ALAMEDA COUNTYWIDE CLEAN WATER PROGRAM

PCBS CONTROL MEASURE IMPLEMENTATION: 2013 - 2027

Report prepared by:

Alameda Countywide Clean Water Program

April 2024

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Protecting Alameda County Creeks, Wetlands & the Bay

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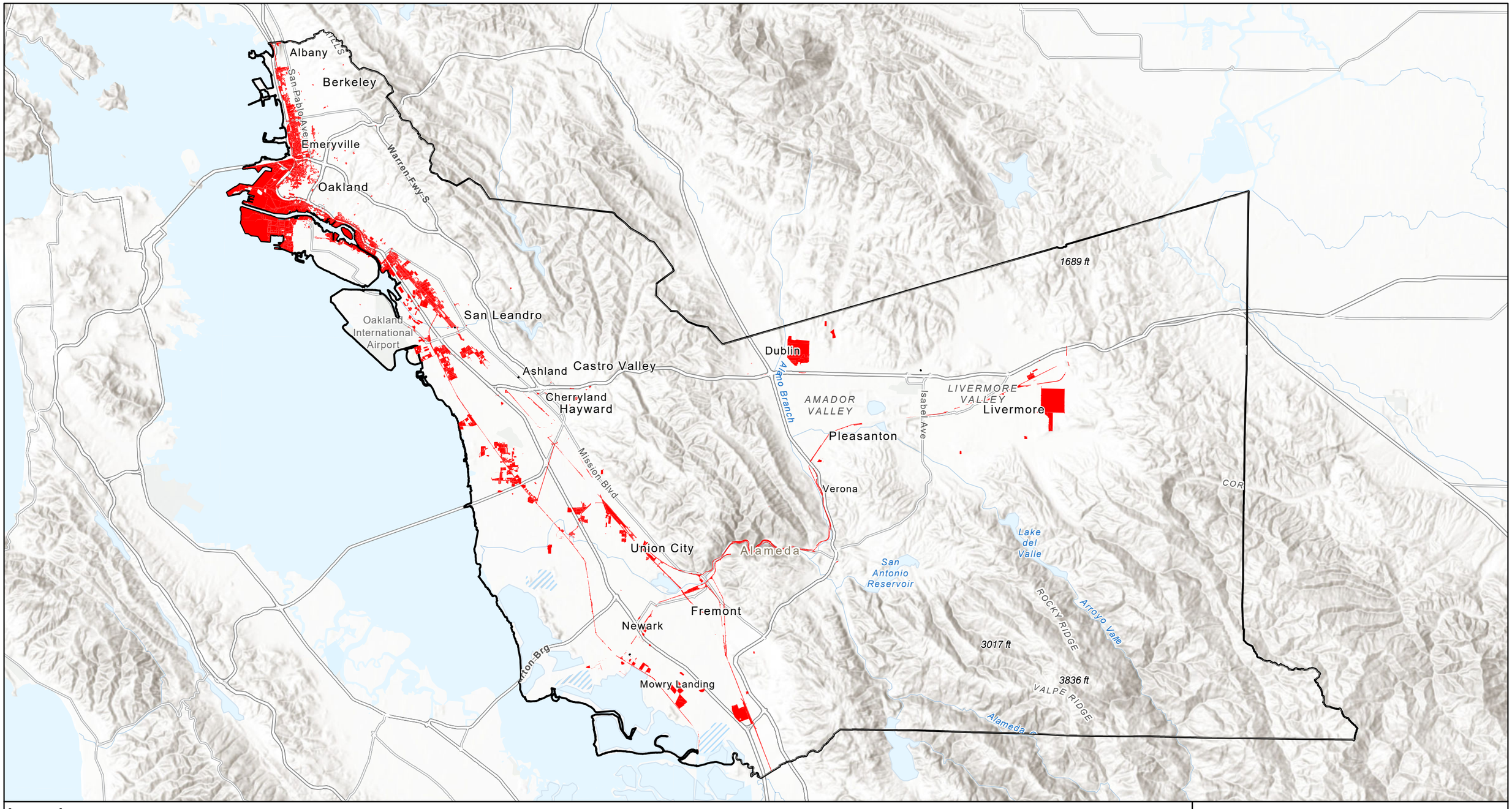
1 Introduction

1.1 Purpose and Report Organization

This *PCBs Control Measures Implementation: 2013 - 2027* report was prepared by the Alameda Countywide Clean Water Program (ACCWP or Program) on behalf of the Municipal Regional Stormwater Permit (MRP) Permittees within Alameda County. This report describes the polychlorinated biphenyls (PCBs) control measures that were implemented by the ACCWP Permittees from 2013 through 2023 and those that will be implemented by 2027 in compliance with MRP Provision C.12 (i.e., PCBs Control Measures).

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 San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) 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 sources/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 to reduce PCBs and mercury from entering stormwater runoff and the Bay. These control measures, also referred to as best management practices (BMPs), are the tools that Permittees can use to assist in restoring water quality in the Bay. Control measure implementation is focusing on PCBs in old industrial areas (see Figure 1). Control actions addressing PCBs are expected to reduce loadings of mercury and other sediment-bound pollutants in urban stormwater runoff.



Legend

- Alameda County
- Untreated Old Industrial Area

Notes:
The "Untreated" portion of Old Industrial Area is that which is not currently treated by exisiting full trash capture (FTC) devices or green infrastructure projects.

N

0 4 8 Miles

Untreated Old Industrial Area
Alameda County

Geosyntec consultants

CWR0609 | April 2024

Figure 1

P:\GIS\Bay_Area_RAA\Project\RAA Scenarios\RAA Scenarios\RAA Scenarios.aprx 4/23/2024 2:57 PM (Author: Emily.Meyers)

This report is organized into the following sections:

1. **Introduction** – This section describes the MRP's requirements for managing PCBs.
2. **Control Measures Overview** – This section provides a general description of the types of implementation actions and control measures that have been and will be implemented by the Permittees to control PCBs.
3. **Old Industrial Control Measure Plan** – This section describes the new treatment control program that must be implemented by 2027.

1.2 Municipal Regional Permit

1.2.1 MRP 2.0 (2015-2022)

NPDES permit requirements associated with Phase I municipal stormwater programs and Permittees in the Bay Area from 2015-2022 were included in MRP 2.0 (Order No. R2-2015-0049). MRP Provision C.12.a. required the implementation of source and treatment control measures and pollution prevention strategies to reduce PCBs in urban stormwater runoff to achieve specified load reductions throughout the permit area. Specifically, MRP 2.0 required the Permittees to:

- Identify the watersheds or portions of watersheds (management areas) in which PCBs control measures were being implemented and those in which new control measures would be implemented during the permit term;
- Identify the control measures that were being implemented and those that would be implemented in each watershed/management area;
- Submit a schedule of control measure implementation; and
- Implement sufficient control measures to achieve the PCBs load reductions stated in the MRP:
    - 160 g/yr PCBs by 6/30/18,
    - 940 g/yr PCBs by 6/30/2020, and
    - 37 g/yr PCBs using green infrastructure by 6/30/2020.

The ACCWP Permittees achieved the required PCBs load reductions in 2018 and 2020, and the PCBs load reductions using green infrastructure in 2020.

Watershed/Management Areas (W/MAs) were identified by each Permittee to focus control measure implementation to achieve the required PCBs load reductions. The W/MAs were designated based on ACCWP's source area identification screening program in old industrial areas. W/MAs were delineated through review by Program and Permittee staff of updated maps showing:

1. The results of 2015 PCBs source property screening categorizing old industrial parcels as high, moderate, or low/no likelihood of ongoing PCBs discharge;
2. Known past or ongoing PCBs source properties from the Clean Watersheds for a Clean Bay project referrals and state environmental databases: Department of Toxic Substances Control EnviroStor, and the State Water Resources Control Board (State Water Board) Geotracker; and
3. Land use classifications (i.e., Old Industrial, Old Urban, New Urban, and Open Space).

These factors were used to create approximate delineations based on the geography within each Permittee's jurisdiction using best professional judgement and Permittee input. If applicable, W/MA boundaries were aligned with existing delineations in a city's General Plan, Specific Plans, and/or Redevelopment Plans. Categorical W/MAs were also created for the non-municipally owned electrical utility (i.e., Pacific Gas and Electric [PG&E]) and railroad properties.

1.2.2 MRP 3.0 (2022-2027)

MRP 3.0 (Order No. R2-2022-0018) was issued on May 11, 2022 and became effective on July 1, 2022. The required MRP 3.0 PCBs activities and control measures are listed in **Table 1-1** below and are described in **Section 3**.

Table 1-1: MRP 3.0 PCBs Control Provisions

Provision	Description
C.12.a	Assess PCBs Load Reductions from Stormwater
C.12.b	Program for Source Property Identification and Abatement
C.12.c	Program for Control Measure Implementation in Old Industrial Areas
C.12.d	Program for Controlling PCBs from Bridges and Overpasses
C.12.e	Program for Controlling PCBs from Electrical Utilities

Provision	Description
C.12.f	Plan and Implement Green Stormwater Infrastructure to reduce PCBs loads
C.12.g	Manage PCB-Containing Materials and Wastes During Building Demolition Activities
C.12.h	Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations
C.12.i	Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins
C.12.f	Implement a Risk Reduction Program

2 Permittee Implementation Actions

This section describes the implementation actions and control measures that were implemented from 2013 through 2023 or will be implemented by 2027 to control PCBs. In addition to implementing the following control measures, the ACCWP and Permittees submit extensive annual reports describing their implementation actions to the SFBRWQCB.

2.1 Assess PCBs Load Reductions from Stormwater

MRP 2.0 required Permittees to develop, document, and implement an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of control measures to demonstrate progress toward achieving the load reductions required in the permit term. The Program participated in a regional project on behalf of the Permittees to prepare the *Interim Accounting Methodology for TMDL Loads Reduced* report in May 2017. The Program and Permittees then participated in another regional project to refine the source control measure load reduction accounting methods for the MRP 3.0 permit term in the *Bay Area Stormwater Management Agencies Association (BASMAA) Source Control Load Reduction Accounting for Reasonable Assurance Analysis* report. This report was approved in 2022.

2.2 Program for 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 validate the existence of significantly elevated PCBs concentrations through surface soil/sediment sampling in the right-of-way (ROW) 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 milligram per kilogram (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 take actions to cause the property to be abated or 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 Permittees implement or cause to be implemented 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 are described in the source property referral that is sent to the SFBRWQCB.

MRP 3.0 requires Permittees to investigate 2,620 acres of potential PCBs source properties during the MRP 3.0 permit term.

2.3 Program for Control Measure Implementation in Old Industrial Areas

MRP 3.0 Provision C.12.c requires the Permittees, within the permit term, to implement or cause to be implemented control measures (i.e., treatment controls, diversion to wastewater treatment plants, green stormwater infrastructure (GSI), enhanced operation and maintenance controls, or other controls) to achieve PCBs load reductions. The Permittees in Alameda County must implement control measures on 664 acres of old industrial land use areas that have not been redeveloped or treated with GSI or other treatment controls by June 30, 2027.

Implementation of treatment control measures on 664 acres would result in a total estimated load reduction of about 121 g/yr of PCBs (assuming a 70% pollutant removal efficiency). Implementation of control measures with a lower efficiency than 70 percent will result in reduced area credited (for those lower efficiency control measures) toward fulfillment of the total treatment area requirement. The area credited will be proportional to the ratio of the implemented control measure efficiency relative to the efficiency of treatment controls.

In choosing locations for control measures, Permittees must focus on catchments containing known or suspected source areas or evidence of moderate to high PCBs soil concentrations (soil/sediment concentrations greater than 0.2 mg PCBs/kg).

The ACCWP prepared a revised *Old Industrial Area Control Measure Plan*[1] in March 2024 that provides a plan and schedule for implementing control measures

[1] Download the report here: https://cleanwaterprogram.org/resources/.

in old industrial areas to address the PCBs load reduction requirements in MRP 3.0 Provision C.12.c. **Section 3** of this report summarizes that plan.

2.4 Program for Controlling PCBs from Bridges and Overpasses

PCBs may be found in storm drain or roadway infrastructure in public rights-of-way, from use of materials such as caulk and sealants in storm drains and between concrete curbs and street pavement. During MRP 2.0, the Program and Permittees conducted a study to investigate whether PCBs are present locally in such materials and in what concentrations.

MRP 3.0 Provision C.12.d requires Permittees to implement a California Department of Transportation (Caltrans) specification to manage, as part of bridge and overpass roadway replacement or major repair, potential PCBs-containing material in bridge roadway expansion joints. Permittees are tracking the development of the Caltrans specification, developed an inventory of bridges in their jurisdictions in 2023, and will implement the Caltrans specification during applicable replacement activities when it is available.

2.5 Program for Controlling PCBs from Electrical Utilities

During MRP 2.0, ACCWP and Permittee representatives worked with SFBRWQCB staff to ensure thorough documentation and clean-up completion of PG&E PCBs transformer spills. BASMAA conducted a regional Stressor/Source Identification (SSID) project, in compliance with MRP Provision C.8.e, which developed a regional SSID workplan to further understand the magnitude and extent of PCBs released by electrical utility equipment spills, and to identify controls that could be implemented to reduce the water quality impacts of this source. In FY 2018-19, the regional SSID project developed the SSID workplan. As a result of this project, BASMAA sent a letter requesting that the SFBRWQCB use its authority under Section 13267 of the California Water Code to compel private electrical utilities operating in the Bay Area to provide technical information that is needed to support further investigation of electrical utility equipment and properties as potential sources of PCBs to MS4s in the Bay Area.

MRP 3.0 Provision C.12.e requires Permittees to: (1) develop or improve and implement Standard Operating Procedures (SOPs) to respond to, clean up, and

report spills and releases from municipally owned oil-filled electrical equipment (OFEE); (2) develop and implement a plan to maintain and upgrade municipal owned OFEE; (3) document PCBs loads avoided through existing and ongoing OFEE removal and replacement programs; and (4) collaborate with the SFBRWQCB to request information from non-municipally owned electrical utilities. In 2023, the Program and the City of Alameda developed updated spill response SOPs and reported an estimate of the total PCBs mass removed from the City of Alameda's municipal utility's equipment between 2002 and 2023. The City of Alameda will submit an annual summary of their plans to maintain and upgrade PCBs-containing OFEE in 2024 and will report the removal/disposal of PCBs-containing OFEE.

2.6 Plan and Implement Green Stormwater Infrastructure to Reduce PCBs Loads

MRP 3.0 requires Permittees to implement GSI projects consistent with the implementing requirements in Provision C.3.j. Provision C.3.j requires each Permittee to continue to implement a GSI Plan for the inclusion of GSI on public and private lands. The Plan serves as an implementation guide and reporting tool during this and subsequent MRP permit terms to provide reasonable assurance that urban runoff TMDL WLAs (e.g., for the PCBs TMDL) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. The Permittees in Alameda County must implement a total of 58.42 acres of retrofit treatment (i.e., in addition to Regulated Projects) countywide; MRP 3.0 assigns a mandatory treatment area for each Permittee if the countywide total is not achieved. If the goal is not met countywide, each Permittee must locally implement GSI projects to treat 0.2 acres.

2.7 Manage PCB-Containing Materials and Wastes During Building Demolition Activities

During the MRP 2.0 term, the Permittees developed, in cooperation with BASMAA, a program and protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition. 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. For MRP compliance, applicable structures were defined as concrete masonry commercial, public, institutional, and industrial structures constructed 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.

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in building materials. This Regional Project developed 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 developed training materials and conducted trainings for municipal staff and outreach workshops for the industry on implementing the framework/protocols developed via the project. Permittees began implementing the PCBs management program and protocol on July 1, 2019.

In addition, the Permittees are implementing an assessment methodology and data collection program to quantify the PCBs loads reduced through implementation of the protocol, summarized below:

1. As defined in the management program, the municipality informs demolition permit applicants that their projects are subject to the MRP Provision C.12.f requirements, necessitating, at a minimum, an initial screening for priority PCBs-containing building materials.
2. For every demolition project, applicants complete and submit a version of BASMAA's model "PCBs Screening Assessment Form" (Screening Form) or equivalent to the municipality.
3. The municipality reviews the Screening Form and works with the applicant to correct any deficiencies before determining it is complete.
4. The municipality then issues the demolition permit or equivalent, according to its procedures.
5. For Applicable Structures only, the municipality submits completed Screening Forms and any supporting documents to ACCWP.

6. ACCWP compiles the completed Screening Forms and any supporting documents. ACCWP then works with the other MRP countywide programs to manage and evaluate the data, and to assist Permittees with associated MRP reporting requirements.

Data collection started with implementation of the new program on July 1, 2019. When sufficient amounts of new data have been collected, the data will support:

- Development of a revised estimate of the reduction in PCBs loading to stormwater runoff resulting from implementation of the new program, and
- Evaluation of various aspects of the PCBs management program and the effectiveness of potential future refinements.

2.8 Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

MRP 2.0 required Permittees to prepare and submit a PCBs control measures implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in PCBs load reductions sufficient to attain the PCBs TMDL wasteload allocations by 2030. To comply with this provision, the Program prepared the required Implementation Plan and schedule. The *Alameda County PCBs and Mercury Control Measure Plan and Reasonable Assurance Analysis Report* was provided with the Fiscal Year (FY) 2019/20 Annual Report. MRP 3.0 Provision C.12.h requires Permittees to update this PCBs control measures implementation plan and RAA by March 31, 2026.

2.9 Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

MRP Provision C.12 requires Permittees to conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to Bay margin areas. The Permittees are required to report the findings and results of the studies completed, planned, or in progress, as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles in the March 15, 2026 Integrated Monitoring Report.

Permittees are addressing this provisions through a multi-year project by the San Francisco Bay Regional Monitoring Program (RMP) to identify, model, and investigate embayments along the Bay shoreline designated Priority Margin Units (PMUs). The multi-year RMP project is studying two PMUs in Alameda County that are located downstream of urban watersheds where PCBs management actions are ongoing and/or planned. The Permittees' annual financial contribution to the RMP supports these studies.

2.10 Implement a Risk Reduction Program

MRP Provision C.12 requires Permittees to conduct an ongoing risk reduction program to address public health impacts of PCBs in San Francisco Bay fish. The fish risk reduction program takes actions to reduce actual and potential health risks in those people and communities most likely to consume Bay-caught fish, such as subsistence fishers and their families. Permittees conduct an ongoing risk reduction program with the potential to annually reach a minimum of 3,000 individuals who are likely consumers of Bay-caught fish. The Permittees report on the status of the risk reduction program their Annual Reports and will report the findings of the effectiveness evaluation of their risk reduction program in their FY 2025/26 Annual Report.

3 Alameda County Old Industrial Area Control Measure Plan

As described in **Section 2.3**, the ACCWP submitted an Old Industrial Area Control Measure Plan (CMP) as required by MRP 3.0 Provision C.12.c on March 31, 2023. ACCWP revised the March 2023 CMP to address SFBRWQCB comments and submitted the revised plan on April 1, 2024. The CMP provides a plan and schedule for focused implementation of control measures in old industrial areas to address PCBs load reduction requirements.

3.1 Old Industrial Area Treatment Control Measures

This section describes the treatment control measures that will be implemented by Permittees during this permit term to control PCBs in urban runoff from areas containing known or suspected sources or areas with evidence of moderate to high PCBs soil concentrations. Potential treatment control measures include retrofit with GSI or non-GSI treatment control, enhanced O&M practices,

redevelopment with GSI, full trash capture devices, and diversion to publicly-owned treatment works (POTW). The process for selecting treatment control measures is described below.

A summary of the area available to be addressed by each of the treatment control measure categories is provided in **Table 3-1**. As stated above, Provision C.12.c requires treatment of 664 acres. The total available area shown in **Table 3-1** is less than 664 acres, but the estimate does not include areas that may potentially be treated by a regional retrofit project in the City of Oakland or full trash capture devices in each jurisdiction.

Table 3-1: Old Industrial Area Available for Treatment Control

Treatment Measure	Available Area (Acres)
Retrofit with Treatment Controls in Focus Areas	284.2 acres
Enhanced O&M Storm Drain Cleaning in City of Oakland	19 to 52 acres
Applicable Redevelopment Projects	196 acres

3.1.1 Focus Areas

ACCWP analyzed the existing monitoring data to identify known or suspected areas with moderate or high concentrations of PCBs. These areas are located in the cities of Berkeley, Emeryville, Hayward, Oakland, and San Leandro. There are 284.2 acres within parcels and ROWs in the selected high priority focus areas. The Emeryville Crescent and San Leandro Bay watersheds are known areas of concern and will be targeted for investigation.

In compliance with MRP Provision C.12.b, Permittees will continue to monitor old industrial areas to identify new source properties and pursue abatement of the source properties that were previously referred. The Emeryville Crescent and San Leandro Bay watersheds will be prioritized for pollutants of concern monitoring. Additional focus areas will be assessed for specific treatment control measures as monitoring conducted for C.12.b identifies additional moderate areas.

Process for Selecting and Implementing Specific Treatment Control Measures

The process that the Permittees will use to select and implement specific control measures consists of the following:

1. ACCWP compiled a map of focus areas using existing data. Focus areas group existing moderate or high data points (soil/sediment concentrations greater than 0.2 mg PCBs/kg) into smaller management areas. The RMP priority margin units (i.e., the Emeryville Crescent and San Leandro Bay watersheds) are also included as focus areas.
2. ACCWP will resample the focus areas to confirm the presence of moderate or elevated levels of PCBs. This monitoring will be conducted April 2024-September 2024. If resampling finds that an area is not moderately contaminated (i.e., PCBs ≤ 0.2 mg/kg), the focus area map will be revised to indicate the result of the monitoring. The revised maps will be included in the annual report.
3. If there is a confirmed source property (i.e., PCBs ≥ 1 mg/kg), the Permittee will refer the property to the SFBRWQCB and implement enhanced O&M measures at the site. Alternatively, Permittees may abate or cause the property to be abated directly. Source properties will be referred as they are identified throughout the permit term unless the Permittee causes abatement of the property.
4. For target areas where elevated levels of PCBs are confirmed, the Permittee will conduct site visits within the focus area to determine if there is a readily identifiable source. These site visits will occur between April 2024 and September 2024 or when new moderate data is collected.
5. If a property that is a source of moderate contamination (i.e., PCBs ≥ 0.2 mg/kg) is located, the Permittee will assess whether the property owner can implement actions on the property to contain or treat the source. The Permittee will take action require that the property owner contain or treat PCBs on or around the site. These actions will be conducted when a source of moderate contamination is identified beginning in October 2024.

6. If no specific property is identified as a source of moderate contamination, the Permittee will select and implement controls for the moderate area in the ROW (e.g., treatment or enhanced operations and maintenance) based on site constraints, local infrastructure, and drainage patterns. Assessment of site-specific control measure options for confirmed moderate areas will occur from June 2024 through December 2024, or as new moderate areas are confirmed thereafter.

3.1.2 Treatment Control Options

Retrofit with Treatment Controls or Green Stormwater Infrastructure

Retrofit projects provide treatment control for existing developed areas without redeveloping the tributary area. Treatment controls may include GSI or non-GSI treatment.

MRP 3.0 defines treatment as any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff. MRP 2.0 Provision C.3.j required each Permittee to develop a Green Infrastructure Plan for inclusion in the 2019 Annual Report. These Green Infrastructure Plans mapped and prioritized areas for potential and planned public and private GSI projects for implementation by 2020, 2030, and 2040. These Green Infrastructure Plans and direct input from Permittees were used to identify retrofit projects that are planned to be implemented in old industrial and moderate areas during this permit term. GSI will also be considered for retrofit of confirmed focus areas.

Implementation of a Regional Treatment Control Project

In 2021, ACCWP screened regional project opportunities from the Alameda County Stormwater Resource Plan (SWRP) to identify a subset of potential candidate locations for a regional retrofit project within Alameda County. Geospatial screening was used to identify potential projects by selecting permittee-owned parcels with one acre or more of non-building area, within 25 feet from the nearest storm drain line. A total of 462 Potential Regional Project Locations remained after this screening. A detailed screening of 35 of the potential locations with the largest old industrial area was conducted. These

locations were ranked as 'High,' 'Medium,' and 'Low' priorities based on available space, potential drainage area, and visual site suitability.

The City of Oakland, as part of an update to the City's Storm Drain Master Plan, is exploring the feasibility of funding and building a regional treatment control facility. The City is building on the regional project opportunity analysis described above to identify potential multi-benefit project locations within Oakland. Prioritization criteria include old industrial and moderate PCBs loading areas within the drainage catchment, priority neighborhoods, co-location with planned Capital Improvement Projects (CIP), potential flood control benefits, and Caltrans drainage area. The project would include surface and subsurface components and would be designed to capture drainage from up to 100 acres. The project would be designed to accommodate and/or improve existing or future desired site uses. Other benefits (e.g., community walkability enhancements, urban greening, and sustainability elements) would be incorporated into the project design as feasible.

Assuming an average cost per treated acre of $125,000, the total estimated design, permitting, outreach, procurement, and construction cost for the regional stormwater treatment control project is $12,500,000. The City of Oakland included this project in its FY 2023-25 CIP list as an unfunded project.

Enhanced Operation and Maintenance

Enhanced MS4 O&M activities include street sweeping; drain inlet cleaning; and storm drain, culvert, and channel desilting to remove excessive quantities of accumulated sediment. Each of these O&M activities removes PCBs that are present in the sediment that is removed.

If the Focus Area investigations find accumulated sediments that are moderately contaminated in inlets, storm drains, or along the ROW, enhanced O&M will be conducted to remove the contaminated sediment. The method selected to remove moderately contaminated sediment will be a function of the site conditions (e.g., the presence/absence of curb and gutter, inlets, and storm drains).

The Zone 12, Line M Improvement Project is located along an east-west flowing drainage channel between the Union Pacific Railroad tracks to the east and Baldwin Street to the west. The channel is part of the Elmhurst Creek Watershed

and merges into Elmhurst Creek approximately 1,500 feet southwest of the project site, which enters San Leandro Bay. The project site includes approximately 600 linear feet of the channel. The Alameda County Flood Control & Water Conservation District (District) refers to this location as Zone 12, Line M. The District will be widening the channel at the project site. Up to 2,600 cubic yards of soil will be excavated during the improvements.

Full Trash Capture Treatment Control Measures

MRP Provision C.10 requires Permittees to implement trash prevention and control actions, including full trash capture systems, to reduce trash generation. Along with trash, full trash capture systems capture sediment that may be contaminated with PCBs. Permittees have installed both large and inlet-based full trash capture devices. Large full trash capture devices, including hydrodynamic separators (HDS), gross solids removal devices (GSRDs), and baffle boxes, capture and treat urban runoff from large drainage areas, ranging from tens to hundreds of acres. Inlet-based devices in roadways enhance the capture of sediments that may be contaminated with PCBs from smaller, localized drainage areas. In addition, these inlets with full trash capture device are typically cleaned more frequently that standard inlets. Trash capture device implementation is described in each Permittee's Trash Load Reduction Plan. Installation of full trash capture devices will consider old industrial areas to reduce loads of PCBs.