



**Santa Clara Valley  
Urban Runoff  
Pollution Prevention Program**

# **Control Measure Plan to Reduce PCBs and Mercury in Urban Runoff from Old Industrial Areas**

*Plan and schedule for control measure implementation during  
MRP 3.0 in the Santa Clara Valley*

Submitted in compliance with Provision C.11/12.c of NPDES Permit No. CAS612008,  
Order No. R2-2022-0018

**FINAL REVISED  
September 2024**

This report is submitted by the agencies participating in the



City of Campbell	City of Milpitas	City of Santa Clara
City of Cupertino	City of Monte Sereno	City of Saratoga
City of Los Altos	City of Mountain View	City of Sunnyvale
Town of Los Altos Hills	City of Palo Alto	County of Santa Clara
Town of Los Gatos	City of San José	Santa Clara Valley Water District (Valley Water)

Prepared for:

Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP)

Prepared by:



EOA, Inc.

1410 Jackson St., Oakland, CA 94612

## TABLE OF CONTENTS

List of Figures .....	iv
List of Tables .....	iv
List of Appendices .....	v
Acronyms .....	vi
<b>EXECUTIVE SUMMARY .....</b>	<b>vii</b>
<b>1. INTRODUCTION .....</b>	<b>1</b>
1.1 Problem Definition.....	1
1.2 Land Areas Contributing Moderately or Highly Elevated PCBs or Mercury to Stormwater .....	1
1.3 Regulatory Requirements .....	3
1.4 Control Measures Plan Purpose and Approach .....	4
1.5 Organization of the Plan .....	6
<b>2. PRIORITIZED LOCATIONS FOR PCBs AND MERCURY CONTROL MEASURE IMPLEMENTATION .....</b>	<b>7</b>
2.1 OI Land Areas Available for Control Measure Implementation .....	7
2.2 Planned Additional Verification Monitoring During MRP 3.0 .....	12
<b>3. TARGETED CONTROL MEASURE PROGRAMS.....</b>	<b>15</b>
3.1 Source Area Investigations .....	15
Planned/Ongoing Source Area Investigations During MRP 3.0.....	18
Other Actions to Support Implementation of the Control Program.....	20
3.2 Controls for Properties with Moderately Elevated PCBs or Mercury .....	20
Control Measure Description .....	20
Planned/Ongoing Implementation During MRP 3.0.....	22
Other Actions to Support Implementation of the Control Program.....	23
3.3 Abatement of Highly Elevated PCBs or Mercury Source Properties .....	23
Control Measure Description .....	23
Planned/Ongoing Implementation During MRP 3.0.....	24
3.4 Control Program for Public ROW Areas in Catchments with High Priority OI Land Areas .....	25
Control Measure Description .....	25
Planned/Ongoing Implementation During MRP 3.0.....	26
<b>4. OTHER CONTROL MEASURE PROGRAMS.....</b>	<b>27</b>
4.1 Green Stormwater Infrastructure .....	27
Control Measure Description .....	27
Current and Anticipated Level of Implementation.....	28
4.2 Other Types of Stormwater Treatment Systems .....	34
Control Measure Description .....	34
Current and Anticipated Level of Implementation.....	34
<b>5. ESTIMATED POLLUTANT LOAD REDUCTIONS.....</b>	<b>41</b>
5.1 Targeted Control Measure Programs .....	41
5.2 Other Control Measures.....	42
5.3 Summary of Anticipated Load Reductions .....	43
<b>6. PLANNING AND IMPLEMENTATION SCHEDULE.....</b>	<b>45</b>
<b>7. REFERENCES .....</b>	<b>48</b>

## LIST OF FIGURES

Figure 2.1. Flow chart demonstrating how verification monitoring is used to prioritize OI land areas for targeted controls during MRP 3.0 based on PCBs monitoring data. ....	9
Figure 2.2. Geographical extent of land areas in the Santa Clara Valley identified as old (pre-1980) industrial land use in 2002 (i.e., starting date for the PCBs and Mercury TMDLs) categorized as fully addressed for PCBs and mercury or prioritized for targeted controls based on monitoring data. ....	11
Figure 2.3 Stormwater catchments and associated old industrial (OI) parcels in the Santa Clara Valley where Verification Monitoring has been completed or is planned during MRP 3.0. ....	13
Figure 3.1. Flow chart demonstrating progression from Source Area Investigations through control measure implementation and final outcomes for high priority OI land areas. ....	16
Figure 3.2. Stormwater catchments with high priority old industrial (OI) land areas that are targeted for Public ROW Investigations, On-site Inspections and Sampling and Targeted Control Programs in the Santa Clara Valley during MRP 3.0. ....	19
Figure 4.1. Locations where parcel-based Low Impact Development (LID) projects have been recently completed or are anticipated during MRP 3.0, including those within high priority catchments with moderately or highly elevated PCBs. ....	29
Figure 4.2. Planned location and drainage area of the anticipated River Oaks Stormwater Capture Project in the City of San Jose, CA. ....	33
Figure 4.3. Drainage areas for high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices installed, planned or proposed for installation during MRP 3.0. ....	36
Figure 4.4. Areas of potential multi-benefit for PCBs, mercury and trash load reductions in the Santa Clara Valley. ....	40

## LIST OF TABLES

Table 1.1. Average PCBs and mercury concentrations (mg/kg) in sediment <sup>a</sup> measured across the SF Bay Area within five land use categories, including source properties where highly elevated PCBs and/or mercury concentrations have been observed. ....	3
Table 2.1. Old industrial (OI) land areas in the Santa Clara Valley fully addressed for PCBs and mercury prior to MRP 3.0 and those (remaining) areas that are not fully addressed for PCBs and mercury, and further prioritized for targeted controls. ....	10
Table 2.2. Verification Monitoring planned by SCVURPPP during MRP 3.0 to reclassify undetermined priority old industrial (OI) parcels in the Santa Clara Valley. ....	14
Table 3.1. Stormwater catchments with high priority old industrial (OI) land areas that are targeted for Public ROW Investigations or On-site Inspections and Sampling in the Santa Clara Valley during MRP 3.0. ....	18
Table 4.1. Extent of land areas in high, undetermined and low priority catchments in the Santa Clara Valley where parcel-based Low Impact Development (LID) projects have been recently completed or are anticipated during MRP 3.0. ....	30
Table 4.2 Drainage areas and associated land uses for high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices installed or planned for installation during MRP 3.0 in high priority stormwater catchments with moderately or highly elevated PCBs or mercury. ....	37
Table 4.3. Drainage areas and associated land uses for high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices installed during MRP 3.0 in undetermined or low priority stormwater catchments. ....	38
Table 5.1. Estimated PCBs and mercury load reductions anticipated to occur via the implementation of control measures identified in Sections 5.1 and 5.2 of this Plan. ....	44
Table 6.1. Anticipated schedule for control measure planning and implementation tasks in old industrial (OI) and moderate PCBs or mercury land areas during MRP 3.0. ....	46

## **LIST OF APPENDICES**

Appendix A High Priority Stormwater Catchment Factsheets

Appendix B Draft Outreach Materials and Source Property Pollutant Control Plan Template

## ACRONYMS

BASMAA	Bay Area Stormwater Management Agencies Association
BAMSC	Bay Area Municipal Stormwater Collaborative
BMP	Best Management Practice
CASQA	California Stormwater Quality Association
CWA	Clean Water Act
GSI	Green Stormwater Infrastructure
HDS	Hydrodynamic Separator
OI	Old Industrial
LID	Low Impact Development
MPC	Monitoring and Pollutants of Concern Committee
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
O&M	Operations and Maintenance
PCBs	Polychlorinated Biphenyls
POC	Pollutant of Concern
POTW	Publicly Owned Treatment Works
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program for Water Quality in San Francisco Bay
ROW	Right-of-Way
RWSM	Regional Watershed Spreadsheet Model
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SFEI	San Francisco Estuary Institute
STM	Stormwater Treatment Measure
SWRP	Stormwater Resource Plan
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USEPA	US Environmental Protection Agency
WMA	Watershed Management Area
WY	Water Year

## EXECUTIVE SUMMARY

Fish tissue monitoring in San Francisco Bay (Bay) has revealed the bioaccumulation of Polychlorinated Biphenyls (PCBs), mercury, and other pollutants in Bay sportfish. The levels found are thought to pose a health risk to people consuming these fish. As a result, an interim advisory has been issued on the consumption of certain types of sportfish from the Bay. The San Francisco Bay Regional Water Quality Control Board (Regional Water Board) developed Total Maximum Daily Load (TMDL) water quality restoration programs for PCBs and mercury that identified urban runoff as an important pathway for these legacy pollutants to the Bay.

For over two decades, San Francisco Bay Area cities and counties have implemented control measures to reduce contributions of PCBs and mercury from municipal separate storm sewer systems (MS4s) that convey urban runoff to the Bay. Building off this significant experience, this *Control Measure Plan to Reduce PCBs and Mercury in Urban Runoff from Old Industrial Areas* (Plan) was developed by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program) on behalf of all SCVURPPP member agencies (i.e., Co-permittees). This Plan is revised from the version submitted on March 31, 2023 to address Regional Water Board comments provided in a letter dated August 2023. The Plan complies with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit (Order No. R2-2022-0018; Permit No. CAS612008), also known as the Municipal Regional Permit (MRP 3.0).

This Plan summarizes the control measure programs, implementation schedules, and pollutant load reductions that SCVURPPP member agencies anticipate achieving during the MRP 3.0 term in the Santa Clara Valley. This Plan addresses MRP 3.0 Provisions C.11/12.c requirements for Co-permittees to submit plans and schedules for implementing control measures and stormwater treatment in old industrial (OI) land areas and other areas that generate moderate levels of PCBs or mercury to address the load reduction requirements included in these provisions. This Plan includes maps of the areas where control measures are to be implemented, the acreage of these areas, and a description of design and sizing features for all control measures implemented for each treated catchment in the Santa Clara Valley. This Plan describes two types of control programs: 1) *Targeted Control Programs* and 2) *Other Control Programs*. Targeted control programs are directed by Co-permittees and include ongoing, enhanced, and new actions that target OI land areas located in stormwater catchments containing known or suspected PCBs or mercury source areas or evidence of moderately to highly elevated PCBs or mercury based on monitoring data. Other (non-targeted) control measures include actions that are implemented by Co-permittees, other agencies, or by private parties associated with OI land use areas, but do not specifically target areas with known moderately to highly elevated PCBs or mercury in the catchment. Although they are not intended to target areas with moderately or highly elevated PCBs or mercury, these other control measures can still provide significant PCBs and mercury load reduction benefits in areas where there is evidence of contamination prior to implementation of the control.

### **Anticipated Control Measure Implementation**

Land areas where *Targeted Control Programs* should be implemented are identified through monitoring data collected at multiple spatial scales. Verification Monitoring is conducted by SCVURPPP at the catchment or sub-catchment scale. This type of monitoring can include collecting stormwater samples at the catchment scale to verify that there are moderately or highly elevated PCBs or mercury in the stormwater catchment. Verification Monitoring can also include collection of sediment samples in the public right-of-way (ROW) in locations draining OI land areas. Catchments verified as having moderately to highly elevated PCBs or mercury are targeted for additional investigation and controls, as described below. SCVURPPP conducts Source Area Investigation monitoring, in catchments verified as having moderately to highly

elevated PCBs or mercury. The purpose of this type of monitoring is to identify the source(s) of PCBs or mercury in the catchment. Source Area Investigation monitoring has been ongoing since MRP 1.0, but during MRP 3.0 SCVURPPP further refined its process to incorporate new and enhanced efforts to gain access to and collect samples on private properties to determine if a property is a source of PCBs or mercury in stormwater.

**Targeted Control Programs** described in this Plan use available information to target land areas with moderately or highly elevated PCBs or mercury. Control measure programs that target these moderately or highly elevated OI land areas include:

1. **Controls for Properties with Moderately Elevated PCBs or Mercury.** This control program is a new effort developed during MRP 3.0 that targets Moderate Pollutant (PCBs or mercury) Contributing Properties (MPCPs) for on-site controls.
2. **Abatement of Highly Elevated PCBs Source Properties.** This control program is a continuation of ongoing efforts since MRP 1.0 to target properties that are sources of highly elevated PCBs for referral and abatement.
3. **Controls for Public ROW Areas in Catchments with High Priority OI Land Areas.** This control program focuses on catchments with moderately to highly elevated PCBs or mercury where source investigations failed to identify specific PCBs or mercury source properties. If PCBs or mercury source properties cannot be identified in a catchment with moderately or highly elevated PCBs or mercury, Co-permittees will delineate the drainage area associated with the moderate or high result(s), and follow the process described in the Clean Watersheds for a Clean Bay (CW4CB) Guidance Manual to evaluate how other types of controls (e.g., enhanced O&M activities) may provide PCBs and/or mercury reductions. The selection of appropriate controls for each catchment is site-specific, and will be determined through an evaluation process that will take place after the results from a source area investigation indicate that no source property(s) has been identified in the catchment.

The **Other Control Measure Programs** described in this Plan implement control measures in OI land areas that have multiple benefits and provide reductions of PCBs, mercury and trash. As such, these other types of control programs may be implemented in catchments that have yet to be verified as contributing moderately or highly elevated PCBs or mercury to stormwater; or where monitoring data indicate that an OI land area is not moderately or highly elevated. Other control measure programs include:

1. **Green Stormwater Infrastructure (GSI).** Includes parcel-based Low Impact Development (LID) implemented on properties, public green streets and regional GSI projects.
2. **High-Flow Capacity Stormwater Treatment Systems and Inlet-based Stormwater Screening Devices.** Stormwater treatment systems that include proprietary devices that remove sediment, trash, and other pollutants from stormwater through screening, trapping, and settling mechanisms.

In addition to the monitoring and control measures programs described above, this Plan also describes a new monitoring program that is currently under development by SCVURPPP to better demonstrate the potential scale of load reductions that can be achieved via both targeted and other control programs in OI land areas. Additional details on this program are described in Section 4.

### **Estimated PCBs and Mercury Load Reductions**

The permit requires that Co-permittees in the Santa Clara Valley collectively achieve a reduction of 121 g/yr of PCBs and 28 g/yr of mercury during the permit term in OI land areas and other areas with land uses that generate moderately to highly elevated PCBs or mercury (i.e.,  $\geq 0.2$  mg/kg PCBs and  $\geq 0.3$  mg/kg mercury in sediment or stormwater particle ratio, and/or  $> 36$  ng/L PCBs in stormwater). Based on conservative estimates, anticipated control measure implementation (excluding source property referrals) is expected to result in the reduction of 121 g/yr for PCBs (ranging from 61 g/yr to 182 g/yr), and 25 g/yr for mercury (ranging from 13 g/yr to 35 g/yr) by the end of the permit term in OI areas with moderate PCBs or mercury. All load reductions were calculated using the methods approved by the Regional Water Board Executive Officer and described in the Source Control Load Reduction Accounting for Reasonable Assurance Analysis report (BASMAA 2022). These estimates represent a “best” estimate for anticipated control measure implementation during MRP 3.0. The best estimates were calculated generally assuming that roughly 50% of the anticipated control measure implementation described in this Plan would be completed during MRP 3.0. Ranges assume 25% to 75% of anticipated control measure implementation described in this Plan would be completed during MRP 3.0. Best estimates and ranges for PCBs and mercury demonstrate that Co-permittees should collectively achieve the C.11.c and C.12.c load reduction requirements during MRP 3.0.

## 1. INTRODUCTION

This *Control Measure Plan to Reduce Polychlorinated Biphenyls (PCBs) and Mercury in Urban Runoff from Old Industrial Areas* (Plan) presents the current status of control measure planning and implementation in the Santa Clara Valley (Santa Clara County, CA) to achieve PCBs and mercury load reductions required by the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Order No. R2-2022-0018; Permit No. CAS612008), also known as the Municipal Regional Permit (MRP). This Plan was developed by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program) on behalf of all SCVURPPP member agencies (i.e., Co-permittees<sup>1</sup>) in compliance with MRP Provisions C.11.c.iii.(1) and C.12.c.iii.(1).

### 1.1 Problem Definition

Fish tissue monitoring in San Francisco Bay (Bay) has revealed the bioaccumulation of PCBs, mercury, and other pollutants in Bay sportfish (SFBRWQCB, 1995). The levels found are thought to pose a health risk to people consuming these fish and as a result, an interim advisory has been issued on the consumption of sportfish from the Bay. The advisory led to the designation of the Bay in 1998 by San Francisco Bay Regional Water Quality Control Board (SFBRWQCB or Regional Water Board) as an impaired water body on the Clean Water Act (CWA) "Section 303(d) list" due to elevated levels of PCBs and mercury. In response, the Regional Water Board developed Total Maximum Daily Load (TMDL) water quality restoration programs targeting PCBs and mercury. The general goals of the TMDLs are to identify sources of PCBs and mercury and implement actions to control the sources of these pollutants to achieve water quality standards and restore beneficial uses of the Bay (SFBRWQCB 2006, 2008). In the TMDLs, stormwater discharges, including those in the Santa Clara Valley, were identified as a key sources of these pollutants to the Bay.

Since the development and adoption of the PCBs and Mercury TMDLs, SCVURPPP Co-permittees have implemented numerous control measures to reduce the loads of PCBs and mercury in stormwater. These control measures have been previously reported by SCVURPPP and have had a direct benefit to Bay beneficial uses by reducing the contributions of PCBs and mercury from stormwater (SCVURPPP 2021).

### 1.2 Land Areas Contributing Moderately or Highly Elevated PCBs or Mercury to Stormwater

Over the past 20 years, SCVURPPP Co-permittees have spent significant public resources to identify locations within the urban landscape where PCBs or mercury are elevated and determine what control measures will likely provide the most load reduction benefits for these pollutants. Findings from numerous studies demonstrate that PCBs and mercury sources are generally associated with watershed land areas where equipment containing these pollutants were manufactured, transported or used and facilities that recycle PCBs or mercury-containing devices and equipment. These sources include current and historic metal, automotive, and

---

<sup>1</sup> Cities of Campbell, Cupertino, Milpitas, Monte Sereno, Mountain View, Palo Alto, San José, Santa Clara, Saratoga, Sunnyvale, the Towns of Los Altos Hills and Los Gatos, the County of Santa Clara and Valley Water.

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 the production and use of PCBs and mercury were the greatest in the U.S. These areas are identified as old industrial (OI) land areas and are considered potential sources of PCBs and mercury in stormwater discharges to local creeks/rivers and the Bay.

Screening-level PCBs and mercury concentration thresholds have been selected to identify whether a land area likely has elevated (moderate or high) PCBs or mercury and to indicate proximity to a source (BASMAA 2022). Concentrations are considered elevated if sediment collected on properties or in the public right-of-way (ROW) are  $\geq 0.2$  mg/kg for PCBs or  $\geq 0.3$  mg/kg for mercury. Concentrations of PCBs in sediment that are  $\geq 0.2$  mg/kg, but  $< 0.5$  mg/kg are considered moderately elevated and concentrations  $\geq 0.5$  mg/kg are classified as highly elevated (SFBRWQCB 2022). Concentrations of mercury in sediment that are  $\geq 0.3$  mg/kg, but  $< 1.0$  mg/kg are considered moderately elevated and concentrations  $\geq 1.0$  mg/kg are classified as highly elevated (SFBRWQCB 2022). PCBs concentrations  $< 0.2$  mg/kg in sediment and mercury concentrations  $< 0.3$  mg/kg in sediment are considered low/background urban concentrations. Additionally, stormwater samples are considered elevated if particle ratios (i.e., whole water PCBs or mercury concentration divided by the suspended sediment concentration) are  $\geq 0.2$  mg/kg for PCBs,  $\geq 0.3$  mg/kg for mercury, or for PCBs only, if whole water concentrations are  $> 36$  ng/L (i.e., the top 15% of concentrations measured in stormwater across the Bay Area). A similar stormwater concentration threshold has not been set for mercury.

The dataset of PCBs and mercury concentrations measured over the past 20 years in sediment samples throughout the San Francisco Bay Area (SF Bay Area) has been invaluable to Co-permittees. This dataset has helped identify land areas where PCBs or mercury are elevated, and where controls measures will have the greatest load reduction benefits (BASMAA 2022). These sediment samples were collected from roadways, curb and gutters, driveways, sidewalks, storm drain inlets, manholes, culverts, and surface soils within public ROWs and on private properties across the Bay Area. To date, this data set includes over 1,600 PCBs datapoints and over 1,400 mercury datapoints. Table 1.1 presents the average concentrations of PCBs and mercury derived from this dataset, based on the predominant land use within the vicinity of where the sediment was collected. Additional information on these data is provided in BASMAA (2022). These data support the assumption that OI and other old (i.e., developed prior to 1980) land areas where PCBs or mercury were more heavily used in the past, contribute much higher masses of these pollutants per unit area than newer urban land areas developed post-1980, after the sale of PCBs was banned in the US. Other (non-industrial) old urban land areas where elevated PCBs concentrations have been observed include commercial/transportation and residential areas. For mercury, elevated concentrations have been found in OI land areas, old residential, and even new urban land areas.

**Table 1.1. Average PCBs and mercury concentrations (mg/kg) in sediment<sup>a</sup> measured across the SF Bay Area within five land use categories, including source properties where highly elevated PCBs and/or mercury concentrations have been observed.**

Land Use Associated Category	PCBs (mg/kg)	Mercury (mg/kg)
Source Property	32 <sup>b</sup>	NA
Old Industrial <sup>b</sup>	0.79 <sup>b</sup>	0.43
Old Commercial / Old Transportation <sup>b</sup>	0.22 <sup>b</sup>	0.20
Old Residential <sup>b</sup>	0.20	0.43
New Urban	0.07	0.46
Agriculture / Open Space	0.07	0.29

<sup>a</sup> mg/kg – milligrams per kilogram of sediment(< 2mm grain size)

<sup>b</sup> Average concentration for old industrial, old commercial/transportation, and old residential land use categories are in the moderate (0.2 - < 0.5 mg/kg) to high (≥ 0.5 mg/kg) range for PCBs.

### 1.3 Regulatory Requirements

The MRP regulates the control/management of stormwater and non-stormwater discharges from Phase I Municipal Separate Storm Sewer Systems (MS4s) in the SF Bay Area. The MRP is issued to SF Bay Area municipalities and flood control agencies by the Regional Water Board. The current version of the MRP (MRP 3.0) became effective on July 1, 2022. Provisions C.11 and C.12 contain specific requirements for controlling PCBs and mercury in municipal stormwater. These requirements are consistent with the urban runoff implementation plans for the Guadalupe River watershed mercury TMDL and the SF Bay PCBs and mercury TMDLs. Sub-provisions C.11/12.c require Co-permittees to implement (or cause to be implemented) treatment control measures, stormwater diversion to wastewater treatment facilities, redevelopment (provided green stormwater infrastructure (GSI) is implemented in compliance with C.3.b), enhanced operation and maintenance (O&M), or other control measures to comply with the performance metrics identified in Provisions C.11/12.c.i. Performance metrics must be achieved by the end of the permit term (i.e., June 2027). For the Santa Clara Valley Co-permittees, the C.11/12.c.i performance metrics are the following:

1. Reduce PCBs and mercury loads from 664 acres of Old Industrial or Moderate PCBs or mercury areas by implementing stormwater control measures with at least 70% load reduction efficiency; or
2. Reduce loads from these areas by 28 g/yr of mercury and 121 g/yr of PCBs.

If Co-permittees choose to comply with these requirements by demonstrating PCBs and mercury load reductions (i.e., option #2 above), then the Co-permittees must use accounting methods described in BASMAA (2022) that have been approved by the Regional Water Board’s Executive Officer.

By March 31, 2023, Co-permittees were required to submit plans and schedules for implementing controls in old industrial/moderate PCBs and mercury areas to achieve the C.11/12.c.i performance metrics. The Control Measure Plans (CMPs) must include the following:

- Maps of the areas where control measures are to be implemented;
- Acreage of these catchments (areas); and
- Descriptions of design and sizing features for all control measures, treatment devices and stormwater diversion facilities implemented for each treated catchment.

Given that MRP 3.0 allows (and encourages) Co-permittees to comply with all requirements in C.11 and C.12 through a collaborative effort, SCVURPPP developed and submitted a CMP on behalf of all SCVURPPP Co-permittees in March 2023.

In a letter dated August 25, 2023, Regional Water Board staff provided comments on SCVURPPP's CMP as well as the CMPs submitted by the four other countywide programs that represent Co-permittees in counties other than Santa Clara. The letter requested that all stormwater programs (including SCVURPPP) revise and resubmit their CMPs by October 31, 2023 to address shortcomings identified by Regional Water Board staff in the letter. In a follow-up meeting held on September 15, 2023 between Regional Water Board, stormwater program, and Co-permittee staff, the CMPs and comments included in the letter were discussed and clarified. Stormwater programs agreed to revise their plans to address applicable comments provided in the letter, but requested additional time to resubmit their CMPs. Regional Water Board staff agreed to extend the resubmittal timeline to March 31, 2024, contingent upon receiving an adequate written response summarizing planned revisions to their CMPs. In October 2023, SCVURPPP developed and submitted a letter that outlined the planned revisions to the SCVURPPP CMP and formally requested an extension to the original timeline. In a letter dated October 31, 2023, Regional Water Board staff agreed to the proposed revisions and extended the deadline for SCVURPPP (and all stormwater programs) to submit their revised CMPs to March 31, 2024. This Plan has been revised from the version submitted in March 2023 to address all Regional Water Board comments included in the letter.

### 1.4 Control Measures Plan Purpose and Approach

The purpose of this Plan is to describe the control measures that SCVURPPP Co-permittees anticipate implementing to achieve the PCBs and mercury load reductions required by MRP Provisions C.11.c and C.12.c, respectively. This Plan includes descriptions of the ongoing, enhanced and new control measures Co-permittees have already begun to implement and will continue to implement during the remainder of MRP 3.0 in OI land areas.

This Plan describes two types of control programs: 1) *Targeted Control Programs* and (2) *Other Control Measure Programs*. Targeted control programs are directed by Co-permittees and include ongoing, enhanced, and new actions that target OI land areas located in stormwater catchments containing known or suspected PCBs or mercury source areas or evidence of moderately to highly elevated concentrations based on monitoring data. Other (non-targeted) control measures include actions that are implemented by Co-permittees, other agencies, or by private parties associated with OI land use areas, but do not specifically target areas with known moderately to highly elevated PCBs or mercury in the catchment. Although they are not intended to target areas with moderately or highly elevated PCBs or mercury, these other controls may still provide important load reduction benefits in OI land areas where there is evidence of PCBs or mercury contamination prior to implementation of the control.

Land areas where *Targeted Control Programs* should be implemented are identified through monitoring data collected at multiple spatial scales. Verification Monitoring is conducted by SCVURPPP at the catchment or sub-catchment scale. This type of monitoring can include collecting stormwater samples at the catchment scale to verify that there are moderately or highly elevated PCBs or mercury in the stormwater catchment. Verification Monitoring can also include collection of sediment samples in the public ROW in locations draining OI land areas. Catchments or parcels verified as having moderately to highly elevated PCBs or mercury are targeted for additional investigation, as described below. SCVURPPP conducts Source Area Investigation Monitoring, in catchments verified as having moderately to highly elevated PCBs or mercury. The purpose of this type of monitoring is to identify the source(s) of PCBs or mercury in the catchment. Source area investigation monitoring has been ongoing since MRP

1.0, but during MRP 3.0 there are new and enhanced efforts to gain access to and collect samples on private properties to determine if a property is a source of PCBs or mercury in stormwater.

**Targeted Control Programs** described in this Plan use available information to target land areas with moderately or highly elevated PCBs or mercury. Control measure programs that target these moderately or highly elevated OI land areas include:

1. **Controls for Properties with Moderately Elevated PCBs or Mercury.** This control program is a new effort developed during MRP 3.0 that targets Moderate Pollutant (PCBs or mercury) Contributing Properties (MPCPs) for on-site controls.
2. **Abatement of Highly Elevated PCBs Source Properties.** This control program is a continuation of ongoing efforts since MRP 1.0 to target properties that are sources of highly elevated PCBs for referral and abatement.
3. **Controls for Public ROW Areas in Catchments with High Priority OI Land Areas.** This control program focuses on catchments with moderately to highly elevated PCBs or mercury where source investigations failed to identify specific PCBs or mercury source properties. If PCBs or mercury source properties cannot be identified in a catchment with moderately or highly elevated PCBs or mercury, Co-permittees will delineate the drainage area associated with the moderate or high result(s) and follow the process described in the CW4CB Guidance Manual to evaluate how other types of controls (e.g., enhanced O&M activities) may provide PCBs and/or mercury reductions. The selection of appropriate controls for each catchment is site-specific, and will be determined through an evaluation process that will take place after the results from a source area investigation indicate that no source property(s) has been identified in the catchment.

The **Other Control Measure Programs** described in this Plan implement control measures in OI land areas more opportunistically than the targeted control measures summarized above. As such, these other types of control programs may be implemented in catchments that have yet to be verified as having moderately or highly elevated PCBs or mercury; or where monitoring data indicate that an OI land area is not moderately or highly elevated. Other control measure programs include:

1. **Green Stormwater Infrastructure (GSI).** Includes parcel-based Low Impact Development (LID) implemented on properties and public green streets and regional GSI projects.
2. **High-Flow Capacity Stormwater Treatment Systems and Inlet-based Stormwater Screening Devices.** Stormwater treatment systems that include proprietary devices that remove sediment, trash, and other pollutants from stormwater through screening, trapping, and settling mechanisms.

In addition to the monitoring and control measures programs described above, this Plan also describes a new monitoring program that is currently under development by SCVURPPP to better demonstrate the potential scale of load reductions that can be achieved via both targeted and other control programs in OI land areas. Additional details on this program are described in Section 4.

## 1.5 Organization of the Plan

The subsequent sections of this Plan are organized as follows:

### **Section 2 – Prioritized Locations For PCBs and Mercury Control Measure**

**Implementation.** This section identifies and prioritizes all OI land areas in the Santa Clara Valley that are potentially available for new or enhanced controls during MRP 3.0. These OI land areas are further prioritized for controls based on the availability and magnitude of PCBs or mercury monitoring data collected to date to classify OI land areas as high or low priority.

**Section 3. Targeted Control Measure Programs.** This section presents full details about the new, enhanced and ongoing control measure programs targeted in catchments containing moderately to highly elevated PCBs or mercury.

**Section 4. Other Control Measure Programs.** This section presents information about ongoing planning and implementation of other types of control measures that may provide important PCBs or mercury load reduction benefits on OI land areas. The types of controls and the assessments that Co-permittees will conduct to confirm that the controls implemented in these areas provide PCBs or mercury load reduction benefits are also presented in this section. The new monitoring program that is under development to provide data to better evaluate the collective benefits of these other control measures is also described.

**Section 5 – Estimated Pollutant Load Reductions.** This section provides estimates of the PCBs and mercury load reductions that will occur if control measures described in Sections 3 and 4 of this Plan are implemented. Maximum and “best” load reduction estimates are provided and compared to the performance metrics identified in MRP 3.0 Provisions C.11/12.c. This information demonstrates that the majority of the estimated load reduction benefits that will be achieved via this Plan will occur through controls targeted at OI land areas in catchments with moderately or highly elevated levels of PCBs or mercury.

**Section 6. Implementation Schedule.** This section outlines the implementation schedule for the control measures described in this Plan.

## 2. PRIORITIZED LOCATIONS FOR PCBS AND MERCURY CONTROL MEASURE IMPLEMENTATION

This section identifies and prioritizes all OI land areas in the Santa Clara Valley that are potentially available for new or enhanced controls during MRP 3.0. These OI land areas are prioritized for controls based on the availability and magnitude of PCBs or mercury concentrations observed in monitoring data associated with specific OI land areas in the Santa Clara Valley.

### 2.1 OI Land Areas Available for Control Measure Implementation

In 2002 (starting date of the PCBs and Mercury TMDLs), there were 7,509 acres of OI land areas in the Santa Clara Valley.<sup>2</sup> These OI land areas are widely distributed across the Valley and are mostly comprised of private properties and old railroads. Over the past two decades, a large portion (30%) of this OI area has been redeveloped and stormwater runoff from these areas is now addressed through Low Impact Development (LID) and Green Stormwater Infrastructure (GSI). An additional portion of the 2002 OI area (1.2%) has been identified by SCVURPPP as a highly elevated PCBs source property and was referred to the Regional Water Board for abatement by a Co-permittee. Given the high level of pollutant load reduction efficiencies of LID/GSI control measures and source property abatement<sup>3</sup>, PCBs and mercury generated on these OI land areas are assumed to be effectively addressed by these controls.

For this Plan, LID/GSI controls implemented and source properties referred prior to July 1, 2021 are considered baseline controls and thus do not count towards the performance metrics described in MRP 3.0 Provisions C.11/12.c.<sup>4</sup> As such, these areas are not considered “available” for new/enhanced controls during MRP 3.0. The remaining OI land areas where LID/GSI was not implemented, or source property referrals were not made as of July 1, 2021 (i.e., areas not fully addressed for PCBs and mercury) are considered potentially available for new or enhanced controls during MRP 3.0. Controls implemented in these areas after the baseline date and through the end of the permit term (i.e., between July 1 2021 and June 30, 2027) may count towards the performance metrics in MRP 3.0 Provisions C.11/12.c.

All OI land areas in the Santa Clara Valley do not contribute the same level of PCBs or mercury to stormwater. To allow for the most cost-effective implementation of stormwater control measures, OI land areas that are potentially available for controls must be prioritized based on available monitoring data. Information gained through sediment and stormwater monitoring data is used to help Co-permittees prioritize OI land areas for PCBs or mercury control measure implementation. Over the past 20 years, SCVURPPP has conducted stormwater and sediment monitoring on behalf of Co-permittees in the Santa Clara Valley to help prioritize and direct PCBs and mercury control measure implementation.

Monitoring conducted to verify that an OI land area is in fact contributing moderately or highly elevated levels of PCBs or mercury to a Co-permittee’s MS4 is called *Verification Monitoring*. This type of monitoring is typically conducted in stormwater catchments containing OI land

---

<sup>2</sup> The CMP submitted in March 2023 identified 8,350 acres of old industrial (OI) land areas in the Santa Clara Valley. This number included 6,577 acres of OI parcels, 932 acres of old railroad parcels and rights-of-way (ROWs), and 841 acres of public ROW areas (i.e., streets/roads). The public ROW areas were removed from the OI land use classification in the current Plan (March 2024) for consistency with the other Bay Area counties, reducing the total OI land use area in the Santa Clara Valley to 7,509 acres.

<sup>3</sup> BASMAA 2022.

<sup>4</sup> Per Regional Water Board letter dated August 25, 2023.

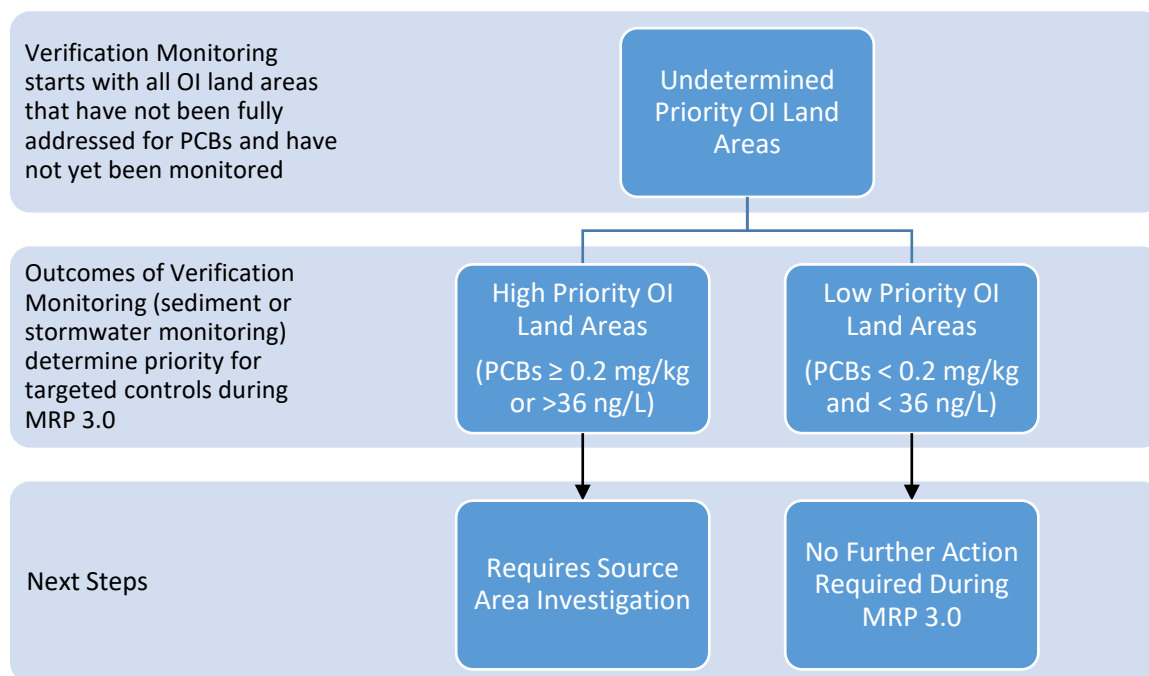
areas or in other areas where PCBs or mercury were historically used, disposed of, or released. Verification Monitoring involves collecting screening-level stormwater or sediment samples in locations that drain entire catchments or sub-catchments containing OI areas. Samples are collected in the MS4, typically at outfalls (if possible) or further upstream in areas that drain a defined sub-catchment or specific OI parcels. If any screening-level samples have elevated concentrations (i.e.,  $\geq 0.2$  mg/kg PCBs or  $\geq 0.3$  mg/kg mercury in sediments, or in stormwater,  $\geq 0.2$  mg/kg PCBs or  $\geq 0.3$  mg/kg mercury particle ratio and/or  $> 36$  ng/L of PCBs, which is the top 15% of stormwater concentrations measured in MS4s across the Bay Area), then the OI land areas within the catchment area are verified as potential contributors of moderately or highly elevated PCBs or mercury to stormwater, and the catchment is then targeted for additional controls to reduce/eliminate the sources of PCBs or mercury in the catchment. SCVURPPP Verification Monitoring is focused on collecting data in all OI land areas.

SCVURPPP has conducted Verification Monitoring of OI land areas for nearly two decades. The information gained through monitoring conducted through Water Year 2023 (i.e., September 31, 2023) was used to prioritize the 5,156 acres of OI land area that has not been fully addressed for PCBs or mercury and thus is potentially available for new or enhanced controls during MRP 3.0. All OI land areas not fully addressed for PCBs or mercury were classified into the following categories based on this information:

- **High Priority for Targeted Controls:** OI land areas within catchments where moderately to highly elevated PCBs or mercury have been observed via monitoring data. These areas are prioritized for targeted controls during MRP 3.0. Includes OI land areas that have been confirmed as source properties (but not yet referred or abated) or are potential sources of PCBs or mercury to the MS4. Targeted investigations of all potential sources are needed to identify specific source properties that contribute moderately or highly elevated PCBs or mercury to stormwater and determine the appropriate controls to address each source.
- **Low Priority for Targeted Controls:** OI land areas where only low levels of PCBs or mercury have been observed via monitoring. These areas have been verified to have low levels of PCBs or mercury via stormwater monitoring at or near catchment outfalls; via sediment samples collected in the public ROW near or adjacent to OI land uses areas; or via sediment samples collected on OI parcels. OI land areas that are categorized as *Low Priority* will not be targeted for further control measure implementation during MRP 3.0.
- **Undetermined Priority:** OI land areas that have not yet been monitored for PCBs and mercury. These areas require Verification Monitoring at the catchment, sub-catchment, or individual parcel-level to verify if PCBs or mercury are moderately or highly elevated. OI land areas that are verified as having moderately or highly elevated PCBs or mercury via monitoring data will be re-categorized as *High Priority*, while OI land areas identified as having low PCBs and mercury monitoring data will be re-categorized as *Low Priority*.

The Verification Monitoring process to categorize OI land areas as high or low priority for controls during MRP 3.0 is demonstrated in Figure 2.1.

## MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley



**Figure 2.1. Flow chart demonstrating how verification monitoring is used to prioritize OI land areas for targeted controls during MRP 3.0 based on PCBs monitoring data.**

Table 2.1 and Figure 2.2 present the MRP 3.0 baseline (July 1, 2021) treatment status of all 2002 OI land areas in the Santa Clara Valley. These areas include 2,264 acres of OI land areas that are addressed by LID/GSI projects constructed prior to July 1, 2021, and 88 acres of source properties referred to the Regional Water Board during MRP 2.0 for abatement. The remaining 5,156 acres of OI land areas that have not yet been fully addressed for PCBs and mercury are further prioritized for control measure implementation based on verification monitoring conducting through Water Year (WY) 2023, which ended on September 30, 2023.

Through WY 2023, SCVURPPP has conducted monitoring associated with 3,596 acres of the 5,156 acres of OI land areas that are not yet fully addressed by controls for PCBs and mercury at the start of MRP 3.0, including nearly 300 acres that were monitored during MRP 3.0 (i.e., in WY2022 or WY2023). Low PCBs and mercury were observed on the vast majority of these areas (86%). Other than the fact that these land areas are classified as OI, there is no evidence indicating that these land areas are contributing moderately or highly elevated PCBs or mercury to stormwater in the Santa Clara Valley. Therefore, these OI land areas are considered low priority for targeted controls, at least for the term of MRP 3.0. A total of 474 acres of the remaining OI land areas monitored by SCVURPPP are associated with moderately or highly elevated PCBs or mercury, and therefore are considered high priority areas for targeted control measure implementation during MRP 3.0.

For the 1,559 acres of OI land areas that are currently categorized as undetermined priority, where limited or no monitoring data are available to assist in the prioritization process, monitoring is planned to occur during MRP 3.0 or the subsequent permit term. Results from this monitoring will reclassify OI land areas into either the high or low categories, which may increase the acres of high priority areas where additional targeted control measures should be considered.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

Table 2.1. Old industrial (OI) land areas in the Santa Clara Valley fully addressed for PCBs and mercury prior to MRP 3.0 and those (remaining) areas that are not fully addressed for PCBs and mercury, and further prioritized for targeted controls.<sup>a</sup>

SCVURPPP Co-permittee	Total OI Land Area in 2002 (acres)	OI Land Areas Addressed for PCBs and Mercury Prior to MRP 3.0 <sup>b</sup> (Acres)		OI Land Areas Not Fully Addressed for PCBs and Mercury Prior to MRP 3.0 <sup>c,d</sup> (acres)		
		Source Properties Referred to Regional Water Board	Addressed by Low Impact Development or Green Stormwater Infrastructure	High Priority <sup>d</sup>	Low Priority <sup>e</sup>	Undetermined Priority <sup>f</sup>
Campbell	119	--	11	0.53	48	59
Cupertino	183	--	49	--	92	42
Los Altos	2.0	--	--	--	2.0	--
Los Gatos	31	--	10	--	19	1.7
Milpitas	387	--	91	--	248	48
Mountain View	405	--	118	54 (50)	163 (71)	49
Palo Alto	451	--	110	50 (17)	181 (2)	109
San Jose	3,448	5.1	920	168	1,472 (32)	883 (77)
Santa Clara	1,019	12.3	209	147	468 (45)	183
Unincorporated Santa Clara County	293	--	0.50	--	168 (12)	124
Saratoga	44	--	0.56	--	5.4	38
Sunnyvale	1,127	70.2	745	56	234 (42)	22
<b>TOTALS</b>	<b>7,509</b>	<b>88</b>	<b>2,264</b>	<b>474 (67)</b>	<b>3,122 (204)</b>	<b>1,559 (77)</b>
		<b>2,352</b>		<b>5,156</b>		

<sup>a</sup> July 1, 2021 is the date used to denote whether a control was implemented before or during MRP 3.0.

<sup>b</sup> These old industrial (OI) land areas include those areas that have been addressed by source property referral and abatement or LID/GSI as of July 1, 2021.

<sup>c</sup> These OI land areas include those areas that have not been addressed by source property referral and abatement or LID/GSI as of July 1, 2021.

<sup>d</sup> The acres shown in parentheses (349 acres total) were monitored during MRP 3.0 to date (i.e., through WY2024); results for WY22 and WY23 were used to categorize 272 acres of OI acres as high or low priority, while results for WY24 data (77 acres) are still pending.

<sup>e</sup> OI land areas associated with moderately or highly elevated PCBs or mercury based on monitoring data.

<sup>f</sup> OI land areas associated with low levels of PCBs and mercury based on monitoring data.

<sup>g</sup> OI land areas that have not been fully monitored.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

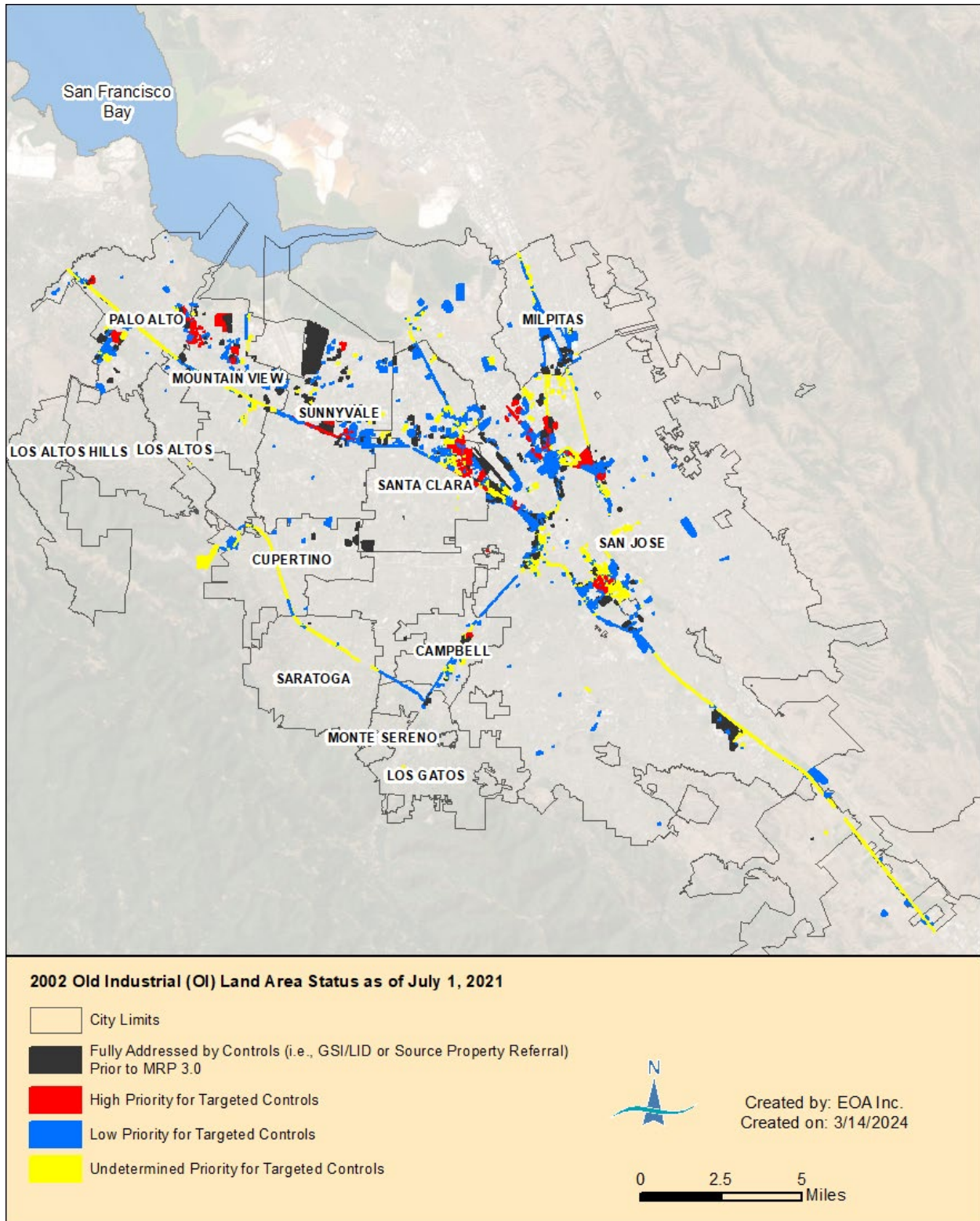


Figure 2.2. Geographical extent of land areas in the Santa Clara Valley identified as old (pre-1980) industrial land use in 2002 (i.e., starting date for the PCBs and Mercury TMDLs) categorized as fully addressed for PCBs and mercury or prioritized for targeted controls based on monitoring data.

As illustrated in Figure 2.2, the OI land areas that have not yet been addressed for PCBs or mercury and are prioritized for controls are geographically distributed throughout the Santa Clara Valley and are not located in a single or small number of stormwater catchments. As a result, the treatment of entire stormwater catchments (e.g., diversions to POTWs) is likely not a cost-effective or a technically feasible option for addressing PCBs and mercury (or other pollutants) associated with these areas.

## **2.2 Planned Additional Verification Monitoring During MRP 3.0**

The OI land areas in 31 catchments containing 789 acres of undetermined priority OI parcels were selected for Verification Monitoring during MRP 3.0. These catchments and the undetermined priority OI land areas within these catchments are shown on Figure 2.3.

Through WY2023, verification monitoring has been completed in 16 of the 31 catchments (i.e., ~300 acres of OI land areas). The outcomes from this monitoring have already informed the prioritization of these OI land areas into either the high or low priority categories, as shown on Figure 2.2 and in Table 2.1.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

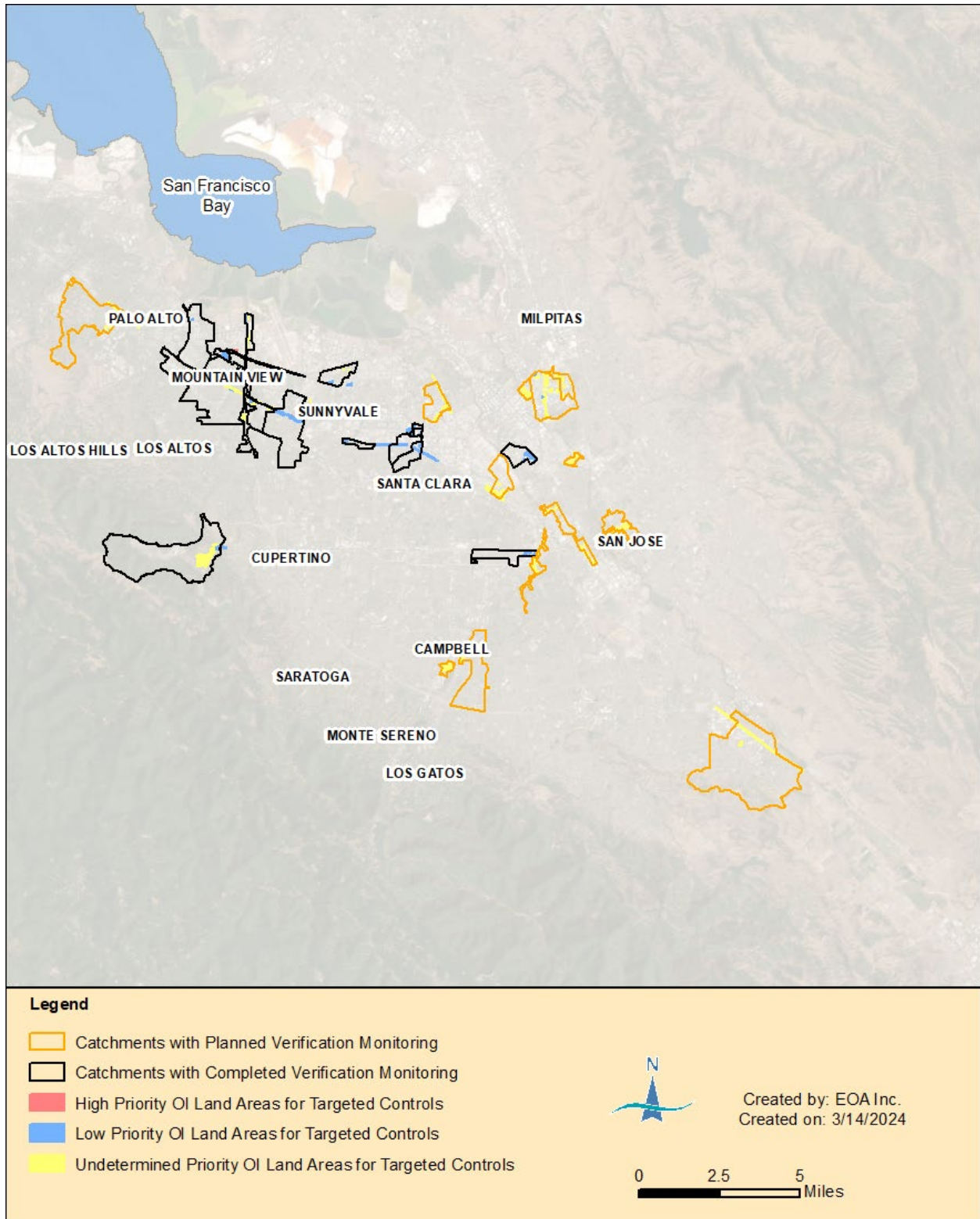


Figure 2.3 Stormwater catchments and associated old industrial (OI) parcels in the Santa Clara Valley where Verification Monitoring has been completed or is planned during MRP 3.0.

## MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

The remaining 15 catchments planned for Verification Monitoring during the permit term are presented in Table 2.2, along with the planned monitoring schedule. These 15 catchments represent more than 500 additional acres of OI land areas in the Santa Clara Valley. All OI land areas within catchments that are verified to have moderately or highly elevated PCBs or mercury through verification monitoring planned during MRP 3.0 will require Source Area Investigations as the next step, as described in the next section (Section 3.1).

**Table 2.2. Verification Monitoring planned by SCVURPPP during MRP 3.0 to reclassify undetermined priority old industrial (OI) parcels in the Santa Clara Valley.**

Catchment ID	Co-permittee	Undetermined Priority OI Land Areas (acres) <sup>a</sup>	Planned Sample Type	Implementation Schedule
036PCL800	San Jose	59	Stormwater	Planned WY2024
036PCL810	San Jose	9	Stormwater	Planned WY2024
067CTC150	San Jose	28	Sediment	Planned WY2024
PMC-D1	Santa Clara County	110	Stormwater	Planned WY2025
066GAC152	San Jose	46	Stormwater	Planned WY2025
049STA050	Santa Clara	37	Stormwater	Planned WY2025
130CNC022	San Jose	34	Stormwater	Planned WY2026
067CTC150	San Jose	28	Stormwater	Planned WY2026
083CTC350	San Jose	28	Stormwater	Planned WY2026
LGC-C3	San Jose	27	Stormwater	Planned WY2027
067GAC190	San Jose	27	Stormwater	Planned WY2027
050CTC100	San Jose	25	Stormwater	Planned WY2027
016MTC910	Palo Alto	23	Sediment	Planned WY2026
113LGC010	Campbell	23	Sediment	Planned WY2027
113LGC565	Campbell	23	Sediment	Planned WY2027
<b>Total Acres</b>		<b>527</b>		

<sup>a</sup> Undetermined priority OI parcels have not been fully addressed for PCBs and mercury and require monitoring to verify if they are associated with moderately or highly elevated PCBs or mercury concentrations.

### 3. TARGETED CONTROL MEASURE PROGRAMS

This section describes control measure programs that are targeted at addressing PCBs or mercury on high priority OI land areas, known to generate moderately or highly elevated PCBs or mercury.<sup>5</sup> The controls described are likely the most effective options for reducing pollutants associated with high priority OI land areas in the Santa Clara Valley. The targeted control measure programs currently being implemented or planned for implementation by SCVURPPP Co-permittees during the MRP 3.0 include the following:

1. *Controls for Properties with Moderately Elevated PCBs or Mercury;*
2. *Abatement of Highly Elevated PCBs or Mercury Source Properties; and*
3. *Controls for Public ROW Areas in Catchments with High Priority OI Land Areas.*

The overall goal of these targeted control programs is to identify and control contributions of moderately or highly elevated PCBs or mercury to stormwater. Additionally, these control measure programs will assist Co-permittees in achieving PCBs and mercury load reduction requirements described in MRP 3.0 Provisions C.11/12.c.

#### 3.1 Source Area Investigations

As described in Section 2.2, Verification Monitoring assists Co-permittees in classifying and prioritizing OI land areas for control measure implementation. Once an OI land area is classified as high priority, based on monitoring data, SCVURPPP begins to conduct a Source Area Investigation in the associated stormwater catchment. The purpose of a Source Area Investigation is to identify specific source properties or source areas in the catchment that disproportionately contribute moderately or highly elevated PCBs or mercury to stormwater. As demonstrated in Figure 3.1, the outcomes of a Source Area Investigation help determine the appropriate control measure program that should be implemented to address PCBs or mercury contributions from one or more properties/areas in the catchment. Once identified, source properties or areas will be subject to the additional controls described in Sections 3.2, 3.3, and 3.4 until all technically and economically feasible controls to reduce PCBs or mercury loads from the catchment have been implemented.

---

<sup>5</sup> As noted in Section 1.2, PCBs are considered elevated if concentrations in sediment are  $\geq 0.2$  mg/kg, or for stormwater samples if a PCBs particle ratio  $\geq 0.2$  mg/kg and/or a stormwater concentration  $>36$  ng/L (i.e., the top 15% of concentrations measured in stormwater across the Bay Area) are observed. Mercury is considered elevated if concentrations in sediment are  $\geq 0.3$  mg/kg, or for stormwater samples if a mercury particle ratio  $\geq 0.3$  mg/kg are observed.

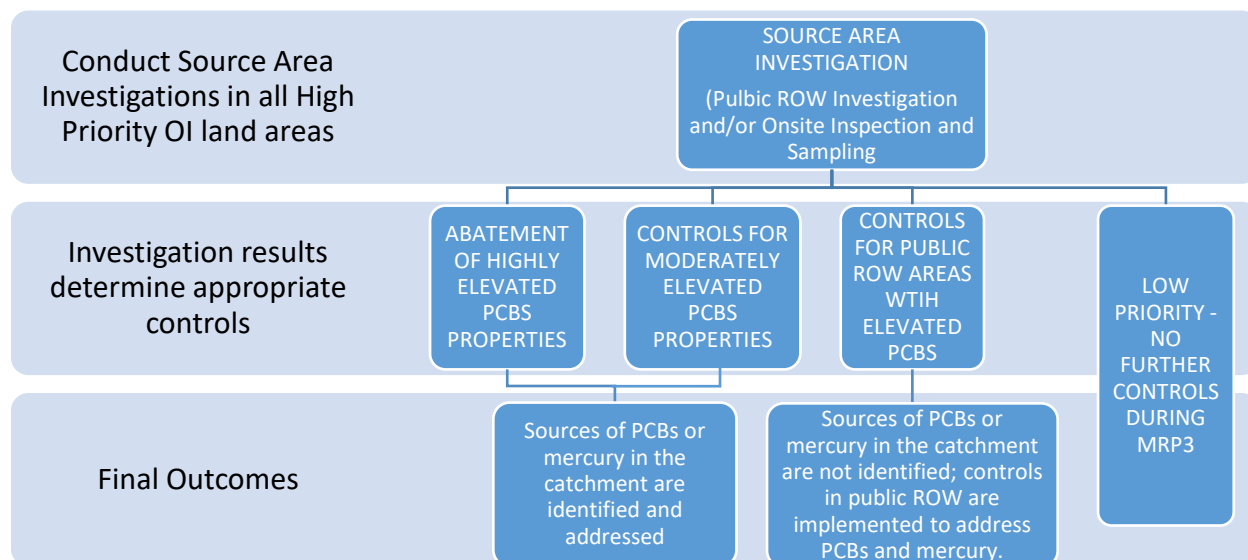


Figure 3.1. Flow chart demonstrating progression from Source Area Investigations through control measure implementation and final outcomes for high priority OI land areas.

SCVURPPP has conducted Source Area Investigations in high priority catchments since MRP 1.0, but with new and enhanced efforts to gain access to and collect samples on private properties, this program is expanding during MRP 3.0. These new and enhanced efforts will support further reduction of PCBs and mercury to stormwater by accomplishing the following objectives:

- 1) Expand the search for source properties to include moderate PCBs or mercury<sup>6</sup> sources in addition to high PCBs or mercury sources that have previously been the sole target, and
- 2) Identify additional source properties (both moderate and high) and (ultimately) control/abate.

Source Area Investigations are conducted in high priority catchments using a phased approach. The first phase is a Targeted Public ROW Investigation and the second phase is an On-site Inspection and Sampling. Each of these investigation phases are described below.

- Targeted Public ROW Investigation. This phase of investigation includes records review, public ROW surveys, and public ROW sampling. The information gathered during records review and public ROW surveys is used to inform development of a public ROW sampling plan. Samples are collected in public ROW locations that represents drainage or sediment release from suspect properties (typically OI parcels, but also other properties if records review/public ROW surveys indicate potential for PCBs or mercury sources on a given property). If any public ROW samples have elevated concentrations ( $\geq 0.2$  mg/kg for PCBs or  $\geq 0.3$  mg/kg for mercury), the parcels draining or contributing

<sup>6</sup> As described in Section 1.2, moderate PCBs and mercury are defined in MRP 3.0 as concentrations in sediment between 0.2 mg/kg and 0.5 mg/kg for PCBs, and between 0.3 and 1.0 mg/kg for mercury. High PCBs and mercury concentrations in sediment  $\geq 0.5$  mg/kg for PCBs and  $\geq 1.0$  mg/kg for mercury.

sediment to that location are prioritized for on-site investigation. There may also be catchments that had elevated screening-level samples, but subsequent public ROW sampling does not point to any specific property(ies) as the potential source. When this occurs, all suspect properties in the catchment will be prioritized for on-site investigation and sampling. This can occur for a variety of reasons, for example there may not be appropriate or accessible sampling locations within the public ROW that represent drainage from a given property. Also, it is important to note that while the presence of an elevated sediment concentration in the public ROW is usually a clear indicator of proximity to a source, a low sediment concentration may be found even if sources are nearby. This is because sediment concentrations can be highly variable over time and across small spatial scales, and this variability is likely to increase with distance from the source. In some cases, additional on-site data may not be needed to determine if a given property is a source of moderately or highly elevated PCBs or mercury. If the public ROW data provides clear evidence that a given parcel is a source of PCBs or mercury to the MS4, then that parcel will be prioritized for the appropriate program (i.e., *Controls for Properties with Moderately Elevated PCBs or Mercury or Abatement of Highly Elevated PCBs Source Properties*).

- On-site Inspection and Sampling: In this phase of investigation on-site inspections and sampling of suspect properties are conducted to determine if the property is a moderately or highly elevated source of PCBs or mercury. On-site inspections and sampling for PCBs and mercury are coordinated with existing municipal stormwater inspection programs. During the property inspection, SCVURPPP and Co-permittee staff gather information about the property, including:
  - Locations and descriptions of all on-site inlets and any other storm drain infrastructure that is directly connected to the MS4;
  - Locations of potential sediment migration off-site;
  - Locations and descriptions of potential sources of PCBs or mercury on the property;
  - Locations and types of best management practices (BMPs) in place to address sediment migration and provide stormwater treatment.

This information helps Co-permittees identify where sediment samples should be collected on the property, and will also facilitate development of control plans if sampling data confirm the property is a source of moderately elevated PCBs or mercury and subject to the *Controls for Properties with Moderately Elevated PCBs or Mercury* control program described in Section 3.2. SCVURPPP's monitoring contractor collects the sample(s) on the property with permission of the property/business owner.

If on-site samples do not have elevated PCBs or mercury, the property is re-categorized as low priority and no further action is required during the permit term. If on-site samples have elevated PCBs or mercury, the property is confirmed as a source of moderately or highly elevated PCBs or mercury. If samples are not collected on a given property, either because appropriate sample collection locations are not found on-site or because property/business owners refuse permission, additional inspections or other follow-up actions may be needed. If samples are not collected because property/business owners refuse permission, Co-permittees will evaluate and consider using all available legal remedies to collect samples on the property. Alternatively, Co-permittees may require property owners to submit and implement an approved plan to prevent release of sediment-bound pollutants to the MS4 in-lieu of collecting samples. This last option is currently under consideration by Co-permittees.

### Planned/Ongoing Source Area Investigations During MRP 3.0

As shown in Table 3.1, during MRP 3.0 to date, Source Area Investigations have been completed, are ongoing, or are planned in 15 catchments that contain more than 400 acres of high priority OI land areas targeted for control program implementation during MRP 3.0. These catchments are classified as high priority because previous Verification Monitoring found moderately or highly elevated PCBs or mercury. Public ROW investigation, and/or On-Site Inspection and Sampling, and implementation of appropriate controls based on the investigation outcomes will be conducted in these 15 high priority catchments during MRP 3.0 to identify and control the PCBs or mercury source(s) to stormwater. **High Priority Catchment Factsheets** that detail the ongoing or planned investigations and control measure implementation during MRP 3.0 in these 15 catchments, including catchment maps are provided in **Appendix A**.

SCVURPPP anticipates starting Source Area Investigations in these catchments during MRP 3.0. In order to achieve the C.11/12.b requirement to investigate 913 acres of OI land areas during the permit term, the Program estimates that investigations will need to be completed for about 200 acres of high priority OI land areas shown in Table 3.1, combined with completing investigations in at least 700 acres of undetermined priority OI land areas described in Section 2.2.

**Table 3.1. Stormwater catchments with high priority old industrial (OI) land areas that are targeted for Public ROW Investigations or On-site Inspections and Sampling in the Santa Clara Valley during MRP 3.0.**

Catchment ID <sup>a</sup>	Co-permittee	Investigation Type	High Priority OI Parcels <sup>b</sup> (acres)	Implementation Schedule
032SVC400	Mountain View	On-site Inspection/Sampling	20	Completed WY2022
017XXX010	Mountain View Palo Alto	Public ROW Investigation	48	Ongoing WY2023/24
017PMC600	Mountain View	On-site Inspection/Sampling	70 <sup>c</sup>	Ongoing WY2024
067CTC250	San Jose	On-site Inspection/Sampling	23	Planned WY2024
050GAC580	Santa Clara	Public ROW Investigation	113	Planned WY2024
033SVW955	Sunnyvale	Public ROW Investigation	1.4	Planned WY2024
034BFL230B	Sunnyvale	On-site Inspection/Sampling	12	Planned WY2024
		Public ROW Investigation	1.9	Planned WY2024
048SVE395	Sunnyvale	Public ROW Investigation	3.0	Planned WY2024
049CZC800	Sunnyvale	Public ROW Investigation	13	Planned WY2024
049SVE410	Sunnyvale	On-site Inspection/Sampling	10	Planned WY2024
017ADC600	Palo Alto	On-site Inspection/Sampling	9 <sup>b</sup>	Planned WY2025
		Public ROW Investigation	12	
050GAC020	San Jose	On-site Inspection/Sampling	38	Planned WY2025
050GAC400	Santa Clara	On-site Inspection/Sampling	0.4	Planned WY2025
		Public ROW Investigation	23	Planned WY2025
067CTC030	San Jose	Public ROW Investigation	12	Planned WY2025
113LGC030	Campbell	On-site Inspection/Sampling	0.5	Planned WY2026
<b>Total</b>			<b>410</b>	

<sup>a</sup>Stormwater Catchments have been described as Watershed Management Areas (WMAs) in previous reports.

<sup>b</sup> High priority OI parcels are available for controls and are located in catchments with moderately or highly elevated PCBs based on monitoring data.

<sup>c</sup> These acres are not OI parcels, but samples collected in the adjacent public ROW have moderately/highly elevated PCBs.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

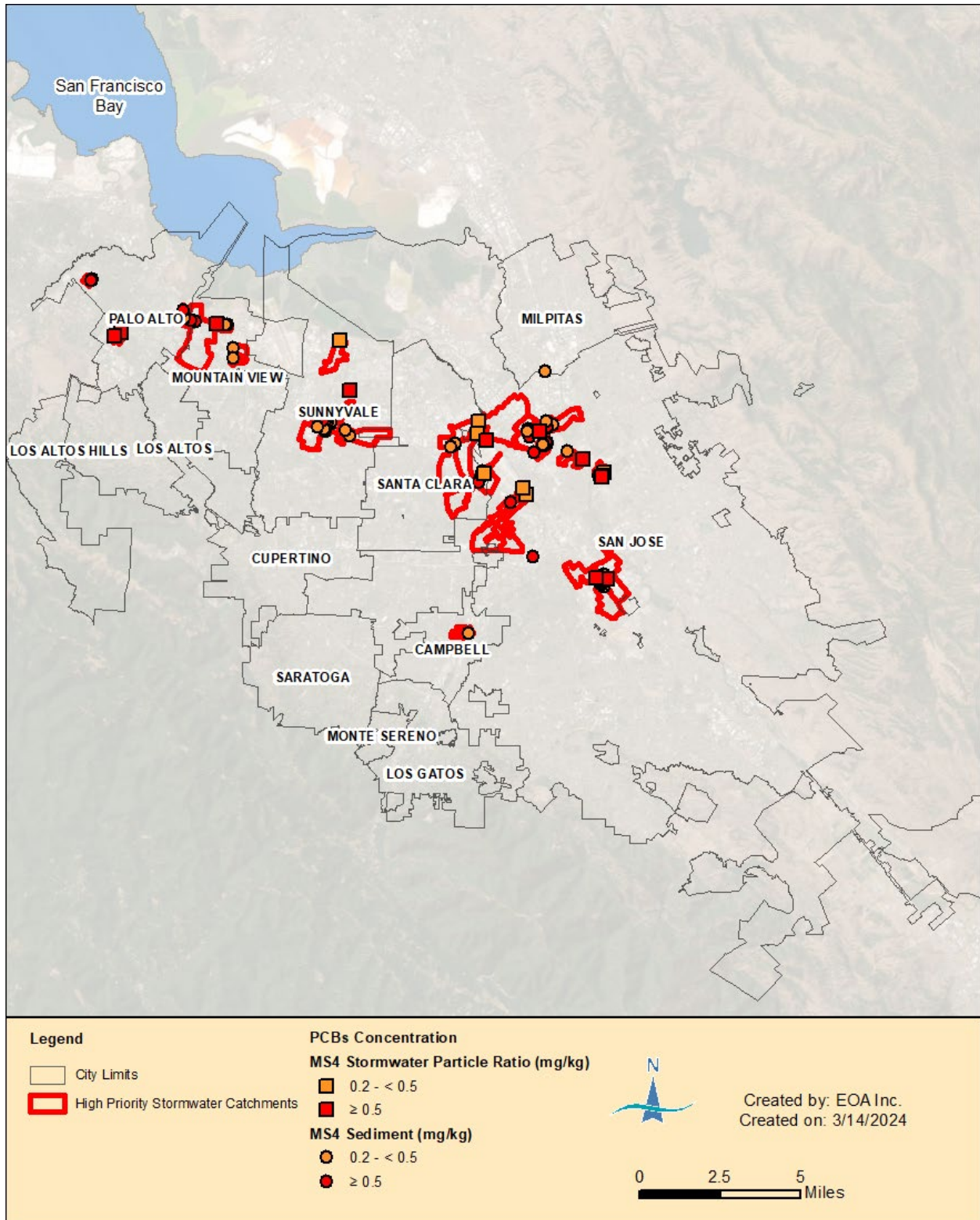


Figure 3.2. Stormwater catchments with high priority old industrial (OI) land areas that are targeted for Public ROW Investigations, On-site Inspections and Sampling and Targeted Control Programs in the Santa Clara Valley during MRP 3.0.

During MRP 3.0, Source Area Investigations are initially focused on the catchments identified in Table 3.1 and shown on Figure 3.2. However, as Verification Monitoring of undetermined priority OI land areas proceeds during the permit term, the Program anticipates that additional catchments will be verified as having moderate/high PCBs or mercury. These catchments with high priority OI land areas will then be added to the Source Area Investigation program. Given that this process is sequential, all high priority OI land areas identified during MRP 3.0 may not be fully investigated by the end of the permit term.

### **Other Actions to Support Implementation of the Control Program**

Since the effective date of MRP 3.0 (July 2022), SCVURPPP and its Co-permittees have also conducted a number of other actions to ensure the successful implementation of the new and enhanced On-site Inspection and Sampling tasks to support the identification of PCBs or mercury sources. SCVURPPP has worked with Co-permittees over the past year to develop the on-site inspection and sampling process and procedures, and to provide tools to support implementation. For example, SCVURPPP developed a number of supporting documents that are intended to inform property/business owners of the inspection and sampling process, and to provide general information about stormwater issues, PCBs and mercury, regulations, and controls. **Appendix B** provides drafts of these documents, which include the following:

- Property Owner Letter to Inspect and Collect Samples on-site Template; and
- Stormwater Pollutants Factsheet on PCBs and Mercury.

Although the overall On-site Inspection and Sampling process described in Section 3.1 above will be similar across all Co-permittees, implementation details will be tailored to each individual Co-permittee. Over the past year SCVURPPP staff has met multiple times with staff from the Cities of San Jose and Sunnyvale, the two cities where on-site inspection and sampling is planned to begin in FY 2023-24. The details of how each City will implement these actions were discussed and tailored. For example, the City of San Jose has decided to coordinate these inspections with their MRP 3.0 Provision C.3 Operation and Maintenance inspection team, and will develop a San Jose-specific letter to property owners to inform them in advance of the upcoming inspections. Full details of how each municipality implements these actions in coming years will be documented in future reports to the Regional Water Board.

In addition, all Co-permittees that have high priority OI land areas within their jurisdictions began reviewing their existing municipal codes over the past year and seeking input from their City Attorneys. The purpose of the review is to ensure that the Co-permittees have adequate authority to implement the new on-site inspection and sampling investigations described above, as well as other new MRP 3.0 requirements. To date, the outcomes of these reviews have varied across Co-permittees. While some Co-permittees are satisfied with the language in their current municipal codes, other Co-permittees are currently working on updates to more fully support implementation of the new or enhanced programs described in this Plan. These efforts are currently on-going and SCVURPPP will provide updates on the outcomes of these actions in future reports to the Regional Water Board.

## **3.2 Controls for Properties with Moderately Elevated PCBs or Mercury**

### **Control Measure Description**

This control program is a new effort developed by SCVURPPP during MRP 3.0 that targets properties that generate moderately elevated PCBs or mercury. This program to address moderate pollutant contributing properties (MPCPs) is focused on implementing control measures on-site, before PCBs or mercury can reach public ROWs and Co-permittee MS4s.

This control measure entails identifying properties with moderately elevated PCBs or mercury concentrations in sediments (0.2 to < 0.5 mg/kg for PCBs and 0.3 to < 1.0 mg/kg for mercury) through the source area investigations described in Section 3.1. Once identified, the control program includes tasks for Co-permittees to work directly with the property owners to cause the implementation of appropriate on-site controls. MPCPs can be addressed through voluntary actions by the responsible party (i.e., property owner, manager, and/or leasee/business owner) or through controls implemented by the responsible party as required by enforcement actions taken by a Co-permittee.

Following identification of an MPCP, Co-permittees (with support from SCVURPPP) work directly with the responsible party to cause implementation of appropriate controls on the property to prevent the release of PCBs or mercury to stormwater. The Co-permittee may require the responsible party to develop and implement a site-specific *Source Property Pollutant Control Plan*. The *Source Property Pollutant Control Plan* will identify all applicable PCBs or mercury sources and transport pathways on the property (e.g., stormwater runoff, wind, vehicle tracking, etc.) and the appropriate controls or BMPs that will be used to intercept each identified PCBs or mercury source/transport pathway.

The control program for MPCPs is still under development, but a preliminary outline of the implementation process and the party responsible for each step in the process is presented here.

**Step 1. SCVURPPP staff will compile and describe data used to identify each MPCP.** After an MPCP has been identified, SCVURPPP staff will prepare a brief technical memorandum that summarizes the relevant information gathered about the property during the source investigation. The memorandum may include information gathered during records review, inspections, and sampling, and will also include site maps that identify known or potential PCBs or mercury sources and transport pathways from the property to the MS4, as documented by SCVURPPP during site inspections.

**Step 2 Co-permittee staff will develop an internal Co-permittee work plan that describes the process and timeline to address each MPCP.** Co-permittee staff will review the technical memorandum and develop a site-specific work plan for each MPCP. The work plan will outline the steps that the Co-permittee will need to take to engage the responsible party and cause implementation of controls on the property to reduce the release of PCBs or mercury to the public ROW and the associated timeline. The work plan will address the following components:

1. Outline the process the Co-permittee will follow to inform responsible parties of the MPCP determination and next steps. This process may entail submitting a letter to the responsible party and following up with a scheduled meeting to provide information/guidance on required actions. In the letter and/or during the site visit, Co-permittees will inform responsible parties of the PCBs or mercury issue on their property, outline the requirements of the new control program for MPCPs, and provide guidance to responsible parties on next steps.
2. Identify the property abatement requirements. For example, the Co-permittee may require the responsible party to develop and implement a site-specific *Source Property Pollutant Control Plan* acceptable to the Co-permittee. The *Source Property Pollutant Control Plan* will document potential sources of PCBs or mercury on the property and associated transport pathways, and identify the control measure(s) that will be implemented to reduce/eliminate release of PCBs or mercury to MS4s via each source/pathway combination. Alternatively, the Co-permittee may provide the responsible party with a list of recommended site-specific controls, BMPs or other

## MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

actions that the responsible party can implement to reduce transport of PCBs or mercury from the property to the MS4. Responsible parties can choose to implement the recommended controls in lieu of developing their own PCBs or mercury control plan. The responsible party will be solely responsible for implementing the on-site control measures described in the *Source Property Pollutant Control Plan* or on the recommended list.

3. Identify potential enforcement actions or penalties for non-compliance (and associated timelines) that may be required to ensure the responsible party completes all requirements in a timely manner.
4. Determine follow-up actions to confirm the MPCP is appropriately controlled. For example, the Co-permittee may conduct follow-up inspections to ensure controls/BMPs are implemented and maintained as needed; or the Co-permittee may require the responsible parties to submit documentation to verify controls are in place and appropriately maintained.
5. Develop a schedule/timeline for all the work plan components to be implemented, including:
  - Informing the responsible party of the MPCP designation;
  - Submission of *Source Property Pollutant Control Plan* by the responsible party for Co-permittee review (if applicable);
  - Co-permittee review and approval of the *Source Property Pollutant Control Plan* (if applicable);
  - Control measure/BMP implementation schedule;
  - Follow-up actions; and
  - Any enforcement actions or penalties if appropriate.

**Step 3. Co-permittees will begin working with the Responsible Party to implement the internal work plan to address the MPCP.** SCVURPPP staff will provide guidance and support as needed.

Controls on MPCPs are expected to provide a relatively high load reduction benefit for PCBs (and potentially mercury). The benefit is estimated to reduce PCBs from the OI land-use based yield of 259 mg/acre/yr to the Old Commercial/Old Transportation land-use based yield of 49 mg/acre/yr (BASMAA 2022). There is not currently an approved method to account for mercury loads reduced as a result of implementing controls on properties with elevated mercury concentrations. This will need to be developed and approved by Regional Water Board in order to take mercury load reduction credit for these actions. As the program is implemented, there will be future opportunities to evaluate and document the load reduction benefits of these actions.

### **Planned/Ongoing Implementation During MRP 3.0**

Although this control program is new to MRP 3.0, SCVURPPP has already identified one MPCP in the Santa Clara Valley via On-site Inspection and Sampling, and anticipates identifying many more as on-site investigations continue during the permit term. The MPCP that has been identified to date is a 20-acre property located in stormwater catchment 032SVC400 in the City of Mountain View. SCVURPPP prepared a ***High Priority Catchment Factsheet*** for this catchment that identifies the MPCP on a map, and describes all existing and planned controls in the catchment during MRP 3.0 (**Appendix A**).

The MPCP property identified in catchment 032SVC400 was targeted for On-site Inspection and Sampling because in summer 2022, the City received information that PCBs were found on the

property as part of an ongoing hazardous materials investigation. Because this property is already on their current C.4 business inspection list, the City of Mountain View staff, with support from SCVURPPP, conducted an unannounced inspection and sample collection event at the property in August 2022. During the inspection, two sediment samples were collected from inlets on the property. One of these samples had moderate PCBs concentrations (0.21 mg/kg), confirming this property is an MPCP. The Program prepared a technical memorandum for the City of Mountain View that outlines the results of the investigation and identifies the next steps for this MPCP. The City is currently reviewing the memo and preparing to implement the MPCP process at this site.

At this time, no other MPCP properties have been identified in the Santa Clara Valley. However, given the upcoming (spring 2024) planned implementation of the enhanced efforts to collect samples on private properties as part of ongoing Source Area Investigations (as described in Section 3.1), SCVURPPP anticipates that new MPCPs will be identified during 2024. As these properties are identified, all MPCPs will be subject to this new control measure program.

### **Other Actions to Support Implementation of the Control Program**

SCVURPPP and Co-permittees conducted a number of other actions to ensure the successful implementation of the new program *Controls for Properties with Moderately Elevated PCBs or Mercury* to address MPCPs. SCVURPPP has worked with Co-permittees over the past year to develop the details of the control program, and to provide tools to support implementation. For example, SCVURPPP has developed both a template letter to inform property owners of the MPCPs control program, and a template for a *Source Property Pollutant Control Plan* that Co-permittees can provide to Property Owners so they can develop their site-specific control plans. SCVURPPP has also developed a fact sheet that identifies the types of controls/BMPs that will likely be needed on MPCPs to prevent release of sediment-bound PCBs or mercury from the property. Drafts of the *Source Property Pollutant Control Plan* template and the factsheet are provided in **Appendix B**.

In addition, as described earlier in this section, all Co-permittees that have high priority OI land areas within their jurisdictions began reviewing their existing municipal codes over the past year. The purpose of the review is to ensure adequate authority to implement the new control program for MPCPs as described above, as well as other new MRP 3.0 requirements. To date, the outcomes of these reviews have varied across Co-permittees, as described earlier in this section. These efforts are currently on-going and SCVURPPP will provide updates on the outcomes of these actions in future reports to the Regional Water Board.

## **3.3 Abatement of Highly Elevated PCBs or Mercury Source Properties**

### **Control Measure Description**

This control program is a continuation of the efforts implemented by SCVURPPP and Co-permittees since MRP 1.0. This program targets properties that contribute highly elevated PCBs ( $\geq 0.5$  mg/kg in sediment) or mercury ( $\geq 1.0$  mg/kg in sediment) to stormwater and is conducted in parallel to the control program for MPCPs. Highly elevated PCBs or mercury source properties are identified through research and monitoring (i.e., Source Area Investigations). Subsequent abatement of these source properties combined with focused control measure implementation in the public ROWs associated with these source properties can provide significant PCBs or mercury load reduction benefits. Property abatement may occur via actions taken by a property owner/manager voluntarily or as an outcome of enforcement actions brought against property owners by Co-permittees or through referrals to regulatory agencies (e.g., Regional Water Board, USEPA, etc.). Upon referral, Co-permittees conduct (or cause to

be conducted) interim enhanced O&M activities in the public ROW adjacent to referred properties or implement downstream treatment measures. These interim measures are intended to intercept historically deposited PCBs or mercury-laden sediment and prevent further discharge of PCBs or mercury from the source area until the property abatement is complete.

*Abatement of Highly Elevated PCBs Source Properties* provides the greatest PCBs load reduction benefit of all control measure programs (i.e., more than 20 times greater than the next most beneficial control measure). As such, identifying and abating highly elevated PCBs source properties has been and remains the most effective control measure for reducing PCBs loads from OI land areas in the Santa Clara Valley. The BASMAA Source Control Load Reduction Accounting for RAA document (BASMAA 2022) that Co-permittees are required to use for calculating pollutant load reductions during MRP 3.0 does not currently provide a method to account for mercury load reductions for source property abatement. However, if monitoring data demonstrate PCBs source properties are also mercury source properties (i.e., mercury  $\geq$  1.0 mg/kg in sediment), Co-permittees will evaluate the available data and develop a method to account for mercury load reductions that will occur as a result of property abatement actions, pending Regional Water Board approval of the new methodology.

### **Planned/Ongoing Implementation During MRP 3.0**

The *Abatement of Highly Elevated PCBs or Mercury Source Properties* program has continued since the adoption of MRP 3.0 and will continue during the entire permit term. Through on-going source area investigations, SCVURPPP has recently identified ten (10) highly elevated PCBs source properties (70 acres) that will require abatement actions during MRP 3.0. These 10 properties are located in 7 different catchments in the Cities of Palo Alto, San Jose, and Santa Clara. The current status and planned actions to address each of these highly elevated PCBs source properties is summarized below. Additional information, including maps that identify each confirmed source property, the potential enhanced O&M activities, and other on-going or planned controls in the seven (7) catchments targeted for source property referrals during MRP 3.0 is detailed in the **High Priority Catchment Factsheets** provided in **Appendix A**.

#### ***Palo Alto Highly Elevated PCBs Source Property – Catchment 031SCH250***

In January 2024, the City of Palo Alto submitted a source property referral to the Regional Water Board for a 19.3 acre multi-parcel property located at 3130-3100 Hansen Way and the parking lot of the property at 1001 Page Mill Road. The referral included an enhanced O&M plan which was approved by Regional Water Board staff prior to referral submission. The enhanced O&M plan entails an annual video and cleanout of the main public storm drain line that runs under the source property and continues downstream through the catchment. The City of Palo Alto is planning to conduct the first video and storm drain line cleanout during the upcoming dry season (summer 2024).

#### ***San Jose Highly Elevated PCBs Source Properties – Catchments 051CTC275, 051CTC400, 051CTC450, 067SCL080 and 083GAC900***

Eight of the recently confirmed source properties are located in 5 stormwater catchments in the City of San Jose, including:

- 1815 - 1775 Monterey Road and 60-64 Barnard Ave (13 acres);
- 1800-1900 Monterey Road (14 acres);
- 1788 Rogers Ave (1.9 acres);
- 1726 Rogers Ave (1.4 acres);
- 1645 Old Bayshore Highway (0.24 acres);
- 701 Kings Row (4.0 acres);

## MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

- Railroad easement (5.7 acres);
- 520 North Marburg Road (8.9 acres).

The City of San Jose is planning to submit referrals to the Regional Water Board for all of these properties during MRP 3.0. City staff are currently evaluating the enhanced O&M actions that could be implemented in the vicinity of these properties and preparing the referral paperwork. During the next few months, City staff will reach out to Regional Water Board staff to discuss these properties and receive approval for the enhanced O&M plans. The City is considering other enhanced O&M options for properties without stormwater treatment systems and high-flow capacity stormwater treatment systems (i.e., HDS units) in downstream locations that drain the confirmed source properties, including storm drain line flush and capture, street sweeping, enhanced storm drain inlet and pump station cleanouts. The City anticipates submitting referrals to the Regional Water Board for six of the properties this year, and the remaining two properties in the following year.

### *Santa Clara Highly Elevated PCBs Source Property – Catchment 066GAC150*

The final confirmed source property is a 1.9-acre property located at 280 Martin Avenue. Program and City staff are currently evaluating the available options to address this property, which may include submission of a new source property referral to the Regional Water Board during MRP 3.0. The City may also decide to work directly with the property owner to abate or cause the property to be abated. SCVURPPP and City staff are also currently evaluating appropriate enhanced O&M actions that could be implemented in the vicinity of this confirmed source property.

## **3.4 Control Program for Public ROW Areas in Catchments with High Priority OI Land Areas**

### **Control Measure Description**

This control program focuses on high priority catchments with moderately or highly elevated PCBs or mercury where a source property cannot be identified via source area investigations. If PCBs or mercury source properties cannot be identified in high priority catchments through the investigation process, Co-permittees will evaluate how alternative controls (e.g., enhanced O&M activities) may address PCBs or mercury in the applicable public ROW areas within the catchment.

The set of alternative controls evaluated will be site-specific and will focus on intercepting PCBs or mercury from the public ROW within catchments with observed (and verified) moderate or high levels of PCBs or mercury. An evaluation process will take place after a source area investigation has been completed in the catchment. The evaluation process will help Co-permittees identify the best control measure options for a given location. This process will follow the control measure evaluation and selection process that is outlined in the Clean Watersheds for a Clean Bay (CW4CB) Guidance Manual that was developed by BASMAA (2017). The CW4CB control measure selection process was developed to assist municipal agencies in selecting control measures at the site or catchment scale to address PCBs or mercury in municipal stormwater runoff. Controls in the CW4CB Guidance Manual include enhanced O&M activities (e.g., street sweeping, catch basin cleaning, pipe cleaning) and retrofitting public streets with GSI or other stormwater treatment controls (i.e., media filters, HDS units, etc.). The CW4CB evaluation and selection process identifies the factors that should be considered for each of these types of controls, including cost; load reduction potential; opportunity/feasibility; safety, and implementation challenges. Additional control-measure specific and site-specific factors are also identified for consideration in the CW4CB Guidance Manual. These factors will

be incorporated into a control measure scoring spreadsheet that will be used to score and rank the different controls for specific situations. This evaluation process will serve as the basis for control measure selection to address public ROW areas in high priority catchments where PCBs or mercury source(s) cannot be identified.

### **Planned/Ongoing Implementation During MRP 3.0**

Implementation of the *Control Program for Public ROW Areas in Catchments with High Priority Ol Land Areas* in a given location during MRP 3.0 is contingent on first completing the source area investigation process within that catchment. Because Source Area Investigations are currently ongoing or planned in all catchments that contain Ol land areas that are available for controls, no catchments are currently targeted for this control program. However, as the permit term progresses, if Source Area Investigations are completed in a catchment and moderately or highly elevated PCBs or mercury source properties are not identified, then Co-permittees will delineate the drainage area and follow the process described in the CW4CB Guidance Manual to select and implement additional controls to reduce stormwater loads of PCBs or mercury from the catchment.

## 4. OTHER CONTROL MEASURE PROGRAMS

This section presents information about ongoing planning and implementation of *Other Control Measures* that may provide important PCBs and mercury load reduction benefits when implemented on OI land areas. Other Control Measures include:

- Green Stormwater Infrastructure (GSI):
  - Parcel-based Low Impact Development (LID);
  - Public Green Streets and Regional GSI Projects;
- High-Flow Capacity Stormwater Treatment Systems (e.g., HDS Units); and
- Inlet-based Stormwater Screening Devices.

These types of controls are primarily implemented for purposes other than the reduction of PCBs or mercury, and often by private parties to address stormwater impacts associated with their properties. This section describes these types of controls and the assessment that Co-permittees will conduct to confirm if these controls will provide PCBs and mercury load reduction benefits when implemented in catchments that may not have verification monitoring demonstrating moderately or highly elevated PCBs or mercury concentrations in stormwater. This section also describes a new monitoring program that is under development to provide data to evaluate the collective benefits of these control measures at the catchment scale.

### 4.1 Green Stormwater Infrastructure

#### Control Measure Description

GSI uses vegetation, engineered soils, and natural processes to manage water and create healthier urban environments. GSI can treat stormwater to remove pollutants and protect water quality, store stormwater (direct water to stable storage areas away from roads and other development), and infiltrate treated water back into the groundwater table (replenishing the groundwater table). At the scale of a neighborhood or project site, GSI refers to stormwater management systems and features that mimic nature by absorbing and storing water. The two major categories of GSI measures that will be implemented during MRP 3.0 are described below.

- Parcel-based Low Impact Development (LID) - All Co-permittees' currently require developers to submit applications for proposed new development and redevelopment projects to their Planning Departments for approval prior to construction. All projects that exceed the MRP 3.0 Provision C.3.b thresholds for Regulated Projects are required to implement LID techniques. In addition, all stormwater treatment on Regulated Projects must meet the C.3.d numeric sizing criteria for stormwater treatment systems. Implementation of LID through redevelopment activities on private and public properties has been and will continue to be one of the most effective control measures available for reducing pollutant loads from OI land areas.
- Public Green Streets and Regional GSI Projects – These types of projects include retrofit of GSI into existing developed areas within the public ROW or on public parcels. Along or within a street or public ROW, these measures are referred to as Green Street measures. When parcel-based GSI measures capture runoff from on-site and off-site areas, they are referred to as Regional Projects. Generally located on publicly-owned lands, Regional Projects may involve collaboration among multiple municipalities and/or public agencies to construct large GSI projects that capture and treat stormwater from large drainage areas.

## **Current and Anticipated Level of Implementation**

### *Parcel-based Low Impact Development (LID)*

All SCVURPPP Co-permittees are continuing to use their planning authorities to ensure that applicable new development and redevelopment projects address stormwater runoff pollutants through the implementation of LID techniques, as required by MRP 3.0 Provision C.3. The majority of the processes and programs needed for Co-permittees to implement these requirements are already in place and Co-permittees plan to continue these efforts, as well as enhance and update systems and processes as needed to ensure new requirements in MRP 3.0 will be fully implemented.

Table 4.1 and Figure 4.1 present the OI land areas that have been or are anticipated to be redeveloped during MRP 3.0.<sup>7,8,9</sup> Countywide, 40 acres of OI land areas have been redeveloped as C.3 Regulated Projects since July 1, 2021, the cutoff date for accounting for actions implemented in compliance with MRP 3.0 Provisions C.11/12.c. Of these 40 acres, 15 acres are located in high priority catchments with moderately or highly elevated PCBs. Another 18 acres are located in undetermined priority catchments that have not yet been monitored, and the remaining 7.4 acres are in low priority catchments where monitoring to date has only found low levels of PCBs. There are also an estimated 422 acres of OI parcels that are currently anticipated to undergo redevelopment during MRP 3.0. Of these 422 acres, 185 acres are located in high priority catchments, 123 acres are located in undetermined priority catchments, and 113 acres are in low priority catchments.

While it is possible that not all of the “anticipated” GSI/LID projects summarized in Table 4.1 will be completed by the end of the MRP 3.0 term due to project delays, Co-permittees anticipate that the majority of these projects will be constructed by June 30, 2027. Further, there will likely be additional LID facilities constructed via redevelopment projects not included in these estimates that will be constructed during the permit term due to the reduced thresholds in MRP 3.0 for Regulated Projects, which became effective in July 2023.

All existing and planned/anticipated parcel-based LID projects that are located in undetermined and low priority catchments will be required to demonstrate PCBs or mercury load reductions achieved in order to claim credit for these projects under C.11/12.c. This information may include new monitoring data, information on historical parcel use, hazardous materials information from environmental impact reports (EIRs), etc. Co-permittees will conduct an assessment of each completed parcel-based LID project prior to claiming PCBs or mercury load reduction credit under C.11/12.c. Available information will be compiled and evaluated during the assessment to determine if there is adequate justification to claim a PCBs or mercury load reduction credit for a GSI/LID project.

---

<sup>7</sup> Based on information available as of the writing of this report.

<sup>8</sup> Projects completed between July 1, 2021 and June 30, 2027 are eligible for load reduction credit under MRP 3.0.

<sup>9</sup> Co-permittees identified “anticipated” LID projects by reviewing project permit applications received as of approximately December 2022. Projects that qualify as C.3 Regulated Projects deemed likely to be completed during the permit term that will address OI land areas were identified.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

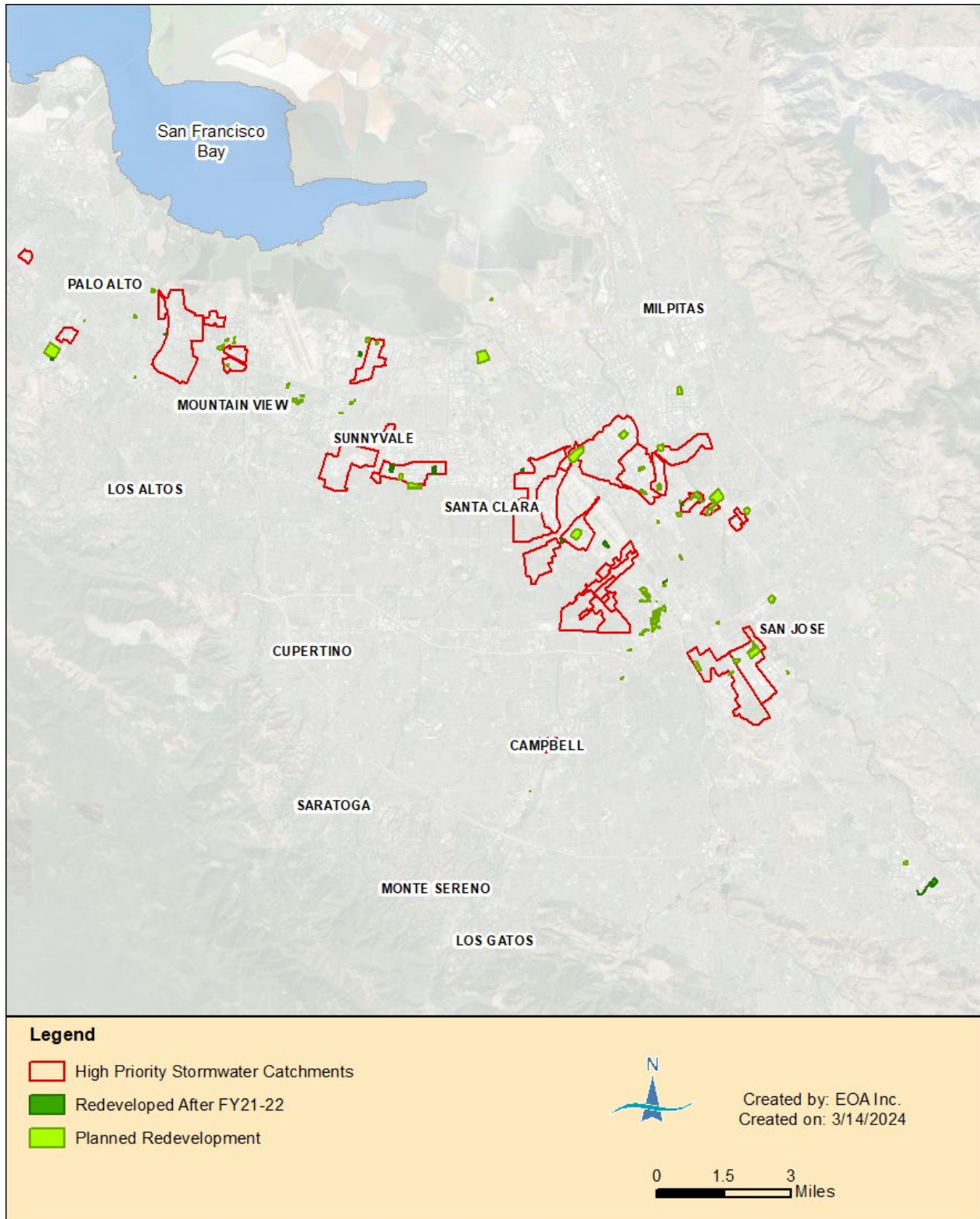


Figure 4.1. Locations where parcel-based Low Impact Development (LID) projects have been recently completed or are anticipated during MRP 3.0, including those within high priority catchments with moderately or highly elevated PCBs.

Table 4.1. Extent of land areas in high, undetermined and low priority catchments<sup>a</sup> in the Santa Clara Valley where parcel-based Low Impact Development (LID) projects have been recently completed or are anticipated during MRP 3.0.

Catchment Priority	SCVURPPP Co-permittee	Parcel-based LID Redevelopment Projects in MRP 3.0 (Acres of OI Parcels)		
		Constructed	Anticipated/ Planned	Total
High	Campbell	0.3	1.7	2.0
	Mountain View		1.3	1.3
	San Jose	1.5	154	156
	Santa Clara	5.8	21	27
	Sunnyvale	7.1	6.8	14
	<b>Subtotal</b>	<b>15</b>	<b>185</b>	<b>200</b>
Undetermined	Campbell		0.4	0.4
	Mountain View		4.3	4.3
	Palo Alto	2.3	7.9	10
	San Jose	16	55	71
	Santa Clara		36	36
	Sunnyvale		20	20
<b>Subtotal</b>	<b>18</b>	<b>123</b>	<b>141</b>	
Low	Mountain View		26	26
	Palo Alto		47	47
	San Jose	0.7	37	38
	Santa Clara	3.7		3.7
	Sunnyvale	3.0	3.4	6.4
	<b>Subtotal</b>	<b>7.4</b>	<b>113</b>	<b>120</b>
<b>Totals</b>		<b>40</b>	<b>422</b>	<b>462</b>

<sup>a</sup> High priority catchments have moderate/high PCBs in the catchment based on monitoring data; Undetermined priority catchments have not yet been monitored, and Low priority catchments have low PCBs in the catchment based on monitoring to date.

To further support these efforts, and in general, provide more data to better understand the PCBs or mercury load reduction benefits of LID projects at the catchment scale, SCVURPPP Co-permittees are also developing a new monitoring program that will begin during MRP 3.0. The full details of this new monitoring effort are still under development, but the overall plan is to identify catchments with completed C.3 LID projects, for which pre-redevelopment PCBs or mercury data are available (at the catchment, sub-catchment, or parcel scale). Post-redevelopment monitoring will be conducted and the results compared to pre-redevelopment monitoring data. The Program has already identified one catchment (017PMC600) in the Santa Clara Valley where this type of monitoring is currently being planned. Catchment 017PMC600, located in the City of Mountain View, will be targeted for post-redevelopment monitoring during the permit term. Additional information about this catchment, including a map of existing monitoring data, the extent of existing C.3 redevelopment, and other controls in the catchment is provided in the **High Priority Catchment Factsheet (Appendix A)**.

The Program is also reviewing existing monitoring data and locations of recent redevelopment to identify other locations where this type of post-redevelopment monitoring could be conducted and compared to pre-redevelopment monitoring data.

#### *Green Streets and Regional GSI Projects*

Co-permittees are also continuing to implement their Municipal GSI Plans<sup>10</sup> that were developed during MRP 2.0 to identify, prioritize, design and implement public GSI projects during MRP 3.0. These efforts include the following actions:

- Annual reviews of Capital Improvement Plan (CIP) projects to identify any opportunities to incorporate GSI into CIP projects and evaluate feasibility. As part of this review, Co-permittees are conducting site reconnaissance, drainage area delineation, and cost analysis to determine which projects can include a GSI component;
- Evaluation of non-CIP project opportunities;
- Coordination with private development – Co-permittees continue to explore options for working with private property developers to install GSI facilities in public ROWs near redeveloped properties, such as along street frontages;
- Evaluation of opportunities identified in SCVURPPP's Stormwater Resource Plan (SWRP);
- Redevelopment in OI/moderate PCBs or mercury areas – Co-permittees are exploring opportunities to install GSI facilities in these areas as they are redeveloped;
- Continue to update and maintain the list of GSI projects that are planned for implementation, and infrastructure projects that have potential for GSI measures (Co-permittees submit these lists to the Regional Water Board each year with Annual Reports); and
- Continue to explore future funding options and identify resources for implementing GSI projects.

Co-permittees will continue to evaluate the extent of implementation, feasibility, locations, and funding options for additional GSI project opportunities during MRP 3.0. These new analyses may focus on the increased emphasis on addressing OI land areas, as well as the new C.3.j numeric GSI retrofit requirements in MRP 3.0. For the Santa Clara Valley, the countywide numeric retrofit target identified in MRP 3.0 Provision C.3.j is 46.09 acres of area treated by GSI projects during the permit term. Each municipal agency is required to address between 0.2 and 5.0 acres (prorated based on population) of land area via GSI retrofit projects.

In addition to the planning underway by each Co-permittee to address Provision C.3.j targets, there is also one large regional project in the City of San Jose that is currently under construction. This project is shown on Figure 4.2 and summarized below.

- River Oaks Stormwater Capture Project - The City of San Jose received grant funding to support this project and the City provided matching funds. Construction began in 2023

---

<sup>10</sup> City of Campbell 2019, City of Cupertino 2019, City of Los Altos 2019, City of Milpitas 2019, City of Monte Sereno 2019, City of Mountain View 2019, City of Palo Alto 2019, City of San Jose 2019, City of Santa Clara 2019, City of Saratoga 2019, City of Sunnyvale 2019, County of Santa Clara 2019, Town of Los Gatos 2019, Town of Los Altos Hills 2019

and will be completed in 2024. The project will collect and treat stormwater runoff from approximately 344 acres of impervious and pervious surfaces prior to its discharge into the Guadalupe River. The catchment is primarily high-density residential and commercial land uses, with some open space. The project will modify the existing pump station and retrofit the existing stormwater detention basin to divert and treat stormwater runoff, and also convert the site into a publicly accessible bioretention area with recreational, aesthetic and educational features. The project will divert both dry and wet weather flows from the existing pump station into a large bioretention basin that will provide stormwater treatment prior to discharge to the Guadalupe River. The site where the bioretention basin will be constructed currently contains a stormwater detention basin used for flood control. The treated flows from the bioretention basin will be captured by underdrains and discharged to the Guadalupe River by a new pump station.

Additionally, SCVURPPP and Co-permittees are working through the Bay Area Municipal Stormwater Collaborative (BAMSC) to identify new funding sources for GSI implementation in the Santa Clara Valley and throughout the region. One such funding source is the new Region 9 USEPA San Francisco Bay Program Office established through recent federal legislation. The new SF Bay Program Office anticipates receiving federal funding annually to support the implementation of projects that protect and restore the SF Bay. The current priority list for projects includes those that implement GSI and address the PCBs TMDL for the SF Bay. SCVURPPP is currently working with the BAMSC to establish a process at the regional scale to identify, rank, and select high priority projects for funding consideration through the new SF Program Office. SCVURPPP will provide updates on the status of establishing and implementing this new project prioritization and selection process in future reports to the Regional Water Board.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

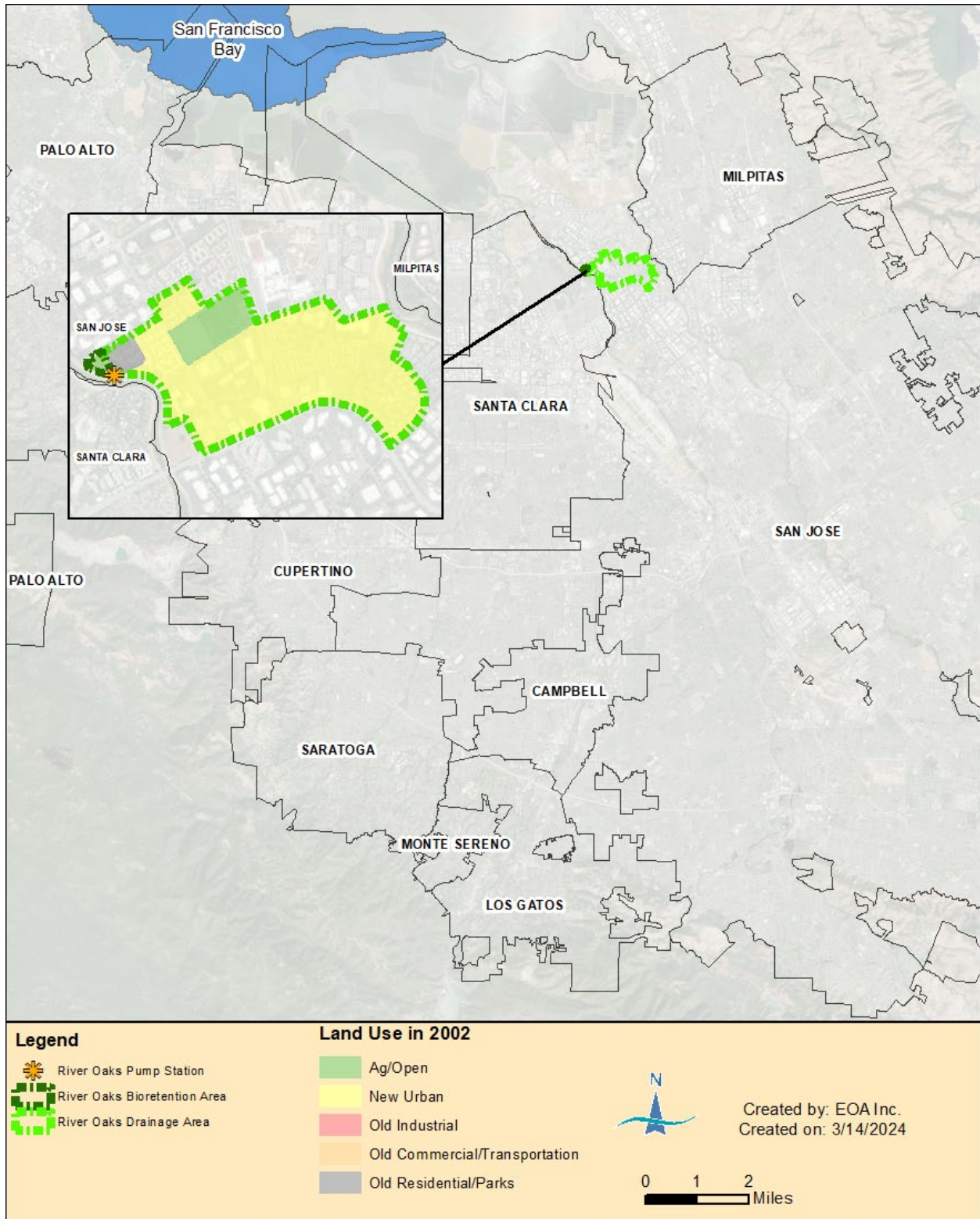


Figure 4.2. Planned location and drainage area of the anticipated River Oaks Stormwater Capture Project in the City of San Jose, CA.

## 4.2 Other Types of Stormwater Treatment Systems

### Control Measure Description

The stormwater treatment systems described in this section are devices or series of devices that trap all particles retained by a 5 mm mesh screen and have a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour storm in the tributary drainage catchment area. These devices are grouped into two general categories: 1) high-flow capacity systems that treat stormwater runoff from hundreds of acres (i.e., large devices), and 2) inlet-based stormwater screening devices that typically treat stormwater runoff from two or less acres of land (i.e., small devices). Because the State Water Board has certified a variety of these proprietary devices as achieving full trash capture, these systems are primarily installed for the purposes of MRP Provision C.10 (trash load reduction) compliance. However, when installed in drainages that contain moderately or highly elevated PCBs or mercury, these systems also reduce PCBs and mercury in direct proportion to the total suspended solids (TSS) removal efficiency (BASMAA 2018).

High-flow capacity stormwater treatment systems include hydrodynamic separators (HDS), debris separating baffle boxes (DSBBs), and gross solids removal devices (GSRDs). HDS devices are flow-through structures that use the tangential forces created by the incoming flow of water to separate trash, debris and sediment, oil and other pollutants from stormwater. These devices rely on a circular chamber to swirl the flow and a settling or separation unit to remove pollutants. Baffle boxes are subsurface rectangular vaults that are placed in line with the storm drain system to reduce pollutant loadings by capturing sediments, gross solids, and associated pollutants. Treatment mechanisms typically include filtration, hydrodynamic separations, and adsorption. These units are installed as sub-surface vaults commonly subdivided into a series of chambers by vertical baffles that interrupt the stormwater flow and promote capture of suspended particles by sedimentation. GSRDs use various screening technologies to remove trash, debris, and solids 5 mm and larger from stormwater runoff. These screens provide treatment by preventing solids larger than the screen opening from passing through. The PCBs and mercury removal efficiencies for these high-flow capacity stormwater treatment systems range from 14% (GSRDs) to 20% (HDS and Baffle boxes) (BASMAA 2022).

Inlet-based stormwater screening devices are generally screens or baskets that are installed in storm drain inlets and typically treat stormwater runoff from an acre or less of land. These devices can also provide PCBs or mercury load reductions due to the trapping and removal of contaminated sediment. When maintained appropriately, the PCBs and mercury removal efficiencies for these devices is approximately 18% (BASMAA 2022).

### Current and Anticipated Level of Implementation

During MRP 3.0, Co-permittees are continuing to evaluate and plan for the installation of additional high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices in the Santa Clara Valley to achieve trash, PCBs and mercury load reduction benefits. The systems that have been installed during MRP 3.0 to date, or are planned (i.e., currently funded) or proposed (currently undergoing feasibility analysis) for installation during MRP 3.0 and their estimated drainage areas are shown on Figure 4.2. The locations of OI land areas that are/will be treated by these systems are also shown on Figure 4.2. Tables 4.2 and 4.3 present additional information about installed and planned treatment systems shown on Figure 4.2. Since July 1, 2021, Co-permittees have installed 227 new inlet-based stormwater screening devices in high priority stormwater catchments with moderately or highly elevated PCBs, and are currently planning to install one new high-flow capacity stormwater treatment system that will treat 145 acres of OI parcels in a high priority catchment during the permit term

## MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

(Table 4.2). Additional systems and devices have been installed during the permit term that are located in catchments containing undetermined or low priority OI areas (Table 4.3). These systems address about 11 acres of OI land areas.

Additional information on the drainage areas and locations of newly installed or planned devices that are located in high priority catchments is detailed in the ***High Priority Catchment Factsheets*** provided in **Appendix A**. Installations of high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices that are not located in high priority catchments will require additional information to demonstrate PCBs or mercury load reductions. For the purpose of C.11/12.c performance metrics, the PCBs or mercury load reduction credit for these projects will only apply to those projects that can provide sufficient evidence of PCBs or mercury in the treated catchment. The assessment that will be conducted to demonstrate this is the same as that described for LID/GSI projects in Section 4.1.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

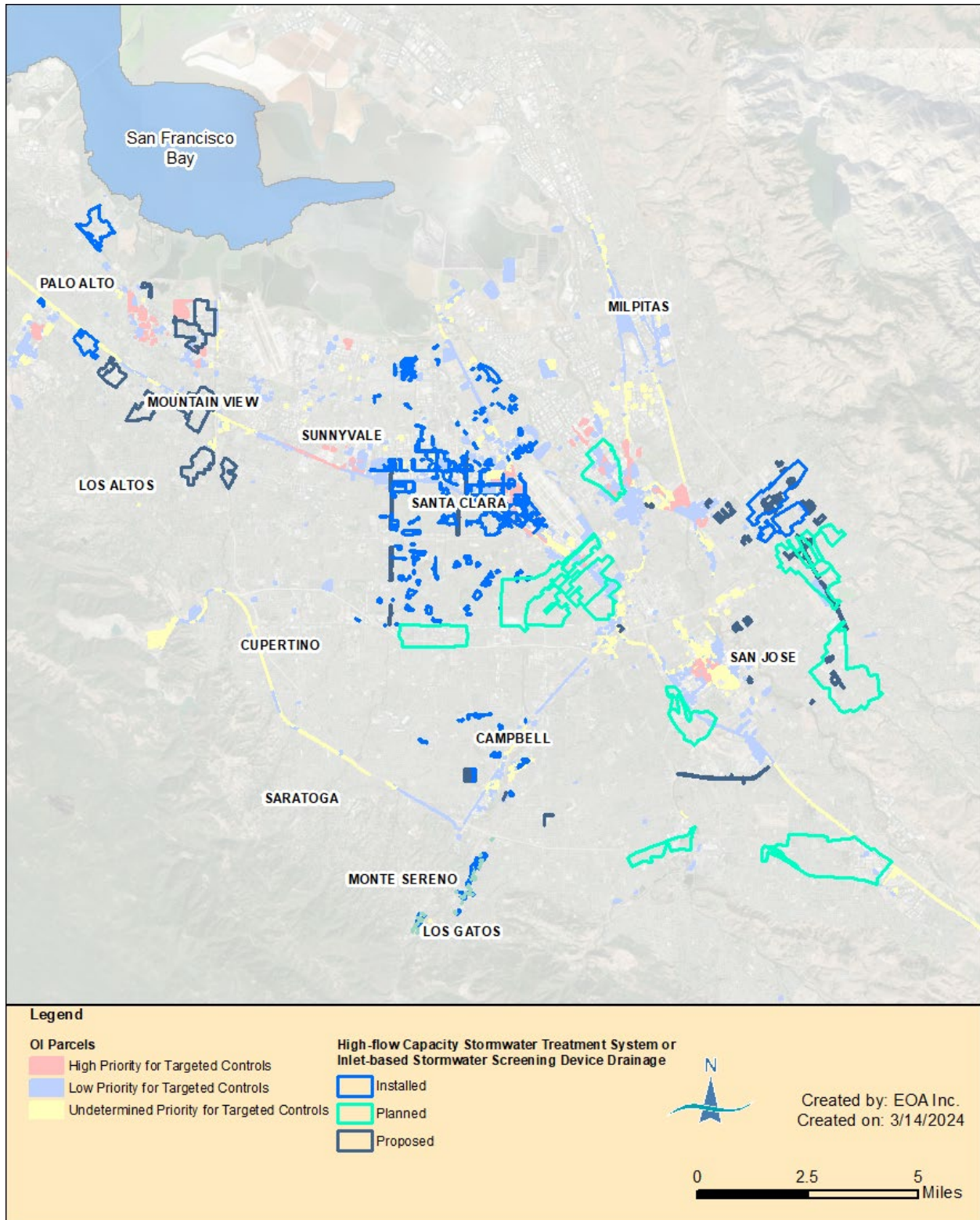


Figure 4.3. Drainage areas for high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices installed, planned or proposed for installation during MRP 3.0.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

**Table 4.2 Drainage areas and associated land uses for high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices installed or planned for installation during MRP 3.0 in high priority stormwater catchments with moderately or highly elevated PCBs or mercury.**

Co-permittee	High Priority Stormwater Catchment	Status (Installed after July 1, 2021 or Planned)	Device Type	Device Count	Acres Treated					
					Old Industrial	Old Commercial/ Old Transportation	Old Residential	New Urban	Ag/Open	Totals
San Jose	050GAC020	Planned	High-flow capacity Stormwater Treatment	1	--	1.4	--	--	1.1	2.6
	051CTC275				141	166	1.7	102	28	438
	051CTC400				4.3	3.1	--	8.0	0.01	15
	066GAC550				0.14	0.12	--	0.07	--	0.33
	Other - San Jose				0.00	0.45	--	--	0.32	0.77
	<b>Subtotal</b>					<b>145</b>	<b>171</b>	<b>2</b>	<b>110</b>	<b>29</b>
Santa Clara	049CZC800	Installed	Inlet-based Stormwater Screening Device	10	4.8	9.3	--	4	0.1	18
	050GAC400			120	34	77	103	1.3	0.6	216
	050GAC580			63	55	13	0.2	4.2	0.00	73
	066GAC150			34	2.6	12	1.2	0.8	0.00	16.4
	<b>Subtotal</b>					<b>96</b>	<b>111</b>	<b>104</b>	<b>10</b>	<b>0.70</b>
<b>Totals</b>				<b>235</b>	<b>242</b>	<b>282</b>	<b>106</b>	<b>121</b>	<b>30</b>	<b>781</b>

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

**Table 4.3. Drainage areas and associated land uses for high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices installed during MRP 3.0 in undetermined or low priority stormwater catchments.**

Co-permittee	Stormwater Catchment ID	Status (Installed after July 1, 2021 or Planned)	Device Type	Acres Treated					
				Old Industrial	Old Commercial/ Old Transportation	Old Residential	New Urban	Ag/Open	Totals
Campbell	113LGC010	Installed	Inlet-based Stormwater Screening Device	2.3	3.8	0.0	1.8	--	8.0
	113LGC140			--	0.3	1.6	--	--	1.9
	Other - Campbell			--	19	28	--	--	47
	Other - San Jose			--	--	0.0	--	--	0.0
Cupertino	Other - Cupertino	Installed	Inlet-based Stormwater Screening Device	--	0.1	--	--	0.6	0.7
Los Gatos	Other - Los Gatos	Installed	Inlet-based Stormwater Screening Device	--	15	2.6	--	0.0	17
Palo Alto	Other - Palo Alto	Installed	High-flow capacity Stormwater Treatment	4.5	105	84	34	89	317
	016MTC910	Installed	Inlet-based Stormwater Screening Device	--	4.2	0.7	--	--	4.9
	Other - Palo Alto			--	0.2	--	--	--	0.2
Santa Clara	049STA050	Installed	Inlet-based Stormwater Screening Device	0.8	1.9	1.1	0.7	--	4.5
	049STA300			2.1	7.4	--	1.4	--	11
	Other - Santa Clara			1.1	126	183	23	4.1	337
	Other - Santa Clara County			--	--	0.0	--	--	0.0
Sunnyvale	Other - Sunnyvale	Installed	Inlet-based Stormwater Screening Device	--	2.0	1.5	--	0.7	4.2
<b>Totals</b>				<b>11</b>	<b>285</b>	<b>301</b>	<b>61</b>	<b>95</b>	<b>753</b>

## MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

In addition to installed and planned stormwater treatment systems described above, SCVURPPP conducted a GIS analysis to identify new opportunities for both high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices within the Santa Clara Valley. This analysis is focused on identifying locations that would provide load reduction benefits for PCBs, mercury and trash. This analysis identified all overlapping areas in the Santa Clara Valley that met each of the following criteria:

1. OI land areas that are potentially available for controls during MRP 3.0; and
2. Areas that have moderate, high, or very high baseline levels of trash generation that are not currently addressed by existing (or planned) GSI or stormwater treatment systems; and
3. Areas that are located in high priority moderate/high PCBs or mercury catchments.

These areas represent potential locations where multiple benefits may be possible for reductions of PCBs, mercury and trash. The results identify locations where additional systems/devices will be considered during MRP 3.0 to address multiple pollutants. These multi-benefit areas based on the analysis conducted to date are illustrated in Figure 4.2.

The final step of this GIS/desktop analysis involved a careful review of the storm drain infrastructure configuration and other features within the areas of potential multi-benefit, to further evaluate the feasibility of installing and operating stormwater treatment systems in these areas. The results of this analysis to date have identified 23 high priority catchments that contain moderately or highly elevated PCBs that are potentially good candidates for high-flow capacity stormwater treatment systems or inlet-based stormwater screening devices to achieve multi-benefit PCBs, mercury and trash load reductions. The OI land areas within these catchments that overlap with significant trash generating areas total 309 acres. Another 266 acres of undetermined-priority OI land areas were also identified that overlap with significant trash generating areas. As verification monitoring of these undetermined priority OI land areas continues during the permit term, additional information will be available to determine if these locations are also good candidates based on the potential to provide multi-benefits.

In a related analysis, the City of San Jose has identified inlets in the City that are prioritized for potential installation of inlet-based stormwater screening devices based on trash load reduction needs. SCVURPPP staff reviewed these inlet locations and stormwater treatment devices, if feasible. As verification monitoring of undetermined priority catchments continues during the permit term, additional information will be available to determine if other inlets are also good candidates based on the potential to provide multi-benefits.

The next step is for Co-permittee staff to ground truth the information provided above by visiting the prioritized sites and making observations and measurements of the critical features necessary to identify whether a stormwater treatment device can be installed at the location of interest. One source of potential funding that Co-permittees are actively pursuing is through Caltrans' Cooperative Implementation Agreements (CIAs). As part of this step, locations that are not good candidates for high-flow capacity devices will be considered for multiple inlet-based devices. As a last step in the analysis, Co-permittees will evaluate resources and determine the feasibility of installing and maintaining stormwater treatment devices at the given locations. The feasibility analysis will include consideration of the initial funds needed to purchase and install each device, as well as the ongoing staffing resources that will be required to operate and maintain each device in the future.

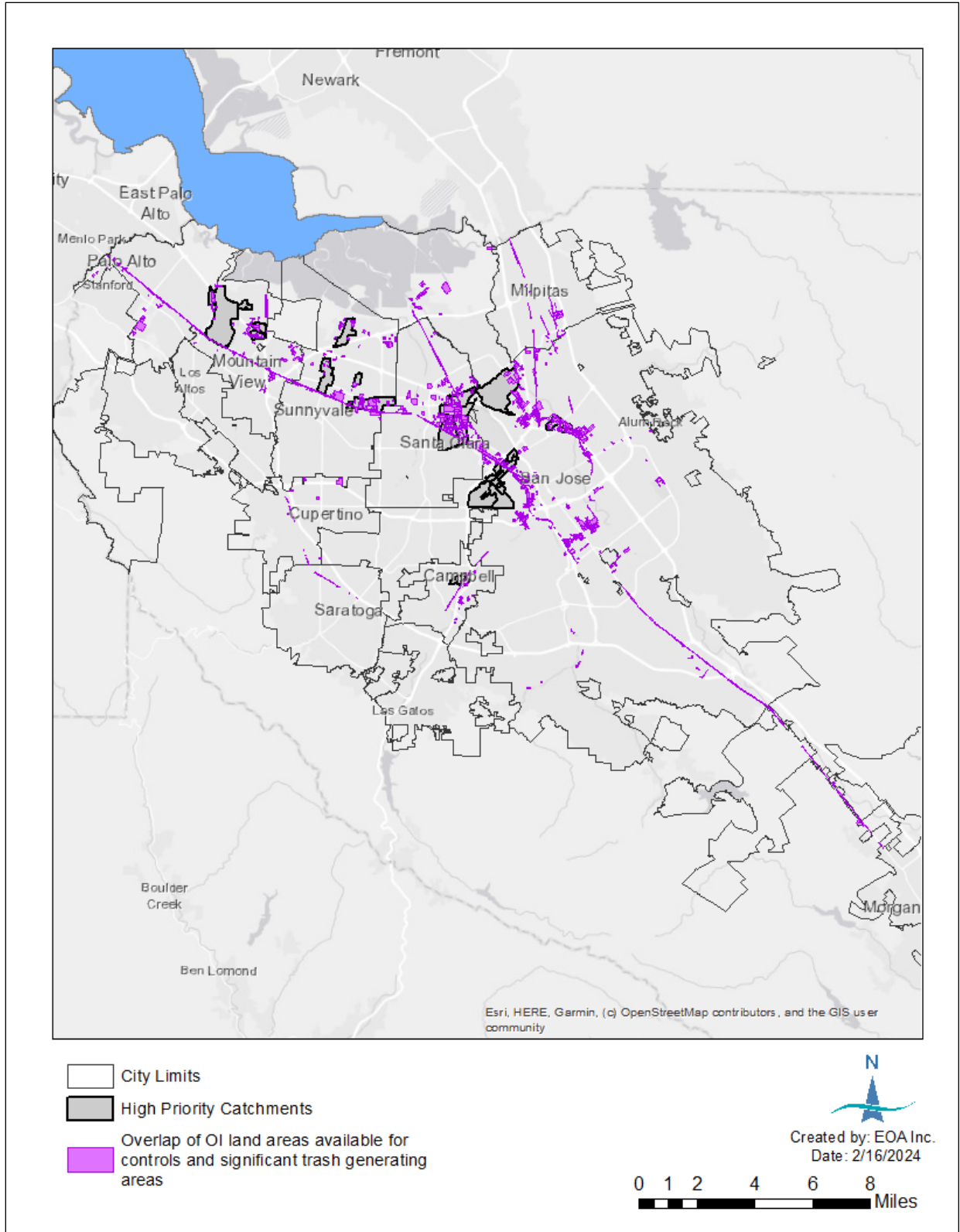


Figure 4.4. Areas of potential multi-benefit for PCBs, mercury and trash load reductions in the Santa Clara Valley.

## 5. ESTIMATED POLLUTANT LOAD REDUCTIONS

This section presents the estimated load reductions of PCBs and mercury that are anticipated to occur as a result of the continued, enhanced, and new control measures described in Sections 3 and 4. All load reductions were calculated using the accounting methodologies in BASMAA (2022).

### 5.1 Targeted Control Measure Programs

The estimated maximum annual PCBs and mercury load reductions that may be achieved by Co-permittees via implementation of *Targeted Control Programs* described in Section 3 were calculated based on the following assumptions:

- 70 acres of highly elevated PCBs source properties recently identified by Co-permittees but not yet been referred to the Regional Water Board will be referred during MRP 3.0; the associated enhanced O&M in public ROWs adjacent to the source properties will be implemented by Co-permittees; and Co-permittees will be credited for 50% of the PCBs load reduction associated with these properties.
- 50 new acres of highly elevated PCBs source properties will be identified (i.e., 2.6% of the ~2,000 acres of OI land areas that require either Verification Monitoring or Source Area Investigation to identify sources) and referred to the Regional Water Board during MRP 3.0; the associated enhanced O&M in public ROWs adjacent to the source properties will be implemented by Co-permittees; and Co-permittees will be credited for 50% of the PCBs load reduction associated with these properties.
- 20 acres of MPCPs identified to date in Mountain View will be addressed as Mountain View staff work with the property owner to implement control measures on the property during MRP 3.0; Co-permittees will be credited for the associated PCBs load reduction.
- 400 new acres of MPCPs will be identified (i.e., 20% of the 2,000 acres of OI land areas that require either Verification Monitoring or Source Area Investigations to identify sources); Co-permittees will be able to successfully work with the appropriate parties (e.g., property owners or managers) to implement control measures on the properties during MRP 3.0; and Co-permittees will be credited for the associated PCBs load reduction.
- PCBs loads reduced for abatement of highly elevated source properties is 5 g/acre/yr and loads reduced for controls implemented on MPCPs is 0.2 g/acre/yr.
- No mercury load reductions for targeted controls are currently accounted for in this Plan. During the permit term, Co-permittees may propose accounting methodologies for moderately and highly elevated mercury source properties and submit to the Regional Water Board for approval.

Control measures described in Section 3 and implemented based on the assumptions above would address 540 acres of OI parcels in high priority catchments with moderate/high PCBs and provide up to 390 g/yr of PCBs load reduction in the Santa Clara Valley. Abatements of all newly identified source properties (both highly and moderately elevated) however are unlikely to be completed by the end of the permit term. As listed in Table 5.1, a more conservative “best” estimate of PCBs load reduction that will be realized during MRP 3.0 via *Targeted Control Programs* is 50% of the 390 g/yr load reduction (i.e., 195 g/yr). Of this amount, the best estimate for the load reductions that will be achieved via controls on moderate PCBs properties (i.e., in

compliance with C.12.c) is 44 g/yr of PCBs load reduction. Note, there are assumed to be no mercury load reduction benefits via abatement of PCBs source properties. However, if mercury concentrations are elevated at any of these moderate or high PCBs source properties prior to abatement, then mercury load reduction benefits will be evaluated.

## 5.2 Other Control Measures

The estimated maximum annual PCBs and mercury load reductions that may be achieved by Co-permittees via implementation of the *Other Control Programs* described in Section 4 were calculated based on the following assumptions:

- 15 acres of parcel-based LID facilities constructed after July 1, 2021 address OI parcels located in high priority catchments that have moderate/high PCBs based on monitoring data.
- 25 acres of parcel-based LID facilities constructed after July 1, 2021 address OI parcels located in undetermined/low priority catchments; evidence of pre-redevelopment PCBs or mercury contamination will be provided.
- Anticipated construction of 185 acres of parcel-based LID facilities on C.3 Regulated Projects address OI parcels in high priority catchments that have moderate/high PCBs based on monitoring data by the end of MRP 3.0.
- Anticipated construction of 236 acres of parcel-based LID facilities on C.3 Regulated Projects address OI parcels in undetermined/low priority catchments by the end of MRP 3.0; evidence of pre-redevelopment PCBs or mercury contamination will be provided.
- The construction of a regional GSI stormwater capture project that will address 0.4 acres of OI, 0.42 acres of old commercial/old transportation, and 12 acres of old residential land use areas.
- 50% (23 acres) of the Provision C.3.j retrofit requirement will be implemented in high priority catchments that have moderate/high PCBs based on monitoring data.
- PCBs and mercury load reductions for parcel-based LID are calculated as the difference between the OI land use yield and the new urban land use yields, as described in BASMAA 2022.
- PCBs and mercury load reduction efficiencies are 70% for green streets and regional retrofit projects constructed in areas with evidence of moderate to high PCBs and mercury.
- Planned new high-flow capacity stormwater treatment systems will be installed in high priority catchments by the end of MRP 3.0 that will address 145 acres of OI, 171 acres of old commercial/old transportation, and 2 acres of old residential land use areas.
- 227 inlet-based stormwater screening devices installed after July 1, 2021 in high priority catchments that address 97 acres of OI, 112 acres of old commercial/old transportation, and 105 acres of old residential land use areas.
- 178 inlet-based stormwater screening devices installed after July 1, 2021 in undetermined priority catchments that address 6.4 acres of OI, 285 acres of old commercial/old transportation, and 301 acres of old residential land use areas. Evidence of PCBs or mercury contamination in the drainage area will be provided.
- One high-flow capacity stormwater treatment system installed after July 1, 2021 in an undetermined priority catchment that addresses 4.5 acres of OI, 105 acres of old

commercial/old transportation, and 84 acres of old residential land use areas. Evidence of PCBs or mercury contamination in the drainage area will be provided.

- PCBs and mercury load reduction efficiencies for high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices range from 14% to 20%, depending on the type of system installed (BASMAA 2022).

Control measures described in Section 4 and implemented based on the assumptions above would address more than 700 acres of OI parcels in high priority catchments with moderately or highly elevated PCBs. This level of control measure implementation would provide 142 g/yr of PCBs load reduction and 44 g/yr of mercury load reduction. Construction/installation of all planned GSI facilities and other stormwater treatment systems, however, are unlikely to be completed by the end of the permit term. As listed in Table 5.1, a more conservative “best” estimate of PCBs and mercury load reductions that will be realized during MRP 3.0 via *Other Control Programs* is roughly 50% of the maximum load reduction for anticipated/planned projects and 100% of the load reduction for projects that have already been completed (i.e., 77 g/yr) for PCBs and 25 g/yr for mercury.

### 5.3 Summary of Anticipated Load Reductions

Table 5.1 presents the estimated PCBs and mercury load reductions that are anticipated via the control measures outlined in Sections 5.1 – 5.2 as described in this Plan. All load reductions were calculated using the methods approved by the Regional Water Board Executive Officer and described in BASMAA (2022). These estimates include the maximum load reduction potential if all controls described in this Plan are implemented, as well as the best estimate and ranges for the more realistic levels of control measure implementation during MRP 3.0. The best estimates for load reductions anticipated to occur during MRP 3.0 in OI land and other land areas with moderate to high PCBs in the Santa Clara Valley are 272 g/yr for PCBs (ranging from 131 g/yr to 401 g/yr) and 25 g/yr for mercury (ranging from 13 g/yr to 35 g/yr). The majority of the PCBs load reductions during MRP 3.0 (~70%) will occur as a result of targeted control programs implemented in high priority catchments with moderately to highly elevated PCBs based on monitoring data. Excluding high PCBs source property referrals, the best estimates for load reductions that will be achieved via this Plan in moderate OI areas are 121 g/yr for PCBs and 25 g/yr for mercury. These best estimates for PCBs demonstrate that Co-permittees will be able to achieve the C.12.c load reduction requirement of 121 g/yr from OI/moderate PCBs areas during MRP 3.0. The range of likely mercury load reductions demonstrates that Co-permittees may be able to achieve the C.11.c load reduction requirement of 28 g/yr from OI/moderate mercury areas during MRP 3.0. Note, these estimates do not include any mercury load reductions for addressing moderately elevated mercury source properties. Co-permittees will need to evaluate the mercury load reduction benefits of moderate PCBs source property abatements that occur during the permit term and document the mercury load reduction benefits achieved at properties where monitoring data indicated mercury concentrations on the property were elevated. These evaluations are expected to provide additional mercury load reductions that will ensure achievement of the C.11.c load reduction requirement for mercury.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

Table 5.1. Estimated PCBs and mercury load reductions anticipated to occur via the implementation of control measures identified in Sections 5.1 and 5.2 of this Plan.<sup>a, b, c</sup>

Control Measure	Assumptions for Estimated Loads Reduced	PCBs Loads Reduced (g/yr)				Mercury Loads Reduced (g/yr)			
		Maximum Potential	Best Estimate	Min	Max	Maximum Potential	Best Estimate	Min	Max
Targeted Control Programs	70 acres of <u>confirmed highly elevated</u> PCBs source properties will be referred and 50% load reduction will be credited	176	88	44	132	No mercury load reduction is currently estimated for moderately or highly elevated PCBs source property abatement, but will be evaluated during the permit term for any PCBs source properties that also have elevated mercury.			
	50 acres of <u>new highly elevated</u> PCBs source properties will be identified/referred and 50% load reduction will be credited	126	63	32	95				
	20 acres of currently identified <u>MPCPs</u> will be controlled for PCBs	4	2	1	3				
	400 acres of <u>new MPCPs</u> will be identified and controlled for PCBs	84	42	21	63				
	<i>Subtotal</i>	390	195	98	293				
Other Control Measures	<u>LID facilities</u> in high priority catchments via C.3 requirements for Regulated projects (Constructed after July 1, 2021)	4				1			
	<u>LID facilities</u> in medium/low priority catchments via C.3 requirements for Regulated projects (Constructed after July 1, 2021); evidence of PCBs or mercury contamination provided	7	3	2	5	1	1	0.3	0.9
	Anticipated completion of <u>planned/potential LID facilities</u> in high priority catchments via C.3 requirements for Regulated projects	48	24	12	36	9	5	2	7
	Anticipated completion of <u>planned/potential LID facilities</u> in medium/low priority catchments via C.3 requirements for Regulated projects; evidence of PCBs or mercury contamination provided	61	31	15	46	12	6	3	9
	Anticipated completion of planned <u>regional GSI</u> project which will address <u>old commercial/old transportation</u> and old residential land areas	0.3	0.2	0.1	0.2	5	2	1.2	4
	50% of the <u>green street</u> or <u>regional GSI</u> projects constructed by Co-permittees to comply with Provision C.3.j will address <u>old industrial/moderate</u> PCBs or mercury land use areas	4	2	1	3	1	0.5	0.3	0.8
	Anticipated high-flow capacity stormwater treatment systems installed in high priority catchments	9	5	2	7	4	2	1	3
	Inlet-based stormwater screening devices installed in high priority catchments after July 1, 2021	6				3			
	Anticipated high-flow capacity stormwater treatment systems installed in undetermined or low priority catchments; evidence of PCBs or mercury contamination provided.	1	1	0.3	1	4	2	1.0	3.0
	Inlet-based stormwater screening devices installed in undetermined priority catchments; evidence of PCBs or mercury contamination provided.	2	1	0.5	1	4	2	1.1	3.2
<i>Subtotal</i>	142	77	33	109	44	25	13	35	
Subtotal – Includes all controls in moderate/OI areas for credit towards MRP C.11/12.c		230	121	55	175	44	25	13	35
<b>Totals</b>		<b>532</b>	<b>272</b>	<b>131</b>	<b>401</b>	<b>44</b>	<b>25</b>	<b>13</b>	<b>35</b>

<sup>a</sup> Maximum Potential: the total load reduction that can be achieved for the maximum level of planned implementation for all controls described in Sections 3 and 4.

<sup>b</sup> Best Estimate: the total load reduction that can be achieved assuming only 50% of the maximum level of anticipated/planned implementation occurs and 100% implementation for control measures completed since July 1, 2021.

<sup>c</sup> Range: the range of load reductions that can be achieved assuming 25% to 75% of the maximum level of planned implementation occurs for all control measures.

## 6. PLANNING AND IMPLEMENTATION SCHEDULE

Table 6.1 provides the anticipated schedule for implementing the major control measure planning and implementation actions described in this Plan during the term of MRP 3.0. Given the uncertainties in the Plan surrounding the development and implementation of new programs, funding options, and other limitations, SCVURPPP will provide updates to this Plan via the Program's annual report to document the completion of tasks, projects, progress of ongoing evaluations and planning studies, and the addition of any new projects or controls not included in this version of the document. The annual updates will also serve to document many of the requirements of MRP Provision C.11/12 for annual reporting, including:

- Report progress on the acreage of land areas investigated, and actions taken for parcels investigated (e.g., abatement referral, enforcement, etc.);
- Source Property Referral Reports;
- Descriptions of enhanced O&M associated with Source Property Referrals; and
- Report on control measures implemented consistent with the Plan, and any modifications thereto.

Further, the information documented in the Plan and annual updates will be used to demonstrate achievement of the PCBs and mercury load reduction requirements identified in C.11/12.c, as well as document the overall loads of PCBs and mercury reduced Program-wide through implementation of all control measures during the permit term.

The Plan may also be updated and revised to reflect changing or new conditions in local watersheds, additional knowledge gained and lessons learned from ongoing control measure implementation, monitoring data, model outputs, etc. SCVURPPP will collect information from Co-permittees on an annual basis to document completed projects and level of control measure implementation achieved each year, and all associated loads reduced due to these actions. Tracking and mapping of completed GSI/LID projects will continue through the SCVURPPP Stormwater Treatment Measures (STM) Data Portal. Currently, the STM Data Portal operates as a centralized, web-based data management system with a connection to GIS platforms to track and map all completed GSI/LID projects in the Santa Clara Valley. The data portal may be updated in the future to track other types of control measures, including installation of other types of stormwater treatment systems and devices, the locations and types of enhanced O&M activities, and to document abatement on PCBs or mercury source properties (both moderately and highly elevated), as they are completed.

Additionally, this Plan does not limit SCVURPPP or any of its Co-permittees from pursuing any and all remedies that they may have in response to the MRP, including seeking funding for these mandates.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

Table 6.1. Anticipated schedule for control measure planning and implementation tasks in old industrial (OI) and moderate PCBs or mercury land areas during MRP 3.0.

Control Measure - Planning and Implementation Tasks			MRP 3.0 Year				
			FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27
Targeted Control Programs	Verification Monitoring and Source Area Investigations	Conduct Verification Monitoring in undetermined priority catchments to confirm moderate/high PCBs or mercury					
		Conduct Targeted Public ROW investigations in high priority catchments					
		Develop new on-site inspection and sampling procedures					
		Conduct On-site Inspection and Sampling investigations					
		Review investigation results and identify new moderate/high PCBs or mercury source properties					
	Program to Control Moderate Pollutant-Contributing Properties (MPCPs)	Develop the new Program to Control MPCPs					
		Implement the new Program to Control MPCPs					
	Program to Abate High PCBs or Mercury Source Properties	For recently confirmed source properties (70 acres), evaluate options and develop plans for abatement and enhanced O&M					
		Submit referrals for high PCBs or mercury source properties to Regional Water Board and begin enhanced O&M in public ROWs					
		For new high PCBs or mercury source properties identified during MRP 3.0, evaluate options for property abatement and enhanced O&M and develop plans					
		Submit referrals for new source properties to Regional Water Board and begin enhanced O&M in public ROWs					
	Controls for Public ROW Areas in Catchments with High Priority OI Land Areas	As source investigations are completed, develop plans to implement controls in public ROWs in catchments where sources were not identified.					
	Document PCBs and mercury loads reduced during permit term for implementation of targeted control programs.						

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

Control Measure - Planning and Implementation Tasks			MRP 3.0 Year					
			FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	
Other Control Programs	Green Stormwater Infrastructure	Continued municipal oversight and review to ensure all C.3 Regulated Project requirements are met. Continued inspections and tracking of all C.3 Regulated Projects.						
		Continued planning and implementation of Co-permittee GSI Plans						
		River Oaks Regional Stormwater Capture Project	Design					
			Construction					
		Ongoing planning to identify public C.3.j project sites, develop funding sources, design and construct projects.						
		Document PCBs or mercury loads reduced during permit term for all constructed GSI/LID projects.						
	Plan and implement new monitoring program to provide post-redevelopment data for LID/GSI projects							
	Other Stormwater Treatment Systems	Construct planned high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices.						
		Conduct additional GIS analyses to identify candidate catchments for high-flow capacity stormwater treatment systems or inlet-based stormwater screening devices to achieve multiple benefits.						
		Ground-truth candidate catchment locations and potential funding sources.						
		Plan and implement additional stormwater treatment systems.						
		Document mercury and PCBs or mercury loads reduced during permit term for all constructed/installed high-flow capacity stormwater treatment systems and inlet-based stormwater screening devices.						

## 7. REFERENCES

Bay Area Stormwater Management Agencies Association (BASMAA) 2017. Clean Watersheds for a Clean Bay. Final Project Report. Prepared by EOA, Inc. and Geosyntec Consultants. April 2017.

BASMAA 2017. [Guidance to San Francisco Bay Area Local Agencies for Reducing Polychlorinated Biphenyls \(PCBs\) and Mercury in Municipal Stormwater Runoff](#). May 2017.

BASMAA 2018. Evaluation of PCBs in Caulk and Sealants in Public Roadway and Storm Drain Infrastructure Final Project Report. Prepared by EOA, Inc. August 16, 2018.

BASMAA 2022. Source Control Load Reduction Accounting for Reasonable Assurance Analysis. Prepared for BASMAA by Geosyntec Consultants, Inc., and EOA, Inc. January 21, 2022.

City of Campbell 2019. Green Stormwater Infrastructure Plan. July 2019.

City of Cupertino 2019. Green Stormwater Infrastructure Plan. September 2019.

City of Los Altos 2019. Green Stormwater Infrastructure Plan. July 2019.

City of Milpitas 2019. Green Stormwater Infrastructure Plan. September 2019.

City of Monte Sereno 2019. Green Stormwater Infrastructure Plan. August 2019.

City of Mountain View 2019. Green Stormwater Infrastructure Plan. September 2019.

City of Palo Alto 2019. Green Stormwater Infrastructure Plan. 2019.

City of San Jose 2019. Green Stormwater Infrastructure Plan. September 2019.

City of Santa Clara 2019. Green Stormwater Infrastructure Plan. August 2019.

City of Saratoga 2019. Green Stormwater Infrastructure Plan. August 2019.

City of Sunnyvale 2019. Green Stormwater Infrastructure Plan. August 2019.

County of Santa Clara 2019. Green Stormwater Infrastructure Plan. September 2019.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), California State Water Resources Control Board, and California Department of Fish and Game. 1995. Contaminant Levels in Fish Tissue from San Francisco Bay: Final Report. San Francisco Regional Water Quality Control Board, Oakland, CA.

SFBRWQCB 2006. Mercury in San Francisco Bay, Proposed Basin Plan Amendment and Staff Report for Revised Total Maximum Daily Load (TMDL) and Proposed Mercury Water Quality Objectives.

SFBRWQCB 2008. Total Maximum Daily Load for PCBs in San Francisco Bay, Staff Report for Proposed Basin Plan Amendment. February 2008.

SFBRWQCB 2022. San Francisco Region Water Quality Municipal Regional Stormwater NPDES Permit. Order R2-2022-0018, NPDES Permit No. CAS612008.

Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) 2021. Stormwater Control Measures Plan for PCBs and Mercury in the Santa Clara Valley - Version 5.0 (2016-2021). September 30 2021.

MRP 3.0 Control Measure Plan for Old Industrial Areas in the Santa Clara Valley

SCVURPPP and Santa Clara Valley Water District (Valley Water) 2019. Santa Clara Basin Stormwater Resource Plan. Final Report. Prepared by EOA, Inc., Paradigm Environmental, and Lotus Water. August 2019.

Town of Los Gatos 2019. Green Stormwater Infrastructure Plan. August 2019.

Town of Los Altos Hills 2019. Green Stormwater Infrastructure Plan. August 2019

