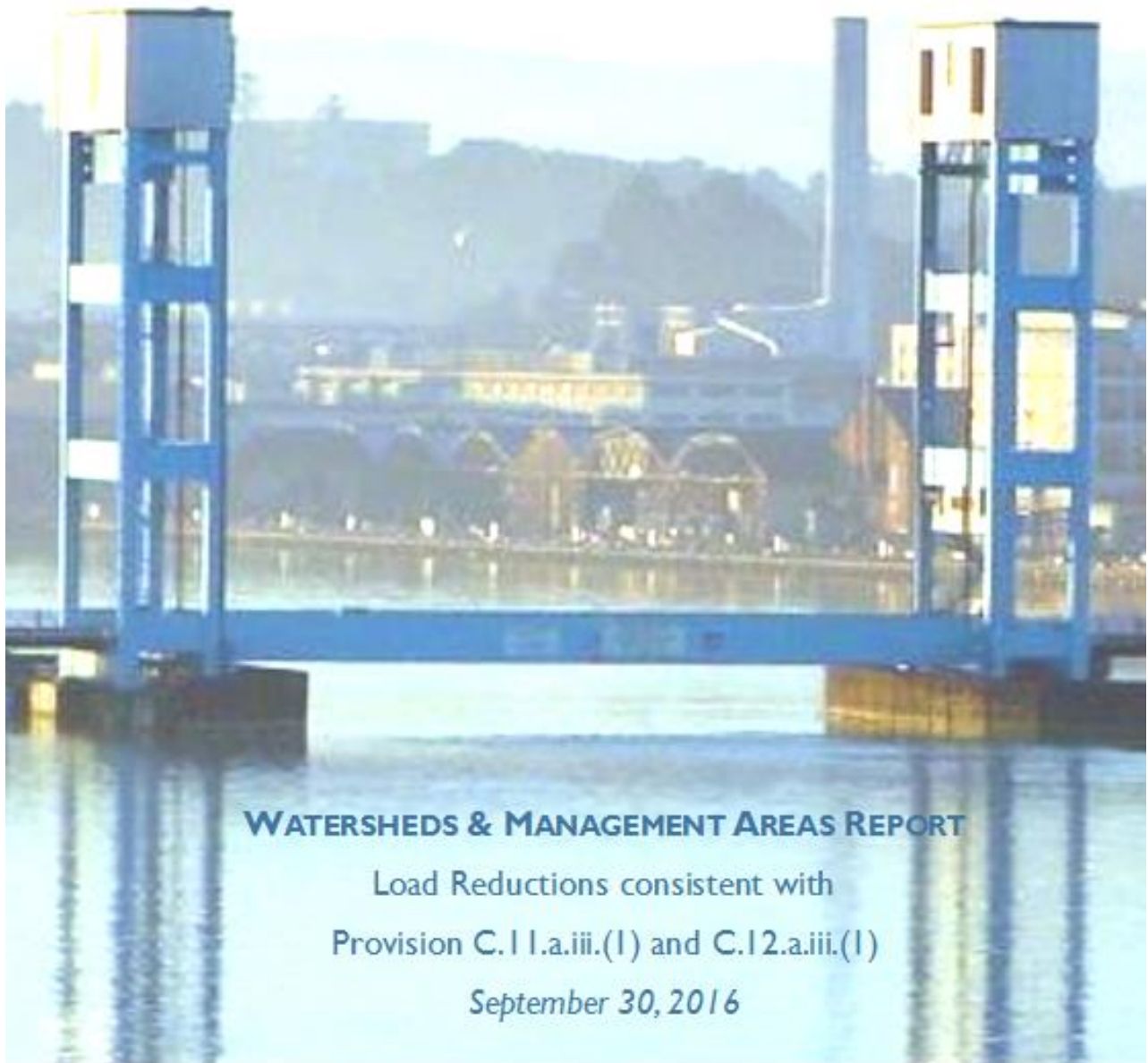


Vallejo Sanitation and Flood Control District
and the City of Vallejo

MERCURY AND PCB CONTROL MEASURES



WATERSHEDS & MANAGEMENT AREAS REPORT

Load Reductions consistent with
Provision C.11.a.iii.(1) and C.12.a.iii.(1)
September 30, 2016



The Vallejo Permittees acknowledge the Contra Costa Clean Water Program for sharing the content and format of this report.

1 INTRODUCTION

1.1 Purpose

This *Mercury and PCBs Watershed/Management Areas (W/MAs) and Control Measures* report was prepared by the Vallejo Sanitation and Flood Control District and City of Vallejo (Vallejo Permittees) per the Municipal Regional Permit (MRP) for urban stormwater issued by the San Francisco Bay Regional Water Quality Control Board (Water Board), 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 Water Board 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 Water Board has developed Total Maximum Daily Load (TMDL) water quality restoration programs targeting PCBs and mercury in the Bay. The general goals of the TMDLs are to identify sources of PCBs and mercury to the Bay and implement actions to control the sources and restore water quality.

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).

MRP Permittees, stormwater programs, Bay Area Stormwater Management Agencies Association (BASMAA), Water Board, 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. The 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 sub-watersheds that discharge urban runoff with PCBs and other pollutants to the Bay;
- Identifying PCBs and mercury source areas within the project sub-watersheds 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, a 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.

With the adoption of the current MRP, the Vallejo Permittees are now in the process of evaluating GIS capabilities 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 Vallejo Permittees GIS capabilities will be critical to 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 likely 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 Vallejo Permittees stormwater GIS platform features a central spatial database running on Oracle with discipline specific desktop applications using Munsys and AutoCAD

as well as multiple user access using QGIS on the desktop. In addition, the Open Spatial GIS suite is used to provide browser based maps, analysis, plotting and reporting capabilities for city staff. The web based maps run in a browser on the desktop, as well as providing access on tablets and phones in the field. The Vallejo Permittees anticipate that an 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

The Program 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 Solano Permittees PCBs load reductions listed in MRP Tables 12.1 and Table 12.2 during this MRP term:

- 13.8 g/yr PCBs by 6/30/18,
- 87.4 g/yr PCBs by 6/30/2020, and
- 3.7 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 (VSFCD & COV, April 1, 2016). These factors were used to create approximate delineations based on the geography within each Permittee's jurisdiction.

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, Vallejo Permittees, and BASMAA. In a general sense, screening/sampling will primarily be conducted by the Vallejo Permittees, 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		
	City of Vallejo	VSFCD	BASMAA
Source Property Identification and Abatement	<ul style="list-style-type: none"> Work with Program to design monitoring program. Implement enhanced O&M for referred properties. 	<ul style="list-style-type: none"> Design and conduct pollutants of concern (POCs) monitoring. Prepare referral forms, including identification of enhanced O&M. Compile and submit referrals to WATER BOARD in Region 2 and the CVRWQCB in Region 5. Coordinate with BASMAA on ongoing control measure adaptive management. 	<ul style="list-style-type: none"> Discuss ongoing control measure implementation and adaptive management at Monitoring / Pollutants of Concern (MPC) Committee.
Green Infrastructure / Treatment Control Measures	<ul style="list-style-type: none"> Prepare a GI Plan. Implement GI projects. Gather and compile data on C.3 projects. 	<ul style="list-style-type: none"> No role in GI. 	<ul style="list-style-type: none"> Coordinate GI planning at Development Committee. Discuss control measure implementation and adaptive management at MPC Committee.
Managing PCBs in Building Materials	<ul style="list-style-type: none"> Participate in BASMAA Regional Project. Adopt Framework. 	<ul style="list-style-type: none"> Assist BASMAA Regional Project. 	<ul style="list-style-type: none"> Develop Framework through Regional Project.
Managing PCBs in Infrastructure	<ul style="list-style-type: none"> Participate in BASMAA Regional Project. 	<ul style="list-style-type: none"> Participate and assist BASMAA Regional Project. Conduct monitoring. 	<ul style="list-style-type: none"> Develop monitoring plan and report monitoring results via Regional Project.
Enhanced O&M	<ul style="list-style-type: none"> Implement enhanced O&M where identified. 	<ul style="list-style-type: none"> Coordinate with BASMAA on ongoing control measure adaptive management. Implement enhanced O&M where identified. 	<ul style="list-style-type: none"> Discuss ongoing control measure implementation and adaptive management at MPC Committee.
Mercury Load Avoidance and Reduction	<ul style="list-style-type: none"> No active role. 	<ul style="list-style-type: none"> Conduct collection events. Compile and track data. 	<ul style="list-style-type: none"> Discuss ongoing control measure implementation and adaptive management at MPC Committee.
Illegal Dumping Cleanup	<ul style="list-style-type: none"> Identify illegal dumping sites. Conduct/coordinate cleanup. 	<ul style="list-style-type: none"> Identify illegal dumping sites. Conduct/coordinate cleanup. Compile and track data. 	<ul style="list-style-type: none"> Discuss ongoing control measure implementation and adaptive management at MPC Committee.
Stockpiles, Spills, and Disposal of PCBs	<ul style="list-style-type: none"> Identify facilities through routine inspections. 	<ul style="list-style-type: none"> Identify facilities through routine inspections. 	<ul style="list-style-type: none"> Discuss ongoing control measure implementation and adaptive management at MPC Committee.

Control Measure Category	Roles and Responsibility		
	City of Vallejo	VSFCD	BASMAA
	<ul style="list-style-type: none"> • Conduct/coordinate cleanup. • Track OES reports and follow-up on spills with PGE. • Coordinate w/ Permittees, BASMAA partners, WATER BOARD, and PGE as needed. 	<ul style="list-style-type: none"> • Conduct/coordinate cleanup. • Track OES reports and follow-up on spills with PGE. • • Compile and track data. • Coordinate w/ Permittees, BASMAA partners, WATER BOARD, and PGE as needed. 	

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. VSFCDD will compile and report the 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

Agency	Typical Role / Responsibility
VSFCDD	<ul style="list-style-type: none"> • Creeks, watersheds, and stormwater management • Engineering and construction services • Capital improvement projects
City of Vallejo	<ul style="list-style-type: none"> • Planning/zoning/General Plan development • Development project review & approvals • Construction and building inspections • Public facility services and maintenance

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 Water Board for investigation and abatement by the Water Board 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 Water Board 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 Water Board. 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 Water Board prior to submitting the source property referral. The Water Board will review the source property referral and provide comments to the Permittee within 30 days (if needed).

The Vallejo Permittees, in collaboration with the MRP Permittees, are conducting ongoing targeted investigation and monitoring for known or suspected source properties. Source identification is one of five priority pollutants of concern (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 Water Board as of September 2016 are listed in Table 2-1 below.

Table 2-1: Contaminated Sites Referred to the Water Board

SITE NAME	LOCATION	YEAR REFERRED
No Contaminated Sites have been referred to the Water Board		

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 right-of-way (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 Vallejo 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 ROWs 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 Vallejo 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 Vallejo Permittees 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 publically owned treatment works (POTWs) as a method to reduce loads of PCBs and

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

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

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

Current Status

Normal discharges from the State Street Pump Station were terminated in mid -June. The contents of the pump stations wet well removed by Vactor truck and then discharged to the Fairfield Suisun Sewer District treatment plant. As dry weather runoff accumulates in the pump station, the water will be removed and disposed of at the POTW. The pump station resumes its normal discharge operation settings in late September. This project is ongoing.

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 mercury fever thermometers 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 Vallejo Permittees coordinate with MRP 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.

HHW in the Vallejo area is collected by Recology Vallejo located at 2021 Broadway Street, Vallejo, CA. Recology serves the communities of Vallejo and parts of unincorporated Solano County. The types of data collected at this facility is the standard Cal Recycle 303a form. However, 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.

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 Fairfield and Suisun City).

Table 2-2: PG&E Transformer Pole Spills in Vallejo

CITY	SPILL DATE	LOCATION	QUANTITY/ CONCENTRATION	DATE OF FINAL SPILL REPORT FROM PGE AND WATER BOARD
There have been no reported or discovered transformer pole spills to report.				

BASMAA representatives have been working with Water Board 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. Water Board 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, Suisun and San Pablo Bays.

Water Board 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 WATER BOARD with (1) an inventory of spills in the Bay Area, and (2) written SOPs for spill response. Mr. Sanchez stated that the Water Board, 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.

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.

Vallejo Community

2.7 List of Watersheds / Management Areas

The watersheds / management areas (W/MAs) within the Vallejo Community are shown on the Figure entitled: Vallejo WMAs and District Properties.

1. Urban Old Properties
2. Old Industrial
3. Electrical Properties

4. Railroad Properties
5. District Owned Properties

2.8 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 2-3 and are discussed in the sections below.

2.8.1 Source Property Identification and Abatement

PCBs-Contaminated Properties Referred to the Regional Water Board

No properties within the Vallejo Community have been referred to the Water Board, 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.

2.8.2 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.

2.8.3 Managing PCBs in Building Materials and Infrastructure

Managing PCBs in Building Materials

The Vallejo 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 Vallejo Permittees will be participating in a BASMAA Regional Project to address PCBs in infrastructure as described in section 2.3.2.

2.8.4 Enhanced Operation and Maintenance Control Measures

No enhanced operation and maintenance control measures are proposed.

Source Controls and Other Control Measures

Mercury Load Avoidance and Reduction

The Vallejo 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 Vallejo 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 2-3.

Vallejo Permittees Watershed/Management Areas & Summary of Control Measures

Control Measure Category	Watershed/Management Area				Permittee Owned Parcels
	Old Industrial	Old Urban	PG&E	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	Po	Po			Po
Storm Drain Inlet Cleaning	Po	Po			Po
Pump Station Maintenance	Po	Po			Po
Desilting of Channels and Culverts	Po	Po			Po
Street Flushing	Po	Po			Po
Storm Drain Line Cleaning	Po	Po			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)

Vallejo WMAs and District Properties



- Old Industrial
- Electrical Properties
- Railroad
- Urban Old
- District Properties

APPENDIX A

Percent Trash Reduction in all TMAs due to Control Measures Other than Trash Full Capture Systems

Street Sweeping: The District will work with the City of Vallejo to confirm enhancements or new actions implemented after the MRP 1.0 effective date to identify portions of the TMA where enhanced street sweeping above 2009 levels was implemented.

On-land Cleanup: The District is currently unable to claim credit for this component during the report period due to the lack of adequate documentation to justify estimates. Staff is currently working to establish operational procedures that would allow the District and City of Vallejo to document and accurately calculate percent load removals.

Storm Drain Inlet Cleaning: The District did not claim credit for this component because there were no visual assessments performed to support this activity. Staff are developing a database and operational procedures to document storm drain inlet cleaning activities, including visual documentation of all activities.

Anti-littering and Illegal Dumping Enforcement Activities: District staff will work with the City of Vallejo to develop a system for documenting activities in this area to describe the number of citations or other corrective actions accomplished each year as well as develop a system for documenting and recording anti-littering and illegal dumping enforcement records.

Other Types of Actions: Although the District and City of Vallejo have addressed the removal of trash through other activities including public education and litter focused community programs, adequate and defensible data was not available for the report period. Staff will work with the City of Vallejo to develop a system for documenting and reporting these types of activities.

Offset Associated with Additional Creek and Shoreline Cleanups

Additional Creek and Shoreline Cleanups: The District was unable to justifiably claim credit for this activity as information including the number and frequency of cleanups conducted, the locations and cleanup dates, and the volume of trash removed and before and after visual assessments were not documented. Work is underway to implement a system for documenting activities that would fall into this category.

Direct Trash Discharge Controls: City and District staff will investigate the feasibility of developing a Discharge Control Program to offset an additional part of provision C.10.a trash load percent reduction requirement by implementing a comprehensive plan for control of direct discharges of trash to receiving waters from non-storm drain system sources. A draft plan will be submitted to the Water Board Executive Officer for review and approval. The plan will include procedures for documenting the number and frequency of actions conducted, the locations and dates of actions taken, and the volume of trash removed/reduced as well as procedures conducting assessments in receiving waters to demonstrate the effectiveness of the program.

Other Activities to Reduce Trash Loads

Long Term Capital Improvement Plan: The District is currently working to identify long-term capital projects to ensure adequate funding for trash full capture systems identified in the District's Long-term Trash Reduction Plan and Progress Assessment Strategy (VSFCD February 1, 2014).

Review of District's Long-term Reduction Plan and Progress Assessment Strategy: The District is proposing to conduct an independent review and update of the current Long-term Trash Reduction Plan and Progress Assessment Strategy to assess progress toward compliance with future compliance requirements and to adjust the plan as necessary.