance. In addition, culverts and channels are also routinely maintained (i.e., desilted). Enhancements to routine operations and new actions such as storm drain line and street flushing may enhance the Permittees' ability to reduce PCBs and mercury in stormwater. PCBs load reductions achieved through implementation of enhanced O&M control measures, aside from enhanced O&M control measures associated with source property referrals, may be counted as part of the overall load reductions during this permit term.

2.5 Diversion to POTW

This control measure consists of diverting dry weather and/or first flush events from MS4s to publicly owned treatment works (POTWs) as a method to reduce loads of PCBs and mercury in urban runoff.

2.6 Source Controls and Other Control Measures

2.6.1 Mercury Load Avoidance and Reduction

Mercury load avoidance and reduction includes a number of source control measures listed in the California Mercury Reduction Act adopted by the State of California in 2001. These source controls include material bans, reductions of the amount of mercury allowable for use in products, and mercury device recycling. The following source controls bans are included:

- Sale of cars that have light switches containing mercury;
- Sale or distribution of fever thermometers containing mercury without a prescription;
- Sale of mercury thermostats; and,
- Manufacturing, sale, or distribution of mercury-added novelty items.

In addition, fluorescent lamps manufacturers continue to reduce the amount of mercury in lamps sold in the U.S. Manufacturers have significantly reduced the amount of mercury in fluorescent linear tube lamps.

Mercury Device Recycling Programs resulting in Mercury load reduction generally include three types of programs that promote and facilitate the collection and recycling of mercury–containing devices and products:

- Permittee-managed household hazardous waste (HHW) drop-off facilities and curbside or door-to-door pickup;
- Private business take-back and recycling programs (e.g., Home Depot); and,
- Private waste management services for small and large businesses.

The Program has been conducting a Methylmercury Control Study in response to Provision C.11.i of the East County Permit, which states: “Permittees shall conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and shall develop and evaluate additional BMPs as needed to reduce mercury and methylmercury discharges to the Delta and meet methylmercury waste load allocations…”. *The Methylmercury Control Studies Progress Report* was submitted on schedule to the Central Valley Water board on October 30, 2015 and can be found on the CCCWP website http://www.cccleanwater.org/surveys-studies-annual-report/.

The Program coordinates with Permittees and local household hazardous waste (HHW) collection facilities to implement mercury collection and recycling in accordance with MRP Provisions C.11.a.i and C.11.a.ii.

CCCWP Permittees collect HHW at three regional facilities in the County:

- Central Contra Costa Sanitary District (CCCSD);
- Delta Diablo Sanitation District (DDSD); and,

- West Contra Costa Integrated Waste Management District (WCCIWMA).

CCCSD serves the communities of Concord, Clayton, Martinez, Pleasant Hill, Orinda, Lafayette, Moraga, Walnut Creek, Danville, San Ramon and unincorporated county. DDSD serves Pittsburg, Antioch and Bay Point. WCCIWMA serves Richmond, Pinole, El Sobrante, El Cerrito and San Pablo.

The types of data collected at each facility are slightly different as is the level of differentiation between types of mercury containing devices and the level of specificity in reporting the data. These efforts are no longer required to be reported, but will be tracked for mercury loads reduced through implementation of mercury avoidance and reduction control measures.

In addition to the above mercury collection activities, as of the end of July 2016, all PG&E-owned and County-owned street lights in Contra Costa County (roughly 7,300 lamps) have been converted from mercury and/or high pressure sodium vapor street lights to Light Emitting Diode (LED) street lights. Each street lamp is reported to have from 1 to 22 mg of mercury, with an average of 16 mg/bulb for a 100 Watt bulb. Using the 16 mg average per bulb, this street light replacement project resulted in an estimated 117 grams of mercury being removed.

2.6.2 Illegal Dumping Clean-Up

This source control measure entails clean-up of construction and demolition debris from illegal dumping areas. This control measure will apply to construction and demolition illegal dumping only during this permit term, but may be expanded to other types of illegally dumped trash if supported by monitoring data.

2.6.3 Stockpile, Spills, and Disposal of PCBs

This control measure includes the proper clean-up and disposal of stockpiles, spills, and/or improperly disposed quantities of PCBs. The measure would involve, for instance, a concentrated source of PCBs (e.g., a barrel) that is found and cleaned-up or properly disposed and the clean-up of transformer spills by PG&E (see Table 2-2 below for a list of PG&E transformer pole spills in Contra Costa County).

Table 2-2: PG&E Transformer Pole Spills in Contra Costa County

CITY	SPILL DATE	LOCATION	QUANTITY/ CONCENTRATION	DATE OF FINAL SPILL REPORT FROM PGE AND SFBRWQCB
Richmond	5/4/15	5635 San Diego St, Richmond	60 gal, 45 ppm	11/16/15
Richmond		Port of Richmond	1,000 lbs	Not determined
Richmond	02/07/2016	5610 Bayview, Richmond	13 gal, <2 ppm	3/2/16
Orinda	4/5/2016	Orinda	20 gal, undefined conc.	Not determined
Concord	3/6/16	1354 Babel Ln, Concord	30 gal, 31 ppm (reported to OES as 1,000 ppm)	Not determined

CCCWP and BASMAA representatives have been working with SFBRWQCB staff to ensure thorough documentation and clean-up completion of PG&E PCBs transformer spills. This activity could have a significant effect on where PCBs in the public right-of-way are found, as many spills happen in residential areas. Residential areas are not typically high likelihood areas for PCBs sources, so no other control measures have been developed specifically for these areas. SFBRWQCB and BASMAA representatives will work on better defining agency roles and responsibilities in responding to spills, at least for their own agencies, and hope to get PG&E to cooperate to make a smoother and more transparent process as we try to reduce the loading of PCBs into the San Francisco Bay, San Joaquin/Sacramento Rivers Delta, and Suisun and San Pablo Bays.

SFBRWQCB staff arranged a meeting on February 26, 2016 with the BASMAA MPC chair and Daniel Sanchez, Hazardous Materials and Water Quality Program Manager for PG&E. Mr. Sanchez had agreed to provide BASMAA and SFBRWQCB with (1) an inventory of spills in the Bay Area, and (2) written SOPs for spill response. Mr. Sanchez stated that the SFBRWQCB, Certified Unified Program Agency (CUPA) & Office of Emergency Services (OES) are called if the spill exceeds 49 gallons or threatens a waterway, a storm drain, or human health, and that a CUPA gets a courtesy call for every spill. No information has come from Mr. Sanchez since the meeting.

CCCWP staff has been compiling information on PCBs transformer spills that have occurred since 2015 (there are additional data from earlier years). Table 2-2 presents a partial list of the spills that have happened throughout Contra Costa County. All information on the spills and clean-ups are not currently available, as the process to get documentation of the completion of a clean-up is difficult. PG&E has many private

contractors that are called out at odd hours in inclement weather to do the clean-up. Tracking one representative who can confirm PG&E's process or progress on spills has proven impossible so far. Many spills are less than 49 gallons and less than 50 ppm, but still have significant levels of PCBs concentrations (e.g., 5 gallons of transformer oil with a PCBs concentration of 44 ppm). Figure 2-1 below shows a spill that occurred in Concord on March 6, 2016. Note how the transformers landed in puddle, directly in the MS4 and stormwater. The road drainage is a series of dirt right-of-way and culverts under driveways.

Figure 2-1: Spill on 1354 Babel Lane Concord.

3 CITY OF ANTIOCH

3.1 List of Watersheds / Management Areas

The watersheds / management areas (W/MAs) within the City of Antioch are shown on Figure 3-1 and are listed below:

1. ANT-1: Old Urban
2. ANT-2: Old Industrial / High Likelihood
3. ANT-PGE: Categorical PG&E
4. ANT-Rail: Categorical Rail

3.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of the W/MAs is provided in Table 3-1 and are discussed in the sections below.

3.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Antioch have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

3.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

3.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

3.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

3.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

3.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

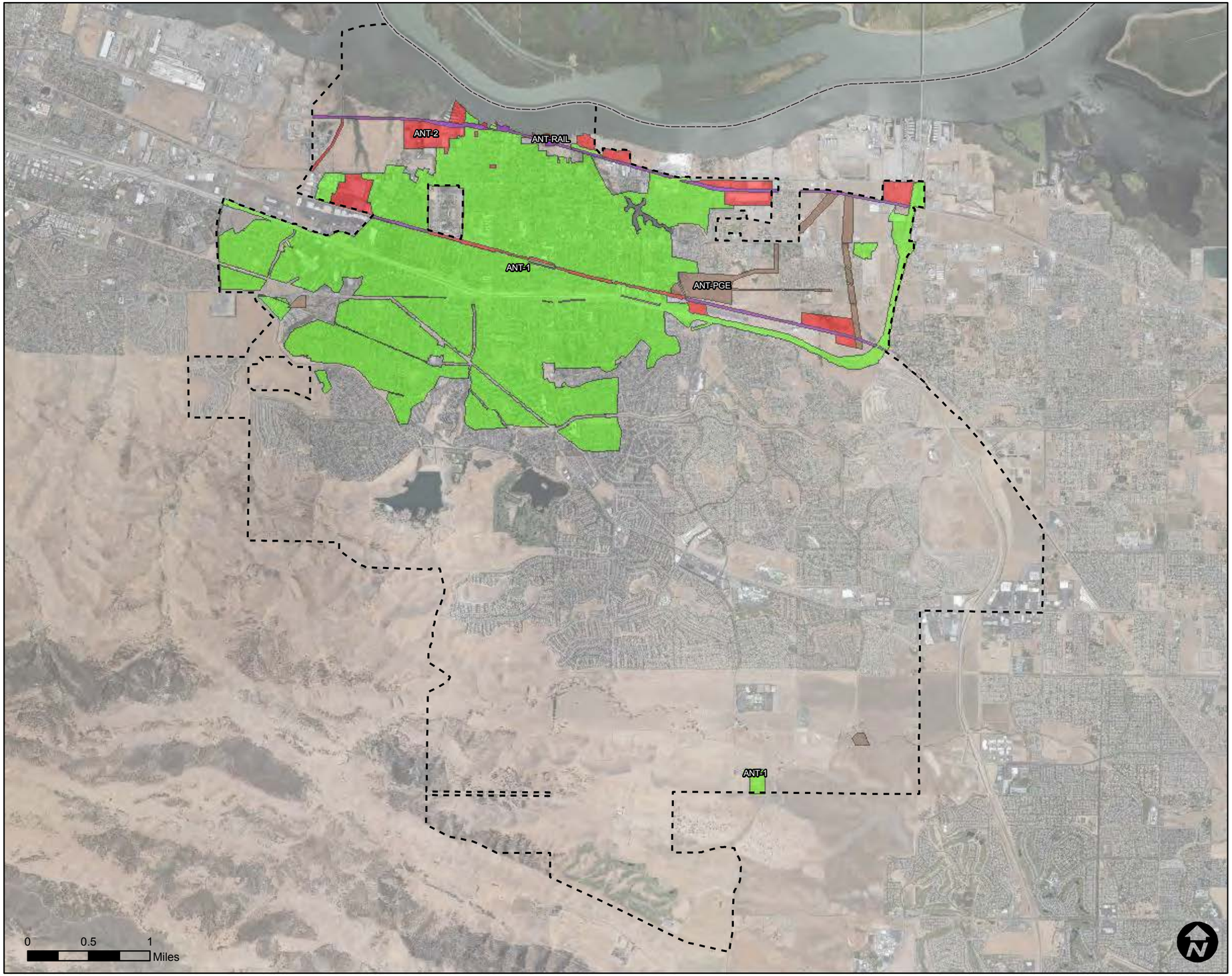
Stockpiles, Spills, and Disposal of PCBs

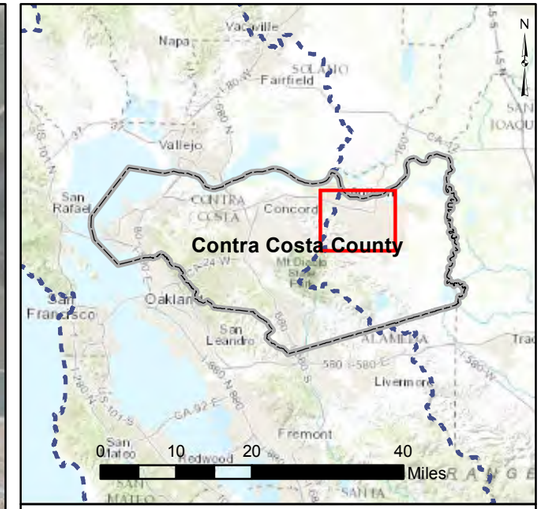
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 3-1. City of Antioch Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area			
	ANT-1 Old Industrial / High Likelihood	ANT-2 Old Urban	ANT-PG&E	ANT-Rail
Source Property Identification and Abatement				
Source Property Investigation	C, P		Po	Po
Referral of Source Property	Po			
Direct Abatement of Source Property				
Categorical Source Property Referral			Po	Po
Green Infrastructure / Treatment Control Measures				
Redevelopment Subject to C.3	C, Po	Po		
GI/Treatment Measures Not Subject to C.3				
Full Trash Capture Devices (HDS)				
Managing PCBs in Building Materials and Infrastructure				
Managing PCBs in Building Materials	Po	Po		
Managing PCBs in Infrastructure	Po	Po		
Enhanced O&M				
Street Sweeping				
Storm Drain Inlet Cleaning				
Pump Station Maintenance				
Desilting of Channels and Culverts				
Street Flushing				
Storm Drain Line Cleaning				
Diversion to POTW				
Diversion to POTW				
Source Controls and Other Control Measures				
Mercury Load Avoidance and Reduction	Po	Po		
Illegal Dumping Cleanup	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po		

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- ANT-1, Old Urban
- ANT-2, Old Industrial / High Likelihood
- ANT-PGE, Categorical PGE
- ANT-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

ANTIOCH

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 3-1**

4 CITY OF BRENTWOOD

4.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) where control measures within the City of Brentwood are shown on Figure 4-1 and are listed below:

1. BRW-1: Old Urban
2. BRW-2: Old Industrial
3. BRW-PGE: Categorical PG&E
4. BRW-RAIL: Categorical Railroad

4.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 4-3 and are discussed in the sections below.

4.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Brentwood have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

There are several properties in Table 4-3 below that have been identified as likely future redevelopment projects, with a possible connection to PCBs. None of the projects have been investigated or identified as having PCBs, beyond a desktop survey, but they contain existing buildings that are of an age that they could have been built with PCBs containing materials. Any property that is part of a redevelopment project will be subject to environmental investigation under CEQA, demolition standards, and redevelopment standards that include compliance with applicable provisions of section C.3.

4.2.2 Green Infrastructure / Treatment Measures

Old Urban W/MA: Any development, redevelopment, and infrastructure projects within this W/MA will be subject to redevelopment standards in effect at the time an application

would be made, such as demolition standards and applicable provisions of section C.3. Much of the area is old residential and original downtown Brentwood, which is highly unlikely to experience significant redevelopment or demolition. The other significant land area of Old Urban is within the Brentwood Boulevard Specific plan and could be affected by Brentwood Boulevard Widening projects identified in the City's Capital Improvements Plan. Most of the Brentwood Boulevard Widening is unfunded.

Old Industrial W/MA: Any development, redevelopment, and infrastructure projects within this W/MA will be subject to redevelopment standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3. In addition, areas identified as old industrial will have the potential for source property investigation and referral.

Table 4-1: City of Brentwood Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
BRW-1: Old Urban	City Block (city hall)	Oct. 2011	4.9 acres	150 City Park Way

Table 4-2: City of Brentwood Potential Projects

WMA ID	DATE OF COMPLETION/OTHER MILESTONE	TREATMENT AREA (AC.)	PROJECT ID	LOCATION
BRW-1: Old Urban	2017 (unfunded)	2.1 acres	N/A (potential)	7030 Brentwood Blvd.
BRW-1: Old Urban	None	7.2 acres	N/A (potential)	2340 Smith Rd.
BRW-1: Old Urban	None	2.2 acres	N/A (potential)	6970 Brentwood Blvd.

7303 Brentwood Boulevard is known as the old Los Mexicanos Market site. This property is within the Brentwood Boulevard Specific Plan and has been identified in the Capital Improvements Plan with a 2017 target, but is currently mostly unfunded. The W/MA is old urban, so any redevelopment will be subject to CEQA, demolition standards in effect at the time, and applicable provisions of section C.3.

2340 Smith Rd. is an old ranchette-type of residential property currently owned by Brentwood Union School District. The existing residential home will likely be subject to

demolition with any future development on the property. It is an older home that may be worth tracking for PCBs, but has not been specifically identified or investigated. As this property is an older residential home on approximately 7 acres, it has not been included in the Old Urban W/MA at this time.

6970 Brentwood Boulevard is within the Brentwood Boulevard Specific Plan. It is an old ranchette-type of property that has been purchased by a developer with the intent of redeveloping. There has been no application received, so this is still considered a potential project instead of a planned project. The existing residential home will be subject to demolition with any future development on the property. It is an older home that may be worth tracking, but has not been specifically identified or investigated.

4.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

For building demolition, the same projects mentioned above in tables 4.1 and 4.2 would, based on the timing of the demolition, be subject to PCBs control framework/protocols that are to be developed. The City of Brentwood contains two locations that have been identified as high-likelihood.

One is an Antioch Building Materials site at 6823 Brentwood Boulevard. It is in the Old Industrial W/MA and has been identified as High Likelihood. This location is within the Brentwood Boulevard Specific Plan area and any future project will be subject to all the environmental requirements of a development or redevelopment project.

The second location is a PG&E-owned parcel near the southwest edge of Brentwood, along the new Highway 4 corridor. The access drive is located at the intersection of John Muir Parkway with Fairview Ave. This location is within an Old Industrial W/MA, but is extremely unlikely to be redeveloped.

The City of Brentwood is also participating in the BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

Brentwood's infrastructure, even within the old urban W/MA, is of mostly of modern construction, so at this time, it seems there is little reason to suspect that there are PCBs-containing materials in the infrastructure. More will be revealed with continuing efforts to study PCBs sources. The older original infrastructure is not of the type where PCBs

containing materials would have been used since it is mostly asphalt pavements and concrete curb, gutter and sidewalks, where caulking was not used. The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

4.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

4.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

4.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

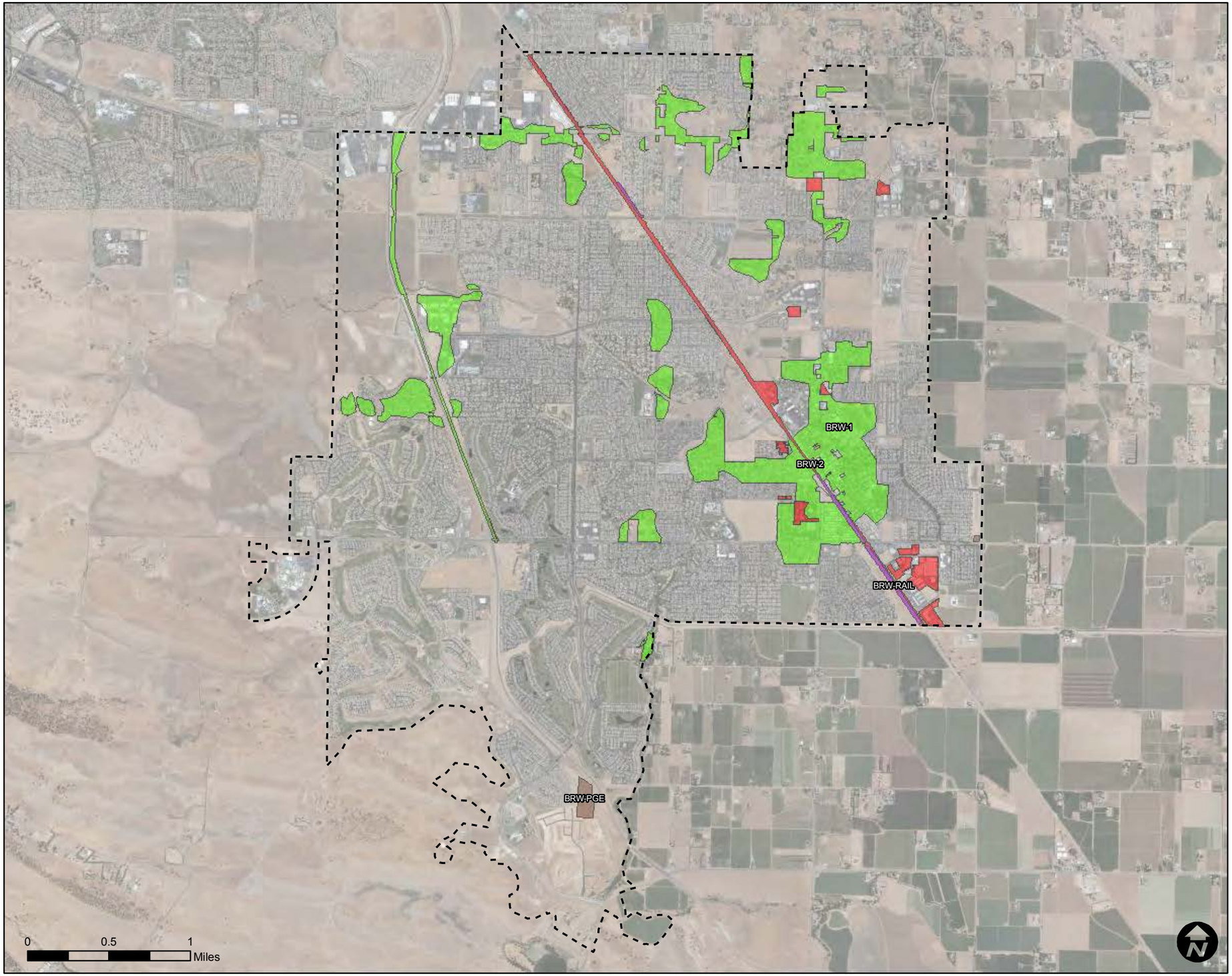
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 4-3. City of Brentwood Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area			
	BRW-1: Old Urban	BRW-2: Old Industrial	BRW-PGE	BRW-RAIL
Source Property Identification and Abatement				
Source Property Investigation		C, Po	Po	Po
Referral of Source Property		Po		
Direct Abatement of Source Property		Po		
Categorical Source Property Referral		Po	Po	Po
Green Infrastructure / Treatment Control Measures				
Redevelopment Subject to C.3	C, Po	Po		
GI/Treatment Measures Not Subject to C.3				
Full Trash Capture Devices (HDS)				
Managing PCBs in Building Materials and Infrastructure				
Managing PCBs in Building Materials	Po	Po		
Managing PCBs in Infrastructure	Po	Po		
Enhanced O&M				
Street Sweeping				
Storm Drain Inlet Cleaning				
Pump Station Maintenance				
Desilting of Channels and Culverts				
Street Flushing				
Storm Drain Line Cleaning				
Diversion to POTW				
Diversion to POTW				
Source Controls and Other Control Measures				
Mercury Load Avoidance and Reduction	Po	Po		
Illegal Dumping Cleanup	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po		

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- BRW-1, Old Urban
- BRW-2, Old Industrial
- BRW-PGE, Categorical PGE
- BRW-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

BRENTWOOD

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 4-1**

5 CITY OF CLAYTON

5.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) the City of Clayton are shown on Figure 5-1 and are listed below:

1. CLA-1: Old Urban

5.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of this W/MA is provided in Table 5-1 and are discussed in the sections below.

5.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Clayton have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

No further investigation is warranted in the City of Clayton.

5.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within the W/MA will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

5.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

5.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

5.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

5.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

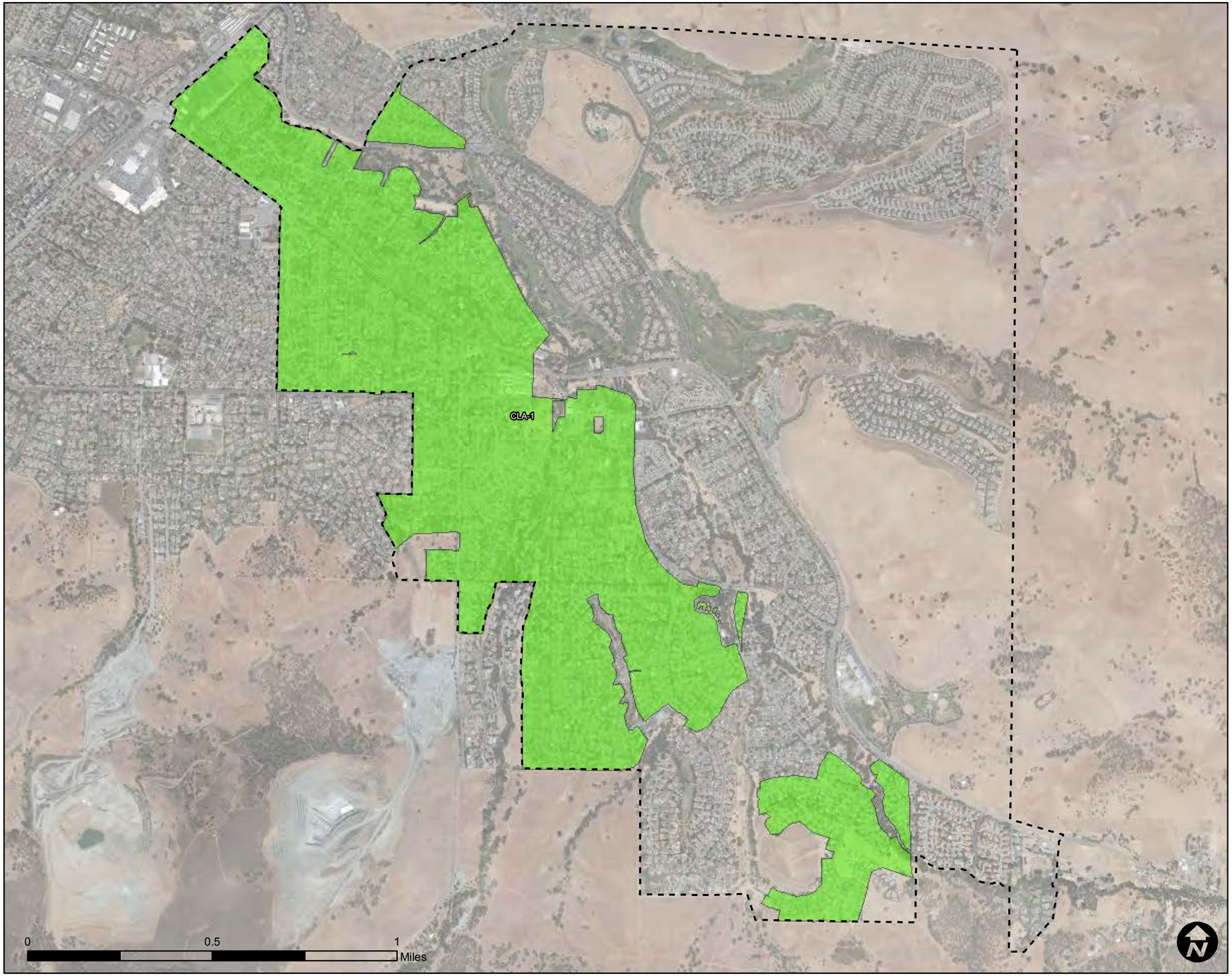
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 5-1. City of Clayton Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area CLA-1: Old Urban
Source Property Identification and Abatement	
Source Property Investigation	
Referral of Source Property	
Direct Abatement of Source Property	
Categorical Source Property Referral	
Green Infrastructure / Treatment Control Measures	
Redevelopment Subject to C.3	Po
GI/Treatment Measures Not Subject to C.3	
Full Trash Capture Devices (HDS)	
Managing PCBs in Building Materials and Infrastructure	
Managing PCBs in Building Materials	Po
Managing PCBs in Infrastructure	Po
Enhanced O&M	
Street Sweeping	
Storm Drain Inlet Cleaning	
Pump Station Maintenance	
Desilting of Channels and Culverts	
Street Flushing	
Storm Drain Line Cleaning	
Diversion to POTW	
Diversion to POTW	
Source Controls and Other Control Measures	
Mercury Load Avoidance and Reduction	Po
Illegal Dumping Cleanup	Po
Stockpiles, Spills, and Disposal of PCBs	Po

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- CLA-1, Old Urban

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

CLAYTON

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 5-1**

6 CITY OF CONCORD

6.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Concord are shown on Figure 6-1 and are listed below:

1. CON-1: Old Urban
2. CON-2: Old Industrial
3. CON-3: Military Base
4. CON-PGE: Categorical PG&E
5. CON-RAIL: Categorical Railroad

6.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 6-3 and are discussed in the sections below.

6.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Concord have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

6.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

The City of Concord has completed one (1) green infrastructure installation as part of a recent capital improvement project, with an additional installation planned as part of the second phase of the project. In addition, numerous private development projects, subject

to the provisions of C.3, continue through various stages of construction, with several completed this year and multiple ongoing. Several major redevelopment plans are also in the early stages of review and approval by the City of Concord, which will incorporate C.3 design and treatment over the entire project site.

Table 6-1: City of Concord Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
CON-1: Old Urban	Farm Bureau Road – Phase 1			Willow Pass Road to Wren Avenue
CON-1: Old Urban	Ashby Lumber – Site Expansion			Arnold Industrial
CON-1: Old Urban	Costco Parking Lot / Fueling Expansion			Monument/Detroit
CON-PGE: Categorical PG&E	PG&E Distribution Center			

Table 6-2: City of Concord Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
CON-1: Old Urban	Farm Bureau Road – Phase 2			Wren Avenue to Walnut Avenue
CON-1: Old Urban	Veranda Shopping Center			2001 Diamond Boulevard
CON-1: Old Urban	Masonic Temple – Historic Society			

6.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

As part of the demolition for the planned Veranda shopping center project, the building materials and surrounding onsite soils for the existing Chevron offices on Diamond Boulevard were tested and materials identified as below the residential numeric detection limits for PCBs (<0.25 ppm), per EPA guidance, were designated for haul away and

disposal at an approved site, thereby mitigating a measured volume of PCBs that otherwise had the potential to migrate into downstream receiving waters.

The City of Concord is also participating in the BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

6.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

6.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

6.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

Stockpiles, Spills, and Disposal of PCBs

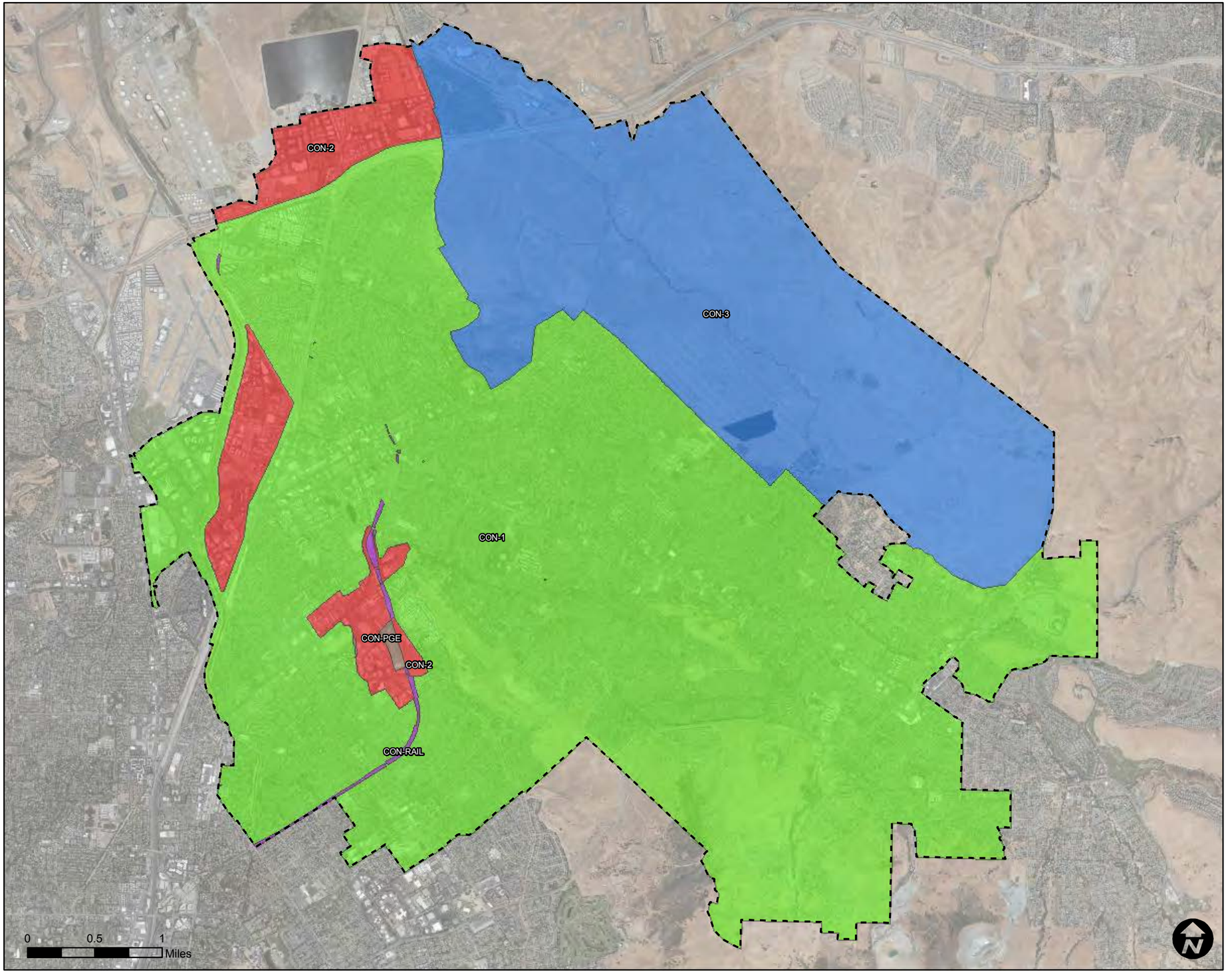
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

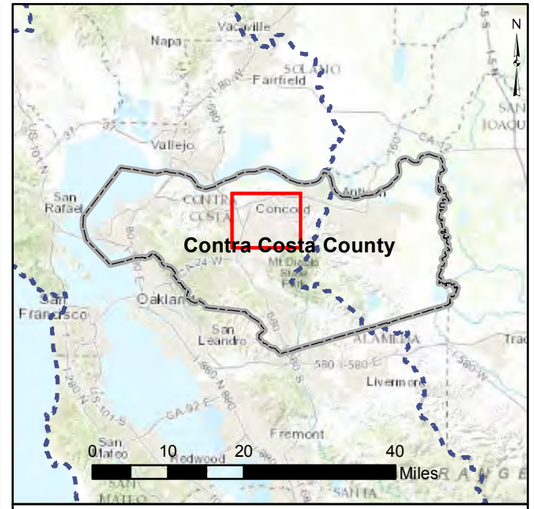
In February 2016, the City of Concord collected documentation from PG&E following a transformer spill and subsequent PCBs cleanup.

Table 6-3. City of Concord Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area				
	CON-1: Old Urban	CON-2: Old Industrial	CON-3: Military Base	CON-PGE	CON-RAIL
Source Property Identification and Abatement					
Source Property Investigation		C, Po	Po	Po	Po
Referral of Source Property		Po			
Direct Abatement of Source Property					
Categorical Source Property Referral				Po	Po
Green Infrastructure / Treatment Control Measures					
Redevelopment Subject to C.3	C, P, Po	P, Po	C, P, Po		
GI/Treatment Measures Not Subject to C.3	Po	Po	Po		
Full Trash Capture Devices (HDS)					
Managing PCBs in Building Materials and Infrastructure					
Managing PCBs in Building Materials	C, P, Po	Po	Po		
Managing PCBs in Infrastructure	P, Po	Po	Po		
Enhanced O&M					
Street Sweeping					
Storm Drain Inlet Cleaning					
Pump Station Maintenance					
Desilting of Channels and Culverts					
Street Flushing					
Storm Drain Line Cleaning					
Diversion to POTW					
Diversion to POTW					
Source Controls and Other Control Measures					
Mercury Load Avoidance and Reduction	C, Po	Po	Po		
Illegal Dumping Cleanup	C, Po	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	C, Po	Po	Po		

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- CON-1, Old Urban
- CON-2, Old Industrial
- CON-3, Military Base
- CON-PGE, Categorical PGE
- CON-RAIL, Categorical Rail

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CONTRA COSTA CLEAN WATER PROGRAM

CONCORD

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 6-1**

7 TOWN OF DANVILLE

7.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the Town of Danville are shown on Figure 7-1 and are listed below:

1. DAN-1: Danville Town Boundary
2. DAN-PGE: Categorical PG&E

7.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in this W/MA is provided in Table 7-1 and are discussed in the sections below.

7.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

Danville has no known or suspected source properties. The majority of the Town is residential. The downtown area and a portion of the older residential areas, are identified as old urban. No properties within the Town of Danville have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

No further investigation is warranted in the Town of Danville.

7.2.2 Green Infrastructure / Treatment Control Measures

Danville is primarily built out. A few larger undeveloped parcels are planned for residential subdivisions, but haven't been built yet. All major redevelopment in Danville will be subject to C.3 regulations. The Town is also planning on updating the Danville Downtown Master Plan. Green Infrastructure will be encouraged throughout town and in the Downtown Plan where feasible.

7.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

7.2.4 Enhanced Operation and Maintenance Control Measures

Danville is implementing on-going town-wide control measures and maintenance efforts including street sweeping, catch basin cleaning, and desilting of channels and culverts. Drainage maintenance capital improvement projects may include desilting culverts before replacement.

7.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

7.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

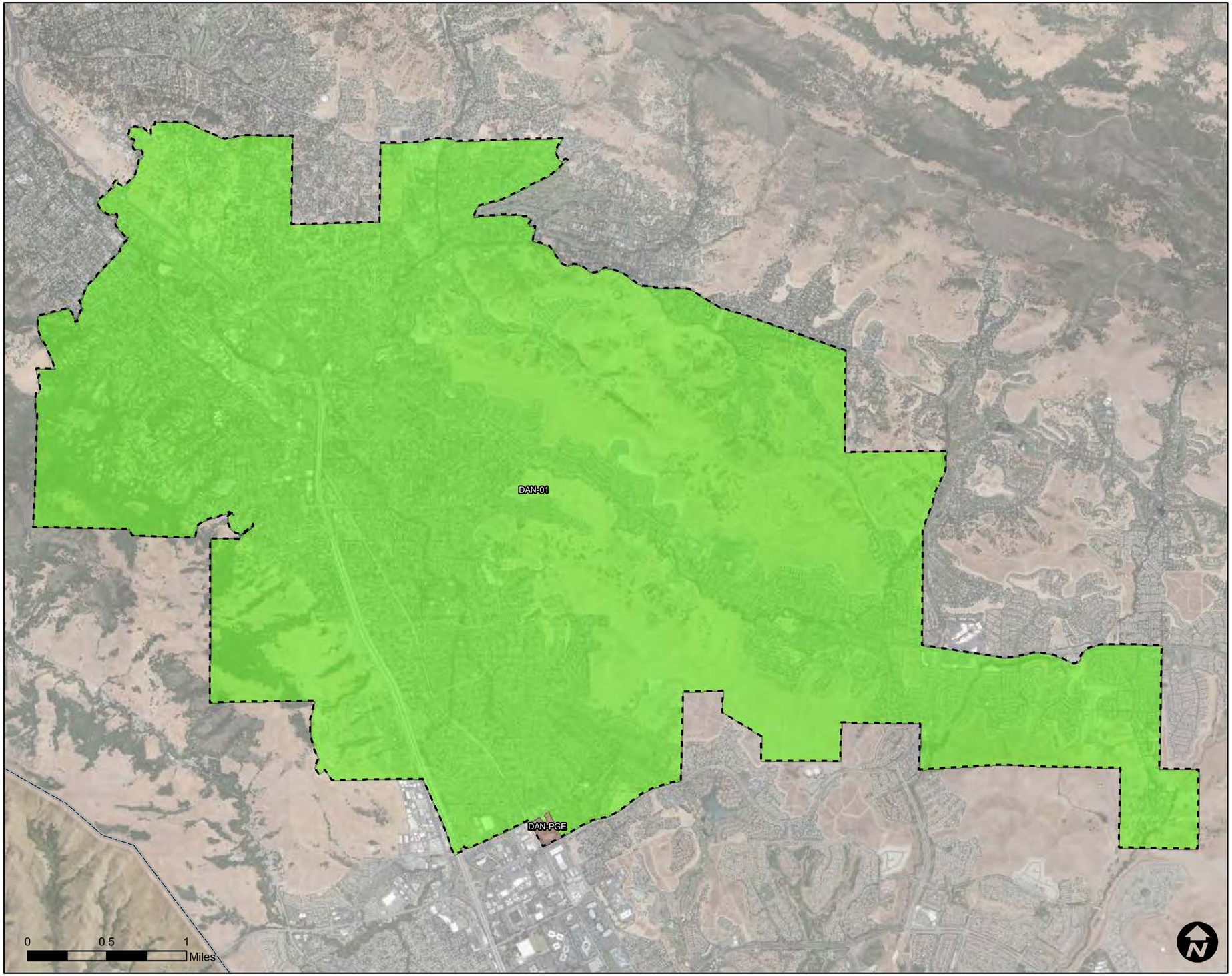
Stockpiles, Spills, and Disposal of PCBs

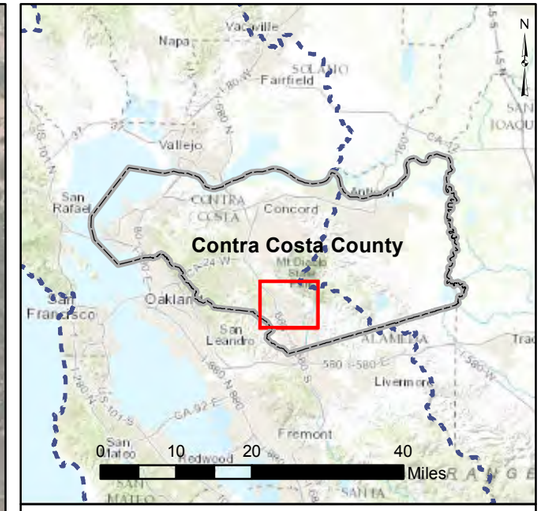
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 7-1. Town of Danville Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area	
	DAN-1: Danville Town Boundary	DAN-PGE
Source Property Identification and Abatement		
Source Property Investigation	C	Po
Referral of Source Property		
Direct Abatement of Source Property		
Categorical Source Property Referral		Po
Green Infrastructure / Treatment Control Measures		
Redevelopment Subject to C.3	C, P, Po	
GI/Treatment Measures Not Subject to C.3	C, P, Po	
Full Trash Capture Devices (HDS)	C, P, Po	
Managing PCBs in Building Materials and Infrastructure		
Managing PCBs in Building Materials	P	
Managing PCBs in Infrastructure	Po	
Enhanced O&M		
Street Sweeping	C, P, Po	
Storm Drain Inlet Cleaning	C, P, Po	
Pump Station Maintenance		
Desilting of Channels and Culverts	C, Po	
Street Flushing		
Storm Drain Line Cleaning		
Diversion to POTW		
Diversion to POTW		
Source Controls and Other Control Measures		
Mercury Load Avoidance and Reduction	Po	
Illegal Dumping Cleanup	C, P, Po	
Stockpiles, Spills, and Disposal of PCBs	Po	

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- DAN-01, Danville WMA
- DAN-PGE, Categorical PGE

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

DANVILLE

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 7-1**

8 CITY OF EL CERRITO

8.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of El Cerrito are shown on Figure 8-1 and are listed below:

1. ELC-1: Old Urban
2. ELC-2: Old Industrial and High Likelihood
3. ELC- PGE: Categorical PG&E
4. ELC- RAIL: Categorical Railroad

8.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 8-3 and are discussed in the sections below.

8.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of El Cerrito have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

8.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

Table 8-1: City of El Cerrito Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
ELC-2: High Likelihood/ Industrial	Stege Sanitary Service			7500 Schmidt Ln.
ELC-1: Old Urban	San Pablo Avenue Rain Gardens			Site A. Eureka at SPA Site B. Madison at SPA
ELC-1: Old Urban	City Hall Public Safety Buildings			10890 San Pablo Avenue
ELC-1: Old Urban	Ohlone Greenway Raingardens			Fairmount Avenue at BART/Ohlone Greenway

Table 8-2: City of El Cerrito Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
ELC-1: Old Urban	San Pablo Avenue Green Spine Project			San Pablo Ave./Moeser Lane

8.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The City of El Cerrito is currently incorporating a requirement for PCBs monitoring, reporting and safe disposal into the City building demolition permit process and will also be participating in the BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

8.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

8.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

8.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

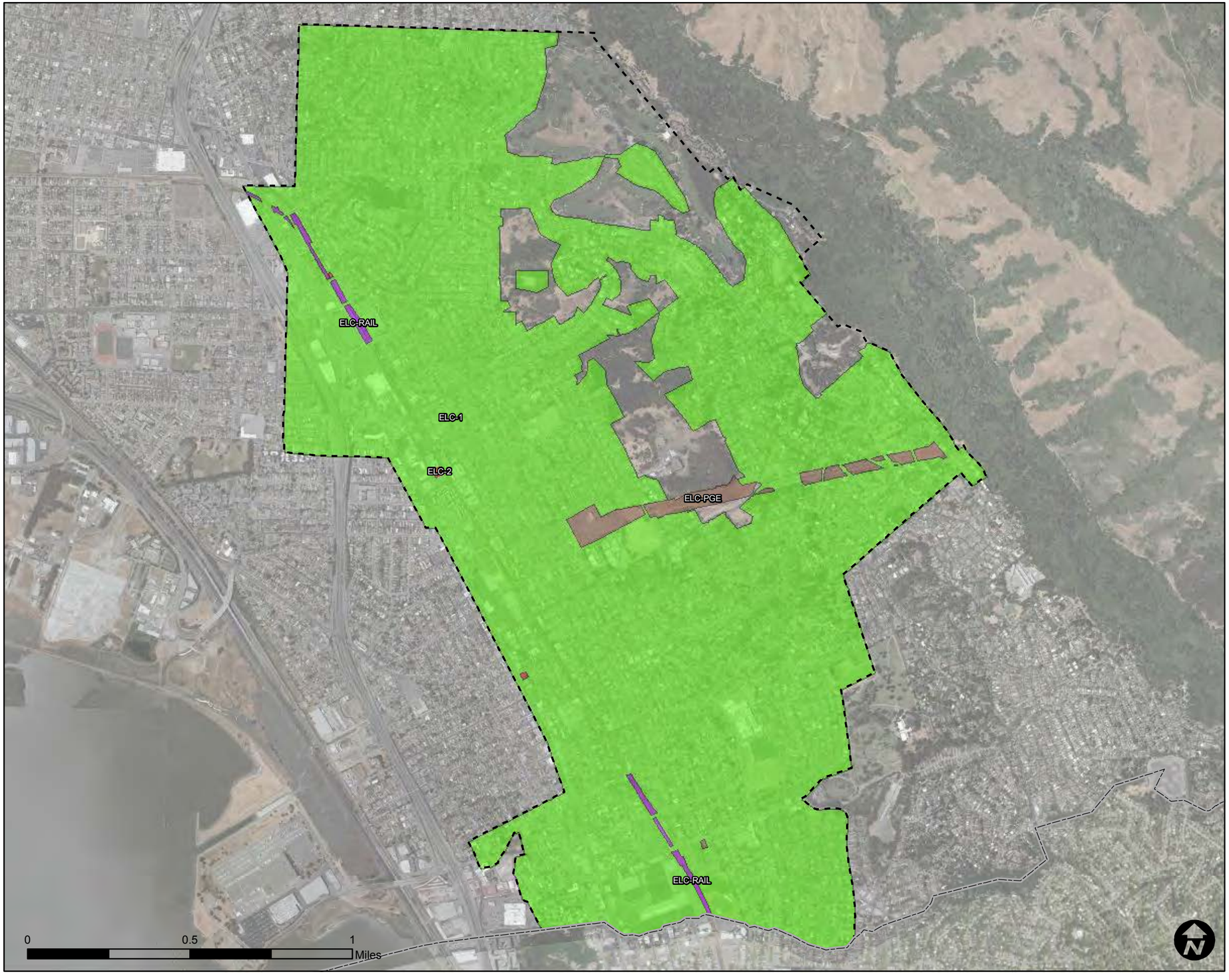
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 8-3. City of El Cerrito Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area			
	ELC-1: Old Urban	ELC-2: High Likelihood/ Old Industrial	ELC- PGE: Cat. PG&E	ELC- RAIL: Cat. Railroad
Source Property Identification and Abatement				
Source Property Investigation	Po	C, Po	Po	Po
Referral of Source Property	Po	Po		
Direct Abatement of Source Property				
Categorical Source Property Referral	Po	Po	Po	Po
Green Infrastructure / Treatment Control Measures				
Redevelopment Subject to C.3	C, P, Po			
GI/Treatment Measures Not Subject to C.3	C, P, Po	Po		
Full Trash Capture Devices (HDS)	C, P, Po	C, Po		
Managing PCBs in Building Materials and Infrastructure				
Managing PCBs in Building Materials	P	P		
Managing PCBs in Infrastructure	Po	Po		
Enhanced O&M				
Street Sweeping	C	C		
Storm Drain Inlet Cleaning	C	C		
Pump Station Maintenance				
Desilting of Channels and Culverts				
Street Flushing				
Storm Drain Line Cleaning	C, Po	C, Po		
Diversion to POTW				
Diversion to POTW				
Source Controls and Other Control Measures				
Mercury Load Avoidance and Reduction	Po	Po		
Illegal Dumping Cleanup	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po		

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- ELC-1, Old Urban
- ELC-2, Old Industrial / High Likelihood
- ELC-PGE, Categorical PGE
- ELC-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

EL CERRITO

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 8-1**

9 CITY OF HERCULES

9.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Hercules are shown on Figure 9-1 and are listed below:

1. HER-1: Old Urban
2. HER-2: Old Industrial/ High Likelihood
3. HER-PGE: Categorical PG&E
4. HER-RAIL: Categorical Railroad

9.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 9-1 and are discussed in the sections below.

9.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Hercules have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

9.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

9.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

9.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

9.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

9.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 9-1. City of Hercules Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area			
	HER-1: Old Urban	HER-2: Old Industrial/ High Likelihood	HER-PGE	HER-RAIL
Source Property Identification and Abatement				
Source Property Investigation		C, Po	Po	Po
Referral of Source Property		Po		
Direct Abatement of Source Property		Po		
Categorical Source Property Referral			Po	Po
Green Infrastructure / Treatment Control Measures				
Redevelopment Subject to C.3	C, P, Po			
GI/Treatment Measures Not Subject to C.3		Po		
Full Trash Capture Devices (HDS)				
Managing PCBs in Building Materials and Infrastructure				
Managing PCBs in Building Materials	Po	Po		
Managing PCBs in Infrastructure	Po	Po		
Enhanced O&M				
Street Sweeping				
Storm Drain Inlet Cleaning				
Pump Station Maintenance				
Desilting of Channels and Culverts				
Street Flushing				
Storm Drain Line Cleaning				
Diversion to POTW				
Diversion to POTW				
Source Controls and Other Control Measures				
Mercury Load Avoidance and Reduction	Po	Po		
Illegal Dumping Cleanup	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po		

Completed (C), Planned (P), Potential (Po)

Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- HER-1, Old Urban
- HER-2, Old Industrial / High Likelihood
- HER-PGE, Categorical PGE
- HER-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

HERCULES

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 9-1**

10 CITY OF LAFAYETTE

10.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Lafayette are shown on Figure 10-1 and are listed below:

1. LAF-1: Old Urban

10.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 10-3 and are discussed in the sections below.

10.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

The City of Lafayette has no known or suspected source properties. No properties within the City of Lafayette have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

No further investigations are warranted in the City of Lafayette.

10.2.2 Green Infrastructure / Treatment Control Measures

C.3 Regulated Redevelopment Projects completed within the City's Old Urban W/MA since fiscal year 2009-2010 and planned projects are included in the tables below. Any additional development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

Table 10-1: City of Lafayette Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
LAF1 Old Urban	EcoVive Office Building	Bioretention Basins	N/A	3800 & 3810 Mt. Diablo Blvd.
LAF1 Old Urban	The Woodbury Condominiums	Modified Bioretention Treatment System	N/A	1001-1010 Woodbury Road
LAF1 Old Urban	Belle Terre	Bioswales	N/A	3428 Mt. Diablo Blvd.
LAF1 Old Urban	Marquis Townhomes	Bioswales	N/A	Shreve Lane
LAF1 Old Urban	Whole Foods employee parking lot	Bioswales	0.72	3505 Deer Hill Road
LAF1 Old Urban	Whole Foods L08-09	Bioswales	N/A	3505 Deer Hill Road
LAF1 Old Urban	Merrill Gardens	Flow-Thru Planters	1.35	1010 Second Street at Mt. Diablo Blvd.
LAF1 Old Urban	Fiesta Lane	Bioretention Areas	0.87	Lafayette Circle

N/A = not available

Table 10-2: City of Lafayette Planned Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
LAF1 Old Urban	Homes at Deer Hill	Bioretention	N/A	3233 Deer Hill
LAF1 Old Urban	Lennar	Media Filter, Self-Retaining L/S, Bioretention	N/A	3666, 3672, 3682 Mt. Diablo Blvd.
LAF1 Old Urban	Chase	Flow Through	N/A	3603 Mt. Diablo Blvd.

N/A = not available

10.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

10.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

10.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

10.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

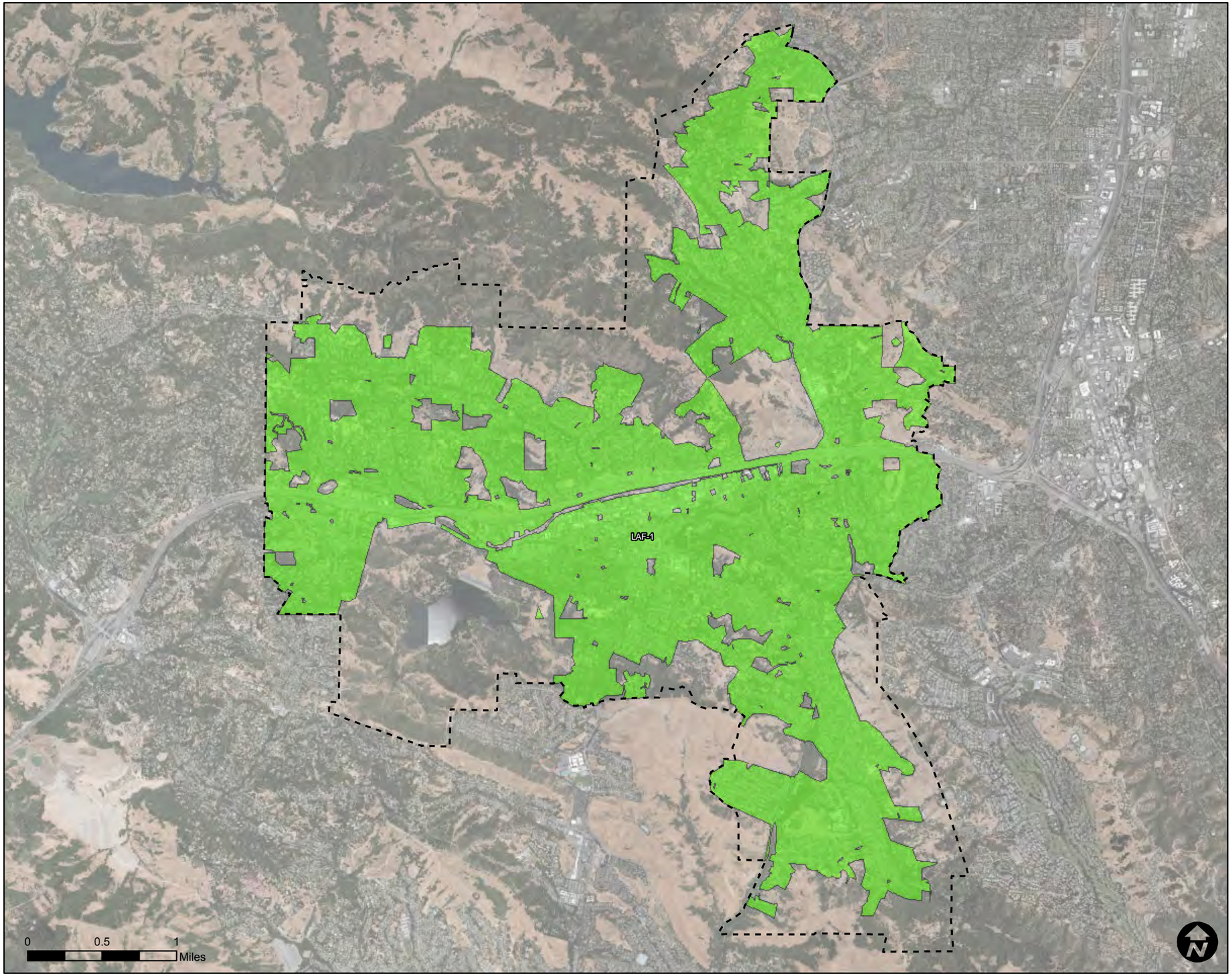
Stockpiles, Spills, and Disposal of PCBs

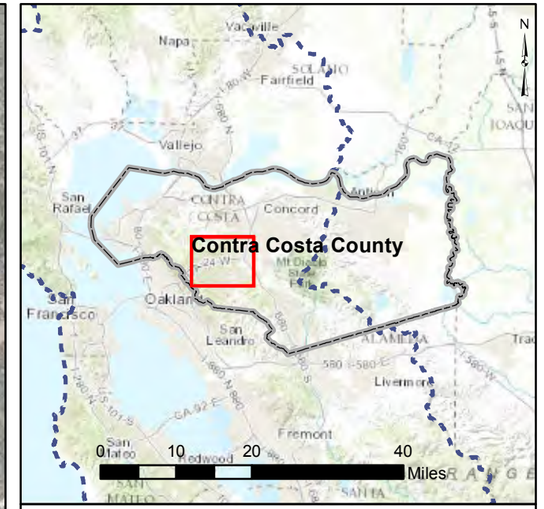
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs. The City of Lafayette has experienced no specific PCBs incidents of dumping that require cleanup to date.

Table 10-3: City of Lafayette Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area LAF-1: Old Urban
Source Property Identification and Abatement	
Source Property Investigation	C
Referral of Source Property	
Direct Abatement of Source Property	
Categorical Source Property Referral	
Green Infrastructure / Treatment Control Measures	
Redevelopment Subject to C.3	Po
GI/Treatment Measures Not Subject to C.3	Po
Full Trash Capture Devices (HDS)	
Managing PCBs in Building Materials and Infrastructure	
Managing PCBs in Building Materials	Po
Managing PCBs in Infrastructure	Po
Enhanced O&M	
Street Sweeping	
Storm Drain Inlet Cleaning	
Pump Station Maintenance	
Desilting of Channels and Culverts	
Street Flushing	
Storm Drain Line Cleaning	
Diversion to POTW	
Diversion to POTW	
Source Controls and Other Control Measures	
Mercury Load Avoidance and Reduction	Po
Illegal Dumping Cleanup	Po
Stockpiles, Spills, and Disposal of PCBs	Po

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- LAF-1, Old Urban

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

LAFAYETTE

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 10-1**

11 CITY OF MARTINEZ

11.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Martinez are shown on Figure 11-1 and are listed below:

1. MTZ-1: Old Urban
2. MTZ-2: Refinery/Industrial
3. MTZ-3: Downtown/Commercial
4. MTZ-RAIL: Categorical Railroad
5. MTZ-PGE: Categorical PG&E

11.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 11-4 and are discussed in the sections below.

11.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Martinez have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

The City of Martinez conducted visual windshield inspection of potential Old Industrial and High Likelihood parcels. No source control is being conducted currently in the old urban areas. Although no investigations are currently underway, future investigations have the potential to result in a property referral.

11.2.2 Green Infrastructure / Treatment Control Measures

Table 11-1: City of Martinez Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
MTZ-1	Arnold Commercial Retail Center	1/22/2016 (Constructed in two phases)	1.49	1047 Arnold Drive
MTZ-1	Foxwood Community, Subdivision 9103-Bio swale	10/1/2008	3.87	Morello Ave/Silva Court
MTZ-1	Foxwood Community, Subdivision 9103 – CDS unit	10/1/2008	2.39	Morello Ave/Silva Court
MTZ-1	Rankin Aquatic Complex (Rankin Pool)	12/5/2012	1.27	100 Buckley Street
MTZ-1	Rankin Park	10/17/2012	0.97	Glen Drive
MTZ-1	Wills Residence	10/12/2010	0.79	4958 Alhambra Valley Road
MTZ-3	Intermodal Facility Parking Lot	7/02/2014	4.92	360 Ferry Street
MTZ-1	Hidden Valley Park	7/16/2014	1.40	Center Ave & Redwood Road
MTZ-1	Berrellesa Palms-RCD (Senior Housing Project)	3/11/2015	1.03	310 Berrellesa Street
MTZ-1	The Paseos, Subdivision 9089 (bio-swales and bio-retention basins)	2015	6.09	1000 Howe Road
MTZ-1	The Paseos, Subdivision 9089 – 2 CDS units	2015	1.3	1000 Howe Road

Table 11-2: City of Martinez Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
MTZ-1	Martinez Unified School District School	Design complete 2016-17	1.0	601 Alhambra Way

Table 11-3: City of Martinez Potential Projects

WMA ID	DATE OF COMPLETION/OTHER MILESTONE	TREATMENT AREA (AC.)	PROJECT ID	LOCATION
MTZ-1	2017-18	Undetermined at this time	Waterfront Park Renovation	Martinez Marina Park
MTZ-1	2018	Undetermined at this time	Pacheco Blvd Improvement	Contra Costa County & City (joint project)

Table 11-1: This table contains constructed public and private development projects. These projects installed bioretention basins, bioswales, and CDS units to meet the C.3 requirements.

Table 11-2: The Village at Arnold project is currently under construction. Bioretention basins are or will be construction and operation soon.

Table 11-3: Projects are in preliminary design phase. Scopes and limits of these projects are not well defined at this time. Projects will likely construct green infrastructure facilities (such as bioretention basins) to comply with C.3 requirement for green infrastructure. (Construction will be contingent upon available funding, which has not been determined at this time. Design to available funding.)

11.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

11.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

11.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

11.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

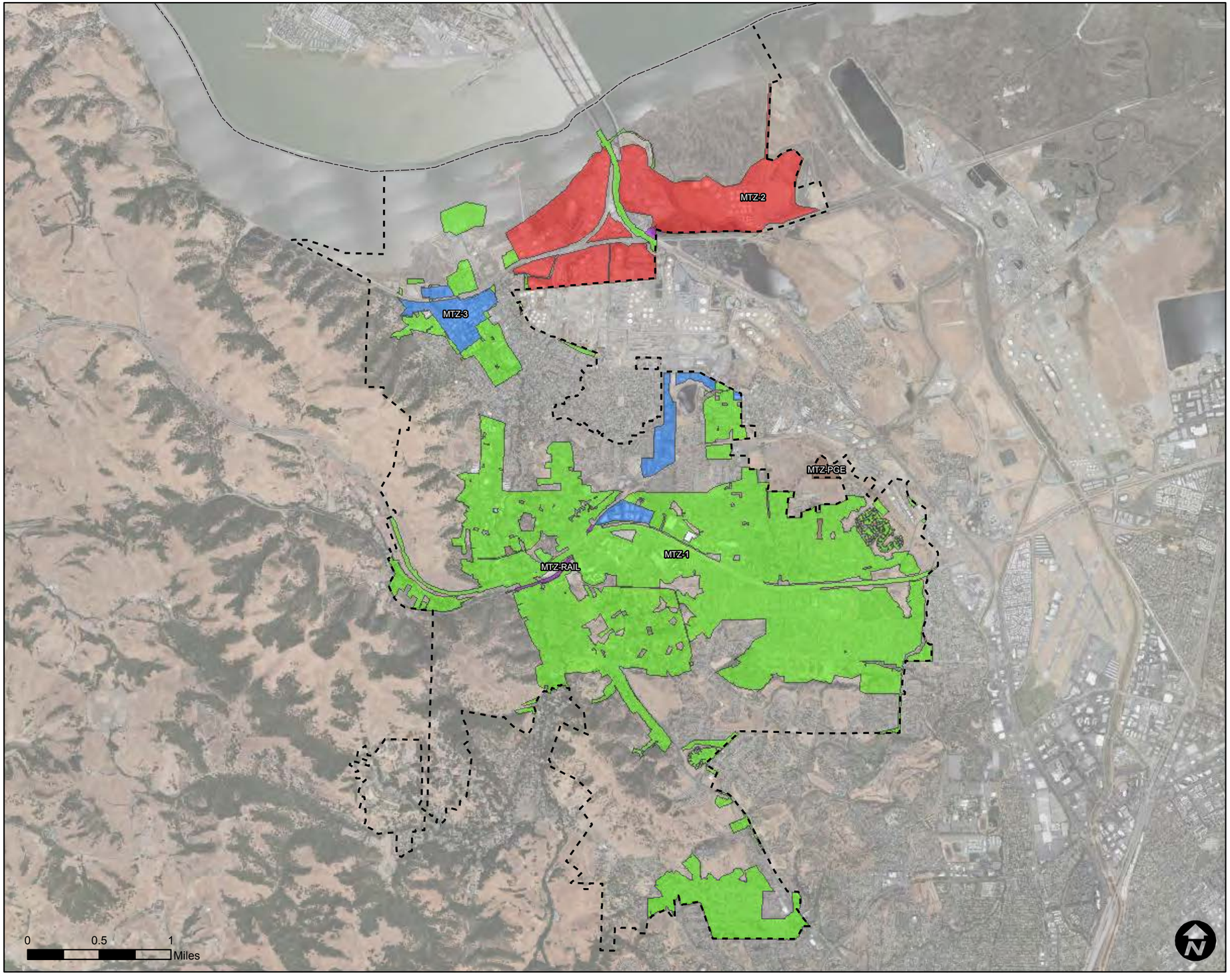
Stockpiles, Spills, and Disposal of PCBs

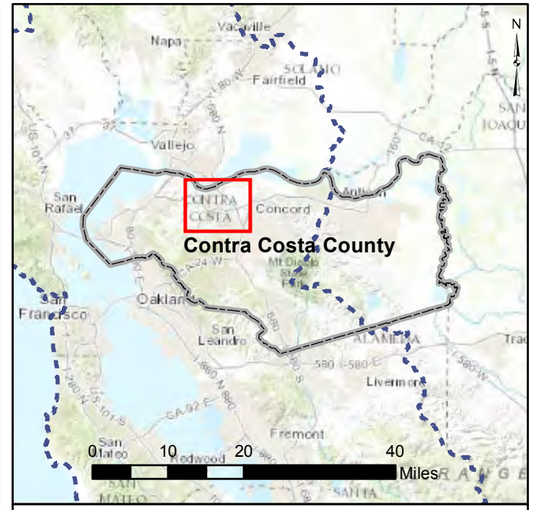
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 11-4. City of Martinez Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area				
	MTZ-1: Old Urban	MTZ-2: Refinery/ Industrial	MTZ-3: Downtown/ Commercial	MTZ-Rail	MTZ-PG&E
Source Property Identification and Abatement					
Source Property Investigation	Po	Po	Po	Po	Po
Referral of Source Property	Po	Po	Po		
Direct Abatement of Source Property	Po	Po	Po		
Categorical Source Property Referral				Po	Po
Green Infrastructure / Treatment Control Measures					
Redevelopment Subject to C.3	Po	Po	C, Po		
GI/Treatment Measures Not Subject to C.3	Po	Po	Po		
Full Trash Capture Devices (HDS)	C, Po	Po	C, Po		
Managing PCBs in Building Materials and Infrastructure					
Managing PCBs in Building Materials	Po	Po	Po		
Managing PCBs in Infrastructure	Po	Po	Po		
Enhanced O&M					
Street Sweeping	Po	C, Po	C, Po		
Storm Drain Inlet Cleaning	C, Po	C, Po	C, Po		
Pump Station Maintenance		Po			
Desilting of Channels and Culverts	C, Po	Po	Po		
Street Flushing	Po	Po	Po		
Storm Drain Line Cleaning	C, P, Po	C, Po	C, P, Po		
Diversion to POTW					
Diversion to POTW					
Source Controls and Other Control Measures					
Mercury Load Avoidance and Reduction	Po	Po	Po		
Illegal Dumping Cleanup	Po	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po	Po		

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- MTZ-1, Old Urban
- MTZ-2, Refinery/Industrial
- MTZ-3, Downtown/Commercial
- MTZ-PGE, Categorical PGE
- MTZ-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

MARTINEZ

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 11-1**

12 TOWN OF MORAGA

12.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the Town of Moraga are shown on Figure 12-1 and are listed below:

1. MOR-1: Old Industrial
2. MOR-2: Old Urban

12.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 12-3 and are discussed in the sections below.

12.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the Town of Moraga have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

No further investigations are warranted in the Town of Moraga.

12.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

The Town of Moraga has two (2) green infrastructure installations proposed in its capital improvement program, one is an off-site mitigation for a landslide repair and repaving project in the form of a bioswale. The second is incorporation of bioretention facilities to treat street runoff as part of construction of a roundabout at an existing intersection. In addition, a few private development projects, subject to the provisions of C.3, continue through various stages of construction. Both projects are in the initial planning phase and details are not available at this time.

The projects listed in Table 12-1 have completed construction as of June 2016.

Table 12-1: Town of Moraga Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
MOR-2: Old Urban	8 Julianna Court	February 2010		8 Julianna Court
MOR-2: Old Urban	226 Rheem Boulevard	November 2010	0.29	226 Rheem Boulevard
MOR-2: Old Urban	1057/1065 Camino Pablo	February 2011	0.28	Monument/Detroit
MOR-2: Old Urban	Moraga Country Club	October 2011	0.46	1600 St. Andrews Drive
MOR-2: Old Urban	Joseph L. Alioto Recreation Center – St Mary's College	March 2015	3.53	1928 St Marys Road
MOR-2: Old Urban	Expansion of Existing North Parking Lot – St Mary's College	August 2014	0.44	1928 St Marys Road
MOR-2: Old Urban	Moraga Commons Off-Street Parking	October 2012 (start of construction)	0.28	1425 St. Mary's Road

The planned projects listed in Table 12-2 have received discretionary approval and are either under construction or pending permit issuance.

Table 12-2: Town of Moraga Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
MOR-2: Old Urban	Hetfield Estates Subdivision 9051	FY 16-17	1.26	Hetfield Place
MOR-2: Old Urban	Camino Ricardo Subdivision (Harvest Court)	FY 16-17	2.85	Camino Ricardo
MOR-2: Old Urban	Minor Subdivision 601-14	Unknown	0.43	1049 Camino Pablo
MOR-2: Old Urban	Rancho Laguna II Subdivision 9330 Bella Vista		7.0	Rheem Blvd between St. Mary's Road and Moraga Road
MOR-2: Old Urban	Subdivision 9317 Via Moraga	FY 16-17	1.2	489 Moraga Road
MOR-2: Old Urban	Palos Colorados	Unknown	27.5	Moraga Road

12.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Town of Moraga is applying conditions of approval to demolition permits for buildings that have the potential to have PCBs- and/or mercury-containing materials. The condition of approval requires that the applicant have the structure evaluated for PCBs and mercury containing materials prior to issuance of the demolition permit. If PCBs and/or mercury containing materials are found, the applicant shall have these items removed and properly disposed of a licensed contractor and written documentation thereof. The Town of Moraga is also participating in the BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

12.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

12.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

12.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris as needed.

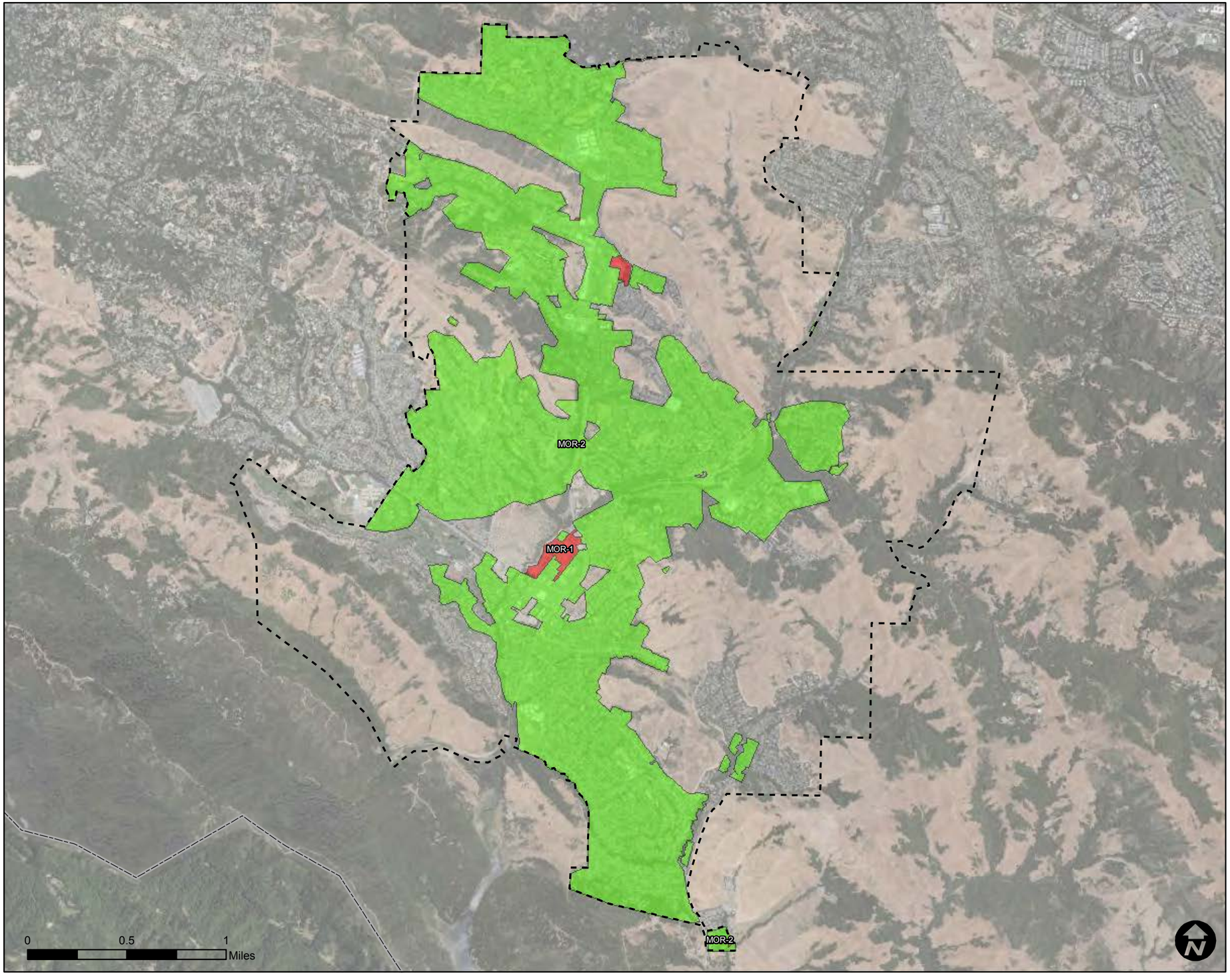
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 12-3. Town of Moraga Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area	
	MOR-1: Old Industrial	MOR-2: Old Urban
Source Property Identification and Abatement		
Source Property Investigation	C	C
Referral of Source Property		
Direct Abatement of Source Property		
Categorical Source Property Referral		
Green Infrastructure / Treatment Control Measures		
Redevelopment Subject to C.3	C, P, Po	Po
GI/Treatment Measures Not Subject to C.3	Po	P
Full Trash Capture Devices (HDS)		
Managing PCBs in Building Materials and Infrastructure		
Managing PCBs in Building Materials	Po	Po
Managing PCBs in Infrastructure	Po	Po
Enhanced O&M		
Street Sweeping		
Storm Drain Inlet Cleaning		
Pump Station Maintenance		
Desilting of Channels and Culverts		
Street Flushing		
Storm Drain Line Cleaning		
Diversion to POTW		
Diversion to POTW		
Source Controls and Other Control Measures		
Mercury Load Avoidance and Reduction	Po	Po
Illegal Dumping Cleanup	Po	Po
Stockpiles, Spills, and Disposal of PCBs	Po	Po

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- MOR-1, Old Industrial
- MOR-2, Old Urban

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

MORAGA

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 12-1**

13 CITY OF OAKLEY

13.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Oakley are shown on Figure 13-1 and are listed below:

1. OAK-1: Old Urban
2. OAK-2: Old Industrial/High Likelihood
3. OAK-RAIL: Categorical Railroad
4. OAK-PGE: Categorical PG&E

13.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 13-1 and are discussed in the sections below.

13.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Oakley have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

The City of Oakley has not identified any source properties but will continue its inspection of commercial/industrial facilities required by Provision C.4 which may identify source properties in the future, albeit unlikely given the commercial rather than industrial nature of the facilities inspected.

13.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

13.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The City of Oakley is applying conditions of approval to demolition permits for buildings that have the potential to have PCBs- and/or mercury-containing materials. The condition of approval requires that the applicant have the structure evaluated for PCBs and mercury containing materials prior to issuance of the demolition permit. If PCBs and/or mercury containing materials are found, the applicant shall have these items removed and properly disposed of a licensed contractor and written documentation thereof. The City of Oakley is also participating in the BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

13.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

13.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

13.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

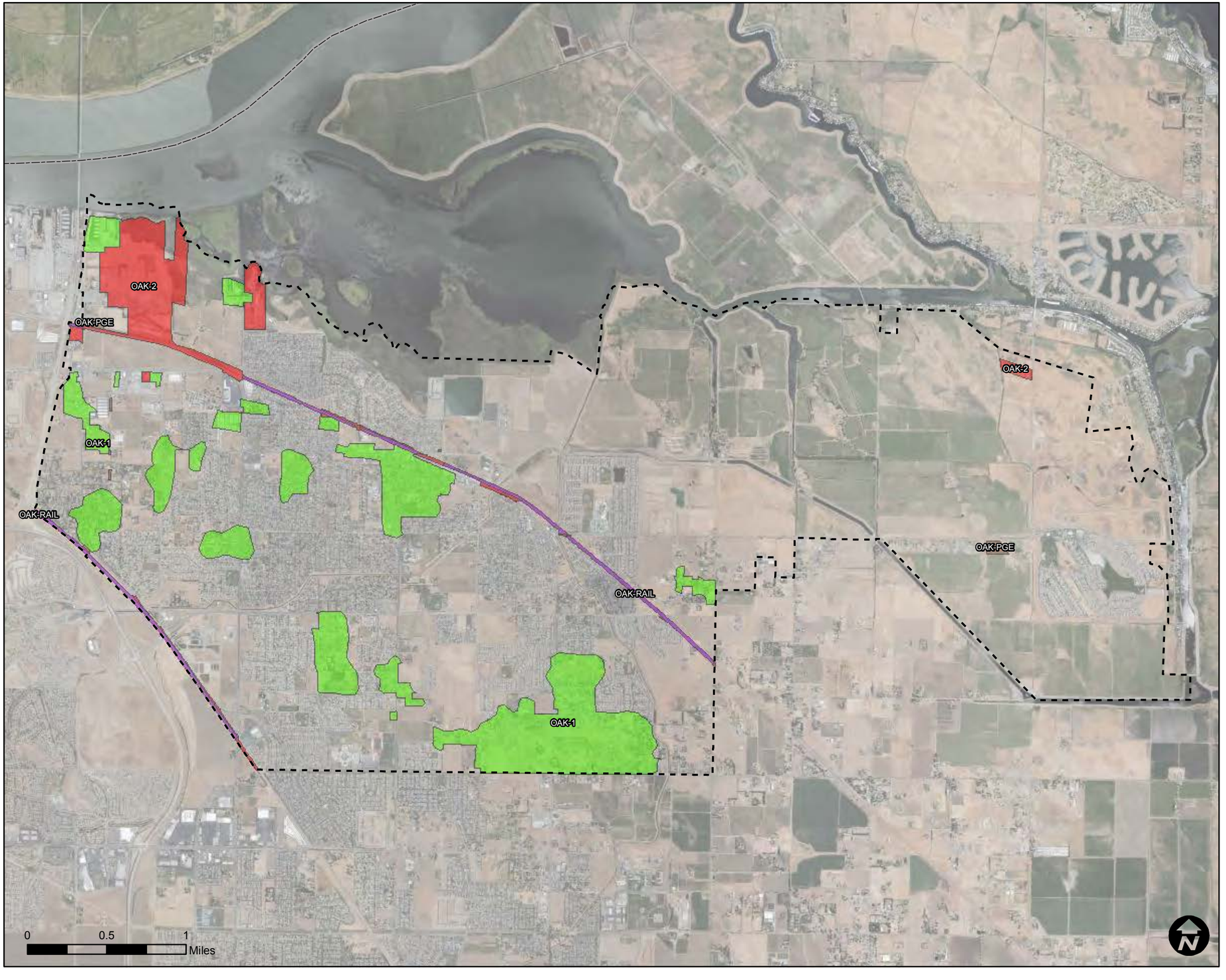
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 13-1. City of Oakley Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area			
	OAK-1: Old Urban	OAK-2: Old Industrial/ High Likelihood	OAK-RAIL	OAK-PGE
Source Property Identification and Abatement				
Source Property Investigation		Po	Po	Po
Referral of Source Property		Po		
Direct Abatement of Source Property				
Categorical Source Property Referral			Po	Po
Green Infrastructure / Treatment Control Measures				
Redevelopment Subject to C.3	C, P, Po	Po		
GI/Treatment Measures Not Subject to C.3	C, P, Po	Po		
Full Trash Capture Devices (HDS)				
Managing PCBs in Building Materials and Infrastructure				
Managing PCBs in Building Materials	Po	Po		
Managing PCBs in Infrastructure	Po	Po		
Enhanced O&M				
Street Sweeping				
Storm Drain Inlet Cleaning				
Pump Station Maintenance				
Desilting of Channels and Culverts				
Street Flushing				
Storm Drain Line Cleaning				
Diversion to POTW				
Diversion to POTW				
Source Controls and Other Control Measures				
Mercury Load Avoidance and Reduction	Po	Po		
Illegal Dumping Cleanup	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po		

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- OAK-1, Old Urban
- OAK-2, Old Industrial / High Likelihood
- OAK-PGE, Categorical PGE
- OAK-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

OAKLEY

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 13-1**

14 CITY OF ORINDA

14.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Orinda are shown on Figure 14-1 and are listed below:

1. ORI-1: Old Urban
2. ORI-2: Downtown
3. ORI-PGE: Categorical PG&E

14.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 14-1 and are discussed in the sections below.

14.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Orinda have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

The City of Orinda is largely old urban. There are no suspected source properties contained in the City of Orinda's W/MAs. The only old industrial areas are owned and operated by PG&E and included in WMA 4. Therefore, no ongoing inspection or abatement is required.

14.2.2 Green Infrastructure / Treatment Control Measures

The City of Orinda requires developers to follow the Stormwater C.3 Guidebook developed by the Contra Costa Clean Water Program for all new development or redevelopment. The City may pursue a Downtown Specific Plan in the future, but there is no timeline for implementation at the time of this report.

14.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

14.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

14.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

14.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

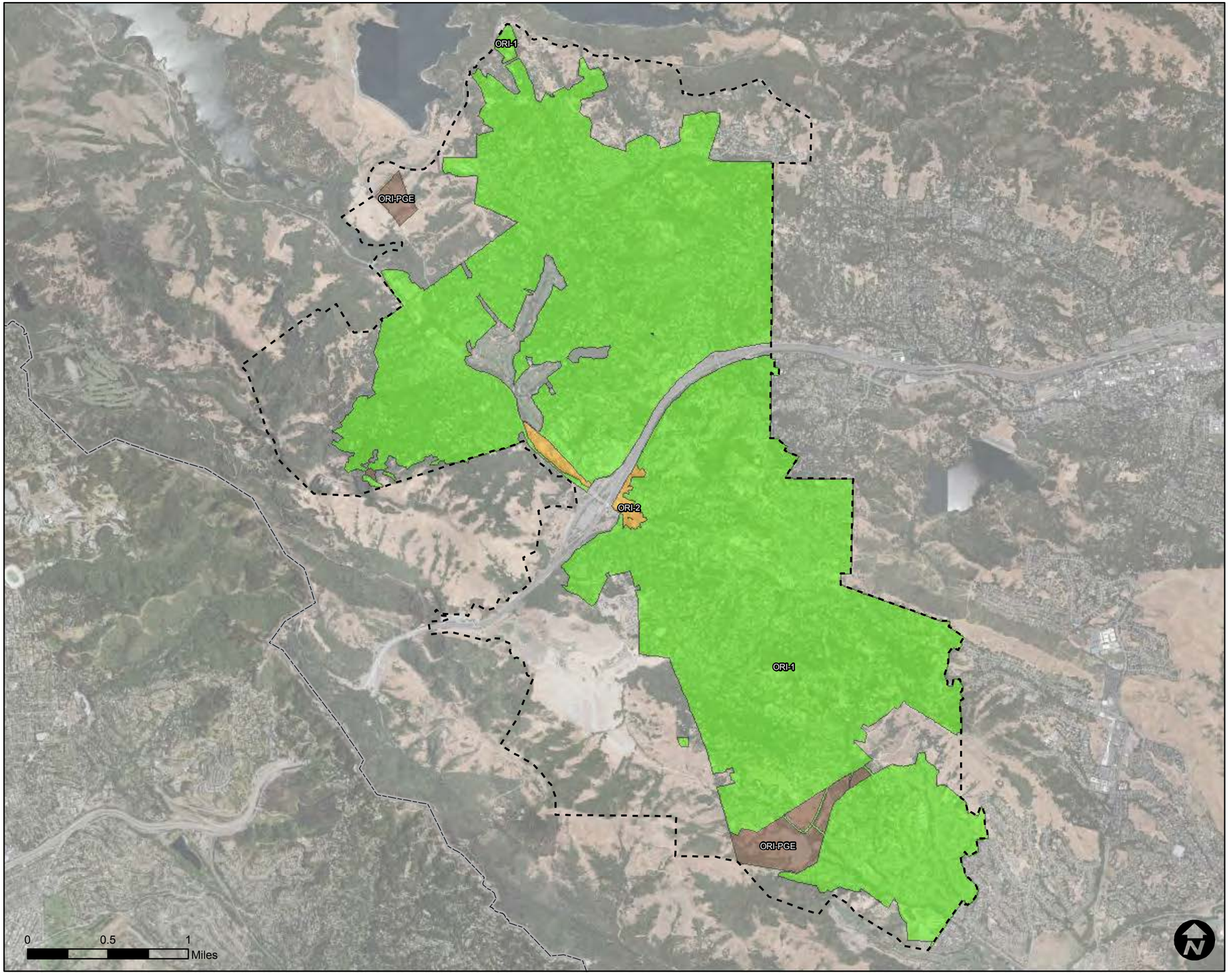
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 14-1. City of Orinda Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area		
	ORI-1: Old Urban	ORI-2: Downtown	ORI-PGE
Source Property Identification and Abatement			
Source Property Investigation			Po
Referral of Source Property			
Direct Abatement of Source Property			
Categorical Source Property Referral			Po
Green Infrastructure / Treatment Control Measures			
Redevelopment Subject to C.3	C, P	C, P	
GI/Treatment Measures Not Subject to C.3		Po	
Full Trash Capture Devices (HDS)	Po	Po	
Managing PCBs in Building Materials and Infrastructure			
Managing PCBs in Building Materials	P	P	
Managing PCBs in Infrastructure	Po	Po	
Enhanced O&M			
Street Sweeping	C	C	
Storm Drain Inlet Cleaning	Po	Po	
Pump Station Maintenance			
Desilting of Channels and Culverts			
Street Flushing			
Storm Drain Line Cleaning			
Diversion to POTW			
Diversion to POTW			
Source Controls and Other Control Measures			
Mercury Load Avoidance and Reduction	P, Po	P, Po	
Illegal Dumping Cleanup	C, Po	C, Po	
Stockpiles, Spills, and Disposal of PCBs	Po	Po	

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- ORI-1, Old Urban
- ORI-2, Downtown
- ORI-PGE, Categorical PGE

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

ORINDA

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 14-1**

15 CITY OF PINOLE

15.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Pinole are shown on Figure 15-1 and are listed below:

1. PIN-1: Old Industrial/ High Likelihood
2. PIN-2: Old Urban Commercial
3. PIN-3: Old Urban Residential
4. PIN-RAIL: Categorical Railroad
5. PIN-PGE: Categorical PG&E

15.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 15-2 and are discussed in the sections below.

15.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Pinole have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

15.2.2 Green Infrastructure / Treatment Control Measures

Table 15-1: City of Pinole Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
PIN-3	CVS		TBD	Canyon at Appian

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

15.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

15.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

15.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

15.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

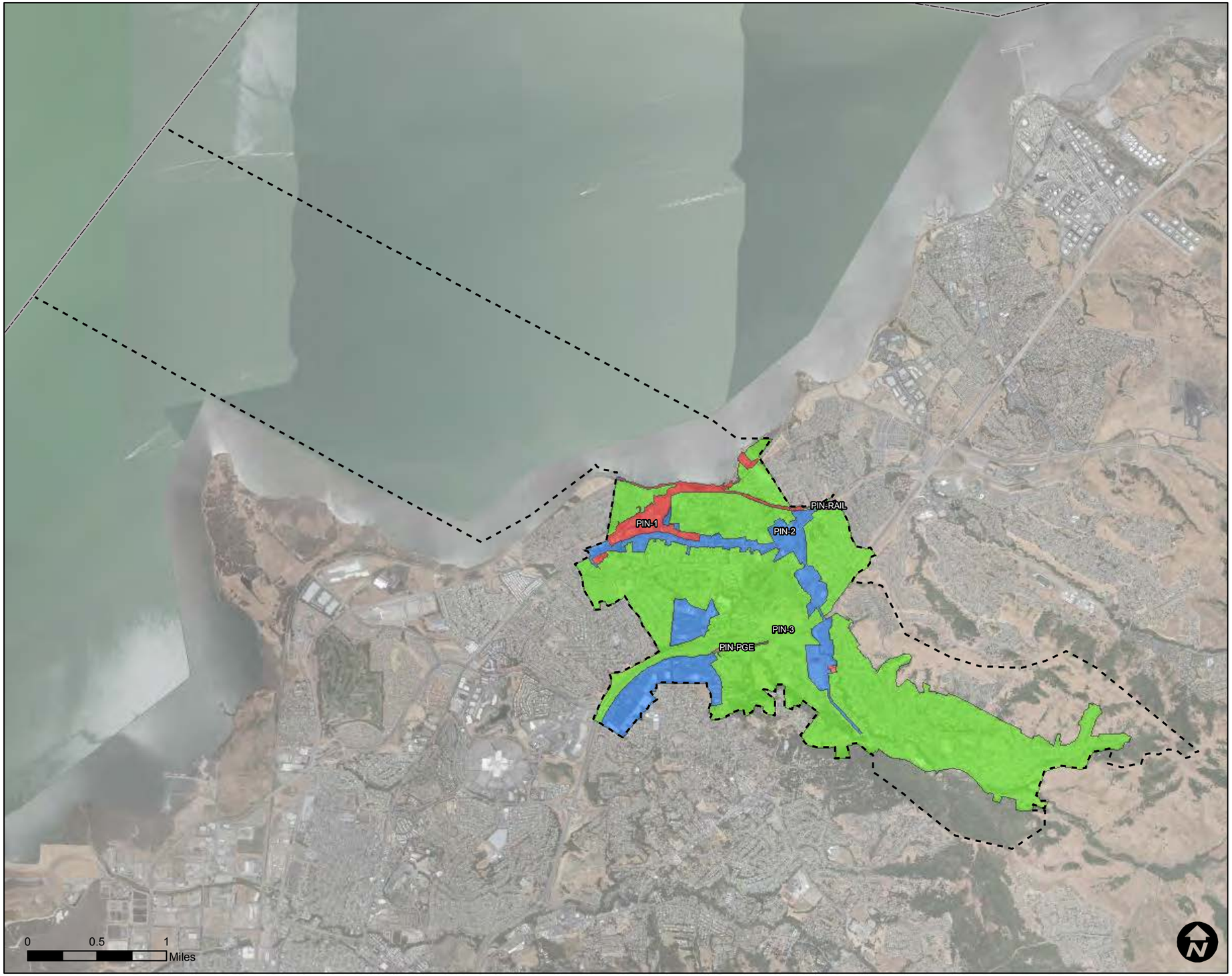
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 15-2. City of Pinole Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area				
	PIN-1: Old Industrial/ High Likelihood	PIN-2: Old Urban Commercial	PIN-3: Old Urban Residential	PIN-RAIL	PIN-PGE
Source Property Identification and Abatement					
Source Property Investigation	Po			Po	Po
Referral of Source Property	Po				
Direct Abatement of Source Property	Po				
Categorical Source Property Referral				Po	Po
Green Infrastructure / Treatment Control Measures					
Redevelopment Subject to C.3	Po	C, P, Po	C, P, Po		
GI/Treatment Measures Not Subject to C.3					
Full Trash Capture Devices (HDS)					
Managing PCBs in Building Materials and Infrastructure					
Managing PCBs in Building Materials		Po	Po		
Managing PCBs in Infrastructure	Po	Po	Po		
Enhanced O&M					
Street Sweeping					
Storm Drain Inlet Cleaning					
Pump Station Maintenance					
Desilting of Channels and Culverts					
Street Flushing					
Storm Drain Line Cleaning					
Diversion to POTW					
Diversion to POTW	Po				
Source Controls and Other Control Measures					
Mercury Load Avoidance and Reduction	Po	Po	Po		
Illegal Dumping Cleanup	Po	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po	Po		

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- PIN-1, Old Industrial / High Likelihood
- PIN-2, Old Urban Commercial
- PIN-3, Old Urban Residential
- PIN-PGE, Categorical PGE
- PIN-RAIL, Categorical Railroad

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

PINOLE

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 15-1**

16 CITY OF PITTSBURG

16.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Pittsburg are shown on Figure 16-1 and are listed below:

1. PIT-1: Old Urban
2. PIT-2: Southern Energy Delta/ Genon
3. PIT-3: USS Posco Industries
4. PIT-4: Dow Chemical Company
5. PIT-5: Old Industrial
6. PIT-6: Camp Stoneman
7. PIT-7: Waterfront Industrial
8. PIT-PGE: Categorical PG&E
9. PIT-RAIL: Categorical Railroad

16.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 16-4 and are discussed in the sections below.

16.2.1 Source Property Identification and Abatement

The City of Pittsburg's method of identifying source property and abatement consists of collecting sediment samples within the public rights-of-way that are adjacent to or receive runoff from potential parcels and through the process of entitling new, redeveloped, and capital improvement projects.

The City continues to participate in the Clean Water Program's project of collecting sediment samples within the City's rights-of-way. This fiscal year, we may expand sampling within drainage easement areas on specific parcels. As PCBs-containing sediment is found in excess of 1 mg/kg, those parcels will be referred to the SFBRWQCB for further action, if no other City action is occurring in conjunction with the Parcel.

The majority of these highly suspect parcels are within WMA 2 Southern Energy Delta / Genon, WMA 3 USS Posco, WMA 4 Dow Chemical Properties, WMA 7 Camp Stoneman, and WMA 8 Waterfront Industrial. These parcels, with the exception of WMA 7 & 8, are located along the City's waterfront, and have no offsite MS4 facilities or curb and gutter frontage improvements. Drainage flows northward, directly into the Delta. Therefore, increased City O&M has no impact within these WMAs.

For those applicants that are seeking to receive entitlements to develop on these high likelihood parcels, the City includes a condition of approval that soil on site is sampled for presence of PCBs prior to the issuance of a grading permit. This condition has also begun to be included in capital improvement projects where historic structures were demolished and new facilities are installed.

The majority of the City's storm drainage infrastructure is within WMA 1 Old Urban. Enhanced O&M and entitlement screening process are the primary measures the City will implement for source identification and abatement.

PCBs-Contaminated Properties Referred to the Regional Water Board

One property within the City of Pittsburg has been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date. The Former Molino Enterprises, Inc. (Molino) is a former auto wrecking facility that was forced to close in 2008. In 1997, Contra Costa Health collected samples which yielded long-chain hydrocarbons at concentrations up to 140,000 mg/kg and total lead up to 1,200 mg/kg. In 1997, one soil sample collected from a stained area yielded total petroleum hydrocarbons at 130,000 mg/kg. On May 30, 1997, the District Attorney's office of Contra Costa County sent an Order to Show Cause preliminary injunction to the owner requiring them to retain the services of a licensed professional to investigate the extent of contamination beneath the site. Gallardo & Associates was retained to prepare a work plan and conduct a site investigation. Between 1997 and 1998, monitoring wells were installed and soil boring samples were taken and analyzed. Subsequent to regulatory action by the County, the owner installed a stormwater treatment system at the site in 2002. Sampling of stormwater continued from about 2002 thru 2008. On April 8, 2008, SFBRWQCB staff inspected and noted violations of the Industrial General Permit. In November 2015, a Remedial Investigation Work Plan was approved for the site. An initial round of sampling was conducted in December 2015. As a result of the history of inspections and monitoring activities, Molino was referred to the SFBRWQCB on January 15, 2016. Further on-site investigations by the owner's representative found PCBs

scattered throughout the site. Plans are underway to develop a comprehensive site analysis to determine the extent of PCBs on the site.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

16.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

Table 16-1 summarizes the C.3 projects completed within The City of Pittsburg designated WMAs. Currently there are three more projects about to begin construction one within WMA 4 Dow Chemical Company that includes an enhanced water recovery system, one project in WMA 1 Old Urban that will include bioretention, and one project in WMA 7 Camp Stoneman that will include self-retaining areas and permeable pavement.

Table 16-1: City of Pittsburg Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	APN / SITE ADDRESS
PIT-1: Old Urban	Civic Center City Hall Parking Lot	2008	1.6	65 Civic Avenue
PIT-1: Old Urban	Crestview Apartments	2008	3.5	2000 Crestview Drive
PIT-6: Camp Stoneman	Fire Prevention Bureau	2011	1	2329 Loveridge Road
PIT-6: Camp Stoneman	Fire Station 84	2010	.986	1903 Loveridge Road
PIT-6: Camp Stoneman	Irish Construction	2013	2.2	2151 Piedmont Way
PIT-5: Old Industrial	La Almenara	2012	0.73	1065 Beacon Street
PIT-5: Old Industrial	Trans Bay Cable	2014	5.22	570 W. 10th Street
PIT-1: Old Urban	Martin Luther King Jr. High School	2013	11.6	950 El Pueblo Drive
PIT-7: Waterfront Industrial	Marina Commercial Building	2010	0.32	47 Marina Boulevard
PIT-1: Old Urban	Old Town Plaza	2010	0.36	500 Railroad Avenue
PIT-1: Old Urban	Siena Court	2012	1.77	085-164-017
PIT-1: Old Urban	Vidrio	2008	1.7	600 Railroad Avenue

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	APN / SITE ADDRESS
PIT-6: Camp Stoneman	Da Vita Dialysis	2011	2.03	1150 Leland Road
PIT-3: USS Posco Industries	United Spiral Pipe	2009	44.8	900 E 3rd Street
PIT-6: Camp Stoneman	Riverside Continuation High School	2010	7	088-131-009

Table 16-2: City of Pittsburg Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	APN / SITE ADDRESS
PIT-4: Dow Chemical Company	Dow Chemical Infrastructure Upgrades	2016 project approvals still in progress. Work to occur in phases	unknown	073-220-049
PIT-6: Camp Stoneman	Stoneman Apartments	2017 work to begin 2016	10.5 acres	3080 Loveridge Road
PIT-1: Old Urban	Solomon Temple	2016/2017	2	655 California Avenue

Table 16-3: City of Pittsburg Potential Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONES	ACRES TREATED	LOCATION
PIT-1: OLD URBAN	Railroad Avenue Class I Trail	In design 2016, construction 2017	0.56	West side of Railroad Ave
PIT-1: OLD URBAN	Kiss n Ride at Railroad and eBart Station	In design 2016, construction 2017	1.2	East Side of Railroad Ave @ Railroad Avenue exit from Hwy 4

16.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The City of Pittsburg has begun implementing a condition of approval for ministerial, discretionary, and capital improvement projects to conduct assessments for PCBs

containing materials for masonry structures prior to demolition and remove them in accordance with EPA guidelines. The City of Pittsburg is also participating in the BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

16.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

16.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

16.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The City participates in a regional HHW program with the Delta Household Hazardous Waste Facility. The City promotes the use of this facility for the collection of mercury containing items for residents and small businesses through brochures and through contact with the general public at year-round publicly hosted events.

The Permittees are actively implementing mercury recycling programs in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The City has hired an employee dedicated to addressing illegally dumped material within the public rights of way. PW staff is trained on the proper disposal protocols for hazardous substances.

The Permittees will identify and cleanup illegal dumping of construction and demolition debris as needed.

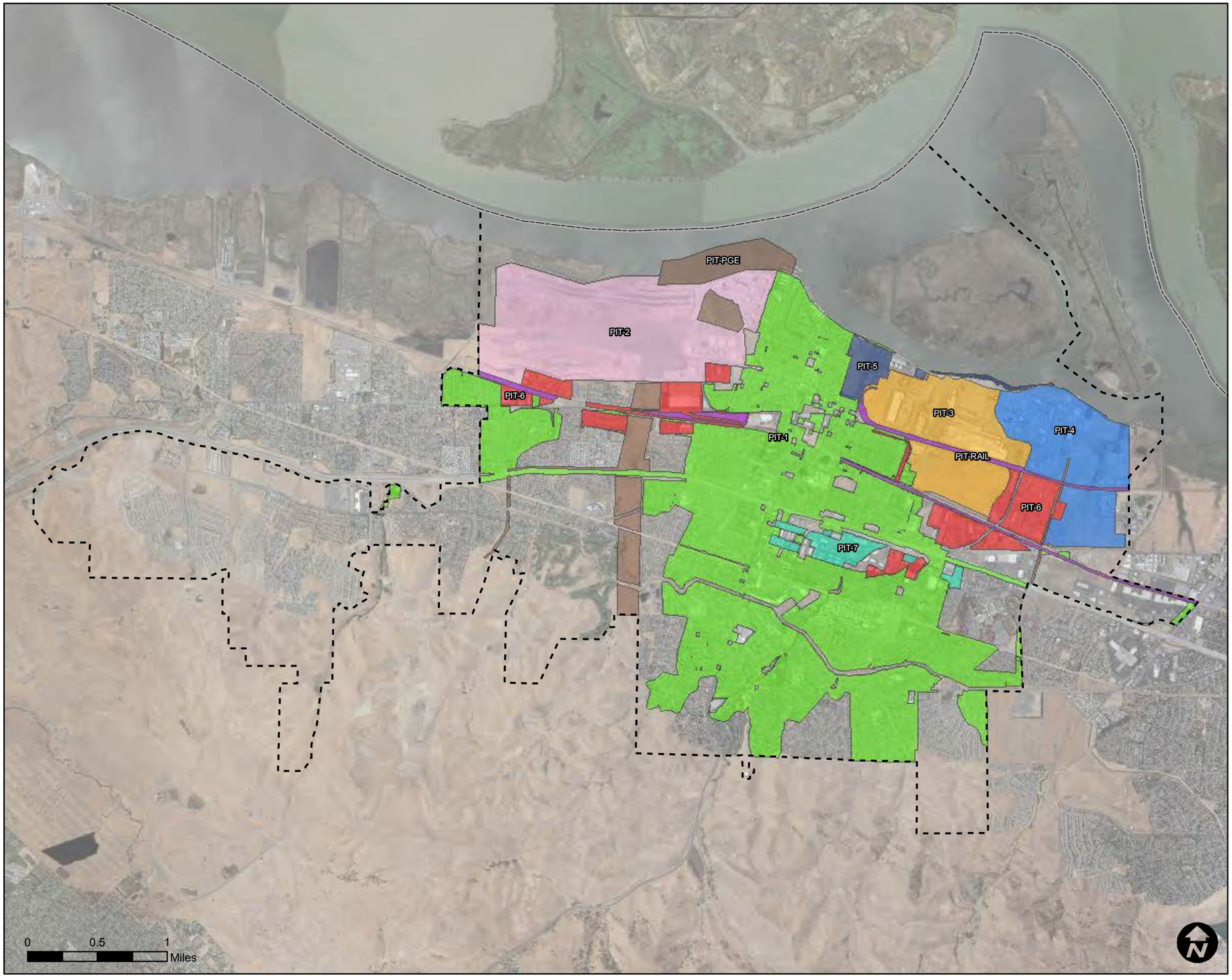
Stockpiles, Spills, and Disposal of PCBs

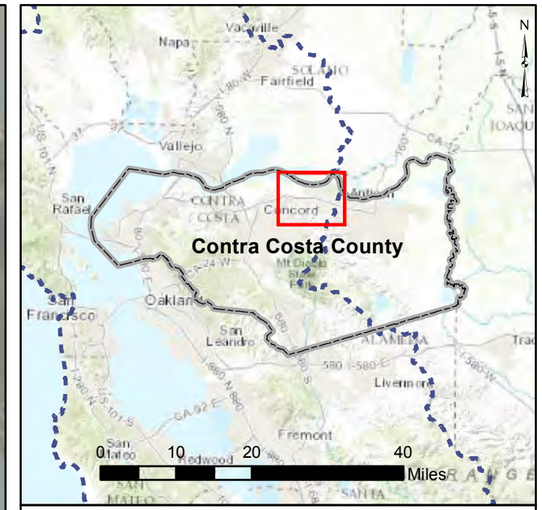
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 16-4. City of Pittsburg Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area								
	PIT-1: Old Urban	PIT-2: SED/ Genon	PIT-3: USS Posco	PIT-4: Dow Chem. Co.	PIT-5: Old Industrial	PIT-6: Camp Stoneman	PIT-7: Waterfront Industrial	PIT-8: Cat. PG&E	PIT-9: Cat. Railroad
Source Property Identification and Abatement									
Source Property Investigation	P	C, Po				Po		Po	Po
Referral of Source Property									
Direct Abatement of Source Property	Po								
Categorical Source Property Referral								Po	Po
Green Infrastructure / Treatment Control Measures									
Redevelopment Subject to C.3	Po								
GI/Treatment Measures Not Subject to C.3									
Full Trash Capture Devices (HDS)	Po								
Managing PCBs in Building Materials and Infrastructure									
Managing PCBs in Building Materials	Po	Po	Po	Po	Po	Po	Po		
Managing PCBs in Infrastructure	Po	Po	Po	Po	Po	Po	Po		
Enhanced O&M									
Street Sweeping	P					P	P		
Storm Drain Inlet Cleaning						P			
Pump Station Maintenance	Po	Po							
Desilting of Channels and Culverts	Po	Po					Po		
Street Flushing									
Storm Drain Line Cleaning							P		
Diversion to POTW									
Diversion to POTW									
Source Controls and Other Control Measures									
Mercury Load Avoidance and Reduction	Po	Po	Po	Po	Po	Po	Po		
Illegal Dumping Cleanup	P	P	P	P	P	P	P		
Stockpiles, Spills, and Disposal of PCBs	Po	Po	Po	Po	Po	Po	Po		

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee
- Contra Costa County Boundary

Watershed Management

- PIT-1, Old Urban
- PIT-2, Southern Energy Delta/Genon
- PIT-3, USS Posco Industries
- PIT-4, Dow Chemical Company
- PIT-5, Waterfront Industrial
- PIT-6, Old Industrial
- PIT-7, Camp Stoneman
- PIT-PGE, Categorical PGE
- PIT-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

PITTSBURG

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 16-1**

17 CITY OF PLEASANT HILL

17.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Pleasant Hill are shown on Figure 17-1 and are listed below:

1. PLH-1: Old Urban
2. PLH-2: Old Industrial

17.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 17-3 and are discussed in the sections below.

17.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of Pleasant Hill have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

The City of Pleasant Hill has not identified any source properties but will continue its inspection of commercial/industrial facilities required by Provision C.4 which may identify source properties in the future, albeit unlikely given the commercial rather than industrial nature of the facilities inspected. Ongoing investigations may result in a property referral in the future.

17.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

The projects listed in Table 17-1 have completed construction as of June 2016.

Table 17-1: City of Pleasant Hill Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
PLH-1: Old Urban	Hidden Creek Estates subdivision	November 2008	2.24	10,11,20,21, and 31 Ava Lane
PLH-1: Old Urban	In N Out Burger	May 2012	1.38	570 Contra Costa Blvd.
PLH-1: Old Urban	Pleasant Hill Recreation & Park District Community Center	January 2014	2.3	320 Civic Dr.
PLH-1: Old Urban	Pleasant Hill Recreation & Park District Pleasant Oaks Park	January 2014	11.8	Hawthorne Dr.
PLH-1: Old Urban	Pleasant Hill Recreation & Park District Senior & Teen Center	October 2012	2.9	233 Gregory Lane
PLH-1: Old Urban	Safeway	February 2012	9.24	707 Contra Costa Blvd.
PLH-1: Old Urban	Dick's Sporting Goods	July 2014	6.1	2314 Monument
PLH-1: Old Urban	Buskirk Avenue	October 2014	5.71	Buskirk Avenue
PLH-1: Old Urban	Geary Road	May 2013	0.5	Geary Road at Pleasant Hill Road

The planned projects listed in Table 17-2 have received discretionary approval and are either under construction or pending permit issuance.

Table 17-2: City of Pleasant Hill Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
PLH-1: Old Urban	Hilton Homewood Suites	2017	2.43	550 Ellinwood Way
PLH-1: Old Urban	Pleasant Hill Shopping Center Pad - NE Corner	2016	0.61	552-572 Contra Costa Boulevard

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
PLH-1: Old Urban	Price Lane Subdivision	2017	1.02	118 Price Lane
PLH-1: Old Urban	Pleasant Hill Animal Clinic	TBD	0.22	2805 Contra Costa Boulevard
PLH-1: Old Urban	Sun Valley Apartments Site Improvement Project	TBD	0.2	1382-1400 Contra Costa Boulevard
PLH-1: Old Urban	Tuscany Apartments	TBD	0.3	1460 Contra Costa Boulevard

The City of Pleasant Hill has not identified any potential public projects but will be considering the possibility of a project in the Grayson Creek watershed to address trash, PCBs, and mercury. Potential private projects will be reported upon receiving discretionary approval.

17.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

17.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

17.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

17.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

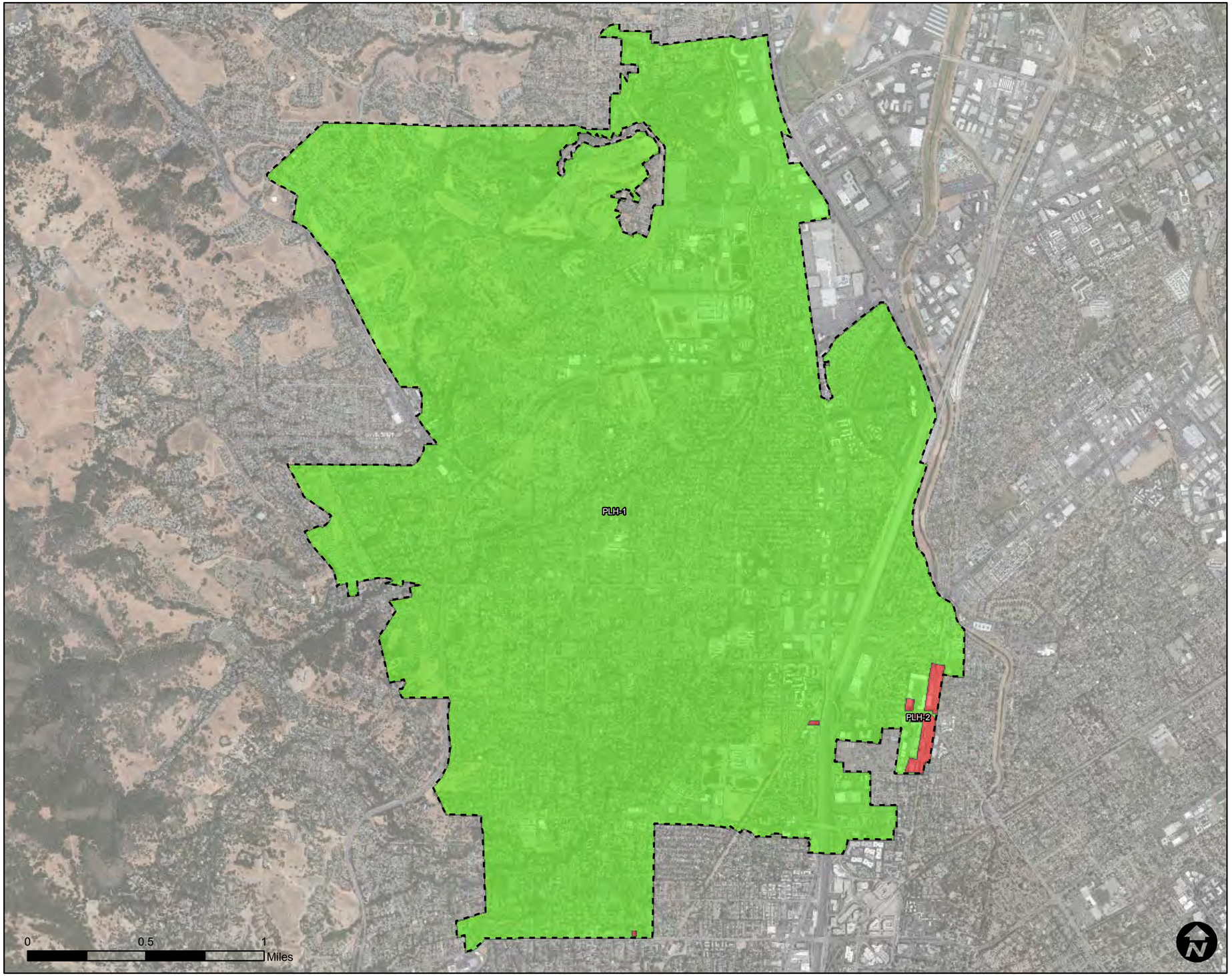
Stockpiles, Spills, and Disposal of PCBs

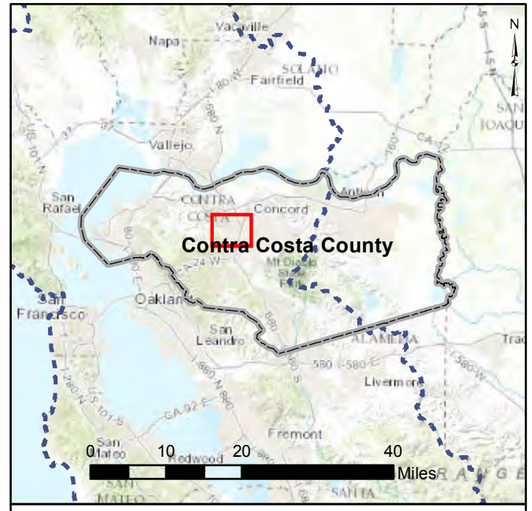
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 17-3. City of Pleasant Hill Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area	
	PLH-1: Old Urban	PLH-2: Old Industrial
Source Property Identification and Abatement		
Source Property Investigation	C	C
Referral of Source Property		Po
Direct Abatement of Source Property		
Categorical Source Property Referral		
Green Infrastructure / Treatment Control Measures		
Redevelopment Subject to C.3	C, P, Po	Po
GI/Treatment Measures Not Subject to C.3	P, Po	Po
Full Trash Capture Devices (HDS)		
Managing PCBs in Building Materials and Infrastructure		
Managing PCBs in Building Materials	Po	Po
Managing PCBs in Infrastructure	Po	Po
Enhanced O&M		
Street Sweeping		
Storm Drain Inlet Cleaning		
Pump Station Maintenance		
Desilting of Channels and Culverts		
Street Flushing		
Storm Drain Line Cleaning		
Diversion to POTW		
Diversion to POTW		
Source Controls and Other Control Measures		
Mercury Load Avoidance and Reduction	Po	Po
Illegal Dumping Cleanup	Po	Po
Stockpiles, Spills, and Disposal of PCBs	Po	Po

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- PLH-1, Old Urban
- PLH-2, Old Industrial

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

PLEASANT HILL

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 17-1**

18 CITY OF RICHMOND

18.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Richmond are shown on Figure 18-1 and are listed below:

1. RIC-1: Old Urban
2. RIC-2: Point Pinole
3. RIC-3: Santa Fe Channel
4. RIC-4: Zeneca Site
5. RIC-Rail: Categorical Rail
6. RIC-PGE: Categorical PG&E

18.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 18-4 and are discussed in the sections below.

18.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

Two properties within the City of Richmond have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date (see Section 2.1).

Property #1. Sims Metal Management Richmond Facility (Sims Richmond) is a scrap metal facility located in Richmond within the Parr Watershed. Sims Richmond is located adjacent to and on former United Heckathorn Co. property, a Superfund site that is under remediation for dichlorodiphenyltrichloroethane (DDT) and dieldrin contamination. As part of 2011-2013 CW4CB Task 3 efforts, Sims Richmond was identified for a site inspection because of previous observations that electrical transformers used to be stored on-site. An inspection of Sims Richmond was conducted on May 18, 2011 by City of Richmond staff. During the inspection, inspectors noted that activities on the large dirt lot of the Sims Richmond site had the potential to generate track-out; there was also visible standing water as a result of dust control. On October 3 and 4, 2012, samples were collected from four locations in the public ROW along S. 4th Street, Wright Avenue, and Hoffman

Boulevard. The sediment samples had PCBs concentrations ranging from 0.932 to 1.450 mg/kg. As a result of the inspection and monitoring activities, Sims Richmond was referred to the SFBRWQCB on September 15, 2015.

SIMS Richmond implements the following BMPs to contain pollutants onsite: 1) construction of concrete berm, completed in 2013, in front of property to prevent stormwater that accumulates on the property from running onto the street. This water is pumped to an onsite retention pond and/or Bakers Tank for reuse as dust control on metal piles; 2) street sweeping occurs during business hours on the City's street property; and 3) the stormwater outfall has been plugged since 2011 such that stormwater from the facility does not discharge to the City's stormwater collection system. The facility is also inspected by the City, as required by Provision C.4 of the MRP, to ensure BMPs are implemented to control pollutants onsite.

#2. Rickert International Trading Co., Inc. (Rickert) is currently a forklift repair business located in Richmond within the Lauritzen Watershed. As part of 2011-2013 CW4CB Task 3 efforts, CW4CB project managers, City of Richmond staff, and CCCWP staff developed a rational for site inspections, drafted a list of potential sites to inspect, and conducted the site inspections. Rickert was identified for a site inspection because of previous high PCBs concentrations in the vicinity of the facility. An inspection of Rickert was conducted on June 10, 2011, by City of Richmond staff. During the inspection, inspectors noted that old equipment was stored on-site and was a risk for leaking hydraulic fluid. On October 3, 2012, samples were collected from two locations in the public right-of-way (ROW) along Cutting Boulevard. Rickert was targeted for sediment sampling from a storm drain inlet in front of the driveway entrance to the forklift repair yard. Sampling crews were also able to collect soil directly adjacent to the property of the forklift storage yard, between the fence and the sidewalk in the public ROW. Sediment samples from the storm drain had a PCBs concentration of 0.367 mg/kg (equal to 0.367 ppm). Sediment samples collected adjacent to the fence had a PCBs concentrations of 0.326 mg/kg. As a result of the inspection and monitoring activities, Rickert was referred to the SFBRWQCB on September 15, 2015. Rickert has a partial concrete berm on its property to prevent sediments from entering sidewalks. This facility is also inspected by the City, as required by Provision C.4 of the MRP, to ensure BMPs are implemented to control pollutants onsite.

Ongoing Investigations

The City of Richmond, through its C.4 business inspection program, continuously inspects and investigates industrial and commercial properties for potential sources of PCBs in the

Santa Fe Channel, Zeneca, North Richmond management areas. Moreover, City staff inspects PG&E maintenance yard, located in its jurisdiction, to warrant that all PCBs containing transformers and equipment are properly contained and disposed. Ongoing investigations may result in a property referral in the future.

Through the plan checking process, any properties that apply for grading permits for the purpose of site remediation under clean up orders by State regulatory agencies (i.e. State Water Resources Control Board, Department of Toxic Substance Control) are required to submit monitoring results for PCBs prior to permit issuance.

Currently, the City does not perform any source identification in residential Old Urban or New Urban management areas.

18.2.2 Green Infrastructure / Treatment Control Measures

Development and redevelopment projects in all management areas are subjected to the Contra Costa County C.3 requirements.

In the Point Pinole Business Park Management Area, a proposed and planned project is located on a 42.14 acre site at 2995 Atlas Road, at the corner of Atlas and Giant Road. The project involves construction of a 700,000 square foot logistics building and associated parking, loading, and landscaping. The new building would include 40,000 square feet of office space and 687,820 square feet of warehouse space. This is a required project for C.3 and is listed in Table 18-2 as a planned project.

In the Old Urban Management Area, the City has planned and potential projects (See Tables 3-2 and 3-3) to conform to its adopted General Plan and proposed Urban Greening Master Plan. Potential projects are streets rehabilitation and residential buildings.

The Santa Fe Channel Management Area is an industrial area in Richmond historically and presently. This area is known to have been contaminated with high levels of PCBs, according to studies conducted over the years by the San Francisco Estuary Institute. Bio-retentions were constructed in the City Right of Way and in front of a PG&E substation, as a pilot project funded by an EPA grant (Clean Water 4 Clean Bay), to treat PCBs found in sediments. The City plans to continue to construct green infrastructure in the area, Cutting Blvd between S 1st St and S 4th St, when funding is available. Other completed project incorporated bio-retentions was Honda Port of Entry.

In New Urban Management Area, proposed and redevelop projects are subjected to C.3 requirement.

Zeneca site is contaminated with PCBs and other contaminants due to historic use of the site as chemical manufacturing. This site is under remediation order by the Department of Toxic Substance Control. There is no planned C.3 project in this area as long as remediation is on-going.

Table 18-1: City of Richmond Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
Santa Fe Channel	Cutting Blvd Bioretention Retrofits	September, 2014	1.66	Cutting Blvd & S 1st St
Old Urban	Comcast Parking Lot	November, 2010	0.98	1401 Marina Way S., Richmond, CA
Old Urban	Moody Underpass	November, 2015	1.50	Marina Bay Parkway & Pierson Ave
Old Urban	Meade St Bypass Road	November, 2013	1.42	Regatta Blvd & Meade St
Old Urban	Bio-Rad	March, 2012	0.5	3110 Regatta Blvd., Richmond, CA 94804
Old Urban	D&H Landscaping	September, 2008	1.25	850 Morton Ave, Richmond, CA
Old Urban	Grocery Outlet	May, 2013	1.86	12010 San Pablo Ave, Richmond, CA
Old Urban	Hanlees Toyota	January, 2014	0.51	3255 Auto Plaza, Richmond, CA
Santa Fe Channel	Honda Port of Entry	November, 2010	8.05	Foot of Canal Blvd
Old Urban	Kaiser Parking Lot	September, 2011	1.59	727 MacDonald, Richmond, CA
Santa Fe Channel	Lewis Building (Omega Pacific)	October, 2010	0.94	618 S 8th St, Richmond, CA
Old Urban	Making Waves Academy	October, 2012	6.45	2900 Technology Ct., Richmond, CA
Old Urban	Point Richmond Self-Storage	October 2008	1.50	300 W Ohio Ave, Richmond, CA
Point Pinole Business Park	Whole Foods Distribution Center	May, 2013	7.64	6035 Giant Rd, Richmond, CA
Point Pinole	UPS Richmond (North Bay) Trailer Staging Expansion	October, 2014	5.46	1601 Atlas Rd, Richmond, CA

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
Business Park				
Old Urban	2600 Goodrick Ave	May, 2015	4.64	2600 Goodrick Ave, Richmond, CA
Old Urban	Harbour View Senior Apartments	January, 2016	0.92	25 Harbour Way S, Richmond, CA
Old Urban	Hilltop Mall Road Spec School	January, 2016	8.38	3000-3050 Hilltop Mall Rd, Richmond, CA
Point Pinole Business Park	Point Pinole Business Park Phase I	November, 2015	2.03	Foot of Giant Rd
Old Urban	City of Richmond Hall	2009	10.68	440 and 450 Civic Center Plaza, Richmond, CA
Old Urban	Artison Cove	April, 2014	5.61	901 Marina Way S, Richmond, CA
Old Urban	Gompers School	August 2015	0.97	8th St, 9th St, Chanslor Ave, Bissell Ave

Table 18-2: City of Richmond Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
Old Urban	San Pablo Ave Green Stormwater Spine	October, 2016	1.21	San Pablo Ave & McBryde Ave
Old Urban	Booker T Anderson Parking Lot Improvement	TBD	1.00	Carlson Blvd & 47th St
Old Urban	Nevin Ave Improvement Project	September, 2016		Nevin Ave between 19th St and 27th St
Old Urban	Bay Walk	TBD	10.0	Marina Way S & Wright Ave
New Urban	Shea Bottoms Property	TBD	11.1	West of Canal Boulevard, East of Seacliff Drive, Richmond, CA.
Point Pinole	2995 Atlas Road Associates	TBD	41.68	Atlas Rd and Giant Hwy

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
Business Park				
Old Urban	Terminal 1 Residential Community	TBD	13.8	Dornan Dr. & Brickyard Cove
Old Urban	Hilltop Apartments	TBD	2.2	Garrity Way & Hilltop Mall Rd

Table 18-3: City of Richmond Potential Projects

WMA ID	DATE OF COMPLETION/OTHER MILESTONE	TREATMENT AREA (AC.)	PROJECT ID	LOCATION
Old Urban	TBD	TBD	Macdonald Ave Street Improvement	Macdonald Ave, Garrard Blvd to Harbour Way
New Urban	TBD	TBD	Marina Bay Waterfront	Marina Way S & Northshore Dr.
Santa Fe Channel	TBD	TBD	Cutting Blvd Bioretention Retrofits	Cutting Blvd & S 1st St – S 4th St
Old Urban	TBD	2.75	Central Ave Housing	5620 Central Ave, Richmond, CA
Old Urban	TBD	3.38	Nevin Home Residential	Nevin Ave, Between 21st St & 23rd St
Old Urban	TBD	4.92	Richmond Riviera	Marina Way S & Hall Ave
Old Urban	TBD	0.80	The Point Richmond Residential Project	S Garrard Blvd & W Cutting Blvd

18.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

18.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

18.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

18.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

The City of Richmond utilizes the 1-800-NO DUMPING hotline for reports of illegal dumping activities. When reports received by the City abatement crew, illegally dumped materials abated and sorted according to the type of wastes and disposed of accordingly.

Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

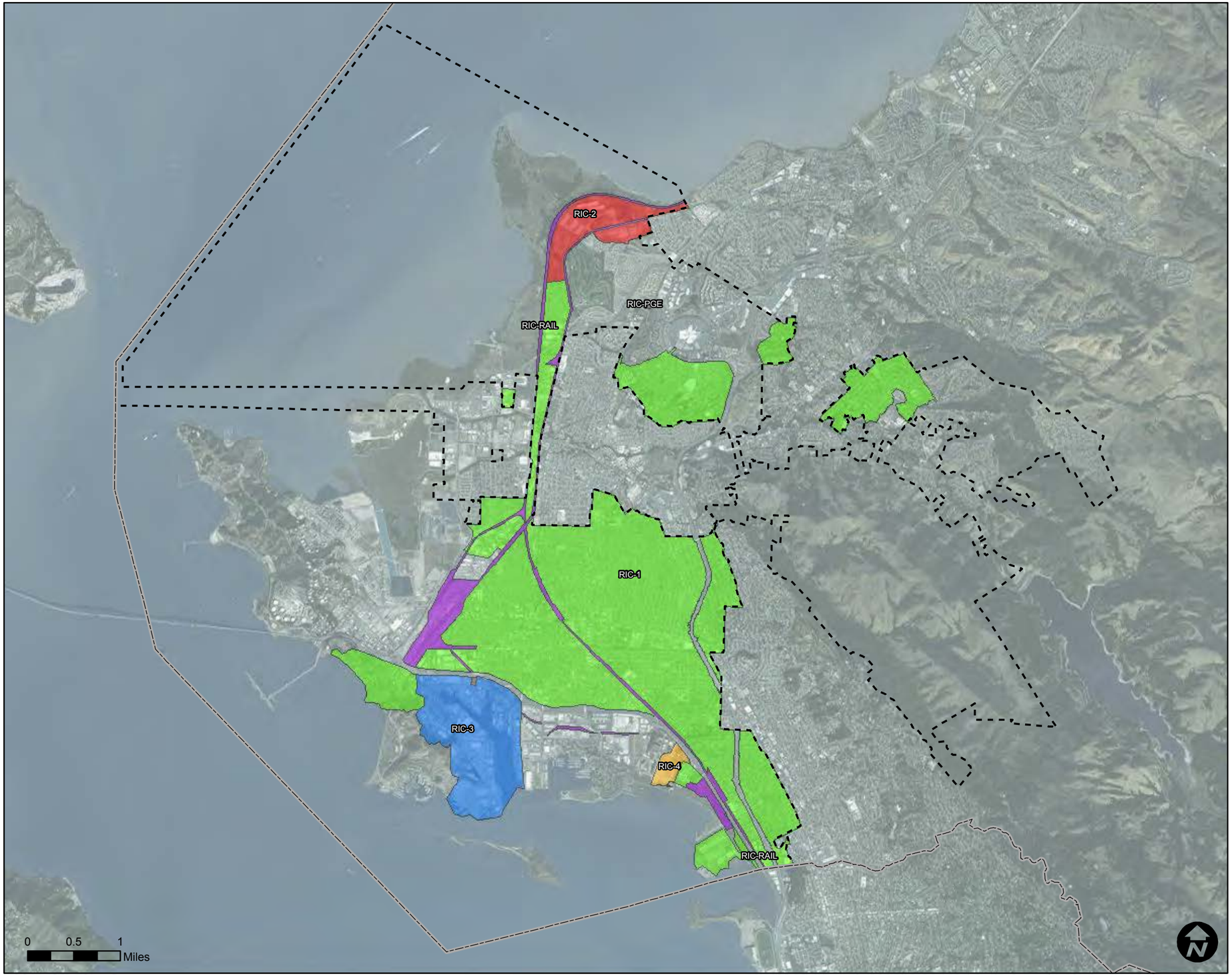
In November of 2014, a spill occurred at the City owned Port. The source of PCBs was from transformers employed on site. The City reported the incident to EPA and followed EPA standard protocols for the removal, disposal, and clean-up/monitoring of transformers and leaked oil containing high concentration of PCBs.

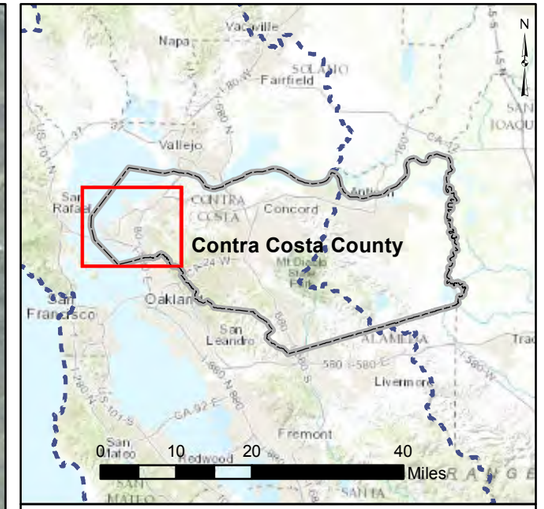
The City of Richmond staff diligently investigated, enforced, and followed up on the removal, disposal, and remediation of spills from transformers belonging to PG&E as they are reported.

Table 18-4. City of Richmond Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area					
	RIC-1: Old Urban	RIC-2: Point Pinole	RIC-3: Santa Fe Channel	RIC-4: Zeneca	RIC-RAIL	RIC-PGE
Source Property Identification and Abatement						
Source Property Investigation		C	C	C	Po	Po
Referral of Source Property		Po	C	Po		
Direct Abatement of Source Property		Po	C	P		
Categorical Source Property Referral	Po		Po		Po	Po
Green Infrastructure / Treatment Control Measures						
Redevelopment Subject to C.3	C	P	C			
GI/Treatment Measures Not Subject to C.3	Po		Po			
Full Trash Capture Devices (HDS)						
Managing PCBs in Building Materials and Infrastructure						
Managing PCBs in Building Materials	P	P	P	P		
Managing PCBs in Infrastructure	Po	Po	Po	Po		
Enhanced O&M						
Street Sweeping	C	C	C			
Storm Drain Inlet Cleaning	C	C	C			
Pump Station Maintenance	C		C			
Desilting of Channels and Culverts						
Street Flushing						
Storm Drain Line Cleaning	C	C	C	C		
Diversion to POTW						
Diversion to POTW	C					
Source Controls and Other Control Measures						
Mercury Load Avoidance and Reduction	C	C	C	C		
Illegal Dumping Cleanup	C	C	C	C		
Stockpiles, Spills, and Disposal of PCBs	C	C	C	C		

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee
- Contra Costa County Boundary

Watershed Management

- RIC-1, Old Urban
- RIC-2, Point Pinole
- RIC-3, Santa Fe Channel
- RIC-4, Zeneca Site
- RIC-PGE, Categorical PGE
- RIC-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

RICHMOND

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 18-1**

19 CITY OF SAN PABLO

19.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of San Pablo are shown on Figure 19-1 and are listed below:

1. SPB-1: Rumrill Industrial Area
2. SPB-2: Giant Highway Industrial Area
3. SPB-3: Old Urban
4. SPB-PGE: Categorical PG&E
5. SPB-RAIL: Categorical Railroad

19.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 19-4 and are discussed in the sections below.

19.2.1 Source Property Identification and Abatement

Over the 2014-2015 and 2015-2016 reporting periods the City of San Pablo (in conjunction with the Contra Costa Clean Water Program) screened 132 parcels, revised the high-likelihood parcels to 11 and collected samples at 6 of the 11 sites. Of the 6 samples collected there was one sample in the City of San Pablo that contained PCBs levels above 1.0 mg/kg.

Since the initial sampling, the City of San Pablo has done further research into the neighborhood surrounding the site with the elevated PCBs sample and has learned that this area is adjacent to a previously referred (2009) PCBs contaminated site; however, this site is located in a different jurisdiction. The City of San Pablo has performed additional sampling to eliminate other properties surrounding the area and is currently working with the Contra Costa Clean Water Program and the City of Richmond to perform sediment sampling around the previously referred PCBs contaminated site. Additional sampling is expected to occur in the 2016-2017 reporting year and if lines of evidence confirm that the suspected property is the cause of the elevated PCBs sampling the City of San Pablo with work with the City of Richmond to refer the property to the SFBRWQCB.

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of San Pablo have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

While no properties within the City of San Pablo have been referred to the Regional Water Board by the Contra Costa Clean Water Program, one PCBs contaminated site has been self-abated through a voluntary clean-up. In November of 2015 the City of San Pablo completed a voluntary clean-up of the 4.37 acre old Burlington Northern Santa Fe (BNSF) railroad track brownfield site at 1509 Rumrill Blvd, San Pablo, CA 94804. This City worked with Department of Toxic Substances Control (DTSC) to cap the site and developed it into a sports complex with bioretention facilities in the parking lot.

Contaminated Property Referrals Reporting Summary:

- 1 x structural control located at 1509 Rumrill Blvd, San Pablo, CA 94804
- Structural Control Measure is a capping of a 4.37 acre PCBs contaminated site
- Located in W/MA 1- Rumrill Industrial Area
- Project started in 2014 and was completed in 2015. The site will be inspected annually to ensure the cap is working properly.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

19.2.2 Green Infrastructure / Treatment Control Measures

Over the 2015-2016 reporting year, five projects with bioretention facilities were completed in the City of San Pablo. Additional information regarding the location and size of these facilities is provided in Table 19-1. There is one major redevelopment project currently planned in the City of San Pablo and various other minor projects that are detailed below.

Plaza San Pablo - This project is a 15-acre redevelopment project that will be occurring over the next several years. Phase 1 & 2 of the project was completed in 2016 and included 1.7 acres of road redevelopment and the Walgreens private development (see Table 19-1). Phase 3 & 4 of the project will complete the remaining 0.85 acres of road redevelopment and these roads will include bioretention facilities (Table 19-2). The

remaining parcels (Lots 1, 3, 4, 5 and 7) will be developed in the future at an unknown timeframe. All parcels as part of this project have been and will be subject to C3 requirements.

Minor Projects - The remaining planned project is a private development project that is subject to C3 requirements which will include bioretention facilities.

Table 19-1: City of San Pablo Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
1	Rumrill Sports Park	Nov-15	4.37	1509 Rumrill Blvd, San Pablo, CA 94806
3	Plaza San Pablo Walgreens	Feb-16	1.37	13613 San Pablo Avenue, San Pablo, CA 94806
3	Plaza San Pablo Roads (Phase 1&2)	Mar-16	1.7	Chattleton Lane & Luna Ln, San Pablo, CA 94806
3	Abella Vista	May-16	5.2	Abella Vista Subdivision 9049 & 9270
1	Lao Family Parking Lot	Jun-16	0.43	1869 Rumrill Blvd, San Pablo, CA 94806

Table 19-2: City of San Pablo Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
3	Shell Gas Station	Expected completion in 2017	1.8	2876 El Portal Drive, San Pablo CA 94806
3	Plaza San Pablo Roads (Phase 3&4)	Expected completion in 2017	0.85	Gateway Ave & Chattelton Ln, San Pablo CA 94806

Table 19-3: City of San Pablo Potential Projects

WMA ID	DATE OF COMPLETION/OTHER MILESTONE	TREATMENT AREA (AC.)	PROJECT ID	LOCATION
1	Completion by October 2016	400 liner feet of creek	Desilting Project	Desilting of Wildcat Creek from bridge to rip-rap
3	Expected completion in 2017	0.56 acres	San Pablo Spine	13613 San Pablo Ave, San Pablo CA 94806
1	Expected completion in 2019	5.38 acres	Rumrill Complete Green Streets	Rumrill Blvd between California St & Folsom Ave.

The three projects listed in “Potential Projects” are dependent various factors identified below:

1. *Desilting Project* - The City of San Pablo is planning to desilt 400 linear feet of Wildcat Creek to remove sediment that is blocking storm drain pipes. Currently it is unknown if sampling will occur for this project due to funding and required approvals.
2. *San Pablo Green Spine* - This project is part of a wider grant project being implemented by the San Francisco Estuary Partnership. Due to some recent budget issues the City of San Pablo has just been informed that LID facilities in San Pablo may not be moving forward, therefore the City has move this project from the “planned” to the “potential” list.
3. *Rumrill Complete Green Streets* - This project is an overhaul of Rumrill Boulevard with the goals to encourage multiple modes of transportation and improve water quality by installing Low Impact Development (LID) in an area of high water quality concern. This project is subject to grant funding and is currently only a potential project for green infrastructure. If funding is received for LID aspects this project is expected to install ~11,500 square feet of LID facilities (likely bioretention facilities) in an area of PCBs concern. If the City is successful in the grant application and City Council approves the funding agreement, then this project will move forward.

Table 19-3 provides examples of various other potential projects that the City of San Pablo will be looking into. The City will be assessing Clean Watersheds for a Clean Bay results, development applications, sampling results and other pilot projects to gain a clear

understanding of the economic and environmental impacts of each project. The City will use this information to make informed decisions in the future about funding programs that provided PCBs reductions.

19.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

19.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

19.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

19.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

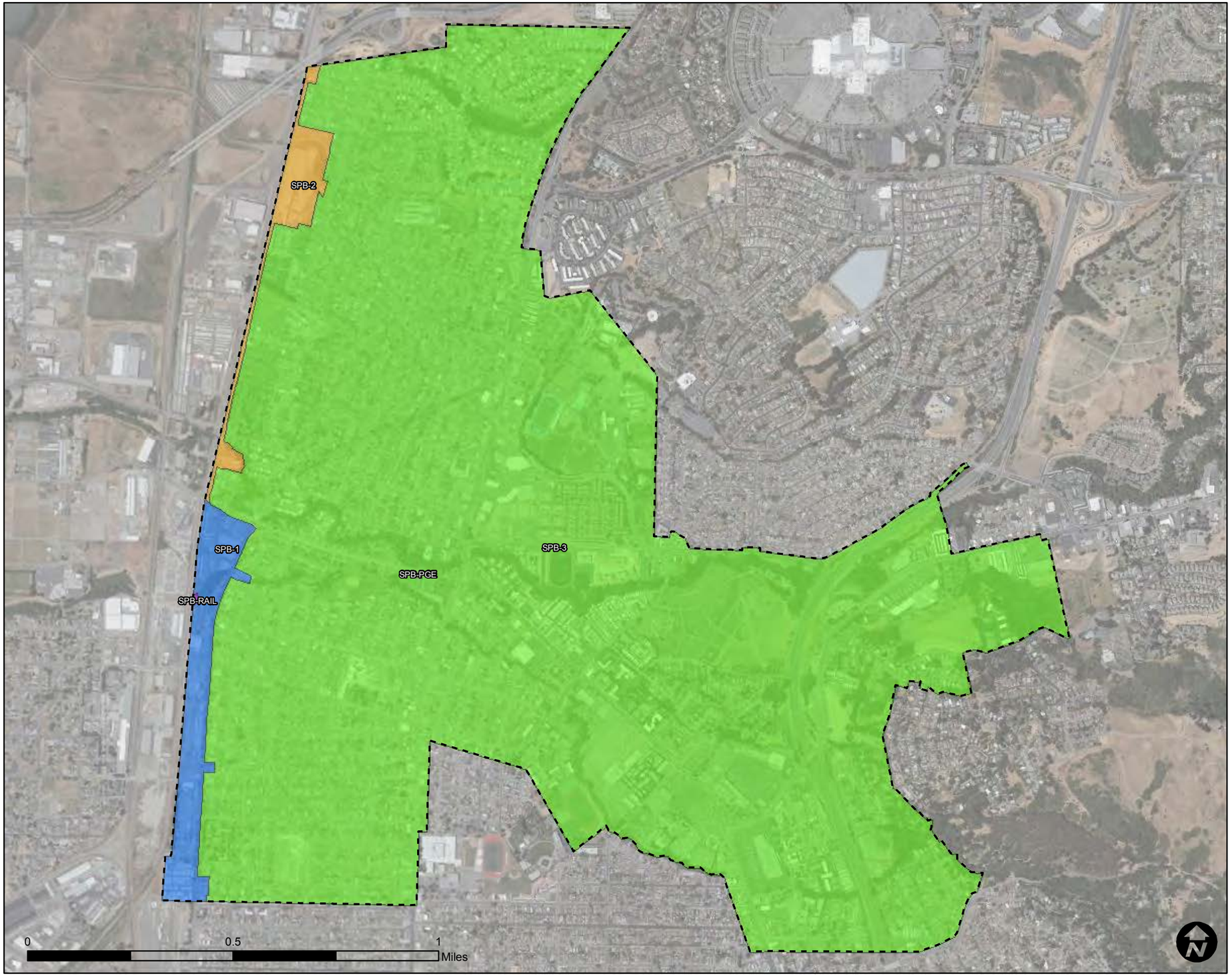
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 19-4. City of San Pablo Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area				
	SPB-1: Rumrill Industrial Area	SPB-2: Giant Highway Industrial Area	SPB-3: Old Urban	SPB-RAIL	SPB-PG&E
Source Property Identification and Abatement					
Source Property Investigation	C, Po	C, Po	P	Po	Po
Referral of Source Property	Po	Po	Po		
Direct Abatement of Source Property	C, Po	Po	Po		
Categorical Source Property Referral				Po	Po
Green Infrastructure / Treatment Control Measures					
Redevelopment Subject to C.3	C, Po	Po	C, P, Po		
GI/Treatment Measures Not Subject to C.3	P, Po	Po	Po		
Full Trash Capture Devices (HDS)	Po	Po	Po		
Managing PCBs in Building Materials and Infrastructure					
Managing PCBs in Building Materials	Po	Po	Po		
Managing PCBs in Infrastructure			Po		
Enhanced O&M					
Street Sweeping		Po			
Storm Drain Inlet Cleaning	Po	Po			
Pump Station Maintenance					
Desilting of Channels and Culverts	Po				
Street Flushing					
Storm Drain Line Cleaning	Po	Po			
Diversion to POTW					
Diversion to POTW					
Source Controls and Other Control Measures					
Mercury Load Avoidance and Reduction	Po	Po	Po		
Illegal Dumping Cleanup	Po	Po	Po		
Stockpiles, Spills, and Disposal of PCBs	Po	Po	Po		

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- SPB-1, Rumrill Industrial Area
- SPB-2, Giant Highway Industrial Area
- SPB-3, Old Urban
- SPB-PGE, Categorical PGE
- SPB-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

SAN PABLO

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 19-1**

20 CITY OF SAN RAMON

20.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of San Ramon are shown on Figure 20-1 and are listed below:

1. SRM-1: Old Urban
2. SRM-PGE: Categorical PG&E

The City of San Ramon has identified one WMA that covers old urban areas within the City. There are no areas within the City's jurisdiction that are categorized as old industrial land use (pre-1974) as defined in the initial Source Property Identification and Abatement study conducted by the Contra Costa Clean Water Program. There are a limited number of commercial buildings within WMA 1 that were constructed pre-1974. Those units are located within the City of San Ramon Northwest Specific Plan and are subject to redevelopment as the residential and commercial markets develop in the area. One PG&E storage facility that may have contained power transformers will be included in a county-wide categorical WMA.

20.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 20-3 and are discussed in the sections below.

20.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the City of San Ramon have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Ongoing Investigations

No further investigations are warranted in the City of San Ramon.

20.2.2 Green Infrastructure / Treatment Control Measures

As stated above, the portion of WMA 1 that includes commercial buildings falls under the San Ramon Northwest Specific Plan that will be subject to C.3 stormwater treatment requirements.

Table 20-1: City of San Ramon Completed Projects

WMA ID	PROJECT ID	DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	SITE ADDRESS
SRM-1: Old Urban	Full Trash Capture	2013	111	Various residential/commercial locations

Table 20-2: City of San Ramon Potential Projects

WMA ID	DATE OF COMPLETION/OTHER MILESTONE	TREATMENT AREA (AC.)	PROJECT ID	LOCATION
SRM-1: Old Urban	Projected 2019	2.5	San Ramon Valley Apartments	2251 San Ramon Valley Blvd

The potential project is currently in the proposal stage of development. The project includes demolition of a 1950's era sports bar and the construction of new apartment units that will require C.3 stormwater treatment.

20.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

The Program and Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

20.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

20.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

20.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The City of San Ramon typically removes items illegal dumping sites with 24 hours of notification or discovery by staff.

The Permittees will identify and cleanup illegal dumping of construction and demolition debris as needed.

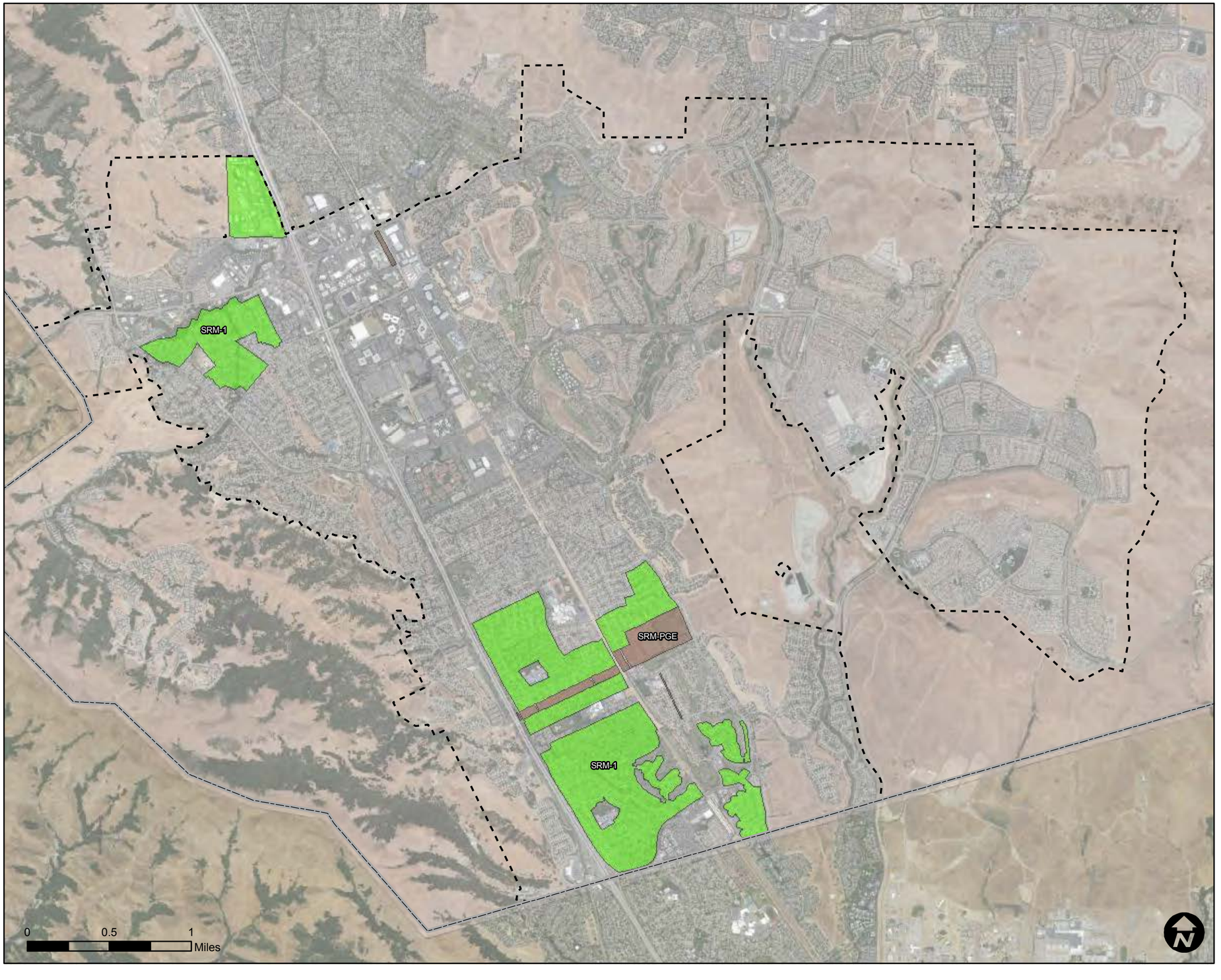
Stockpiles, Spills, and Disposal of PCBs

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 20-3. City of San Ramon Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area	
	SRM-1: Old Urban	SRM-PGE
Source Property Identification and Abatement		
Source Property Investigation	P	Po
Referral of Source Property	Po	
Direct Abatement of Source Property		
Categorical Source Property Referral		Po
Green Infrastructure / Treatment Control Measures		
Redevelopment Subject to C.3	C	
GI/Treatment Measures Not Subject to C.3	Po	
Full Trash Capture Devices (HDS)	C	
Managing PCBs in Building Materials and Infrastructure		
Managing PCBs in Building Materials	P	
Managing PCBs in Infrastructure	P	
Enhanced O&M		
Street Sweeping	C	
Storm Drain Inlet Cleaning	C	
Pump Station Maintenance	P	
Desilting of Channels and Culverts		
Street Flushing		
Storm Drain Line Cleaning	C	
Diversion to POTW		
Diversion to POTW		
Source Controls and Other Control Measures		
Mercury Load Avoidance and Reduction	C, Po	
Illegal Dumping Cleanup	C, Po	
Stockpiles, Spills, and Disposal of PCBs	C, Po	

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- SRM-1, Primary WMA
- SRM-PGE, Categorical PGE

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

SAN RAMON

Watershed Management Areas

PSOMAS | 9/30/2016 | **Figure 20-1**

21 CITY OF WALNUT CREEK

21.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within the City of Walnut Creek are shown on Figure 21-1 and are listed below:

1. WCR-1: Downtown Core
2. WCR-2: Shadelands

21.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 21-4 and are discussed in the sections below.

21.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

A few private and non-jurisdictional properties had been identified to have low potential for PCBs. No properties within the City of Walnut Creek have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Following the Mercury and PCBs Control Measures Implementation guidelines from CCCWP, City staff conducted reconnaissance survey of old industrial and similar areas to determine whether runoff from potential sources properties is likely to convey soils/sediments with significantly elevated PCBs concentrations to the City's storm drain system.

During FY 2014-15 and FY 2015-16, staff screened sixty-one (61) properties. None was classified as high likelihood for PCBs source. Using institutional knowledge, records review, and windshield surveys, staff categorized them as low or moderate likelihood sources of PCBs. The City's routine business facility inspections confirmed the status designation of these properties. Properties that had been redeveloped or undergoing redevelopment are classified as low likelihood source.

Ongoing Investigations

Ongoing investigations may result in a property referral in the future.

21.2.2 Green Infrastructure / Treatment Control Measures

As required by the Municipal Regional NPDES Permit (MRP, provision C.3.j), the City of Walnut Creek requires the inclusion of low impact development (LID) drainage design into storm drain infrastructure on public and private lands (including streets, storm drains, parking lots, building roofs and others). When a project is not considered as a regulated project under provision C.3 (such as a single-family residence project), it is encouraged to install one or more LID elements.

City staff completed review of its long-range Capital Investment Program (CIP) projects for no missed opportunities. Staff prepared a list of green infrastructure projects that are already planned for implementation and those with potential for green infrastructure during the permit year.

Table 21-1: City of Walnut Creek Completed Projects

WMA ID	PROJECT NAME	LAND USE	SITE ADDRESS	TREATMENT TYPE
1	Centre Place	Old Commercial	1855 Olympic Boulevard	Bioretention facilities and pervious concrete
2	Quick Mount PV	Old Commercial	2700 Mitchell Drive	Bioretention facilities and vegetated swales in parking lots
1	Walnut Creek Library	Old Commercial	1644 North Broadway	Bioretention facilities and flow-through planters
1	Walnut Creek Volkswagen	Old Commercial	2020 North Main Street	Bioretention facilities, self-retaining facilities and porous pavement
1	Pleasant Creek Homes	Old Urban	1935 Barkley Avenue	Bioretention facilities, flow-through planters
1	North Main Apartment	Old Commercial	1960 N. Main Street	Bioretention facilities, flow-through planters
1	Brio Apartments	Old Commercial	141 N. Civic Drive	Bioretention facilities, flow-through planters, self-retaining
1	Village Walk 2 Subdivision	Old Urban	1727 Lacassie Avenue	Flow-through planters
1	Cole Terrace Condominiums	Old Urban	1756 Cole Avenue	Bioretention facilities, flow-through planters

Table 21-2: City of Walnut Creek Planned Projects

WMA ID	PROJECT ID OR DESCRIPTION	EXPECTED DATE OF COMPLETION OR OTHER MILESTONE	ACRES TREATED	LOCATION
1	Broadway Plaza	2017	25	1200 – 1250 Broadway Plaza
1	The Corner	2016	0.12	1500 Mt. Diablo Boulevard
2	The Orchards at Walnut Creek	2016	24.53	N. Via Monte and Shadelands Avenue
1	1380 N. California Condominiums	Not available	0.67	1380 North California Boulevard
1	Riviera Avenue Condos	Not available	0.52	1605 Riviera Avenue
1	The Landing at Walnut Creek	Summer 2017	1.78	207-235 Ygnacio Valley Road
1	Lyric at 1500 N. California	Spring 2017	1.23	1500 N. California
1	Trinity Condominium	Not available	0.28	1950-1962 Trinity Avenue
1	TRG Bayrock Luxury Residences	Not available	0.44	2211 North Main Street
1	Marriott Residence Inn	Summer 2017	1.1	2050 N. California/2047 N. Main Street
1	St. Paul Commons	Fall 2017	0.64	1860 Trinity Avenue
1	Riviera Apartments	Not available	0.77	1515 – 1738 Riviera Avenue
1	1716 Lofts	Not available	0.92	1716 N. Main Street
1	Bonanza Heritage Condominiums	Fall 2017	0.40	1874-1882 Bonanza Street
1	F&M Bank	Not available	0.57	1823-1871 N. Main Street

Table 21-3: City of Walnut Creek Potential Projects

WMA ID	DATE OF COMPLETION/OTHER MILESTONE	TREATMENT AREA (AC.)	PROJECT ID	LOCATION
1	N/A	N/A	Main – Duncan Rain garden	N. Main Street at Duncan Street

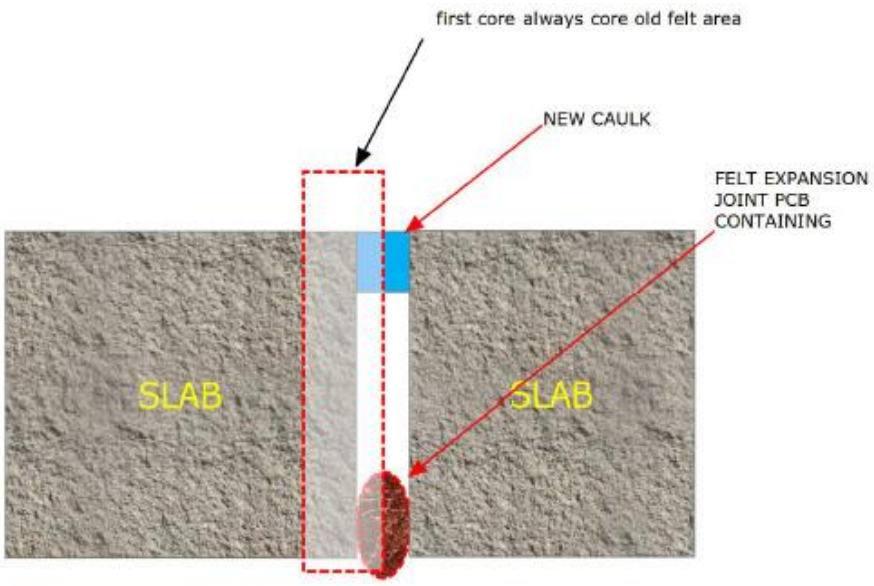
21.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The City of Walnut Creek's Division developed a Condition of Approval for buildings having potential of mercury and/or PCBs containing materials. This policy applies to all tenant improvement or commercial demolition permits where the structure was constructed or remodeled between 1950 and 1980. Project applicant must perform removal of PCBs and mercury containing materials according to federal or California law and regulations, including but not limited to toxic substances control act or the PCBs regulations. The City of Walnut Creek is also participating in the BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

Prior to the start of the Larkey Pool renovation project, the City tested the materials for asbestos, lead and PCBs. Survey work performed by a consultant indicated the presence of degraded PCBs containing felt expansion joint materials under a rubberized deck caulking system. Laboratory analysis of this material indicated concentrations of 1800 parts per million (ppm), which is above the regulatory limit of 50 ppm. Given the typically porous nature of the surrounding concrete, PCBs would be considered capable of leaching into this material, therefore contributing to potentially hazardous waste.



Concrete coring was completed on the main pool deck in various locations but did not indicate that PCBs residue from the original felt expansion joints was infiltrating into the concrete decking. Therefore, the concrete decking was not considered a toxic waste.

PCBs concentrations for a felt-like material under the rubberized expansion joints was categorized as a toxic waste. PCBs oils have not migrated into the concrete decking and therefore the decking is not considered a PCBs toxic waste under TSCA and 40 CFR 761.60. The remaining degraded PCBs containing felts within the expansion joints, however, remain PCBs-containing waste. The City hired a contractor to properly dispose of the material as hazardous waste.

The City of Walnut Creek is also participating in the BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

21.2.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

21.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

21.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The City of Walnut Creek participates in the regional recycling efforts of mercury-containing thermometer and devices through the Central Contra Costa Sanitary District (CCCSD) household hazardous waste program.

The Permittees are actively implementing mercury recycling programs in all W/MA's in order to reduce mercury loading to the Bay.

Illegal Dumping Cleanup

The City has not encountered any incidents involving illegal dumping of PCBs and/or mercury containing materials and related cleanups.

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

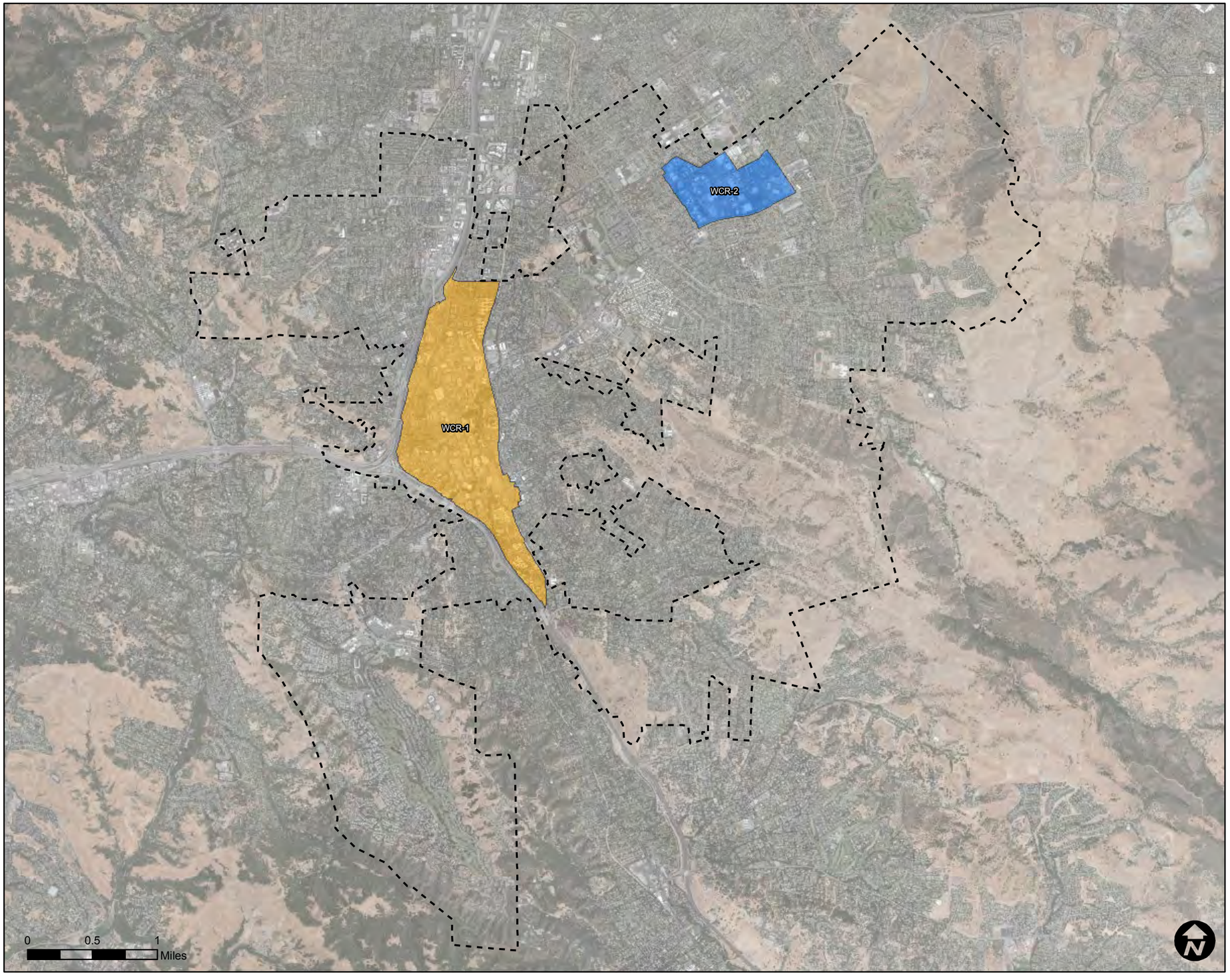
Stockpiles, Spills, and Disposal of PCBs

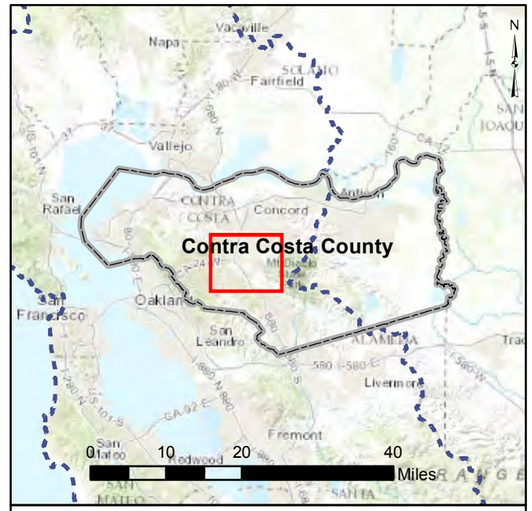
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Table 21-4. City of Walnut Creek Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area	
	WCR-1: Downtown Core	WCR-2: Shadelands
Source Property Identification and Abatement		
Source Property Investigation	C	C
Referral of Source Property		
Direct Abatement of Source Property		
Categorical Source Property Referral		
Green Infrastructure / Treatment Control Measures		
Redevelopment Subject to C.3	C, Po	C, Po
GI/Treatment Measures Not Subject to C.3		
Full Trash Capture Devices (HDS)	C	C
Managing PCBs in Building Materials and Infrastructure		
Managing PCBs in Building Materials	P	P
Managing PCBs in Infrastructure	Po	
Enhanced O&M		
Street Sweeping	C	C
Storm Drain Inlet Cleaning	C	C
Pump Station Maintenance		
Desilting of Channels and Culverts		
Street Flushing		
Storm Drain Line Cleaning		
Diversion to POTW		
Diversion to POTW		
Source Controls and Other Control Measures		
Mercury Load Avoidance and Reduction	Po	Po
Illegal Dumping Cleanup	Po	Po
Stockpiles, Spills, and Disposal of PCBs	Po	Po

Completed (C), Planned (P), Potential (Po)





Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- WCR-1, Downtown Core
- WCR-2, Shadelands

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA CLEAN WATER PROGRAM

WALNUT CREEK

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 21-1**

22 UNINCORPORATED CONTRA COSTA COUNTY

22.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) within Unincorporated Contra Costa County are shown on Figure 22-1 and are listed below:

1. CCC-1: High Likelihood and Source Properties
2. CCC-2: Old Industrial Areas
3. CCC-3: North Richmond Pump Station (NRPS) Drainage Area
4. CCC-4: Infrastructure Improvement Areas (old industrial and old urban areas with very limited or no storm drain systems adjacent to industrial areas)
5. CCC-5: Enhanced Operations and Maintenance Areas (old industrial and old urban areas with curb, gutter, and storm drain systems)
6. CCC-6: Green Infrastructure (incorporated as infrastructure is redeveloped County-wide, not mapped)
7. CCC-PGE: Categorical PG&E
8. CCC-RAIL: Categorical Railroad

These W/MAs are designated based on the types of control measures and actions that may be taken to reduce PCBs flowing or present in the stormwater drainage system. These areas represent priority areas within Contra Costa County. Contra Costa County is large and spread out. Many areas indicated as old industrial and old urban areas that may have PCBs are not included within these priority management areas at this point in time. Contra Costa County has evaluated close to 1,000 potential properties and has found PCBs in sediment sampling at one site. The green infrastructure W/MA is not shown on the map due to the dispersed nature of these sites.

22.2 Scope and Schedule of PCBs Control Measures

A summary of the control measures that are currently being implemented or will be implemented during the term of the permit in each of these W/MAs is provided in Table 22-2 and are discussed in the sections below.

22.2.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the Unincorporated Contra Costa County have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

Contra Costa County identified one source property that tested positive for PCBs during the PCBs screening performed by Contra Costa County and the Clean Water Program. This property, Fass Metals, is in Watershed/Management Area 1 (W/MA 1). Fass Metals is located in North Richmond and is a known PCBs site that was investigated and remediated with the oversite of the Department of Toxic Substances Control (DTSC). Even though the site was remediated, PCBs were found in a sediment sample collected by Contra Costa Clean Water Program. The County is further investigating the possible abatement of PCBs or referral of the site to the Regional Water Quality Control Board to prevent the PCBs-contaminated sediments from migrating off the site.

Ongoing Investigations

Properties designated as High Likelihood or old industrial in Contra Costa County will be further investigated to see if they are properties likely to have PCBs. Contra Costa County will work with County C.4, industrial inspectors under the Commercial and Industrial Inspection Program to investigate the likelihood of PCBs on these High Likelihood Properties. These investigations will be coordinated with the inspections of industrial facilities over the next few years. Ongoing investigations may result in a property referral in the future.

22.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MA's will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3.

Green infrastructure will be incorporated into Contra Costa County redevelopment and new infrastructure projects county-wide over time. The County's completed projects are listed in Table 22-1 below. The County does not currently have planned or potential projects with green infrastructure planned.

Table 22-1: Unincorporated Contra Costa County Completed Projects

WMA ID	PROJECT ID	DATE OF SWTF INSTALLATION	PROJECT AREA (Acres)	TOTAL DRAINAGE AREA (Sq. ft.)	SITE ADDRESS
6	Belmont Terrace *SD05-8984*	2011	13.2	550,148	Falling Star Drive, Shadow Hill Drive, Little Valley Drive (all address numbers), Martinez area (Region 2)
6	Caballo Ranchero *MS06-26*	Mar. 2008	2.236	91,336	2530 & 2540 Caballo Ranchero, Diablo area (Region 2)
6	El Rincon *SD9189*	May 2011	1.53	66,650	El Rincon Road (all address numbers), Bay Point area (Region 2)
6	Laurel Place *SD05-8769*	Aug. 2014	3.8	161,467	4925 Laurel Dr., Concord
6	Paulson Lane *SD04-8939*	July 2008	N/A	78,956	150-158 Paulson Lane and 25-62 Autumn Trail Lane, Walnut Creek area (Region 2)
6	Regional Medical Center - Parking Lot E	2012-2013	0.7	58,850	2500 Alhambra Ave., Martinez
6	Sam's Club Remodel *DP11-3018*	May 2014	9.5	415,120	1225 Concord Ave., Concord
6	South Ave. MS06-0013	2012	1	47,079	165 South Avenue (near Regent Place), Alamo (Region 2)
6	Station Landing *DP07-3064*	2009	4.89	191,009	3055 Oak Road, Pleasant Hill area (Region 2)
6	Tower Mart #101 CV13-00066	2013	0.61	26,701	245 Bailey Road, Bay Point
6	Vasco Road Safety Improvement Project	2009-10	1.81	78,991	Vasco Road; beginning approx. 1.2 miles north of the Alameda County line, and continuing 1.2 miles generally northward; Byron area (Region 5)
6	Walgreens LP08-2044		1.43	56,922	2700 Willow Pass Road, Bay Point

WMA ID	PROJECT ID	DATE OF SWTF INSTALLATION	PROJECT AREA (Acres)	TOTAL DRAINAGE AREA (Sq. ft.)	SITE ADDRESS
6	West County Health Center CPM145-1001	2012	3.67	195,390	13601 San Pablo Avenue, San Pablo (Region 2)

22.2.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

For managing PCBs in building materials, Contra Costa County Watershed Program has been communicating and involving the County's Building Inspector Management in the region-wide discussions relating to the management of PCBs in building materials and has asked for their input in the development of policies to manage PCBs in building materials. The Program and Permittees are also actively participating in a BASMAA Regional Project to address PCBs in building materials as described in section 2.3.1.

Managing PCBs in Infrastructure

In terms of storm drain infrastructure, Contra Costa County has several areas of the County with roadside ditches and others with curb and gutter or curb and gutter interspersed with roadside ditches. Contra Costa County is looking at the possibility of building curb and gutter and storm drain systems in some areas of the County, particularly in residential areas adjacent or near to old industrial areas. Having curb and gutter and storm drain systems would make it easier to enhance the operations and maintenance of the municipal separate storm sewer system (MS4) and where possible to include green infrastructure. The Program and Permittees will also be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

22.2.4 Enhanced Operation and Maintenance Control Measures

Contra Costa County has street sweeping in most areas that have curb and gutter, where street sweeping is possible. In old urban areas near industrial areas that have curb and gutter and storm drain infrastructure, Contra Costa County will investigate the potential for increasing operations and maintenance including measures such as additional street sweeping, inlet cleaning, street flushing and storm drain line cleaning.

22.2.5 Diversion to POTW

Contra Costa County maintains the North Richmond pump station in North Richmond. A temporary diversion was completed under MRP 1.0. The diversion provided an opportunity to coordinate more with West County Wastewater District; test how a diversion could work; and discuss potential future diversions. Contra Costa County is investigating the possibility of building more permanent diversion infrastructure and coordinating with West County Wastewater District to potentially find a way to divert more stormwater drainage discharges.

22.2.6 Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

Household hazardous waste facilities collect materials containing mercury. There may be other opportunities that come up over time to collect mercury or identify additional sources and take measures to reduce discharges to the MS4. Contra Costa County's Landscaping and Lighting District is coordinating with PG&E to replace Mercury (Hg) containing light fixtures with LED fixtures.

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

Illegal Dumping Cleanup

Illegal dumps are cleaned from Contra Costa County's road right-of-way regularly and disposed of properly by Contra Costa County's Public Works or where appropriate, Hazardous Materials. Illegal dumping consists of many types of material including: furniture, trash, construction material and debris, and potentially hazardous materials or wastes. Where possible, information is used to track down the owner of the material and properly dispose of the material or recover costs of disposing.

The Permittees will identify and cleanup illegal dumping of construction and demolition debris as needed.

Stockpiles, Spills, and Disposal of PCBs

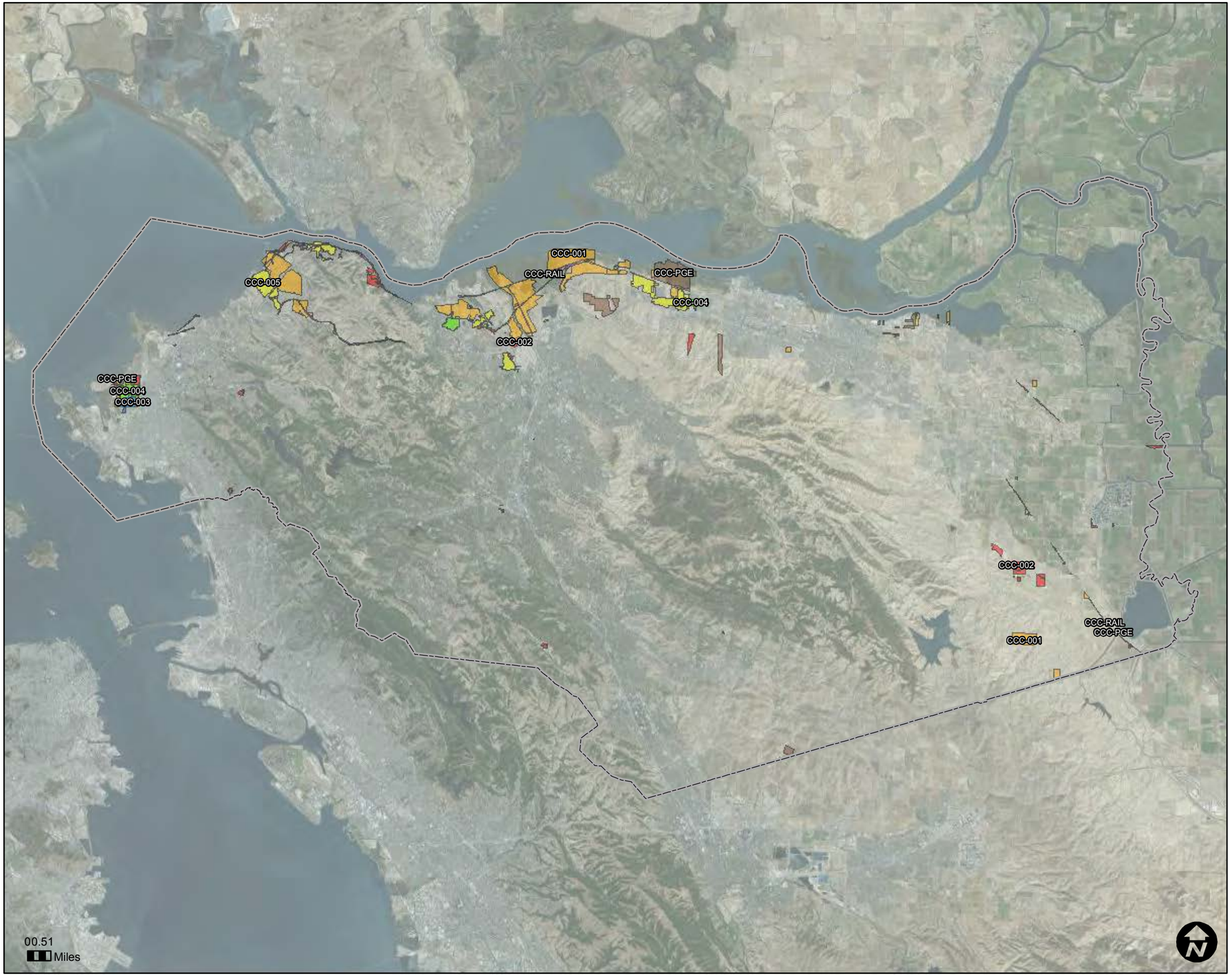
Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Spills occur due to accidents, weather, or other causes. The County may also find or be notified about stockpiles of materials. The County has trained Hazardous Materials and Environmental Health Inspectors on the importance of the identification and correct disposal of PCBs related to stormwater and the revised Municipal Regional Stormwater Permit (MRP 2.0). The County has also been involved in a Task Force with Code Enforcement Officers and has communicated the importance of working with stormwater managers to identify and communicate the potential presence of PCBs when there are spills or stockpiled material. The County will work with Hazardous Materials or other appropriate staff to clean and dispose of PCBs materials properly when and where encountered. Where these spills involve other agencies or organizations, Contra Costa County will work with the agencies or property owners as appropriate.

Table 22-2. Unincorporated Contra Costa County Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area							
	CCC-1: High Likelihood/ Source Properties	CCC-2: Old Industrial Areas	CCC-3: NRPS Drainage Area	CCC-4: Infrastructure Improvement Areas	CCC-5: Enhanced O&M Areas	CCC-6: Green Infrastructure	CCC-PGE	CCC-RAIL
Source Property Identification and Abatement								
Source Property Investigation	P	Po						
Referral of Source Property	P	Po						
Direct Abatement of Source Property	Po	Po						
Categorical Source Property Referral	Po	Po	Po	Po	Po		Po	Po
Green Infrastructure / Treatment Control Measures								
Redevelopment Subject to C.3		Po		Po	Po	Po		
GI/Treatment Measures Not Subject to C.3		Po		Po	Po	Po		
Full Trash Capture Devices (HDS)		Po		Po	Po	Po		
Managing PCBs in Building Materials and Infrastructure								
Managing PCBs in Building Materials	Po	Po	Po	Po	Po	Po		
Managing PCBs in Infrastructure	Po	Po	Po	Po	Po	Po		
Enhanced O&M								
Street Sweeping		Po	Po		Po			
Storm Drain Inlet Cleaning		Po	Po		Po			
Pump Station Maintenance		Po	Po					
Desilting of Channels and Culverts	Po	Po	Po	Po	Po			
Street Flushing	Po	Po	Po		Po			
Storm Drain Line Cleaning		Po	Po	Po	Po			
Diversion to POTW								
Diversion to POTW			Po					
Source Controls and Other Control Measures								
Mercury Load Avoidance and Reduction	Po	Po	Po	Po	Po	Po		
Illegal Dumping Cleanup	Po	Po	Po	Po	Po	Po	Po	Po
Stockpiles, Spills, and Disposal of PCBs	Po	Po	Po	Po	Po	Po	Po	Po

Completed (C), Planned (P), Potential (Po)



Legend

- Permittee Area
- Contra Costa County Boundary

Watershed Management Areas

- CCC-001, High Likelihood and Source Properties
- CCC-002, Old Industrial Areas
- CCC-003, North Richmond Pump Station (NRPS) Drainage Area
- CCC-004, Infrastructure Improvement Areas
- CCC-005, Enhanced Operations and Maintenance Areas
- CCC-PGE, Categorical PGE
- CCC-RAIL, Categorical Rail

Information contained on this map is for the sole purpose of the Contra Costa Clean Water Program. Accuracy of the data is not guaranteed.

CONTRA COSTA COUNTY

Watershed Management Areas

PSOMAS	9/30/2016	**Figure 22-1**

23 REFERENCES

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Attachment 11.2

Revised Final Draft Interim Accounting Methodology for TMDL Loads Reduced

Interim Accounting Methodology for TMDL Loads Reduced

Prepared for

Bay Area Stormwater Management Agencies Association

Prepared by

Geosyntec consultants

engineers | scientists | innovators

1111 Broadway, 6th Floor
Oakland, California 94607

EOA inc.

1410 Jackson Street
Oakland, California 94612

19 September 2016

Version 1.0

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LIST OF ACRONYMS AND ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BASMAA	Bay Area Stormwater Management Agencies Association
CCCWP	Contra Costa Clean Water Program
GI	Green Infrastructure
GIS	Geographic Information System
IMR	Integrated Monitoring Report
mg/ac/yr	milligram per acre per year
mg/kg	milligram per kilogram
MPC	Monitoring and Pollutants of Concern Committee
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
PCBs	Polychlorinated Biphenyls
POC	Pollutants of Concern
POTW	Publically Owned Treatment Works
RAA	Reasonable Assurance Analysis
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFEI	San Francisco Estuary Institute
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
TMDL	Total Maximum Daily Load
WY	Water Year

1. INTRODUCTION

1.1 Background

The Municipal Regional Stormwater Permit (MRP; SFBRWQCB, 2015[1]) Provisions C.11.a and C.12.a require the Permittees to demonstrate cumulative Bay Area-wide and Program area-specific mercury and polychlorinated biphenyls (PCBs) load reductions over the current permit term. MRP Provisions C.11.b and C.12.b require the Permittees to develop and implement an assessment methodology and data collection program to quantify mercury and PCBs loads reduced through implementation of pollution prevention, source control, and treatment control measures. The Permittees will use this assessment methodology to demonstrate progress towards achieving the load reductions required in this permit term. This report has been prepared to address the requirements of MRP Provisions C.11.b.iii.(1) and C.12.b.iii.(1).

Methods included in this report build upon those included in the Integrated Monitoring Report (IMR) Part B (BASMAA, 2014) submitted by MRP Permittees to the Water Board on February 1, 2014; and methodologies described in MRP provision C.12 and the MRP Fact Sheet (SFBRWQCB, 2015).

1.2 Report Overview

A description of the control measures, load reduction accounting methodologies, reporting requirements, and assumptions are presented in Sections 2 through 7 of this report for the following mercury and PCBs control measure categories:

- Source Property Identification and Abatement;
- Green Infrastructure/Treatment Control Measures;
- Management of PCBs in Building Materials and Infrastructure;
- Enhanced Operations and Maintenance Control Measures;
- Pump Station Diversion; and
- Source Controls and Other Control Measures.

Section 8 presents a discussion of how the interim accounting methodologies may be updated and refined to account for new information gathered over this permit term. Section 9 presents a discussion on how the findings and framework from the interim accounting methodology may be

[1] Reissued November 19, 2015 with effective date January 1, 2016, to 77 Phase I municipal stormwater Permittees in five Bay Area counties which are among over 90 local agencies comprising the Bay Area Stormwater Management Agencies Association (BASMAA).

used to develop a longer-term accounting methodology consistent with the Reasonable Assurance Analysis (RAA) required by MRP Provisions C.11.c.ii.(2) and C.12.c.ii.(2).

1.3 Interim Accounting System Basis

The Interim Accounting System outlined in this report is based on relative mercury and PCBs yields from different land use categories. This methodology was outlined in the 2014 Integrated Monitoring Reports (IMRs) (ACCWP, 2014; CCCWP, 2014; SCVURPPP, 2014; SMCWPPP, 2014) and is described in the MRP Fact Sheet. The method involves using default factors for PCBs and mercury load reduction credits resulting from foreseeable control measures implemented during this permit term. This report documents the method described in the MRP Fact Sheet; updates and refines the accounting system to account for new information; justifies the assumptions, analytical methods, sampling schemes, and parameters used to quantify the load reduction for each type of control measure; and indicates what information will be collected and submitted to confirm the calculated load reduction for each unit of activity for each control measure.

As described in the MRP Fact Sheet, a land use-based yield is an estimate of the mass of a contaminant contributed by an area of a particular land use per unit time. Essentially, different types of land uses yield different amounts of pollutants because land use types differ in their degree of contamination resulting from differing intensities of historic or ongoing use of pollutants. The land use categories used to land use-based yields were identified from studies conducted to identify potential POC sources and source areas.

A number of preliminary GIS data layers were developed using existing and historical information on land use and facility types that were located in the Bay Area during the early to mid-20th century. GIS data layers developed included a revised "Old Industrial" land use layer that attempted to depict industrial areas that were present in the year 1968 and an "Old Urban" land use layer that depicts urbanized areas developed by 1974, other than Old Industrial areas. The year 1974 was used as this was the closest year to 1968 for which data were available. The other categories include "New Urban", which depicts areas urbanized after 1974; "Open Space", which represents undeveloped land; and "Other", which consists of airport and military areas. "Source Property" areas are located in historically industrial or other areas where PCBs were used, released, and/or disposed of and/or where sediment concentrations are significantly elevated above urban background levels.

PCBs were more heavily used in older industrial areas so older industrial land use areas yield a much higher mass of PCBs per unit area than newer urban land use areas. The estimated average PCBs and mercury yields are summarized for the six land use yield categories in Table 1 below. These yields are assigned based on land use, but may also be assigned by the Permittees based on monitoring data and/or inspection results. Table 2 presents land use area-weighted average particle concentrations of PCBs, based on average urban suspended sediment yields of roughly 40 metric tons per km^2 (McKee et al. 2013).

Table 1: Estimated Land Use-Based Yields for PCBs and Mercury

Land Use Category	Assumed Average PCBs Yield (mg/ac/yr)	Assumed Average Mercury Yield (mg/ac/yr)
Source Property	4,065	1,300
Old Industrial	86.5	1,300
Old Urban	30.3	215
New Urban	3.5	33
Other	3.5	26
Open Space	4.3	33

mg/ac/yr – milligrams per acre per year
Note: The derivation of these land use-based yields is described in Appendix A to this report. See Table A-3 for further detail.

Table 2. Estimated Average Land Use Particle Concentrations for PCBs and Mercury*

Land Use	PCBs (mg/kg/yr)	Mercury (mg/kg/yr)
Source Property	25.1	8.0
Old Industrial	0.5	8.0
Old Urban	0.2	1.3
New Urban	0.02	0.2
Agriculture/Open Space	NA	NA

mg/kg/yr – milligrams per acre per year
*Particle concentrations in the table above are based on the yields included in Table 1 and the assumed average suspended sediment production of 40 metric tons per km^2 for Source Property, Old Industrial, Old Urban and New Urban land uses. Because sediment production from agricultural and open space land uses range significantly, no PCB or mercury particle concentrations are estimated for these land uses.

2. SOURCE PROPERTY IDENTIFICATION AND ABATEMENT

2.1 Control Measure Description

Source property identification and abatement involves investigations of properties located in historically industrial land use or other land use areas where PCBs or Mercury was used, released, and/or disposed of and/or where sediment concentrations are significantly elevated above urban background levels. The source property identification and abatement control measure begins with performing investigations in High Likelihood/Interest areas to identify PCB/Mercury sources to the municipal storm drain system. Once a source property is identified, the source of PCBs/Mercury on the property may be abated or caused to be abated directly by the Permittee or the Permittee may choose to refer the source property to the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for investigation and abatement by the SFBRWQCB or another appropriate regulatory agency with investigation and cleanup authority. Source properties may include sites that were previously remediated but still have soils concentrations of PCBs/Mercury that are elevated above urban background levels or may be newly identified source properties.

The Permittees will validate the existence of significantly elevated PCB/Mercury concentrations through surface soil/sediment sampling in the right-of-way or through water sampling where visual inspections and/or other information suggest that a specific property is a potential source of significantly elevated PCB/Mercury concentrations. Where data confirm significantly elevated concentrations (e.g., a sediment concentration equal to or greater than 1.0 mg/kg or a concentration greater than 0.5 mg/kg and other lines of evidence) are present in soil/sediment from a potential source property or in stormwater samples, the Permittees will take actions to cause the property to be abated or will refer that property to the SFBRWQCB to facilitate the issuance of orders for further investigation and remediation of the subject property.

For each confirmed source property, the applicable Permittee will implement or cause to be implemented, where appropriate, one or a combination of interim enhanced operation and maintenance (O&M) measures in the street or storm drain infrastructure adjacent to the source property during the source property abatement process to remove historically deposited sediment and/or to prevent further contaminated sediment from entering the storm drain. These enhanced O&M measures will be described in the source property referral that is sent to the SFBRWQCB. If the Permittee finds that enhanced O&M measures are not justified based on the results of the soil/sediment investigation, the Permittee must discuss these findings with the SFBRWQCB prior to submitting the source property referral. The SFBRWQCB will review the source property referral and provide comments to the Permittee within 30 days (if needed).

2.1.1 Categorical Source Properties

Categorical source properties include non-municipally-owned electrical utilities and railroads. These types of source properties present special challenges for identification and referral due to

their quantity, dispersed nature, difficulty in sampling, and the general lack of Permittee control over the property owner.

Permittees may identify and refer specific electrical utility and railroad properties if considered a source property or area based on investigation. Where a Permittee demonstrates limited ability to perform enhanced O&M for this type of property, the Permittee may request that the SFBRWQCB use its authority to require the referred source property owner to implement control measures to prevent the release of PCBs (or Mercury) from the identified source property or area.

Permittees may choose to collect data on electrical utility properties and railroads in order to refer an entire category or subcategory of these properties to the SFBRWQCB at a future date. No special load reduction accounting methodology is proposed for categorical referrals in this report, but a categorical accounting methodology would be proposed at the time of categorical referral in the future.

2.2 Loads Reduced Accounting Methodology

The amount of PCBs and mercury loads (i.e., annual mass or milligrams per year (mg/yr)) reduced will be assessed using the following interim accounting method:

$$Load\ of\ POC\ Reduced = SP_A \bullet (SP_Y - OU_Y)$$

Where:

SP_A = Source property area (acres (ac))

SP_Y = Source property PCBs or mercury yield (mg/ac/yr)

OU_Y = Old Urban land use PCBs or mercury yield (mg/ac/yr)

Thus, for PCBs the load reduced in mg/yr will be calculated as the area of the source property in acres multiplied by 4,035 mg/ac/yr (i.e., 4,065 – 30.3 mg/ac/yr).

For mercury, the load reduced in mg/yr will be calculated as the area of the source property in acres multiplied by 1,085 mg/ac-yr (i.e., 1,300 – 215 mg/ac/yr).

As described in the MRP Fact Sheet, 50% of this load reduction will be credited to the Permittee for properties that are referred to the SFBRWQCB for abatement[2]. For these source properties, the Permittee will implement or cause to be implemented enhanced O&M measures in the vicinity of the referred source property. The remaining 50% load reduction for referred properties will be

[2] The MRP Fact Sheet states that load reductions will be credited during this permit term for source property referrals during the first three years of the permit term. Properties that are identified as sources after this time period (e.g., as land uses and property owners change over time) may be referred and credited during future permit terms.

credited to the Permittee upon completion of the abatement process or at ten years, whichever occurs first. The SFBRWQCB will notify the Permittee when the abatement process is complete.

If the Permittee chooses to abate the property or cause the property to be abated directly without referral to the SFBRWQCB, either through encouraging voluntary actions by the property owner or using municipal enforcement powers, then 100% of the load reduction will be credited to the Permittee at the time that the abatement is complete[3].

2.3 Reporting

For the source property identification and abatement control measure load reduction reporting, the area of each property will be estimated using the County Assessor's parcel map or an equivalent method. For those source properties that are referred to the SFBRWQCB for abatement, a referral form will be provided that describes the enhanced O&M investigation and results and identifies any enhanced O&M control measures that have been implemented or are planned to be implemented at the source property. For those source properties that are being abated or caused to be abated directly by the Permittee, the Permittee will provide a statement that the property has been abatement.

2.4 Assumptions

The following assumptions apply to this control measure category:

- For source properties that include a combination of previously industrial area and area that is not likely to be a source of PCBs (e.g., unimpacted open space area), the source property yield will only be applied to the portion of the property that is likely to be a source area.
- The determination of the need and extent for enhanced O&M control measures for each identified source property (e.g., if significant quantities of soils/sediment are present in the street and/or storm drain adjacent to the identified source property and if those soils/sediment have significantly elevated PCBs concentrations) will be based on the best professional judgement of the Permittee given site-specific conditions. The referral submittal will include a quantitative justification for this determination. It is assumed that the majority of referred source properties will need enhanced O&M control measures. If the Permittee finds that enhanced O&M measures are not justified based on the results of the soil/sediment investigation, the Permittee must discuss these findings with the

[3] The Permittee shall provide documentation to the SFBRWQCB that abatement has effectively eliminated transport of PCBs offsite and from entering the municipal separate storm sewer system (MS4) infrastructure for all transport mechanisms that apply to the site. The documentation should include any additional information, such as type of abatement (e.g., have the sources of PCBs to the MS4 been completely eliminated via capping, paving, walls, plugging/removal of internal storm drains, etc.) and/or water or sediment monitoring data that demonstrates the effective elimination of transport of PCBs offsite into the MS4.

SFBRWQCB prior to submitting the source property referral or the 50% load reduction credit will not be awarded.

- In addition to street sweeping, drain inlet cleaning, pump station cleaning, or storm drain cleanout conducted or caused to be conducted by the Permittee, enhanced O&M control measures may also include installation of rumble strips at entrances/exits of source properties to reduce offsite tracking of contaminated sediment; installation of silt fence, gravel bags, fiber rolls, walls, or other sediment control devices at the edge of the right-of-way to prevent contaminated sediment from reaching the MS4; requesting that the SFBRWQCB require a source property to be covered under the Industrial General Permit, with enhanced monitoring and best management practices (BMP) implementation for pollutants of concern (POC) control; or similar control measures. The selected enhanced O&M control measure or combination of measures should be implemented during the source property abatement process such that historically deposited sediment is removed and additional contaminated sediment is prevented from entering the MS4.

3. GREEN INFRASTRUCTURE/ TREATMENT CONTROL MEASURES

3.1 Control Measure Description

This control measure includes both new development and redevelopment activities as well as retrofit of treatment controls (including green infrastructure) into existing developed areas. This control measure includes new development and redevelopment projects on private and public properties, as well as retrofit of existing infrastructure in public right-of-way areas and on public properties.

Permittees will account for previously implemented projects and/or will implement green infrastructure projects over this permit term to achieve the PCBs load reductions shown in MRP Table 12.2 and mercury load reductions shown in MRP Table 11.1.

3.2 Loads Reduced Accounting Methodology

As discussed in the MRP Fact Sheet, when contaminated areas are newly developed, redeveloped, or retrofitted, the pollutant yield of the area will be reduced through a variety of mechanisms (i.e., removal, capping, or paving of contaminated sediment and/or treatment of the post-development runoff). The amount of PCBs and mercury load reduction can be obtained by multiplying the area of the new development/redevelopment/retrofit project by the difference in land use-based yield (either Old Industrial minus New Urban or Old Urban minus New Urban, whichever pre-development land use is applicable).

3.2.1 Parcel-Based New Development, Redevelopment, or Retrofit Projects

The Permittees will quantify and report the amount of PCBs and mercury loads reduced from implementation of post-development treatment measures (as well as land use change and abatement) for new development, redevelopment, and parcel-based retrofit projects using the following interim accounting method:

$$Load\ of\ POC\ Reduced = P_A \bullet (P_Y - NU_Y)$$

Where:

P_A	=	New development/redevelopment/parcel-based retrofit project area (ac)
P_Y	=	Existing PCBs or mercury yield (mg/ac/yr)
NU_Y	=	New Urban PCBs or mercury yield (mg/ac/yr)

3.2.2 Green Street Projects, Regional Retrofit Projects, and Full Trash Capture Devices

The Permittees will quantify and report the amount of PCBs and mercury loads reduced from implementation of green street projects, regional retrofit projects[4], and full trash capture devices (i.e., hydrodynamic separators (HDS) units) using the following interim accounting method:

$$Annual\ Mass\ of\ PCB\ Reduced = P_A \bullet P_Y \bullet E_f$$

Where:

P_A	=	Tributary area treated by stormwater green infrastructure/retrofit treatment measure (acres)
P_Y	=	Area-weighted PCBs or mercury yield (mg/acre-year)
E_f	=	Efficiency factor for green infrastructure/retrofit treatment control measure (assumed to be 70%) or HDS units (assumed to be 20%)[5]

3.3 Reporting

The following information will be reported for new development/redevelopment/retrofit, green street, and HDS projects:

- Project name and location.
- Whether the project is a new development/redevelopment project subject to MRP Provision C.3.b.ii., a new development/redevelopment project subject to the provisions of the previous MRP, a retrofit project or other project that is not subject to the C.3 provisions of this permit term or the previous permit term, a green street project, or a full trash capture project.
- The year that project construction was completed.
- Total project area for new development/redevelopment/parcel-based retrofit projects and the project tributary drainage area for green streets, regional retrofit, and HDS projects.
- The land use area(s) for the project and the area-weighted land use-based yield for the project area.
- POC loads reduced for each project.

[4] These projects provide treatment control for existing developed areas without redeveloping the tributary area.
[5] See Appendix C for HDS unit efficiency factor data analysis.

4. MANAGE PCBS IN BUILDING MATERIALS AND INFRASTRUCTURE

4.1 Control Measure Description

4.1.1 PCBs in Building Materials

During the first three years of the permit term, the Permittees will develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition, so that PCBs do not enter the municipal separate storm sewer system (MS4). PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, stormwater runoff, or improper waste disposal. Applicable structures include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt. A Permittee is exempt from this requirement if the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

4.1.2 PCBs in Infrastructure

PCBs-containing caulks and sealants may also be found in public infrastructure such as parking garages, bridges, dams, storm drain pipes, and pavement joints (e.g., curb and gutter).

4.2 Loads Reduced Accounting Methodology

4.2.1 PCBs in Building Materials

As stated in the MRP, for this permit term the Permittees will receive a total of 2,000 g/yr (2 kg/yr) PCBs load reduction value if protocols for managing PCBs-containing materials during demolition, as required in MRP Provision C.12.f., have been developed and implemented.

The Permittee-specific portion of the 2,000 g/yr PCBs load reduction value will be based on the proportion of the county population in each municipality in the 2000 Census. If all of the Permittees in a county wish to use an alternative method of distributing the load reductions for managing PCB-containing materials during demolition, these Permittees will report through their countywide stormwater programs on their alternative method (if different from the default population-based method) for assigning Permittee-specific load fractions in the 2019 Annual Report. This can be determined by the Permittees within each county and may be different from one county to the next, but all of the Permittees within a county must use the same method of distributing the county load reductions.

The PCBs load reduction for this control measure will be accounted for in the 2019 Annual Report, if the protocols are developed and implemented prior to July 1, 2019. If the protocols are developed

and implemented prior to July 1, 2018, the PCBs load reduction for this control measure will be accounted for in the 2018 Annual Report.

4.2.2 PCBs in Infrastructure

For infrastructure projects, the following interim accounting method will be used to account for PCBs loads reduced by developing and implementing effective protocols for identifying and managing PCBs-containing materials during infrastructure improvement projects:

$$PCBs\ Loads\ Reduced = A + B$$

Where:

A	=	Estimated average annual mass of PCBs in the infrastructure that entered the MS4 from the infrastructure prior to the infrastructure improvement (mg/yr)
B	=	Estimated average annual mass of PCBs that would have entered the MS4 as a result of the improvement project without proper controls (this accounts for a change in the identification, management, and disposal practices for PCBs-containing caulks and sealants during infrastructure improvement projects) (mg/yr)

The PCB load reduction for this control measure will be accounted for on an individual project basis during this permit term. Monitoring conducted to address the requirements of MRP Provision C.12.e will be used to inform factors A and B above, in conjunction with project-specific monitoring to measure the mass of PCBs-containing caulk and/or sealants in the project's infrastructure.

4.3 Reporting

4.3.1 PCBs in Building Materials

The Permittees will summarize the steps they have taken to begin implementing this control measure, either collectively or individually, in the 2016, 2017, and 2018 Annual Reports.

Each Permittee seeking exemption from the C.12.f requirement to implement this control measure will submit documentation in the 2017 Annual Report, such as historic maps or other historic records, clearly demonstrating that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

In the 2020 Annual Report, the Permittees will provide:

- Documentation demonstrating implementation with each of the minimum requirements in Provision C.12.f.ii(1)(a)-(c).

- An assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs during building demolition.

In the 2020 Annual Report and thereafter, the Permittees will provide documentation of each of the following items:

- The number of applicable structures that applied for a demolition permit during the reporting year; and
- A running list of the applicable structures that applied for a demolition permit (since the date the PCBs control protocol was implemented) that had material(s) with PCBs at 50 ppm or greater, with the address, demolition date, and brief description of PCBs control method(s) used.

4.3.2 PCBs in Infrastructure

The PCB load reduction for this control measure will be reported for each infrastructure project in the Annual Report following project completion. A report will be prepared that describes the infrastructure improvement project, the monitoring done to measure the PCBs present in the caulk and/or sealants, and how the factors A and B were determined.

Monitoring conducted to address the requirements of MRP Provision C.12.e will be reported in the 2018 Annual Report.

4.4 Assumptions

4.4.1 PCBs in Building Materials

- All Permittees will receive their share of the total of 2,000 g/yr PCBs load reduction value if protocols for managing PCBs-containing materials during demolition, as required in MRP Provision C.12.f., have been developed and implemented within their jurisdiction.
- Permittees that have SFBRWQCB Executive Officer approval as exempt from this requirement will also receive their share of the total 2,000 g/yr PCBs load reduction value.

4.4.2 PCBs in Infrastructure

- Sufficient data will be collected as part of the monitoring conducted to address the requirements of MRP Provision C.12.e. to inform the values for factors A and B. A project-specific analysis may also be conducted by the Permittee to develop these factors.

5. ENHANCED OPERATION AND MAINTENANCE CONTROL MEASURES

5.1 Control Measure Description

Routine MS4 operation and maintenance (O&M) activities include street sweeping, drain inlet cleaning, and pump station maintenance. In addition, culverts and channels are also routinely maintained (i.e., desilted). Enhancements to routine operations and new actions such as storm drain line and street flushing may enhance the Permittees' ability to reduce PCBs and mercury in stormwater. PCBs load reductions achieved through implementation of enhanced O&M control measures, aside from enhanced O&M control measures associated with source property referrals, may be counted as part of the overall load reductions expected during this permit term.

5.2 Loads Reduced Accounting Methodology

5.2.1 Inlet Cleaning and Street Sweeping

Load reductions for inlet cleaning and street sweeping will be calculated as follows:

$$\textbf{\textit{Annual Load of PCB Reduced}} = P_A \bullet P_Y \bullet EE_f$$

Where:

P_A = Catchment area for enhanced O&M measure (acres)

P_Y = Area-weighted PCBs yield (mg/acre-year) for the enhanced O&M catchment area based on land use yield (see Table 1)

EE_f = Enhancement Efficiency factor for enhanced O&M control measure (See Appendix D for enhanced inlet cleaning. The enhancement efficiency factor for street sweeping will be based on the results of CW4CB Task 4 WINSLAM modeling analysis).

5.2.2 Pump Station Cleanout, Storm Drain Line Cleanout, Street Flushing, and Culvert/Channel Desilting

Load reductions for enhanced pump station cleanout, storm drain line cleanout, street flushing, and culvert/channel desilting will be calculated as follows:

$$Enhanced_{LR} = Current_{LR} - Baseline_{LR}$$

Where:

$Current_{LR} = Vol_{Current} \bullet \%Sed \bullet \rho \bullet Conc$

$Baseline_{LR} = Vol_{Baseline} \bullet \%Sed \bullet \rho \bullet Conc$

$Vol_{Current}$	=	Average volume of material collected via the enhanced O&M control measure in current year(s) (post-Fiscal Year 2001-02) (m3/yr)
$Vol_{Baseline}$	=	Average volume of material collected via the O&M control measure in baseline years (prior to and including Fiscal Year 2001-02) (m3/yr) (assumed to be zero for storm drain cleanout and street flushing)
%Sed	=	Percent of material collected (by volume) by the enhanced O&M control measure that is sediment < 2mm in diameter (measured)
ρ	=	Sediment density of the material collected by the enhanced O&M control measure (weight per unit volume) (measured)
Conc	=	Average concentration of PCBs in sediments collected by the enhanced O&M control measure (mg/kg; see Section 1, Table 2, for land use-based sediment concentrations to calculate area-weighted concentrations or alternatively use project-specific measurements).

5.3 Reporting

The following information will be reported for this control measure:

- Description of O&M measure enhancement.
- Volume of material collected above baseline and loads reduced.
- Loads reduced.

6. DIVERSION TO POTW

6.1 Control Measure Description

This control measure consists of diverting dry weather and/or first flush events from MS4s to publically owned treatment works (POTWs) as a method to reduce loads of PCBs and mercury in urban runoff.

6.2 Loads Reduced Accounting Methodology

The load reduction calculation method for this control measure is:

$$EnhancedReductionDiversion = CurReductionDiversion - BaseReductionDiversion$$

Where:

BaseReductionDiversion	=	Mass of PCBs or mercury reduced via POTW diversions of urban stormwater in 2002 (assume zero for all diversions except the Palo Alto Diversion Structure)
CurReductionDiversion	=	Mass of PCBs or mercury reduced via POTW diversions of urban stormwater in Year of Interest

And:

Base or Cur ReductionDiversion = ConcDiversion • VolDiversion

Where:

ConcDiversion	=	Average concentration of PCBs or mercury in sediment and/or water diverted to POTW (measured)
VolDiversion	=	Volume of sediment and/or water diverted to POTW (measured)

6.3 Reporting

For diversions, a project-specific report will be prepared that describes the diversion and project-specific load reduction calculations.

7. SOURCE CONTROLS AND OTHER CONTROL MEASURES

This control measure category includes institutional source controls, such as mercury recycling, and other source control measures such as managing illegal dumping of construction debris and stockpiles of PCBs-containing materials. Descriptions of the control measures, accounting method, reporting, and uncertainties for each of these control measures are provided in the sub-sections following.

7.1 Mercury Load Avoidance and Reduction

Mercury load avoidance and reduction includes a number of source control measures listed in the California Mercury Reduction Act adopted by the State of California in 2001. These source controls include material bans, reductions of the amount of mercury allowable for use in products, and mercury device recycling. The following source controls bans are included:

- Sale of cars that have light switches containing mercury;
- Sale or distribution of fever thermometers containing mercury without a prescription;
- Sale of mercury thermostats; and,
- Manufacturing, sale, or distribution of mercury-added novelty items.

In addition, fluorescent lamps manufacturers continue to reduce the amount of mercury in lamps sold in the U.S. Manufactures have significantly reduced the amount of mercury in fluorescent linear tube lamps.

Mercury Device Recycling Programs resulting in Mercury load reduction generally include three types of programs that promote and facilitate the collection and recycling of mercury–containing devices and products:

1. Permittee-managed household hazardous waste (HHW) drop-off facilities and curbside or door-to-door pickup;
2. Private business take-back and recycling programs (e.g., Home Depot); and,
3. Private waste management services for small and large businesses.

7.1.1 Loads Avoided/Reduced Accounting Methodology

The load avoidance/reduction methodology for this control measure is:

$$HgReductionL/S/T = BaseLoadL/S/T - CurLoadL/S/T$$

Where:

BaseLoadL/S/T = Baseline load of mercury in urban stormwater in 2002 from lamps (L), switches (S), and thermostats (T)

CurLoadL/S/T	=	Current load of mercury in urban stormwater in year of interest from lamps (L), switches (S), and thermostats (T)

And:

BaseLoadL/S/T	=	BaseMassL/S/T • BaseNumL/S/T • T
CurLoadL/S/T	=	CurMassL/S/T • CurNumL/S/T • T

Where:

$BaseMass_{L/S/T}$	=	Average mass of total mercury in each lamp (L), switch (S), and thermostat (T) in 2002 (Assume: 93mg per kilogram of linear fluorescent lamp or Compact Fluorescent Lamp (CFL); 2.9g per switch; and 4g per thermostat).
$CurMass_{L/S/T}$	=	Average mass of total mercury in each lamp (L), switch (S), and thermostat (T) recycled in year of interest (Assume: 35mg per kilogram of linear fluorescent lamp or CFL; 2.9g per switch; and 4g per thermostat).
$BaseNum_{L/S/T}$	=	Number or weight of lamps (L), switches (S), and thermostats (T) improperly discarded into the environment in 2002.
$CurNum_{L/S/T}$	=	Number or weight of lamps (L), switches (S), and thermostats (T) discarded into the environment improperly in year of interest.
T	=	% of total mercury in lamps (L), switches (S), and thermostats (T) that when improperly discarded are transported to the Bay via urban stormwater (Assume 4.8%).

And:

BaseNumL/S/T	=	BaseSpentL/S/T - BaseRecycleL/S/T
CurNumL/S/T	=	CurSpentL/S/T - CurRecycleL/S/T

Where:

BaseSpentL/S/T	=	Number or weight of lamps (L), switches (S), and thermostats (T) that reached their end-of-life in 2002
BaseRcyL/S/T	=	Number or weight of lamps (L), switches (S), and thermostats (T) recycled in 2002
CurSpentL/S/T	=	Number or weight of lamps (L), switches (S), and thermostats (T) that reached their end-of-life in year of interest
CurRecycleL/S/T	=	Number or weight of lamps (L), switches (S), and thermostats (T) recycled in year of interest

7.1.2 Reporting

The following information will be reported for this control measure:

- Description of mercury recycling program and activities.
- Mass of mercury reduced or avoided as a results of these programs and activities.

7.2 Illegal Dumping Clean-Up

This source control measure entails clean-up of construction and demolition debris from illegal dumping areas. This control measure will apply to construction and demolition illegal dumping only during this permit term, but may be expanded to other types of illegally dumped trash if supported by monitoring data.

The load reduction calculation method for this control measure is:

Load reduced = (volume of construction and demolition debris cleanup per year) • (average concentration of PCBs and mercury in construction and demolition debris)

Information needed to calculate the load reduction includes:

- Volume of construction and demolition debris (measured)
- Average concentration of PCBs and mercury measured in construction and demolition debris (measured)

Load reduced will be analyzed and determined on a case-by-case basis unless region-wide data is developed through monitoring at a later date.

7.3 Stockpile, Spills, and Disposal of PCBs

This control measure includes the proper clean-up and disposal of stockpiles, spills, and/or improperly disposed quantities of PCBs. The measure would involve, for instance, a concentrated source of PCBs (e.g., a barrel) that is found and cleaned-up or properly disposed.

The load reduction calculation method for this control measure is:

Load reduced = (mass of PCBs in pile) • (fraction of mass that was or could have entered the MS4 per year)

Load reduced would have to be analyzed and determined on a case-by-case basis. Factors that should be considered in determining the fraction of mass that was or could have entered the MS4 per year include proximity to a storm drain, lack of secondary containment/potential for a spill for stockpiles, extent of exposure to rainfall, history of previous spills, etc.

8. PROGRAM UPDATES AND REFINEMENTS

8.1 Interim Accounting Methodology

The interim accounting methodology outlined in this report may be updated and refined to account for significant new information as it becomes available. If needed, the proposed updates will be submitted as an addendum to this report for Executive Office approval in the 2017 Annual Report or subsequent Annual Reports during this permit term.

8.2 Transition to Long Term Accounting Methodology

8.2.1 Reasonable Assurance Analysis

Green Infrastructure

MRP Provision C.3.j requires the Permittees to develop a Green Infrastructure Plan for inclusion in the 2019 Annual Report. The Green Infrastructure Plan must be developed using a mechanism to prioritize and map areas for potential and planned green infrastructure projects, both public and private, on a drainage-area-specific basis, for implementation by 2020, 2030, and 2040. MRP Provisions C.11.c and C.12.c require the Permittees to prepare a Reasonable Assurance Analysis (RAA) for inclusion in the 2020 Annual Report that quantitatively demonstrates that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be achieved by 2040 through implementation of green infrastructure throughout the permit area.

This reasonable assurance analysis should do the following:

1. Quantify the relationship between the areal extent of green infrastructure implementation and mercury and PCBs load reductions. This quantification should take into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.
2. Estimate the amount and characteristics of land area that will be treated through green infrastructure by 2020, 2030, and 2040.
3. Estimate the amount of mercury and PCBs load reductions that will result from green infrastructure implementation by 2020, 2030, and 2040.
4. Quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects.
5. Ensure that the calculation methods, models, model inputs, and modeling assumptions used have been validated through a peer review process.

TMDL Implementation Plan

Additionally, MRP Provisions C.11.d. and C.12.d. require the Permittees to prepare plans and schedules for mercury and PCBs control measure implementation and a RAA demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations by 2028 and the PCBs TMDL wasteload allocations by 2030. The implementation plans, which will also be included in the 2020 Annual Report along with the green infrastructure RAA outlined above, must:

1. Identify all technically and economically feasible mercury or PCBs control measures (including green infrastructure projects, but also other control measures such as source property identification and abatement, managing PCBs in building materials during demolition, enhanced operations and maintenance, and other source controls) to be implemented;
2. Include a schedule according to which technically and economically feasible control measures will be fully implemented; and
3. Provide an evaluation and quantification of the mercury and PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation.

8.2.2 Long Term Accounting Methodology

MRP Provisions C.11.b.iii.(3)/C.12.b.iii.(3) require the Permittees to submit in the 2018 Annual Report any refinements, if necessary, to the Interim Accounting Methodology for use during the subsequent permit term. The need for updating to the Interim Accounting Methodology will be assessed at that time. At a minimum, the proposed Permanent Accounting Methodology will be consistent with green infrastructure RAA methodology for green infrastructure control measures. The Permanent Accounting Methodology for the other control measures will likely be based on the framework established in this Interim Accounting Methodology and will be informed by the implementation and monitoring conducted over the next two years.

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APPENDIX A

Yield Regression Analysis

A.1 METHODOLOGY

The methodology presented in this appendix was developed to assist the MRP Permittees in identifying which watershed characteristics correlate well with areas that have high, moderate, and low rates of pollutant of concern (POC) (i.e., mercury and polychlorinated biphenyls (PCBs)) loading to receiving waters via stormwater runoff. The methodology was developed using the collective local understanding of the types of land areas, facilities, and activities that generate POCs, with a focus on PCBs. The ultimate goal of the analysis was to provide first order estimates of POC loading rates from high, moderate, and low likelihood source areas and to assist Permittees in identifying areas for implementing POC load reduction measures that would have the greatest load reduction benefit.

A.1.1 Source Area Mapping

Documented uses and sources of PCBs and mercury in the urban environment and the results of PCBs source identification and abatement studies described in the 2014 Integrated Monitoring Report (IMR) Part B (BASMAA, 2014) have been used to identify PCBs source areas. Findings demonstrate that PCBs (and to a lesser extent mercury) sources are generally associated with watershed areas where equipment containing POCs were transported or used and facilities that recycle POCs or POC-containing devices and equipment. These sources include current and historic metal, automotive, and hazardous waste recycling and transfer stations; electrical properties and power plants; and rail lines. These sources are typically located in areas that were industrialized between the late 1920's and the late 1970's, the timeframe when PCBs and mercury production were the greatest in the U.S.

To assist Permittees in identifying potential POC sources and source areas, a number of preliminary GIS data layers were developed using existing and historical information on land use and facility types that were located in the Bay Area during the early to mid-20th century. GIS data layers included a revised "Old Industrial" land use layer that attempted to depict industrial areas that were present in the year 1968; an "Old Urban" land use layer that depicts urban areas developed by 1974, other than those depicted as Old Industrial; points depicting current facilities that have the potential to have or have had PCBs on-site; and historical and current rail lines where PCBs may have been transported.

A.1.1.1. Old Industrial Land Areas

Three sets of data layers were acquired and served as the primary sources of information used to create the Old Industrial data layer: 1) the 2005 version of the Association of Bay Area Governments (ABAG) land use data layers for the five Bay Area counties, which depicts current industrial land use areas; 2) 1968 aerial photographs for the Bay Area at 30,000 scale acquired from the United States Geological Survey's (USGS) Earth Explorer website; and 3) the most currently available County Assessor parcel data layers for Bay Area counties. Through the development of the Old Industrial layer, two data layers were created. The first depicts industrial land areas in 1968 that are not currently characterized as industrial by ABAG. This data layer was

created by panning through 1968 aerial photography and identifying industrial land areas outside of the areas characterized as industrial land use in roughly 2005 by ABAG. The purpose of this layer was to identify potential industrial facilities that were present in 1968, but possibly redeveloped or incorrectly identified within the ABAG land use data. The second data layer that was created depicts areas characterized by ABAG in 2005 as industrial land uses that were clearly not industrial in the 1968 aerial photographs. Most of these areas were developed into industrial land uses after 1968 and are most commonly agricultural in the aerial photographs. All parcels that were identified as at least partially industrial in 1968 were visually checked in the data layer to provide greater confidence in its accuracy. Minor edits were then made based on this quality assurance check. If there was uncertainty as to whether a parcel in the 1968 photographs was industrial, then the parcel was classified based on the ABAG land use data. As a final check, the 1968 aerial photographs were also compared to current aerial photographs and each parcel that had been redeveloped was attributed with the current land use, even if that land use remained industrial.

A.1.1.2. Old and New Urban Land Areas

Old Urban and New Urban land use data layers that depict areas urbanized prior to and after 1974, respectively, were developed using an urban extents data layer from 1974, the closest year to 1968 that the data were available. All areas that were within the urban extent in 1974 were defined as Old Urban; those areas that fell outside of this definition were classified as New Urban.

A.1.1.3 Identification of Potential POC Associated Facilities

Point data were collected for a number of facility types that may be associated with either PCBs or mercury. These facility types include those associated with electrical generation, known mercury emitters, metal manufacturing, drum recycling, metal recycling, shipping, automotive recycling, general recycling, and those known to have or historically have had PCBs in use. This information was primarily gathered by the San Francisco Estuary Institute (SFEI) as part of the Urban Stormwater Best Management Practices (BMPs) Proposition 13 Grant project and contains data from a variety of sources, including the California Air Resources Board, EnviroStor, Superfund, Department of Toxic Substances Control, and the State Water Resource Control Board.

Certain facility types for which point data were developed were mapped in greater detail to develop polygons to allow area calculations to be performed. Of particular interest for PCBs were the several hundred electrical substations in the Bay Area. Areas for these facilities were delineated using current and 1968 aerial photographs to attribute whether each facility was built prior to or after 1968. Additionally, military, port, and railroad land use areas were developed using ABAG 2005 land use data and the latest assessor's parcel data. Military parcels were further edited to only include developed areas.

Land use and facility data layers created as part of this effort were then combined to create one contiguous data layer. This data layer was attributed with additional information such as city, county, and watershed.

A.2 YIELD ANALYSIS

The yield analysis consisted of the following three steps:

- Review watershed yield data,
- Characterize the watersheds in terms of yield, and
- Develop regression equations linking yields to watershed attributes.

The analysis results are discussed below.

A.2.1 Review of SFEI Watershed Yield Data

SFEI's *PCBs in San Francisco Bay: Assessment of the Current State of Knowledge and Priority Information Gaps* (Davis et al., 2014) summarizes what had been learned from monitoring PCBs in San Francisco Bay and in the watersheds that discharge to the Bay prior to 2014. Data are presented for various media including fish tissue, sediment, and water. Yield estimates are also provided for monitored watersheds (Figure A-1).

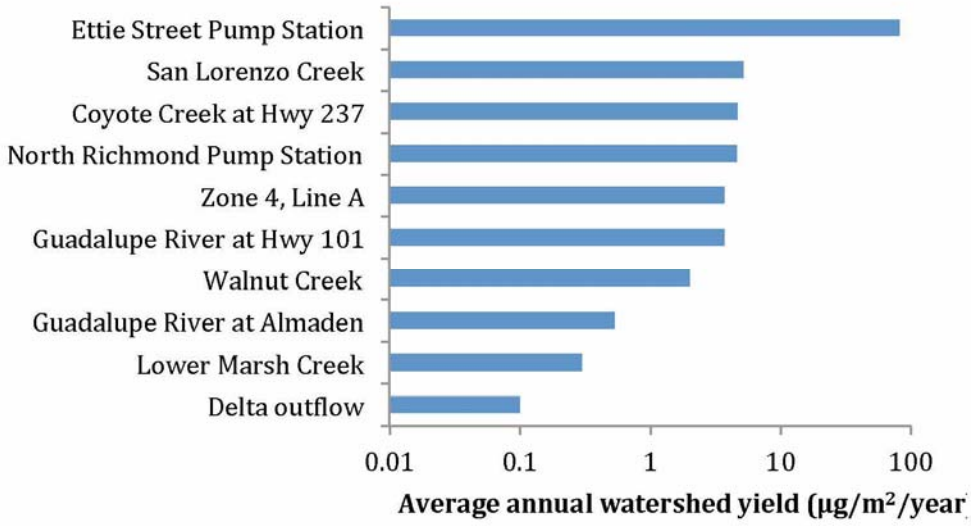

Figure A-1: Average Annual Watershed Yield

SFEI also reported yield estimates for Lower Marsh Creek, San Lorenzo Creek, Walnut Creek, Sunnyvale East Channel, and the Ettie Street Pump Station (ESPS) in the *POC Loads Monitoring Data, Water Year 2011 Report* (Table 13; McKee et al., 2012). The estimates of yield from these sources (ranked by yield) are provided in Table A-1 below. These yield estimates cover a range from approximately 0.1 to 82 µg/m^2/yr. The lowest yield is associated with the Delta outflow and the highest yield is associated with the ESPS watershed.

Table A-1: Mean Annual PCBs Yield Estimates

Watershed	PCBs Yield [µg/m^2/yr]	PCBs Yield [µg/acre/yr]	Watershed Cluster No.[1]
Ettie Street Pump Station	82	331,843	1
Sunnyvale East Channel (H)	8.8	35,612	2
Sunnyvale East Channel (L)	4.8	19,425	2
Coyote Creek at Hwy 237	4.8	19,425	6
North Richmond Pump Station	4.7	19,020	NA
Zone 4, Line A	3.8	15,378	1
Guadalupe River at Hwy 101	3.8	15,378	6
San Lorenzo Creek	2.6	10,522	6
Walnut Creek	2.0	8,094	6
Guadalupe River at Almaden	0.54	2,185	6
Lower Marsh Creek	0.30	1,214	NA
Delta Outflow	0.10	405	NA

Sources: *PCBs in San Francisco Bay: Assessment of the Current State of Knowledge and Priority Information Gaps* (Davis et al., 2014) and *POC Loads Monitoring Report WY 2011* (McKee et al., 2012).
NA – not identified in list of watersheds in *Exploratory Categorization of Watersheds for Potential Stormwater Monitoring in San Francisco Bay* (Greenfield et al., 2010).
1 From *Exploratory Categorization of Watersheds for Potential Stormwater Monitoring in San Francisco Bay* (Greenfield et al., 2010). Clusters are a function of land cover, imperviousness, historic industrial land use, and other features.

Yield estimates for HgT provided in the *POC Loads Monitoring Report, WY 2011* (Table 13, McKee et al., 2012) are summarized in Table A-2 below.

Table A-2: Mean Annual Total Mercury Yield Estimates

Watershed	HgT Yield (µg/m2/year)	HgT Yield (µg/acre/yr)	Watershed Cluster No.
Ettie Street Pump Station	79	319,702	1
Walnut Creek	29	117,359	6
Sunnyvale East Channel (H)	23	93,078	2
Sunnyvale East Channel (L)	13	52,609	2
Lower Marsh Creek	9	36,422	NA
San Lorenzo Creek	8	32,375	6

Source: *POC Loads Monitoring Data WY 2011* (Table 13, McKee et al., 2012)
NA – not identified in list of watersheds in *Exploratory Categorization of Watersheds for Potential Stormwater Monitoring in San Francisco Bay* (Greenfield et al., 2010).

A.2.2 Watershed Characterization

The yield data summarized above indicates that yields vary between watersheds. Therefore, an analysis was conducted to look for trends between yield and watershed characteristics.

SFEI has conducted a watershed characterization study where they categorized 185 watersheds in the Bay Area into eight "clusters" depending on land cover, imperviousness, historical industrial land use, and other features (Greenfield et al., 2010). As indicated in Tables A-1 and A-2 above, the watersheds for which yield estimates are available fall into cluster numbers 1, 2 or 6, where the clusters (and the number of watersheds classified within each cluster) are defined as:

- Cluster No. 1: high commercial and residential land cover and imperviousness, high historic industry and railroads, no PG&E facilities, moderate area (41 watersheds)
- Cluster No. 2: High commercial and residential land cover and imperviousness, high historic industry and railroads, one to four PG&E facilities, large area (43 watersheds)
- Cluster No. 6: largest watersheds, with moderate population density, high open land cover, and low imperviousness (22 watersheds)

This analysis indicates that generally the highest yielding watersheds tend to be in clusters 1 and 2, which are the smaller, more developed and impervious watersheds.

A further analysis was conducted by Geosyntec Consultants to examine if the watersheds could be classified based on observed water quality, rather than watershed characteristics alone. For this purpose, data collected as part of the reconnaissance study conducted by McKee et al. (2012)[6] were examined. Figure A-2 below shows mean particle ratio[7] and mean total PCBs concentrations measured at various locations in the reconnaissance study (total of 17 watersheds). The bars represent the range of observations. The data clearly distinguish two categories of watersheds, a set of watersheds (black circles) in contrast to elevated watersheds (red squares) where concentrations are significantly higher. (A similar distinction was found by McKee et al. (2012) in their analysis of particle ratio data.)

The elevated watersheds consist of ESPS, Santa Fe Channel, Pulgas Creek North, and Pulgas Creek South, of which the latter three watersheds are in Cluster No. 2. Those watersheds near the origin of Figure A-2 have moderate discharge quality in contrast to the elevated watersheds, and are referred to herein as "baseline watersheds." The concept being that, unless data indicate that a watershed is elevated, the best estimate of loads would be derived from data describing the baseline watersheds.

A similar analysis for HgT indicated that most of the watersheds that were higher in PCBs concentrations were also higher in HgT concentrations, but the data exhibited more of a continuum (see Figure 4, McKee et al., 2012). So the decision was made to not distinguish watersheds for HgT as was done with PCBs, but rather to assume that all the watersheds were in the same population. This decision was also driven in part by the more limited data set that is available for HgT yield.

[6]Source of Data: California Environmental Data Exchange Network (CEDEN), SFEI River Loading Study Program, http://www.ceden.us/AdvancedQueryTool

[7] The particle ratio is the ratio of the pollutant of concern concentration (e.g., PCB concentration) to the suspended sediment concentration, for a water sample.

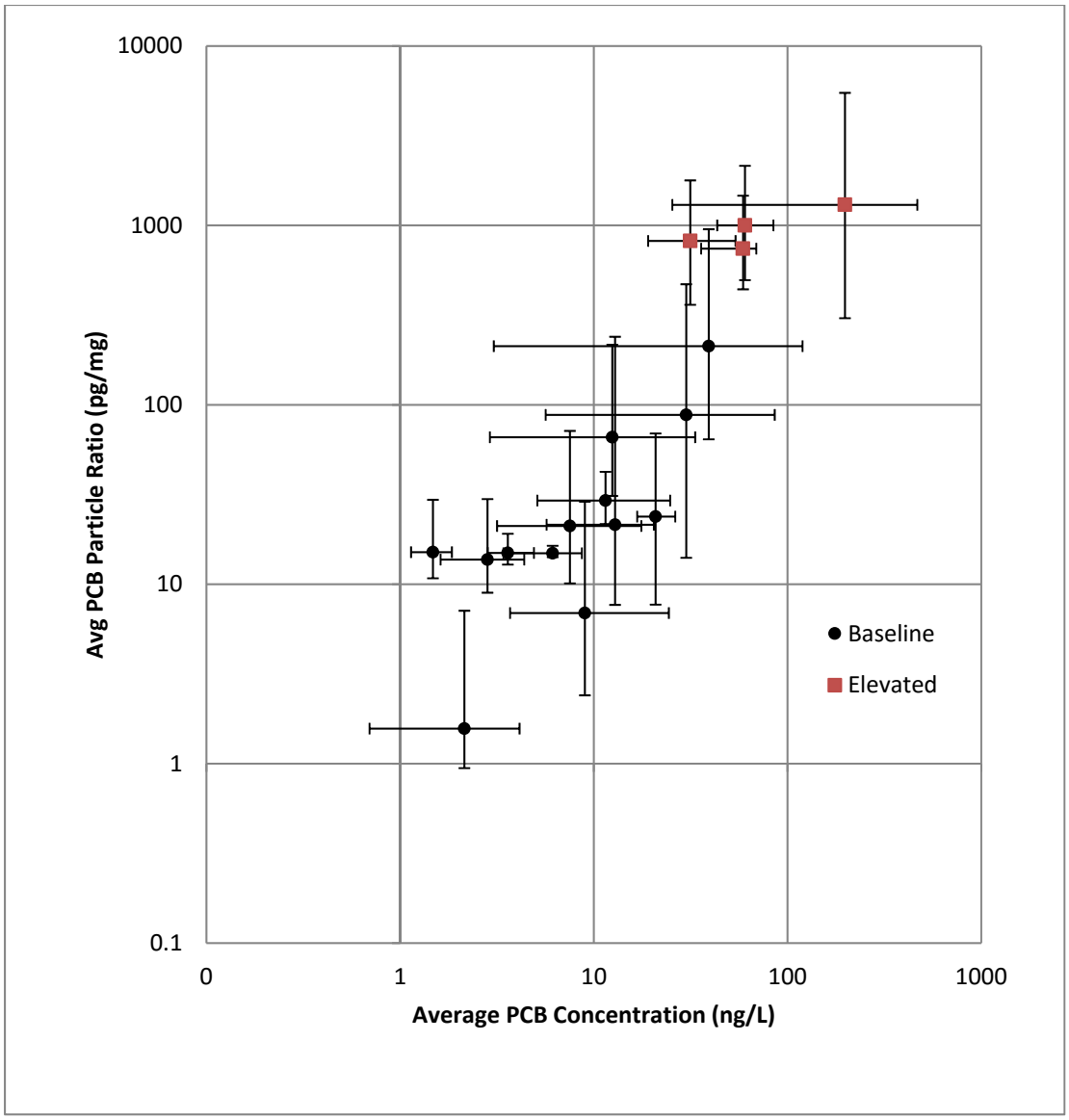

Figure A-2: Mean and Range of PCBs Concentrations in Various Watersheds

A.2.3 Regression Analysis

A regression analysis was conducted using data collected by McKee et al. (2012) for selected baseline watersheds where measured yields were available (from Davis et al., 2014). The selected watersheds were San Lorenzo Creek, North Richmond Pump Station, Zone 4 Line A, Guadalupe River at 101, Marsh Creek and Walnut Creek. Coyote Creek at 237 was not considered representative as most development in the watershed is relatively new; that is, the sum of old industrial and old urban land uses represents 22 percent of the watershed compared to 37 percent for the Walnut Creek watershed and 70 percent for the Guadalupe River at 101 watershed.

To simplify the regression, land use categorizations from the basemap described in section A.1.1 above were aggregated into five categories (Table A-3).

Table A-3: Land Use Categories for Regression Analysis

Specific Category	General Category
Electrical Property - Old	1 – Old Industrial
Industrial - Old	1 – Old Industrial
Industrial - Old - Now Open Space/Vacant	1 – Old Industrial
Industrial - Old - Now Redeveloped	1 – Old Industrial
Port	1 – Old Industrial
Railroad	1 – Old Industrial
Freeway	2 – Old Urban
Urban Old - Commercial	2 – Old Urban
Urban Old - HDR	2 – Old Urban
Urban Old - LDR	2 – Old Urban
Urban Old - Other	2 – Old Urban
Electrical Property - New	3 – New Urban
Industrial - New	3 – New Urban
Urban New - Commercial	3 – New Urban
Urban New - HDR	3 – New Urban
Urban New - LDR	3 – New Urban
Urban New - Other	3 – New Urban
Agriculture	4 – Open Space
Open Space	4 – Open Space
Airport	5 – Other
Military (Developed Areas Only)	5 – Other

The form of the linear regression equation is:

Yield (mg/acre/yr) = [(A x area (old industrial) + B x area (old urban) + C x area (new urban) + D x area (open) + E x area (other)]/Total Area

Where the coefficients (i.e., land use yields) are:

A = 50 mg/acre/year (old industrial)

B = 17.5 mg/acre/year (old urban)

C = 2 mg/acre/year (new urban)

D = 2.5 mg/acre/year (open space)

E = 2 mg/acre/year (other)

Coefficients were determined iteratively and are considered to represent the central tendency of the land use yields based on the watershed data available at the time (2013). The regression analysis results show the importance of land use type on yield, with old industrial having the highest yield. This is consistent with the analysis conducted by McKee et al. (2012), which showed a positive correlation between PCBs concentrations and historic industrialization. Old Urban also has a modest effect and the effects of other land uses are negligible. Figure A-3 below shows how the predicted yields using the regression equation compare to the reported yields from SFEI based on measurements. An R^2 of 0.87 indicates that approximately 87 percent of the variability in PCBs yields could be explained by land use.

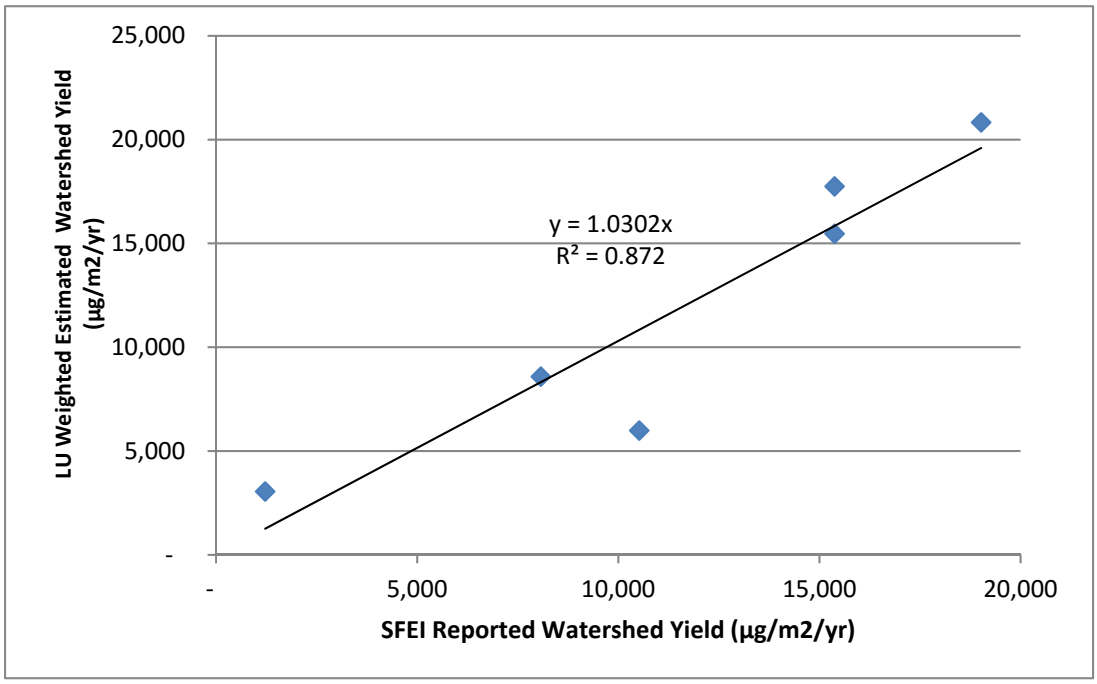

Figure A-3: PCBs Yields Using Linear Regression versus Estimated Yields Based on Monitoring Data

Similarly, a linear regression analysis was conducted for HgT which resulted in the following regression coefficients, considered to approximately represent the central tendency of the yields from land uses present in the watershed.

A = 1,000 mg/acre/year	(old industrial)
B = 165 mg/acre/year	(old urban)
C = 25 mg/acre/year	(new urban)
D = 25 mg/acre/year	(open space)
E = 20 mg/acre/year	(other)

Figure A-4 below shows the correlation of the linear regression to the SFEI reported data. The R^2 of 0.76 indicates that land use explains about 76 percent of the variability in estimated yields. The importance of Old Industrial, and to a lesser extent Old Urban land use, similar to that with PCBs, is illustrated by the magnitude of the coefficients for these land uses.

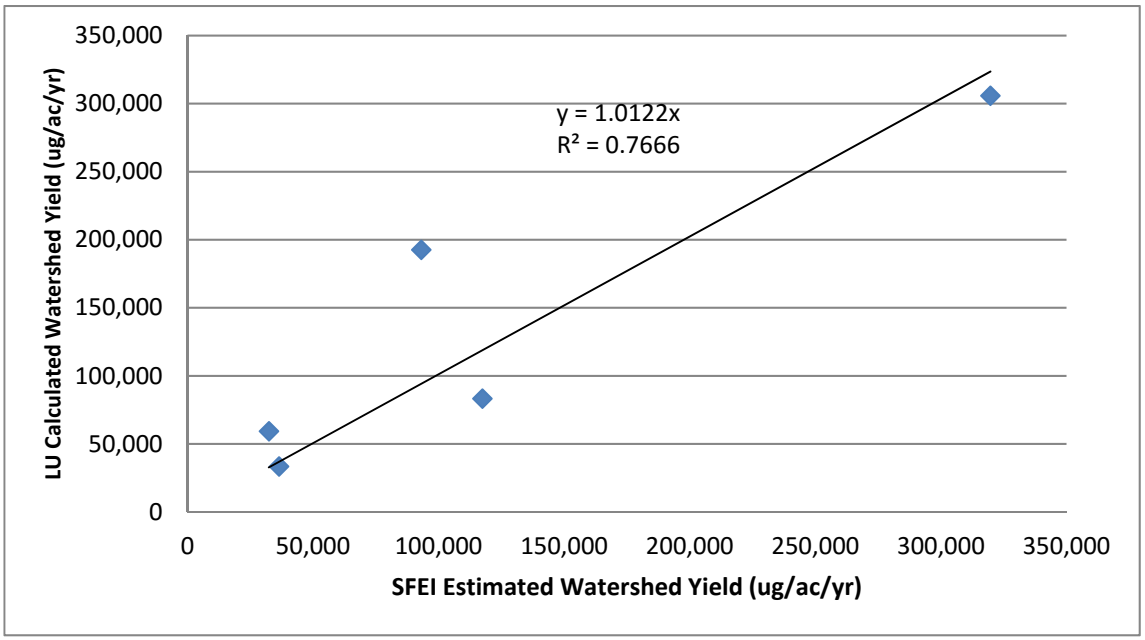

Figure A-4: Total Mercury Yields Using Linear Regression versus Estimated Yields Based on Monitoring Data

A.3 YIELD CORRECTION FACTOR

A.3.1 PCBs Yield

A.3.1.1 Land Use-Based Yields

The land use-based PCBs yields from the regression analysis reported above were multiplied by the area of each land use within each MRP Permittee's jurisdictional boundary to develop estimates of Permittee-based total calculated load. The resulting loads were reported in each countywide program's IMR Part C. These loads are summarized by county in Table A-4 below.

Table A-4: PCBs Loading Reported in the 2014 IMR

County	Load From Land Use Yields (g/yr)	Load From Elevated Watersheds (g/yr)[1]
Alameda	2,566	399
Contra Costa	1,995	354
San Mateo	1,086	86
Santa Clara	2,738	179
Solano[2]	285	N/A
Total	**8,670**	**1,018**

[1] Loading for the five pilot watersheds was calculated separately from the rest of the county land area using the yield from the Ettie Street Pump Station watershed (331,843 µg/ac/yr).

[2] Solano County loads were not reported in their IMR Part C. For this analysis, Solano County load was calculated using the same land use breakdown and yield regression analysis as other MRP Permittees.

The total loads calculated for the IMR have been normalized to the TMDL baseline load of 16 kg/yr for the MRP Permittees for the purposes of load reduction accounting. The total estimated PCBs loads shown above are 8.67 kg/yr from the baseline watersheds (calculated using the land use-based yields from the regression analysis), plus 1.01 kg/yr from the elevated watersheds[8]. A correction factor for the land use yield-based loads is appropriate as the land use-based yields were developed using monitoring data for the baseline watersheds (described in Section A.2.2 above). The elevated watershed loads, on the other hand, are not normalized as these loads are based on long-term measurements of PCBs and mercury loads in discharges from the Ettie Street Pump Station (see Section A.2.2 above). The area-normalized load corresponding to the Ettie Street Pump Station watershed was considered to be representative of the PCBs watershed-based yield for the other elevated watersheds. The estimated total loading for the baseline watersheds was corrected by applying a multiplier to the load calculated using land use-based yield according to the following equation:

$$8.67\frac{kg}{yr} * F + 1.01\frac{kg}{yr} = 16.0\frac{kg}{yr}$$

From this equation, the estimated land use yields should be multiplied by 1.73 to approximate a baseline load of 16.0 kg/yr. Thus, the adjusted land use-based PCBs yields for non-source areas/ property are:

- Old Industrial = 86.5 mg/ac/yr
- Old Urban = 30.3 mg/ac/yr

[8] Elevated watersheds include (BASMAA, 2014):

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

- New Urban/Other = 3.5 mg/ac/yr
- Open Space = 4.3 mg/ac/yr

A.3.1.2 Source Area/Property Yield

To support identification of potential PCBs sources by the Alameda Countywide Clean Water Program (ACCWP) and City of Oakland, Geosyntec Consultants conducted a desktop screening of the ESPS Watershed's Old Industrial land use areas and identified a set of properties with higher likelihood as PCBs sources (called High Likelihood parcels) for further evaluation. This screening effort resulted in the five-level breakdown of land areas shown in Table A-5 below.

Table A-5: ESPS Watershed Parcel Screening Results, Yields, and Loads

Land Use	Area (Acres)	Adjusted Yield (mg/ac/yr)	Adjusted Load (g/yr)
High Likelihood	89.5	4,065	363.8
Old Industrial	123.4	86.5	10.7
Old Urban	789.7	30.3	23.9
New Urban and Other	181.4	3.5	0.6
Open Space	18.7	4.3	0.1

The load from the High Likelihood area can be calculated by subtracting the adjusted load from the other land uses (35.3 g/yr, see Table A-5) from the overall ESPS load (399.1 g/yr, see Table A-4). Thus the High Likelihood area load is 363.8 g/yr. Back calculating for High Likelihood yield ((363.8 g/yr / 89.5 ac) x 1,000) results in an estimated 4,065 mg/ac/yr yield for the source area properties.

A.3.2 Mercury Yield

The land use-based PCBs yields from the regression analysis reported above were multiplied by the area of each land use within each MRP Permittee's jurisdictional boundary to develop estimates of Permittee-based total calculated load. The resulting loads were reported in each countywide program's IMR Part C. These loads are summarized by county in Table A-6 below.

Table A-6: Total Mercury Loading Reported in the 2014 IMR

County	Load From Land Use Yields (g/yr)
Alameda	31
Contra Costa	25
San Mateo	12
Santa Clara	30
Solano[1]	3.1
Total	**101**

[1] Solano County loads were not reported in their IMR Part C. For this analysis, Solano County load was calculated using the same land use breakdown and yield regression analysis as other MRP Permittees.

Mercury land-use based yields were similarly adjusted to better reflect the total wasteload allocation required for the TMDL. The total loads reported in the 2014 IMR were normalized to the TMDL baseline load of 128 kg/yr for the MRP Permittees for the purposes of load reduction accounting. The total estimated total mercury loads shown above are 101 kg/yr. The estimated total loading can be corrected by applying a multiplier to the total load calculated using the land use-based yields according to the following equation:

$$101\frac{kg}{yr} * F = 128\frac{kg}{yr}$$

This results in an adjustment factor of 1.3. Less precision was used in the estimation of the mercury factor as the mercury land use-based yields are slightly less certain than the PCBs loads (illustrated by the smaller correlation factor resulting from the regression). Thus, the adjusted land use-based total mercury yields are:

- Old Industrial = 1,300 mg/ac/yr
- Old Urban = 215 mg/ac/yr
- New Urban/Open Space = 33 mg/ac/yr
- Other = 26 mg/ac/yr

A.4 LIMITATIONS AND UNCERTAINTY

There are a variety of sources of uncertainty in the estimated POC yields, including:

- Elevated Watersheds. The data, especially for PCBs, indicate that there are some watersheds where concentrations are elevated relative to other monitored watersheds, and that these elevated watersheds have high PCBs yields and therefore contribute disproportionately to loads. There may be additional elevated watersheds that have not been identified due to limitations in monitoring conducted to date.
- Data Limitation. Limitations in the monitoring data used to estimate yields include the limited number of watersheds, the limited number of storm events sampled, and limited grab sample collection.
- Land Use Database Accuracy. Land use is the basis for the regression analysis. Not only is the type of land use important, but in the case of PCBs the age of the land use also is critical. The land use data therefore are attempting to characterize the historical evolution of land use based on available sources and aerial photo interpretation. The land use maps have not been fully "ground truthed" and therefore pose an important limitation in the analysis.

- Land Use as a Surrogate. Land use is used as a surrogate for actual PCBs and mercury sources, and although the types of potential sources have been identified, the actual locations and sizes of sources are difficult to determine at this level of analysis. So the same land use type in different locations may have very different sources and thus distinctly different PCBs and mercury concentrations in runoff.

In summary, it is difficult to assess the quantitative implications of these limitations on the magnitude of the projected loads, especially as analysis shifts from regional to smaller spatial scales. Experience with the difficulty in making loading estimates suggests that the projected loads be considered as first order approximation only, which are reflective of the central tendency of the data for the Bay Area as a whole.

SFEI's *Sources, Pathways and Loadings: Multi-Year Synthesis with a Focus on PCBs and Hg* (McKee et al., 2015) discusses the considerable challenges in developing improved estimates of land use-based yields of PCBs and mercury. As discussed above, the regression-based estimate of regional PCBs load that was reported in the 2014 IMR appears to be about 40 percent low. The report suggests that a regional estimate of approximately 20 kg/yr annual load of PCBs in urban runoff (for the entire Bay watershed) remains reasonable; however, other reports disagree. The regression-based estimate of regional total mercury load that was reported in the 2014 IMR appears to be about 20 percent low.

In addition, the standing conceptual model of relative distribution of PCB and total mercury in the landscape (SFEI, 2010) is that the PCBs unit load distribution in the landscape should be more variable than the total mercury distribution. This relative variation in land use yield is supported by product use history, degree of atmospheric recycling, and sources of the two pollutants; variation in concentrations found in Bay Area soils and sediments; and the yields generated from monitoring in the Bay Area which indicate a 800-fold variation for PCBs and a 70-fold variation for total mercury (if the Sacramento River is excluded) (see also SFEI, 2010; Davis et al., 2012; 2014). The relative variation in land use yield for the adjusted yields reported above, presented in Table A-7, is consistent with this conceptual model and therefore these yields are acceptable as first order approximations.

Table A-7: Normalized Land Use-Based Yields for PCBs and Mercury

Land Use Category	Assumed Average PCBs Yield (mg/ac/yr)	PCBs Yield Normalized to Open Space	Assumed Average Mercury Yield (mg/ac/yr)	Mercury Yield Normalized to Open Space
Source Property	4,065	945	1,300	50
Old Industrial	86.5	20	1,300	50
Old Urban	30.3	7	215	8.3
New Urban	3.5	0.8	33	1.3
Other	3.5	0.8	26	0.8
Open Space	4.3	1	33	1

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APPENDIX B

Street and Storm Drain Sediment

Data Analysis

B.1 Descriptive Statistics

Tables B-1 and B-2, and Figures B-1 and B-2 presents descriptive statistics for the PCBs and Mercury street and storm drain sediment dataset that has been compiled by BASMAA to-date. This dataset includes 1,204 PCBs samples and 952 mercury samples taken within the street right-of-way, storm drain conveyance system, and private properties from 1999 through 2015. Data are summarized by the predominant land use within the vicinity of where the sediment was collected.

Table B-1: PCBs concentrations in sediment collected from streets, stormwater conveyance systems, and private properties located in Alameda, Contra Costa, Santa Clara, San Mateo, and Solano Counties between 1999 and 2015.

Statistic	PCB Source Properties	Old Industrial	Old Urban	New Urban	Open Space	All Samples
Maximum	192.91	93.41	16.81	0.07	0.20	192.91
90th Percentile	11.52	0.47	0.36	0.03	0.07	0.83
75th Percentile	5.35	0.14	0.13	0.02	0.04	0.17
Mean	6.70	0.33	0.25	0.02	0.03	0.72
Geometric Mean	2.17	0.05	0.04	0.01	0.01	0.05
Median	1.67	0.04	0.04	0.01	0.01	0.04
25th Percentile	0.92	0.01	0.01	0.01	0.01	0.01
10th Percentile	0.60	0.01	0.01	ND	ND	0.01
Minimum	ND	ND	ND	ND	ND	ND
n	81	835	214	30	44	1204

Table B-2: Mercury concentrations in sediment collected from streets, stormwater conveyance systems, and private properties located in Alameda, Contra Costa, Santa Clara, San Mateo, and Solano Counties between 1999 and 2015.

Statistic	PCB Source Properties	Old Industrial	Old Urban	New Urban	Open Space	All Samples
Maximum	20.60	18.90	12.54	3.31	4.26	20.60
90th Percentile	2.70	0.67	0.73	0.45	0.32	0.77
75th Percentile	1.37	0.30	0.39	0.28	0.18	0.32
Mean	1.54	0.40	0.44	0.35	0.28	0.44
Geometric Mean	0.55	0.18	0.21	0.19	0.12	0.19
Median	0.67	0.16	0.20	0.15	0.12	0.16
25th Percentile	0.15	0.09	0.10	0.10	0.07	0.09
10th Percentile	0.09	0.06	0.06	ND	ND	0.06
Minimum	0.02	0.01	0.01	0.05	0.02	0.01
n	41	740	161	29	40	952

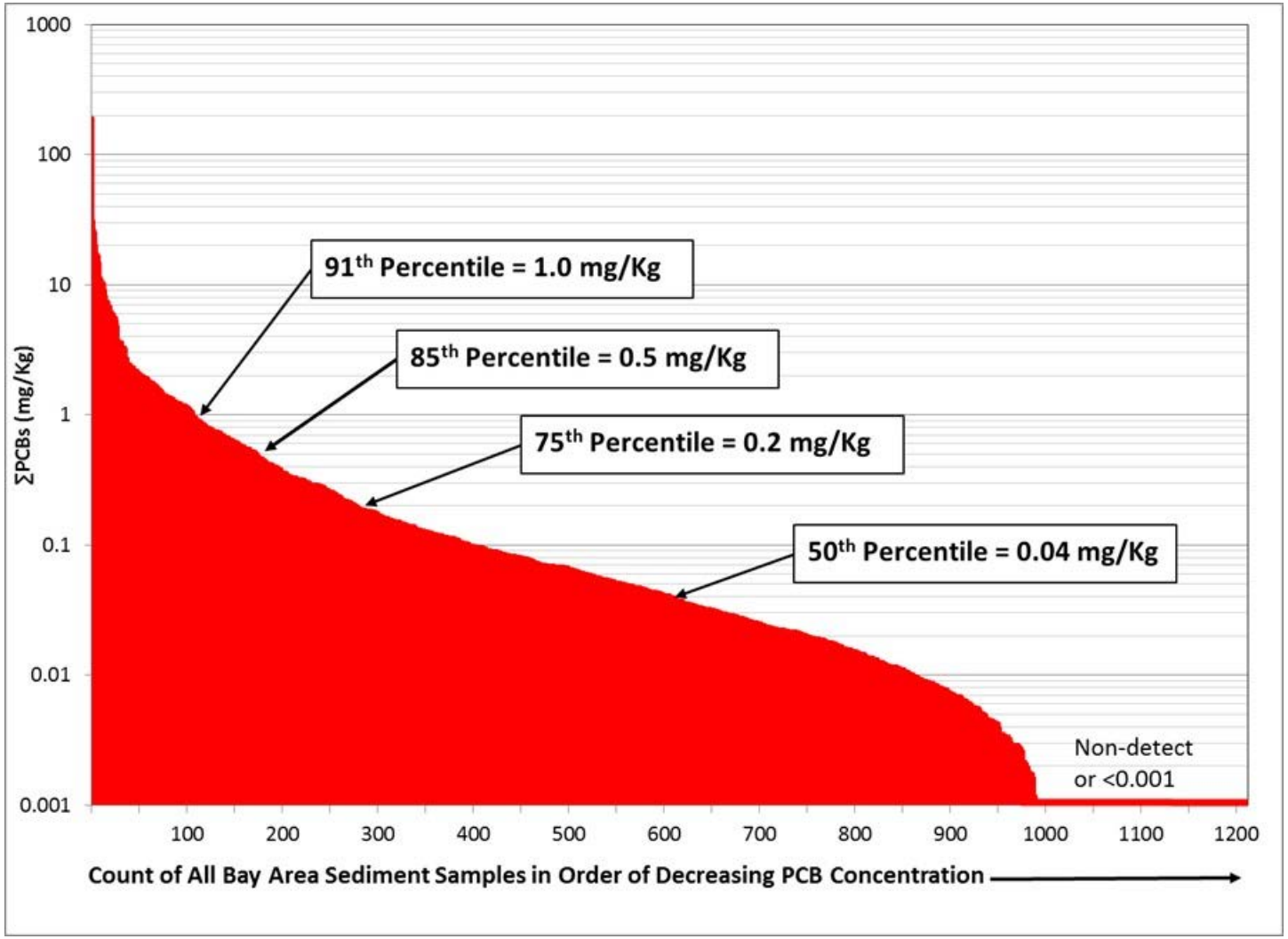

Figure B.1: Total PCB concentrations in sediment collected from streets, stormwater conveyance systems, and private properties located in Alameda, Contra Costa, Santa Clara, San Mateo, and Solano Counties between 1999 and 2015.

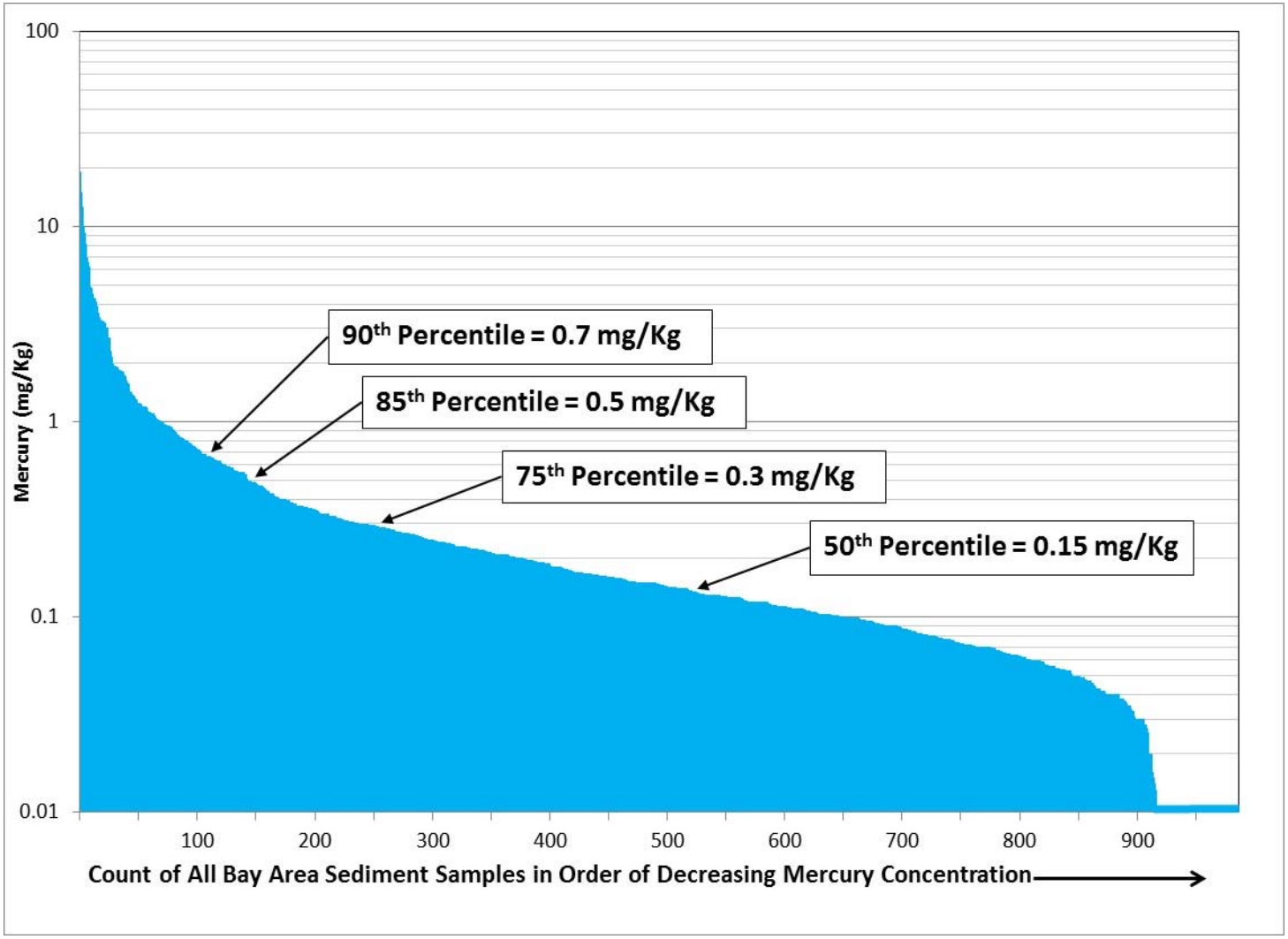

Figure B.2: Total mercury concentrations in sediment collected from streets, stormwater conveyance systems and private properties located in Alameda, Contra Costa, Santa Clara, San Mateo, and Solano Counties between 1999 and 2015.

APPENDIX C

HDS Unit Efficiency Factor Data Analysis

C.1 Purpose and Approach

The purpose of this appendix is to document findings of analysis conducted to determine average percent removal of total suspended solids (TSS) by hydrodynamic separator (HDS) units.

First, percent removal of TSS was calculated for the Clean Watersheds for a Clean Bay (CW4CB) Task 5 Leo Avenue pilot project. For this project, a prefabricated Contech HDS unit called the Continuous Deflective Separator (CDS) was retrofitted into the existing storm drain system in the Leo Avenue Watershed in San Jose.

Influent and effluent water quality was sampled at four events as summarized in Table C-1 below. The CDS unit removed an average of 30% of TSS coming into the unit.

Table C-1: Percent Removal of TSS at Leo Ave CDS Unit

Event	Date	Sample Location	TSS (mg/L)	% Removal
1	28-Feb-14	Inflow	110	17%
		Outflow	91	
2	29-Mar-14	Inflow	230	17%
		Outflow	190	
3	31-Oct-14	Inflow	62	88%
		Outflow	7.5	
4	02-Dec-14	Inflow	82	-3%
		Outflow	84.5	
Average				**30%**

Next, the International Stormwater BMP Database (http://bmpdatabase.org/) was evaluated for potentially useful studies. Twenty studies of manufactured devices were identified as useful for analysis. These studies had a total of 334 paired inflow/outflow data points for TSS. Percent removal was calculated for each paired data point and then averaged for the BMP. The results for these studies along with descriptions of land use type and watershed size and imperviousness are presented in Table C-2 below. Average percent removal ranged from -85% (i.e., an increase in TSS concentration in outflow compared to inflow) to 73% and averaged 19% across all studies (including the Leo Ave. unit).

The dataset was also analyzed by removing BMPs that were treating just roads or highways, parking lots, or college campuses. In this scenario, ten studies remained that had mixed, other, or unknown land use type. Including the Leo Ave unit, the average percent removal of TSS from the BMPs evaluated in this group of studies was slightly higher at 22%.

Table C-2: Percent Removal of TSS for Studies in BMP Database

Site and BMP	Device Model	Land Use Type	Watershed % impervious	Watershed Area (ac)	Average TSS % Removal[1]
OP Soccer Complex: PMSU56_40_40	Contech CDS, Model PMSU56_40_10	Parking lots adjacent to soccer fields.	90	3.98	-85%
NW Birch Place CDS unit: Continuous Deflective Separation unit	CDS Unit	Low Density Residential: 47.4% Office Commercial: 42.2% Multi-Family Residential: 10.3%	--	45.0	-14%
Broadway Outfall: CDS Unit	CDS			132	-6%
University of New Hampshire F3: Continuous Deflective Separation	CDS	College Campus: 100%	100	0.32	-5%
Lake O Sediment Demo: CDS Unit	PSW56_53		--	--	-3%
I-210 / Orcas Ave: Orcas	CDS	Roads/Highway: 100%	100	1.11	-3%
USGS_WI_HSD_DD: Hydrodynamic Settling Device	Downstream Defender®, manufactured by Hydro International.		84	1.90	-1%
I-210 / Filmore Street: Filmore CDS	CDS	Roads/Highway: 100%	100	2.50	2%
University of New Hampshire F2: Environment 21 V2B1	Environment 21 V2B1	College Campus: 100%	100	0.32	5%
University of New Hampshire F1: Vortechnics	Vortechnics	College Campus: 100%	100	0.32	13%
USGS_WI_HSD: HSD	Hydrodynamic Settling Device, Contech	The HSD treats a 0.25-acre deck section of the westbound I–794 freeway	100	0.25	26%
Harrisburg Public Works Yard: PAYardTerreKleene	Terre Kleen	--	90	3.21	28%
SC_StructBMP3: BMP3	Vortechnics	BMP3 is located along the westbound lane of S.C. Highway 802	--	--	29%
Indian River Lagoon CDS Unit: CDS Unit	CDS	Open Space: 38% Light Industrial: 32% Office Commercial: 19%	11	61.5	30%

Appendix C: HDS Unit Efficiency Factor Data Analysis

Site and BMP	Device Model	Land Use Type	Watershed % impervious	Watershed Area (ac)	Average TSS % Removal[1]
Leo Avenue: HDS Unit[2]	Contech CDS	--	--	--	30%
SC_StructBMP1&2: BMP2	CDS Technologies	BMP2 is located along the southbound lane of U.S. Highway 21	100	1.11	39%
University of New Hampshire E1: Aqua Swirl	Aqua Swirl	College Campus: 100%	100	0.99	40%
Timothy Edwards Middle School: Vortechs No 5000	Vortechs	--	80	1.95	45%
VC: VC	Vortcapture	Residential area with lots of organic matter/leaf litter loading	--	--	53%
Marine Village Watershed: VortechsTM Stormwater Treatment System	Vortechs	Office Commercial: 50% Medium Density Residential: 45% Unknown: 5%	95	9.34	72%
NJ Manasquan Bank: NJManasquanCDS	High Efficiency Continuous Deflective Separator (CDS), Model 20_25	--	79	0.89	73%

Notes: -- indicates information was not provided.

1. Based on analysis of paired inflow/outflow results.
2. Leo Ave CW4CB study. Not a BMPDB Study.

The manufacturer's removal efficiency claims and the tested removal efficiencies of six of the BMPs evaluated in the studies were summarized as reported in the Massachusetts Stormwater Technology Evaluation Project (MASTEP) clearinghouse database (Table C-3).

Table C-3: Percent Removal of TSS for Six Manufactured Devices from MASTEP

Product (BMP)	Manufacturer	Manufacturer's Removal Efficiency claim	Tested Removal Efficiency
Aqua-Swirl	Aqua Shield	85%	84-87%
CDS	Contech	70%	65-95%
Vortechs	Contech	35-85%	35-64%
Downstream Defender	Hydro International	90%	70%
V2B1	Environment 21	80%	65%
Terre Kleen	Terre Hill	78%	17-50%
Average[1]			**56%**

Notes: 1. Average based on low end of reported efficiency range.

Based on the above findings, 20% is a conservative estimate of the average percent removal of TSS by HDS units. For the purposes of interim load reduction accounting, the method assumes that HDS units reduce PCBs and mercury concentrations in direct proportion to the TSS reduction.

APPENDIX D

Enhanced Inlet Cleaning Efficiency Factor Data Analysis

D.1 Purpose and Approach

The purpose of this appendix is to document findings of analysis conducted to determine the enhanced efficiency factors (EE_f) for sediment removal associated with increasing the frequency of storm drain inlet cleaning.

Based on a review of available literature, there are limited data available on the reductions of pollutants (including sediment) associated with different storm drain inlet maintenance frequencies. No studies were found that assessed the reduction either PCBs or mercury due to enhanced inlet cleaning frequencies. Two studies in particular, Woodward Clyde (1994) and Caltrans (2003), however evaluated the increase in the removal of material (i.e., sediment, vegetation and trash) from inlets under different cleaning frequencies. Results from both studies indicated that the volume of material removed from inlets increased with cleaning frequency.

The CalTrans (2003) *Drain Inlet Cleaning Efficacy Study* was designed to measure the potential increases in material volume/mass and water quality benefits due to increased inlet cleaning frequencies on freeways. The study was conducted from 1996 through 2000 The volume and mass of material removed under annual, biannual, and 3 times per year cleaning frequencies at 55 to 90 inlets, depending on the year, were measured.

The Woodward Clyde (1994) *Storm Inlet Pilot Study* was conducted in Alameda County in 1993. This study was also designed to measure the potential increases in material volume/mass due to increased inlet cleaning frequencies. A total of 15 inlets draining residential, industrial or commercial land uses were monitored. The volume and mass of material removed under annual, biannual, quarterly and monthly cleaning frequencies were measured.

The increased removal of material measured during both studies is presented in Figure D-1. Caltrans removals appear to be much greater than removal efficiencies measured during the Woodward Clyde study and therefore may not be realistic for the purposes of developing conservative efficiency factors for the Interim Accounting Methodology. Results from the Woodward Clyde study, however, appear to be generally consistent with the results of similar studies (BASMAA 2014; SCVURPPP 2016) that were focused on litter/trash, but also removed and measured other materials (e.g., sediment and vegetation) from inlets.

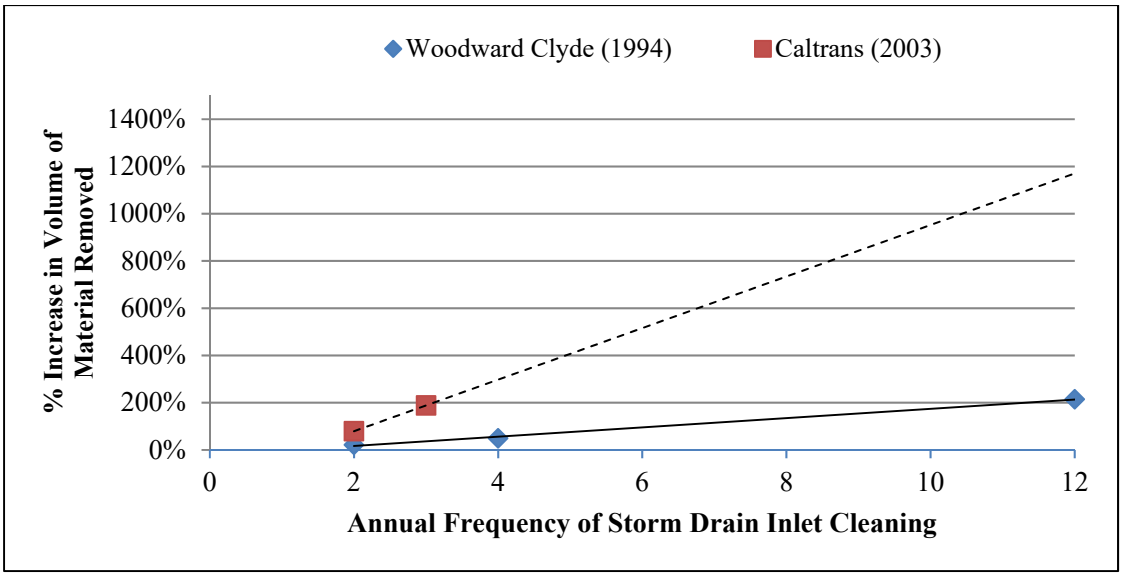

Figure D.1: Reported results of increases in material (e.g., sediment, vegetation and litter) removed as a result of increased storm drain inlet cleaning.

Based on the above findings, Table D.1 presents a conservative estimate of the enhanced efficiency factors for enhanced storm drain inlet cleaning. For the purposes of interim load reduction accounting, the method assumes the following:

- Based on an analysis of 36 Alameda County and San Mateo Permittee storm drain inlet cleaning datasets from 1996 through 2009, on average, municipalities clean their inlets once per year (annually);

- Based on the same dataset, an average of 100 kg of material (sediment, vegetation and litter) is removed from each inlet annually (see descriptive statistics below);

Statistic	Mass (kg) of Material Removed Annually per inlet
Maximum	4049
90th Percentile	476
75th Percentile	284
Mean	268
Geometric Mean	100
Median	91
25th Percentile	41
10th Percentile	21
Minimum	5
# of Municipalities in Dataset	36

- Each inlet (on average) receives drainage from a catchment of 1 acre (BASMAA 2014), equating to a unit material removal rate of 100kg per acre per year;
- The fraction of material associated with PCBs and mercury yields (i.e., sediment <63um) is approximately 15% on average (McKee et al. 2006);
- The annual suspended sediment load to each inlet is roughly 162 kg per year on average (see Table 2); and
- Based on the assumptions above, roughly 15 kg of sediment associated with PCBs and mercury is removed from each inlet cleaned on an annual frequency, equating to about a 9% reduction of PCBs and mercury via annual cleaning (i.e., 15 kg / 162 kg).

Table D.1: Enhanced efficiency factors (EE_f) for increased storm drain inlet cleaning frequencies.

		Enhanced Cleaning Frequency		
		Biannually	Quarterly	Monthly
Original Cleaning Frequency	Annually (Baseline = 0.09)	0.02	0.05	0.20
	Biannually		0.03	0.18
	Quarterly			0.15

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