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LIST OF ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
CW4CB	Clean Watersheds for a Clean Bay
CWA	Clean Water Act
FY	Fiscal Year
GI	Green Infrastructure
MPC	Monitoring and Pollutants of Concern
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
PCBs	Polychlorinated Biphenyls
POC	Pollutant of Concern
POTW	Publically Owned Treatment Works
RAA	Reasonable Assurance Analysis
RMP	Regional Monitoring Program for Water Quality in San Francisco Bay
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
TMDL	Total Maximum Daily Load
WY	Water Year
WMA	Watershed Management Area

1.0 INTRODUCTION

Fish tissue monitoring in San Francisco Bay (Bay) has revealed bioaccumulation of polychlorinated biphenyls (PCBs), mercury, and other pollutants. The levels found are thought to pose a health risk to people consuming fish caught in the Bay. As a result of these findings, an interim advisory has been issued on the consumption of fish from the Bay. The advisory led to the Bay being designated as an impaired water body on the Clean Water Act (CWA) "Section 303(d) list" due to elevated levels of PCBs, mercury, and other pollutants. In response, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) has developed Total Maximum Daily Load (TMDL) water quality restoration programs targeting PCBs and mercury in the Bay. The general goals of the TMDLs are to identify sources of PCBs and mercury to the Bay, implement actions to control the sources, and restore water quality.

The PCBs and mercury TMDLs stipulate that a 90% reduction in PCBs and 50% reduction in mercury found in discharges from urban stormwater runoff to the Bay are needed to achieve water quality standards and restore beneficial uses. Provisions C.11 and C.12 of the first Bay Area Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Municipal Regional Permit, or MRP 1.0; Order R2-2009-0074) required Permittees to implement pilot-scale control measures during the permit term to reduce PCBs and mercury discharges from Municipal Separate Storm Sewer Systems (MS4s) to the Bay. These pilot studies were intended to enhance the collective knowledge about the costs and benefits of different Best Management Practices (BMPs) to control PCBs and mercury.

The reissued permit (MRP 2.0, Order R2-2015-0049) requires municipal agencies to move from pilotscale work to focused implementation and defined load reduction goals (e.g., 3 kg/year region-wide for PCBs). The strategies and BMPs that will be applied to meet the load reduction goals are anticipated at a minimum to include:

- Stormwater green infrastructure (GI);
- Source property identification and referral for investigation and abatement; and
- Management of PCBs in building materials during demolition.

Permittees may also implement additional types of controls to address the PCBs and mercury reduction goals.

In compliance with Provisions C.11 and C.12, the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) is assisting San Mateo County local agencies to identify control measures for PCBs and mercury that reduce discharges from their MS4s. The following sections provide further details about the permit requirements and how SMWCPPP is providing this assistance to San Mateo County municipalities.

1.1. Permit Requirements

MRP 2.0 Provisions C.11.a.iii and C.12.a.iii required Permittees to submit with their FY 2015/16 Annual Reports a prioritized list of watersheds and management areas where control measures for PCBs and mercury are currently implemented or will be implemented during the term of permit along with an implementation schedule. Permittees were also required to provide the monitoring data and other

information used to select the management areas. In addition to the list of management areas, Permittees were also required to report on the following:

- The number, type and locations and/or frequency (if applicable) of control measures;
- A cumulative listing of all potentially PCBs-contaminated sites Permittees have discovered and referred to the Regional Water Board to-date, with a brief summary description of each site and where to obtain further information;
- The description, scope and start date of control measures;
- For each structural control and non-structural control BMP, interim implementation progress milestones and a schedule for milestone achievement; and
- Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified by Permittees.

Per MRP requirements, SMCWPPP submitted an initial report dated April 1, 2016 detailing progress made towards meeting the above reporting requirements (SMCWPPP 2016a). SMCWPPP then submitted further information with its FY 2015/16 Annual Report (SMCWPPP 2016b). In subsequent Annual Reports, Permittees are required to provide updates to the initial information presented with the FY 2015/16 Annual Report.

Permittees are also required to demonstrate achievement of PCBs load reductions during the term of the Permit. Beginning with the FY 2016/17 Annual Report (which this report is part of), Permittees are required to quantify PCBs load reductions and ancillary load reduction benefits for mercury. As part of this requirement to report load reductions, MRP Provisions C.11/12.b., Assess Mercury/PCBs Load Reductions from Stormwater, required Permittees to submit with their FY 2015/16 Annual Report for Executive Officer approval an assessment methodology that updates the load reduction accounting system outlined in the MRP 2.0 factsheet. Permittees are required to use the assessment methodology to quantify in a technically sound manner PCBs and mercury loads reduced through implementation of pollution prevention, source control, and treatment control measures, including source control, stormwater treatment, GI, and other measures. Beginning with their FY 2016/17 Annual Report, Permittees must report on the use of the methodology to demonstrate progress toward achieving the PCBs and mercury load reductions required this permit term. SMCWPPP participated in a Bay Area Stormwater Management Agencies Association (BASMAA) regional project to develop an interim accounting methodology to account for PCBs and mercury load reductions during MRP 2.0 associated with all control measures. The methodology is fully described by BASMAA (2017), a report that was approved by the Regional Water Board's Executive Officer in April 2017.

Per MRP 2.0 requirements, the interim accounting methodology will eventually be replaced by more robust accounting methods, including a modeling approach for estimating pollutant loads reduced via GI and stormwater treatment, via development later in this permit term of a Reasonable Assurance Analysis (RAA).

1.2. Overall Approach in FY 2016/17

This plan documents SMCWPPP's approach and progress to-date in assisting San Mateo County local agencies to reduce discharges of PCBs and mercury from their MS4s to the Bay, in compliance with Provisions C.11 and C.12. In this plan, SMCWPPP is tracking all existing and already planned control measures that should result in pollutant load reduction credits towards meeting the San Mateo County

portion of the PCBs and mercury TMDL wasteload allocations. All existing controls that commenced or were enhanced in 2005 or later are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. This date was selected because load reductions due to controls fully implemented prior to 2005 were already accounted for in the PCBs TMDL baseline urban runoff load estimate. As part of the evaluation SMCWPPP is assessing whether each existing or planned control would represent a new action or an enhancement during the MRP 2.0 permit term or the period immediately preceding the permit term. In addition to credit towards TMDL goals, such controls should result in credit towards the MRP 2.0 requirement that a 370 grams/year PCBs load reduction is achieved in San Mateo County by the end of the MRP 2.0 permit term (of this, a 60 grams/year reduction must be achieved by June 2018). Based on language in the permit and discussions with Regional Water Board staff, it is assumed that applicable controls implemented from July 1, 2013 through the end of the permit term should result in credit towards these load reduction requirements. In addition, MRP 2.0 requires that at least 15 grams/year of the 370 grams/year PCBs load reduction via GI by the end of the permit term. The permit also requires a 6 grams/year mercury load reduction via GI by the end of the permit term.

This plan provides an update to the information that was submitted with the FY 2015/16 Annual Report in September 2016 (SMCWPPP 2016b). It also reports on preliminary PCBs and mercury load reductions achieved this permit term that have been quantified to-date. The information contained within this plan will continue to be updated periodically during MRP 2.0 as new information becomes available about control measures and associated pollutant load reductions.

SMCWPPP's major FY 2016/17 efforts related to PCBs and mercury load reduction include the following:

- Continued updating and prioritizing the list of WMAs previously developed (SMCWPPP 2016b) using desktop and field investigative methods generally consistent with other Bay Area stormwater management program efforts, as coordinated through BASMAA.
- Continued working with San Mateo County MRP Permittees to update the database of existing and planned public and private GI and stormwater treatment projects in San Mateo County, including Low Impact Development (LID) measures at redevelopment sites. The database includes existing GI and treatment facilities constructed in 2005 or later and all known planned facilities.
- Summarized the preliminary PCBs and mercury load reductions achieved this permit term that have been quantified to-date.
- As part of the WMA updating and prioritizing process, collected 17 composite samples of stormwater runoff from outfalls at the bottom of WMAs that contain high interest parcels with land uses associated with PCBs such as old industrial, electrical and recycling. Composite samples consisting of six to eight aliquots collected during the rising limb and peak of the storm hydrograph (as determined through field observations) were analyzed for PCBs congeners, total mercury, and other analytes. SMCWPPP (2017b, DRAFT) provides further details. The full results of this WY2017 Pollutants of Concern (POC) monitoring program will be reported with the Urban Creeks Monitoring Report which is due in March 2018.

- Collected 68 sediment samples as part of the program to attempt to identify source properties within WMAs, potentially for referral to the Regional Water Board for further investigation and abatement. These samples were collected in the public right-of-way (ROW), including locations adjacent to high interest parcels with land uses associated with PCBs such as old industrial, electrical and recycling and/or other characteristics potentially associated with pollutant discharge (e.g., poor housekeeping, unpaved areas, on-site tanks or drums). Individual and composite sediment samples collected from manholes, storm drain inlets, driveways, and sidewalks were analyzed for PCBs congeners, total mercury, and other analytes. SMCWPPP (2017b, DRAFT) provides further details. The full results of this WY2017 POC monitoring program will be reported with the Urban Creeks Monitoring Report which is due in March 2018.
- Continued evaluating opportunities to take credit for PCBs and/or mercury loads avoided due to contaminated site cleanups in San Mateo County that were initiated during 2005 or later, typically a result of enforcement actions to remediate sites overseen by federal or state regulatory agencies. Cleanups completed during the MRP 2.0 permit term that prevent the discharge of PCBs to storm drains should result in credit towards MRP 2.0 load reduction requirements. This evaluation may also lead to opportunities to identify additional PCBs source properties that could be referred to the Regional Water Board for further investigation and abatement, either because cleanup at a site was never completed, or because the cleanup standards applied were not adequate relative to TMDL goals for reducing pollutant loads in stormwater runoff.
- Continued working with San Mateo County Permittees to evaluate new or enhanced municipal operation and maintenance (O&M) activities implemented in 2005 or later that may remove sediments containing PCBs and/or mercury, including any opportunities to monitor existing activities (e.g., via analysis of sediments removed for PCBs and mercury) and/or readily enhancing existing actions to reduce pollutant loads (i.e., "no missed opportunities"). The types of municipal O&M evaluated include maintenance of MS4 infrastructure (e.g., channel desilting and cleanout and/or retrofit of detention ponds, flood control basins, pump stations or storm drain inlets).

The following sections provide pertinent background information, a summary of the types of control measures currently used to control PCBs and mercury discharges in San Mateo County stormwater runoff, documentation of existing and planned control measures for each Permittee, and preliminary estimates of the PCBs and mercury loads reduced during the MRP 2.0 term that have been quantified to-date, calculated using the interim accounting methodology described above.

2.0 BACKGROUND

In 2015, SMCWPPP and San Mateo County MRP Permittees developed a general process for identifying areas of interest and opportunity for PCBs and mercury controls. The process is generally consistent with a framework developed by BASMAA agencies in consultation with Regional Water Board staff. As a first step, SMCWPPP conducted a screening process that covered all land areas in San Mateo County that drain to the Bay. Parcels were identified that were industrialized in 1980 or earlier (i.e., old industrial parcels) or have other land uses associated with PCBs (i.e., electrical, recycling, railroad, and military). SMCWPPP then worked with municipal staff to prioritize these parcels based on the evaluation of existing information on current land uses and practices (e.g., redevelopment status, extent and quality of pavement, level of current housekeeping, any history of stormwater violations, and presence of electrical or heavy equipment, tanks, or stormwater treatment) identified via land use analysis, local institutional/historical knowledge, and surveys of site conditions (windshield, Google Street View, and/or aerial photograph). The result of the prioritization was a list of 1,579 "high interest parcels" (SMCWPPP 2016a and b).

SMCWPPP then implemented a process to identify Watershed Management Areas (WMAs) and prioritize them based on the potential cost-effectiveness of implementing controls within each WMA. WMAs are all catchments with high interest parcels and/or existing or planned pollutant controls (e.g., GI implemented per Provision C.3 requirements or retrofitted into the public ROW). Additional pollutant controls may be implemented in WMAs during the MRP 2.0 permit term, to the extent that feasible and cost-effective controls can be identified. The process identified 110 catchments with high densities of high interest parcels (and generally with existing pollutant controls), and an additional 26 catchments with pollutant controls only, for a total of 136 WMAs.

Stormwater runoff hydrologic catchments were generally chosen as the initial geographical scale at which WMAs were identified. This scale is consistent with the intention of MRP 2.0 Provision C.11/12.a.ii and allows Permittees to more easily track control measure implementation. WMAs are generally urban catchments that drain to 24-inch or larger diameter outfalls, which were originally delineated as part of SMCWPPP's program to help local agencies develop trash controls in San Mateo County (SMCWPPP 2014).¹

Identifying areas of interest and opportunity for PCBs and mercury controls and the selection and classification of WMAs is a multi-year process designed to identify the land areas in San Mateo County that contribute relatively higher loads of PCBs and mercury to MS4s that should be the focus for control measure implementation. Consistent with the permit requirements, the selection of WMAs and controls has primarily focused on PCBs, with assumed ancillary/secondary benefits for controlling mercury.

¹ The WMA numbering system retains the simple numerical designations (ranging from 0 to 408) used for hydrologic catchments during the 2014 delineation. For this project, additional WMAs were delineated for areas that contain parcels of interest but were not delineated in 2014, with numerical designations ranging from 1000 to 1017. These 18 WMAs are not necessarily hydrologic catchments, but are instead a combination of areas that drain to outfalls less than 24-inches or directly to natural waterways or the Bay, or private drainages. Finally, to facilitate pollutant reduction planning and accounting, additional WMAs were delineated that encompass remaining areas that lack parcels of interest but include pollutant controls (mainly GI/redevelopment in old urban areas). These WMAs are not hydrologic catchments and were delineated for each San Mateo County Permittee that drains to the Bay. They were designated "Other –" followed by three letters representing the jurisdiction (e.g., Other – SSF for South San Francisco).

Beginning in the year 2000, SMCWPPP has also conducted an ongoing POC monitoring program to prioritize WMAs and to attempt to identify properties that are sources of pollutants. The POC monitoring helps to prioritize WMAs by identifying which WMAs have source areas and potentially provide the greatest opportunities for implementing controls to reduce loads of POCs in urban stormwater runoff. In recent years, WMAs have been identified and prioritized for sampling by evaluating several types of data, including: PCBs and mercury concentrations from earlier sediment and water sampling efforts, land use data, municipal storm drain data showing pipelines and access points (e.g., manholes, outfalls, pump stations), catchment areas delineated from municipal storm drain data, and logistical/safety consideration. SMCWPPP (2016a and b and 2017b, DRAFT) discuss the results of SMCWPPP's POC monitoring program in more detail. The results of SMCWPPP's most recent POC monitoring for PCBs and mercury, will be reported with the Urban Creeks Monitoring Report which is due in March 2018.

² Monitoring is conducted on a Water Year (WY) basis, with each WY beginning on October 1 and concluding on September 30 of the named year. For example, WY2017 began October 1, 2016 and concluded September 30, 2017.

3.0 SUMMARY OF CONTROL MEASURES

Permittees have implemented a variety of control measures since the development of PCBs and mercury urban stormwater loading estimates incorporated into the TMDLs. Control measures were implemented to reduce PCBs and/or mercury in stormwater and/or other impacts of stormwater runoff. The control measures that have a direct benefit towards reducing the impacts of PCBs and mercury on the Bay are documented in this plan.

The types of control measures implemented to control PCBs and mercury in stormwater runoff generally fall into the following three categories:

- True Source Controls (Load Avoidance) Controls that focus on the original source or use of a potential pollutant. True source controls include regulations and laws adopted to minimize or eliminate the use of a pollutant for specific activities and pollution prevention activities, such as inspections, that identify high risk practices that could release PCBs or mercury into the environment. The one true source control for mercury is the reduction of mercury in devices and equipment as a result of legislation or voluntary reduction by manufacturers. No additional true source controls are currently available for PCBs due to the production of these organic compounds being banned in the 1970s and the tight regulation of PCBs still in use.
- Source Controls (Load Reduction) Source controls are load reduction control measures that reduce the risk of the pollutant entering the environment after it has already been used in devices/materials/equipment, or that intercept the pollutant before it is discharged to a receiving water body. The control measure types that fall into this category include: source property abatement, enhanced street sweeping, MS4 and flood control facility maintenance, mercury device recycling, and the control of PCBs-containing material during building demolition/renovation.
- Treatment Controls (Load Reduction) Treatment controls are load reduction control measures that remove pollutants via physical, biological, or chemical processes. The control measure types that fall into this category include stormwater treatment measures, GI, and diversions of stormwater to Publicly Owned Treatment Works (POTWs).

Control measures needed to address PCBs and mercury load reduction criteria included in MRP 2.0 are currently under development by Permittees based on continued evaluations of sources of these contaminants and load reduction benefits associated with existing control measures. To the extent possible with the available information, control measures implemented to-date and those planned for implementation within each WMA during the term of MRP 2.0 are summarized in Section 4.0, consistent with MRP requirements.

Descriptions of each control measure type that Permittees may implement or cause to be implemented by other responsible parties to control PCBs and/or mercury are provided below.

3.1. Source Property Identification and Abatement

Source Property Investigation and Referral Process

PCBs and mercury source properties are those that disproportionately contribute pollutants to MS4s. Identification and subsequent abatement of these properties and/or focused control measure implementation in the public ROW around source properties to reduce pollutant release can provide an

opportunity for PCBs and mercury stormwater load reductions. Reductions occur through the abatement of properties via available mechanisms, including referrals to the Regional Water Board or through enforcement actions brought against property owners by Permittees.

SMCWPPP Permittees have and continue to implement a program to attempt to identify source properties in priority WMAs (as described in Sections 1.0 and 2.0). These investigations typically include the following tasks:

- 1) Property records and aerial photography review;
- 2) Public ROW surveys and/or property inspections;
- 3) Private property and public row soil/sediment sampling; and
- 4) Reporting and planning/identifying control measures (including planning referrals).

As source properties are identified, information regarding pollutant concentrations observed, evidence of transport to the MS4, property ownership, previous stormwater violations, and any other pertinent information is documented. Additionally, the location and geographical extent of the property is delineated in GIS to facilitate the calculation of PCBs and mercury load reductions.

SMCWPPP Permittees have been conducting source property investigations for a number of years and may continue with these efforts in the future. SMCWPPP and San Mateo County Permittees anticipate referring a minimum of three properties to the Regional Water Board during FY 2017/18 and documenting the associated load reductions. These efforts are described in more detail in Section 4.0.

Review of Contaminated Site Cleanups

In addition to the source property investigations and referral process described above, SMCWPPP has also been evaluating opportunities to take credit for PCBs and mercury loads avoided due to contaminated site cleanups in San Mateo County that were initiated during 2005 or later, since these cleanups are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. The cleanups are typically a result of enforcement actions with cleanup oversight by federal, state and local regulatory agencies, including United States Environmental Protection Agency (USEPA), California Department of Toxic Substance Control (DTSC), the Regional Water Board, and/or local municipal agencies. In addition, cleanups completed during the MRP 2.0 permit term should result in credit towards MRP 2.0 load reduction requirements. Investigation of contaminated site cleanups may also lead to opportunity to identify additional PCBs source properties that could be referred to the Regional Water Board for further investigation and abatement, either because cleanup at a site was never completed, or because the cleanup standards applied were not adequate relative to TMDL goals for reducing pollutant loads in stormwater runoff.

Regional Water Board staff has compiled a list of contaminated sites that were or are targeted for cleanup of soil and/or groundwater impacts under USEPA, DTSC, Regional Water Board, or local municipal agency oversight. The list was compiled primarily from a review of online databases, including DTSC's Envirostor and the State Water Resource Control Board's GeoTracker, and targeted sites that may have been associated with PCBs. The purpose in compiling this list was so that Regional Water Board staff could follow-up with the oversight agencies to ensure stormwater runoff concerns were or will be adequately addressed as part of the cleanups. The list has been updated periodically as new information becomes available. SMCWPPP has reviewed the latest versions of the Regional Water Board

list to help identify PCBs and mercury cleanup sites in San Mateo County. SMCWPPP is also in the process of reviewing online databases (Envirostor and GeoTracker) to review site histories and cleanup records, and compile the information needed to determine the cleanup status of the site, justify calculating any pollutant load reductions for the site cleanup, and document the data inputs needed to calculate loads avoided. The following information is being collected, as available:

- Area of the site;
- Current cleanup status;
- Date of cleanup;
- Evidence of PCBs on the site prior to cleanup (i.e., pre-cleanup PCBs concentrations in soils or groundwater);
- Cleanup/abatement methods;
- Evidence of adequate PCBs cleanup at the site (e.g., post-cleanup PCBs concentrations in soils or groundwater);
- Available evidence to justify designation as a potential PCBs source property for referral to Regional Water Board;
- Documentation of any follow-up needed at the site;

3.2. Green Infrastructure (GI) and Treatment Control Measures

Green Infrastructure

In addition to source property abatement, the installations of GI facilities on private property or public lands has and will continue to provide significant benefits to stormwater quality and PCBs and mercury loads over time in San Mateo County. GI facilities include infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. Examples of GI include bioretention, LID, green/complete streets, and other systems that generally use the natural filtration or infiltration of stormwater.

MRP 2.0 requires that a 370 grams/year PCBs load reduction is achieved in San Mateo County by the end of this permit term. Of this, at least 15 grams/year must be achieved via GI. For the purposes of tracking and crediting pollutant load reductions achieved through GI and stormwater treatment, During FY 2015/16, SMCWPPP staff worked with San Mateo County MRP Permittee staff to begin developing a database of existing and planned public and private GI and stormwater treatment projects in San Mateo County, including LID measures at redevelopment sites (SMCWPPP 2016b). The database includes existing and planned GI and treatment facilities constructed in 2005 or later since these facilities are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. In addition, 2005 was the year that San Mateo County's municipal stormwater permit was amended to include more stringent Provision C. 3 requirements; thus most new or redevelopment projects constructed in 2005 or later include stormwater treatment.

The types of information in the database of existing and planned public and private GI and stormwater treatment projects in San Mateo County includes the following:

- Project name
- Description of GI and stormwater treatment system(s)
- Location street address or location description and coordinates
- Whether the facility is located on private property or in public ROW
- Area treated by facility (acres)
 - For LID at redevelopment or new developments sites, this is generally assumed to be the project area
 - For Green Street or other retrofits in public ROW, estimated drainage area to facility
- Hydraulic sizing criteria
- Date of construction
 - Existing facilities: date of construction completion (e.g., initial inspection sign-off)
 - Planned facilities: estimated construction completion date

During FY 2016/17, SMCWPPP staff continued working with municipal staff to update the GI database with available new or revised information. For each San Mateo County Permittee with urban areas that drain to San Francisco Bay, a summary of the information gathered to-date on existing and planned GI and stormwater treatment facilities is presented in Section 4.0 of this report. Preliminary load reductions calculated for all GI and stormwater treatment implemented in San Mateo County during the MRP 2.0 permit term are reported in Section 5.0.

The information in this section and Section 4.0 also fulfills the requirement in MRP Provision C.3.j.iv to report on progress on development and implementation of methods to track and report implementation of GI.

Trash Full Capture Systems

Trash full capture systems are devices or series of devices that trap all particles retained by a 5mm 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. Examples of full capture systems include storm drain inlet screening devices that treat relatively small areas to hydrodynamic separators and netting devices treating hundreds or thousands of acres.

To-date, large public trash full capture systems have not been installed in urban areas of San Mateo County that drain to the Bay. If these systems are installed in the future, the project information and subsequent loads reduced will be reported in future reports.

3.3. Municipal O&M Activities that Potentially Remove Sediments with PCBs and/or Mercury

SMCWPPP is working with San Mateo County MRP Permittees to continue evaluating new or enhanced municipal O&M activities that may remove sediments containing PCBs and/or mercury. SMCWPPP is

tracking actions implemented in 2005 or later since these actions are assumed to reduce urban runoff pollutant loads relative to the PCBs TMDL baseline urban runoff load. The types of municipal O&M evaluated are described below. As part of this evaluation SMCWPPP is assessing whether new or enhanced municipal O&M activities were implemented or planned for implementation during the MRP 2.0 permit term.

Street Sweeping and Flushing

Most San Mateo County Permittees conduct street sweeping, which along with trash and debris also removes sediments and particle-bound pollutants such as PCBs and mercury to some extent. If enhancements are made by SMCWPPP Permittees to street sweeping programs that would increase PCBs and mercury removal from stormwater runoff, the associated pollutant load reductions will be documented.

In addition to traditional street sweeping, street flushing may also provide pollutant reduction benefits in stormwater runoff. Street flushing includes pressure washing and/or the use of water to flush streets of sediment, trash and sediment-associated pollutants, then collecting and properly disposing of the water, sediments and pollutants. A street flushing pilot project was conducted in San Carlos during MRP 1.0. However, additional street flushing projects have not occurred in San Mateo County under MRP 2.0 to-date. If street flushing projects are implemented by SMCWPPP Permittees in the future, pollutant load reductions associated with this control measure will be documented.

MS4 Line Flushing

Occasionally, opportunities present themselves to remove PCBs or mercury associated sediment deposited in MS4 lines. These opportunities typically do not occur often because the traditional MS4 is designed to convey stormwater (and associated sediments) effectively though the system. MS4 line flushing pilot projects have been conducted in the Bay Area, but not in San Mateo County to-date. If MS4 line flushing projects are implemented by SMCWPPP Permittees, load reductions associated with this control measure will be documented.

Storm Drain Inlet Maintenance

Municipalities periodically conduct storm drain inlet maintenance (e.g., clean-outs of catch basins). Most SMCWPPP Permittees inspect and maintain their inlets annually. Through these efforts, sediment and organic material (and associated pollutants) are removed from the MS4. If enhancements are made by SMCWPPP Permittees to inlet maintenance programs that would increase PCBs and mercury removal from stormwater runoff, the associated pollutant load reductions will be documented.

Channel and Pump Station Maintenance

SMCWPPP Permittees periodically remove sediment from storm drain channels and pump stations as part of their ongoing maintenance programs. As sediment and organic material are removed, sediment-associated pollutants such as PCBs and mercury are also removed. If enhancements are made by SMCWPPP Permittees to channel and pump station maintenance programs that would increase PCBs and mercury removal from stormwater runoff, the associated pollutant load reductions will be documented.

3.4. Managing PCBs in Building Materials

PCBs were used in many applications and materials in buildings, especially those constructed between 1950 and 1980. MRP 1.0 required the implementation of a pilot project to assist in developing management practices that address legacy caulks containing PCBs. Permittees complied with this requirement by participating in a regional project led by the San Francisco Estuary Partnership (SFEP) that: 1) evaluated PCBs levels in caulk in buildings; and developed preliminary BMPs, a Model Implementation Process, and associated model policies and ordinances to reduce or prevent the release of PCB-laden caulks to the environment during demolition of Bay Area buildings.

Building upon the requirements in MRP 1.0, MRP 2.0 Provision C.12.f requires Permittees to develop and implement (or cause to be developed and implemented) an effective protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition so that PCBs do not enter municipal storm drain systems. Applicable structures include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt.

SMCWPPP Permittees are currently participating in a BASMAA regional project that is developing guidance materials, tools, protocols and training materials and conducting outreach. The goal is to assist Permittees to develop local programs to prevent PCBs from being discharged to municipal storm drains due to demolition of applicable buildings. Local agencies will need to tailor the BASMAA products for local use and train local staff to implement the new programs by July 1, 2019. The MRP stipulates a collective PCBs load reduction credit of 246.67 grams/year for San Mateo County Permittees, if all Permittees implement a program consistent with the permit requirements.

3.5. Managing PCBs in Storm Drain or Roadway Infrastructure

Recent studies in areas outside of the Bay Area have shown that PCBs may be present in storm drain and/or roadway infrastructure due to their use in caulks and sealants in the mid to late 20th century. Provision C.12.e of MRP 2.0 requires Permittees to evaluate the presence of PCBs in caulks/sealants used in storm drain or roadway infrastructure in public ROWs by collecting samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement. BASMAA is currently conducting a regional project to address this permit requirement on behalf of all Permittees. The need for future enhanced controls to manage PCBs in storm drain and roadway infrastructure will be evaluated based on the results of the BASMAA project.

3.6. Diversions of Urban Runoff to Wastewater Treatment Facilities

The diversion of urban runoff (i.e., dry weather or stormwater) to wastewater treatment facilities can reduce PCBs and mercury loads in stormwater to the Bay. A temporary diversion of urban runoff to wastewater treatment facilities was conducted in the City of San Carlos as part of a pilot project during MRP 1.0. Although additional diversions are not currently planned, should any diversions be implemented the associated pollutant load reductions will be documented.

3.7. Addressing Illegal Dumping

This source control measure category entails addressing illegal dumping of waste (e.g., construction and demolition debris, stockpiles, spilled materials) containing PCBs or mercury to prevent it from entering

MS4s. If enhancements are made by SMCWPPP Permittees to programs that address illegal dumping and would prevent PCBs or mercury removal from entering stormwater runoff, the associated pollutant load reductions will be documented.

3.8. Mercury Reduction via Hazardous Waste Collection Programs

Many types of devices and equipment (e.g., thermometers, switches, and fluorescent lamps) can contain mercury. When these devices are not adequately managed at their end-of-life, mercury can be released into the environment and become available to stormwater runoff. Control measures currently implemented by Permittees that address the potential for mercury releases include: 1) the support of policies and laws that reduce the mass of mercury in specific devices/equipment; and 2) the implementation of recycling programs that reduce the risk of mercury from being released at the end-of-life of these devices and equipment.

San Mateo County municipalities participate in San Mateo County Health Department's Household Hazardous Waste (HHW) Program and Very Small Quantity Generator Business Collection (VSQG) Program. The HHW Program offers residents the opportunity to drop-off mercury-containing devices and equipment and other hazardous wastes at designated drop-off points or drop-off events free of charge. The VSQG Program provides an inexpensive hazardous waste disposal option to eligible businesses, non-profits, and other government agencies that generate less than 100 kilograms of waste per month. It operates by appointment only and charges a fee to cover the cost of transportation and disposal. Many member agencies promote the availability of the HHW Program and VSQG Program on their agency websites. The estimated mass of mercury collected in FY 2016/17 via these programs is presented in Section 5.0.

4.0 EXISTING AND PLANNED CONTROL MEASURES

The WMAs identified in San Mateo County and the associated control measures currently implemented (i.e., existing) or the control measures under development (i.e., planned) within these WMAs to-date are described for each San Mateo County Permittee in Sections 4.1 through 4.19. Each WMA and the GI/LID facilities within it are mapped in Appendix A, Figures A-1 through A-19. The Cities of Half Moon Bay and Pacifica drain to the Pacific Ocean and therefore were not included below, since this plan is focused on the PCBs and mercury TMDLs for San Francisco Bay. The inventory is organized alphabetically by Permittee and includes information on control measures in each WMA compiled by SMCWPPP to-date. It is important to note that the below summaries are preliminary and may not include all existing or planned control measures. The inventory will continue to be updated and refined as additional information is identified and compiled and as new or enhanced actions are implemented.

4.1. Town of Atherton

Watershed Management Areas

Table 4.1 lists the one WMA identified to-date in the Town of Atherton, and its total land area and associated land uses.

WMA	Other Permittees in	Total Area	% Old	% Old	% New	% Open	% Other
ID	WMA	(Acres)	Industrial	Urban	Urban	Space	
ATH		2,315	0%	95%	5%	0%	0%

Table 4.1. Atherton WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.2 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Atherton.

rable 4.2. Existing (2) and plained (1) 1 ebs and mercury control measures in Athenton WMAS.										
	Control Measure Categories									
	stigation	stigation re and Aeasures	ystems	g Building	rmwater ucture	Operatio Mainten Practio	n and ance ces	water ties	Dumped	ng of Jevices &
WMA ID	Source Property Inve	Green Infrastructu Treatment Control M	Trash Full Capture S	Managing PCBs during Demolition	Managing PCBs in Sto Conveyance Infrastr	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Waste Treatment Facili	Addressing Illegally I PCBs-containing W	Reduction/Recycli Mercury-containing D Products
ATH		E		Р		E	Е			Е

Table 4.2. Existing (E) and planned (P) PCBs and mercury control measures in Atherton WMAs.

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Atherton to-date.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Atherton treat **14 acres** of land comprised of old urban land use. Of this total, **1.16 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.3). It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Atherton is also moving forward with designing a new GI facility in Holbrook-Palmer Park to help reduce existing flooding issues in the lower reaches of Atherton Creek and reduce pollutant loads. The project concept consists of an offline subsurface infiltration chamber that treats a large (estimated at 2,875 acres) multi-jurisdictional area including old urban land uses and encompassing parts of the Towns of Atherton and Woodside, the City of Menlo Park, and Unincorporated San Mateo County. The California Department of Transportation (Caltrans) has offered Atherton a \$13.6 million grant to design and build this stormwater runoff capture facility. Once the design is done, Atherton has the option of not moving forward with construction if it appears that the costs of maintaining the facility – which Atherton would be responsible for – are too high. If the design of the project is approved, construction is estimated to start late in 2018 and be completed in 2020.

		Total Area (Acres)	Land Use Category (Acres)					
Project Type	ID		Old Industrial	Old Urban	New Urban	Open Space	Other	
Parcel-based	ATH	1.16	0	1.16	0	0	0	
New/Redevelopment or Retrofit	Total	1.16	0	1.16	0	0	0	

Table 4.3 Land area in the Atherton WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – Gl includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

- 3 GI and treatment controls may include proprietary vault-based systems.
- 4 The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Atherton or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.2. City of Belmont

Watershed Management Areas

Table 4.4 lists the four WMAs identified to-date in the City of Belmont, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
60	City of San Mateo	298	2%	85%	1%	13%	0%
77	San Mateo County	86	5%	89%	0%	6%	0%
1011	Redwood City & San Carlos	507	12%	50%	10%	20%	8%
BEL		2,511	0%	74%	24%	2%	0%

Table 4.4. Belmont WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.5 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Belmont.

		Control Measure Categories								
WMA	Investigation	ucture and rol Measures	ure Systems	uring Building tion	n Stormwater Frastructure	Operat Mainte Prac	ion and enance tices	/astewater ⁻ acilities	ally Dumped ng Wastes	ng of Mercury- es & Products
ID	Source Property	Green Infrastri Treatment Conti	Trash Full Captu	Managing PCBs d Demoli	Managing PCBs ir Conveyance Inf	Street Sweeping or Flushing	Inlet Cleaning	Diversion to M Treatment F	Addressing Illeg PCBs-containi	Reduction/Recycli containing Device
1011	E	E		Р		E	E			E
60	E	Р		Р		E	E			E
77				Р		E	E			E
BEL		E/P		Р		E	E			E

Table 4.5. Existing (E) and planned (P) PCBs and mercury control measures in Belmont WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of Belmont to-date in WMAs 1011 and 60. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Belmont treat **12.5 acres** of land, of which **7 acres** is comprised of old urban land use. Of this total, **0.32 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.6). An additional **8.48 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Belmont is also planning to construct regional green streets on public lands or ROWs that will treat **1.42 acres** of land. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Table 4.6 Land area in the Belmont WMAs treated b	v GI built from July 1. 2013 to June 30. 2017. ^{1,2,3,4}

	WMΔ	Total Area	Land Use Category (Acres)						
Project Type	ID	(Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other		
Parcel-based	BEL	0.32	0	0.32	0	0	0		
New/Redevelopment or Retrofit	Total	0.32	0	0.32	0	0	0		

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

- 2 Gl includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.
- 3 GI and treatment controls may include proprietary vault-based systems.
- 4 The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Belmont or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.3. City of Brisbane

Watershed Management Areas

Table 4.7 lists the three WMAs identified to-date in the City of Brisbane, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
17		1,639	3%	29%	68%	0%	0%
1004		804	70%	11%	19%	0%	0%
BRI		245	0%	17%	57%	25%	0%

Table 4.7. Brisbane WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.8 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Brisbane.

		Control Measure Categories								
WMA	Investigation	ucture and rol Measures	ure Systems	uring Building tion	n Stormwater frastructure	Operat Mainte Prac	ion and enance tices	/astewater Facilities	ally Dumped ng Wastes	ng of Mercury- es & Products
ID	Source Property	Green Infrastr Treatment Conti	Trash Full Captu	Managing PCBs d Demoli	Managing PCBs in Conveyance Inf	Street Sweeping or Flushing	Inlet Cleaning	Diversion to M Treatment I	Addressing Illeg PCBs-containi	Reduction/Recycli containing Device
17	E	E		Р		E	E			E
1004	E			Р		E	E			E
BRI				Р		E	E			E

Table 4.8. Existing (E) and planned (P) PCBs and mercury control measures in Brisbane WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of Brisbane to-date in WMAs 17 and 1004. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Brisbane treat **9.01 acres** of land which is comprised of old industrial land use. All of this GI was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.6). It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

		Total		Land Use	Category (A	cres)	
Project Type	ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based	17	9.01	9.01	0	0	0	0
or Retrofit	Total	9.01	9.01	0	0	0	0

Table 4.9 Land area in the Brisbane WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 - Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Brisbane or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.4. City of Burlingame

Watershed Management Areas

Table 4.10 lists the 10 WMAs identified to-date in the City of Burlingame, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
16		24	31%	0%	69%	0%	0%
85		121	10%	89%	0%	0%	0%
138		15	30%	50%	20%	0%	0%
139		63	3%	97%	0%	0%	0%
141		62	7%	93%	0%	0%	0%
142		20	44%	56%	0%	0%	0%
149	City of San Mateo	480	1%	98%	1%	0%	0%
164		241	33%	67%	0%	0%	0%
1006		313	16%	68%	5%	11%	0%
BUR		1,827	0%	95%	4%	1%	0%

Existing and Planned Control Measures Summary

Table 4.11 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Burlingame.

				Con	trol Meas	ure Catego	ories			
WMA	Investigation	ucture and rol Measures	ure Systems	uring Building tion	n Stormwater Frastructure	Operat Mainte Prac	ion and enance tices	/astewater ⁼ acilities	ally Dumped ng Wastes	ng of Mercury- es & Products
ID	Source Property	Green Infrastr Treatment Conti	Trash Full Captı	Managing PCBs d Demoli	Managing PCBs i Conveyance Ini	Street Sweeping or Flushing	Inlet Cleaning	Diversion to W Treatment I	Addressing Illeg PCBs-containi	Reduction/Recycli containing Devic
16	E	Р		Р		E	E			E
85	E			Р		E	E			E
138				Р		E	E			E
139		Р		Р		E	E			E
141	E	E		Р		E	E			E
142	E	E		Р		E	E			E
149	E	Р		Р		E	E			E
164	E	E		Р		E	E			E
1006	E	E/P		Р		E	E			E
BUR	E	E/P		Р		E	E			E

Table 4.11. Existing (E) and planned (P) PCBs and mercury control measures in Burlingame WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of Burlingame to-date in the eight WMAs shown in Table 4.11. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Burlingame treat **15.19 acres** of land which is comprised of **6.8 acres** of old industrial and **8.39 acres** of old urban land uses. Of this, **8.25 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.12). An additional **39 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Burlingame has one existing green street project on public lands and ROWs that was constructed in 2011 and treats **1.32 acres** of old urban land use. This "Sustainable Streets and Parking Lot Demonstration" project on Donnelly Avenue includes a curb extension and a rain garden. The City is also currently planning three additional green street projects that will also treat old urban land uses. These projects will include curb

extensions and bioretention areas. Additional information will be documented when it becomes available. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

		Total	Land Use Category (Acres)						
Project Type	ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other		
	164	3.62	3.62	0	0	0	0		
Parcel-based	1006	2.79	0	2.79	0	0	0		
or Retrofit	BUR	1.84	0	1.84	0	0	0		
	Total	8.25	3.62	4.63	0	0	0		

Table 4.12 Land area in Burlingame WMAs treated	by GI built from July 1, 2013 to June 30, 2017. ^{1,2,3,4}
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1 - Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

- 3 GI and treatment controls may include proprietary vault-based systems.
- 4 The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Burlingame or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.5. Town of Colma

Watershed Management Areas

Table 4.13 lists the two WMAs identified to-date in the Town of Colma, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
329	Daly City	806	1%	91%	8%	0%	0%
COL		1,139	0%	15%	84%	0%	0%

Table 4.13. Colma WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.14 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Colma.

					Control I	Measure Cate	gories			
	nvestigation	icture and ol Measures	re Systems	uring Building ion	l Stormwater rastructure	Operatior Maintena Practic	n and ance es	astewater acilities	Dumped PCBs- Mastes	ig of Mercury- s & Products
WMA ID	Source Property I	Green Infrastru Treatment Contr	Trash Full Captu	Managing PCBs du Demolit	Managing PCBs in Conveyance Infi	Street Sweeping or Flushing	Inlet Cleaning	Diversion to W Treatment F	Addressing Illegally containing \	Reduction/Recyclir containing Device
329		E		Р		E	E			E
COL	E	E/P		Р		E	E			E

Table 4.14. Existing (E) and planned (P) PCBs and mercury control measures in Colma WMAs.

Source Property Investigation

Source property investigative work has been conducted in the Town of Colma to-date in WMA COL (Table 4.14). Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Colma treat **19.19 acres** of land which includes **13.33 acres** of old urban land uses. Of this, **5.17 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.15). An additional **16.18 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Colma also has one existing regional green street project on public lands or ROWs that was constructed in 2015 and treats **0.93 acres** of old urban land use. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

		Total	Land Use Category (Acres)							
Project Type	WMA ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other			
Parcel-based	COL	5.17	0	0	0	5.17	0			
or Retrofit	Total	5.17	0	0	0	5.17	0			
Green Streets or	COL	0.93	0	0	0	0.93	0			
Regional Retrofit	Total	0.93	0	0	0	0.93	0			

Table 4.15 Land area in Colma WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Colma or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.6. City of Daly City

Watershed Management Areas

Table 4.16 lists the four WMAs identified to-date in the City of Daly City, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
181	Unincorporated SM County	75	16%	64%	20%	0%	0%
329	Colma	806	1%	91%	8%	0%	0%
350		317	5%	60%	35%	0%	0%
DCY		1,096	1%	85%	14%	0%	0%

Table 4.16. Daly City WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.17 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Daly City.

					Control	Measure C	ategories				
	ivestigation	and Treatment sures	e Systems	ing Building on	Stormwater astructure	Operation and Maintenance Practices		iter Treatment s	Jumped PCBs- /astes	lg of Mercury- s & Products	
ID	Source Property Ir	Green Infrastructure Control Mea	Trash Full Captur	Managing PCBs du Demoliti	Managing PCBs in St Conveyance Infras	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastewa Facilitie	Addressing Illegally containing \	Reduction/Recycling containing Devices	
181		E/P		Р		E	E			E	
329		E/P		Р		E	E			E	
350		Р		Р		E	E			E	
DCY		E/P		Р		E	E			E	

Table 4.17 Existing (E) and planned (P) PCBs and mercury control measures in Daly City WMAs.

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the City of Daly City to-date.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Daly City treat **102.17** acres of land, all of which is comprised of old urban land use. All of this GI was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.18). An additional **120 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Project Type		Total	Land Use Category (Acres)								
Project Type		(Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other				
Parcel-based	329	100.57	0	100.57	0	0	0				
New/Redevelopment	DCY	2.17	0	2.17	0	0	0				
or Retrofit	Total	102.17	0	102.17	0	0	0				

Table 4.18 Land area in the Daly City WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Daly City or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.7. City of East Palo Alto

Watershed Management Areas

Table 4.19 lists the six WMAs identified to-date in the City of East Palo Alto, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
67		95	12%	75%	13%	0%	0%
68		317	0%	96%	4%	0%	0%
70		490	3%	94%	3%	0%	0%
72		26	44%	47%	9%	0%	0%
1015		52	93%	7%	1%	0%	0%
EPA		274	1%	79%	19%	0%	0%

Table 4.19. East Palo Alto WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.20 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of East Palo Alto.

Table 4.20. Existing (E) and planned	(P) PCBs and	mercury control	l measures in Ea	ast Palo Alto WMAs.
	-,	(.)			

					Contro	l Measu	re Categ	ories		
	nvestigation	cture and ol Measures	re Systems	ring Building on	Stormwater astructure	Ope a Maint Prac	ration nd enance ctices	astewater acilities	lly Dumped g Wastes	g of Mercury- s & Products
WMA ID	Source Property Ir	Green Infrastru Treatment Contro	Trash Full Captui	Managing PCBs du Demoliti	Managing PCBs in Conveyance Infr	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wa Treatment Fa	Addressing Illegal PCBs-containin	Reduction/Recyclin, containing Devices
1015	E	E/P		Р		E	E			E
67	E	E/P		Р		E	E			E
68		E		Р		E	E			E
70	E	E/P		Р		E	E			E
72	E	Р		Р		E	E			E
EPA	E	E		Р		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of East Palo Alto to-date in the five WMAs shown in Table 4.11. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in East Palo Alto treat **35 acres** of land which includes **13.5 acres** of old industrial and **16.5 acres** of old urban land uses. Of this, **17.2 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.21). An additional **1.62 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. The City also has six green street projects on public lands and/or in public ROW that are either under construction or in the planning stages. Additional information will be documented when it becomes available. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

	WMA	Total	Land Use Category (Acres)							
Project Type	ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other			
	67	1.20	1.20	0	0	0	0			
	68	1.77	0	1.77	0	0	0			
Parcel-based	70	8.91	4.98	0.98	0	2.95	0			
or Retrofit	1015	2.70	2.70	0	0	0	0			
	EPA	2.62	0	0.62	0	2.00	0			
	Total	17.20	8.88	3.37	0	4.95	0			

Table 4.21 Land area in Fast Palo Alto WMAs treated b	y GI built from Jul	v 1	2013 to June 30	2017, 1,2,3,4
	y or suit from sur	y -	, 2013 to June 30	201/.

1 - Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – Gl includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

- 3 GI and treatment controls may include proprietary vault-based systems.
- 4 The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in East Palo Alto or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.8. City of Foster City

Watershed Management Areas

Table 4.22 lists the two WMAs identified to-date in the City of Foster City, and their total land areas and associated land uses.

Table 4.22	. Foster City	WMAs an	d associate	d land uses.
1 1				

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
1010		273	3%	36%	11%	50%	0%
FCY		2,065	0%	60%	8%	31%	0%

Existing and Planned Control Measures Summary

Table 4.23 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Foster City.

	Control Measure Categories									
WMA ID	Source Property Investigation	Green Infrastructure and Treatment Control Measures	Trash Full Capture Systems	Managing PCBs during Building Demolition	Managing PCBs in Stormwater Conveyance Infrastructure	Operation and Maintenance Practices		/astewater =acilities	ally Dumped ng Wastes	ng of Mercury- es & Products
						Street Sweeping or Flushing	Inlet Cleaning	Diversion to V Treatment	Addressing Ille PCBs-contain	Reduction/Recycl containing Devic
1010		E/P		Р		E	E			E
FCY		E/P		Р		E	E			E

Table 4.23. Existing (E) and planned (P) PCBs and mercury control measures in Foster City WMAs.

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the City of Foster City to-date.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Foster City treat **32.85 acres** of land, of which **16 acres** is comprised of old urban land use. Of
this total, **23.61 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.24). An additional **45.63 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Project Type	WMA	Total	Land Use Category (Acres)						
	ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other		
Parcel-based	1010	14.29	0	0	14.29	0	0		
New/Redevelopment	FCY	9.32	0	7.11	1.69	0.52	0		
or Retrofit	Total	23.61	0	7.11	15.98	0.52	0		

Table 4.24 Land area in Foster City WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – Gl includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Foster City or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.9. Town of Hillsborough

Watershed Management Areas

Table 4.25 lists the one WMA identified to-date in the Town of Hillsborough, and its total land area and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
HIL		3,974	0%	84%	15%	0%	0%

Table 4.25. Hillsborough WMAs and associated land uses.

Existing and Planned Control Measures

PCBs and mercury control measures currently in place or planned for future implementation are described in this section. A preliminary list of control measures for Hillsborough are listed in Table 4.26.

				Con	trol Meas	ure Catego	ories			
	igation	: and asures	stems	Building	mwater cture	Operat Mainte Prac	ion and enance tices	/ater es	umped istes	Mercury- roducts
WMA ID	Source Property Invest	Green Infrastructure Treatment Control Me	Trash Full Capture Sy:	Managing PCBs during I Demolition	Managing PCBs in Stori Conveyance Infrastru	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastew Treatment Faciliti	Addressing Illegally Du PCBs-containing Wa	Reduction/Recycling of I containing Devices & P
HIL		E/P		Р		E	E			E

Table 4.26. Existing (E) and planned (P) PCBs and mercury control measures in Hillsborough WMAs.

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Hillsborough todate.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Hillsborough treat **0.16 acres** of land, all of which is comprised of old urban land use. All of this GI was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.27). An additional **0.02 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

	wма	Total	Land Use Category (Acres)				
Project Type	ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	HIL	0.16	0	0.16	0	0	0
	Total	0.16	0	0.16	0	0	0

Table 4.27 Land area in Hillsborough WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 - GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Hillsborough or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.10. City of Menlo Park

Watershed Management Areas

Table 4.28 lists the 11 WMAs identified to-date in the City of Menlo Park, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
66		64	30%	36%	1%	34%	0%
71	East Palo Alto/ Unincorporated SM County	1,394	2%	92%	2%	4%	0%
238		345	24%	74%	1%	0%	0%
239	Redwood City	36	29%	71%	0%	0%	0%
247	Unincorporated SM County	239	9%	91%	1%	0%	0%
252		108	5%	94%	1%	0%	0%
332	Redwood City	17	5%	95%	0%	0%	0%
378		138	3%	97%	0%	0%	0%
1012		54	84%	16%	0%	0%	0%
1014	Redwood City	176	11%	89%	0%	0%	0%
MPK		2,487	1%	84%	14%	1%	0%

Table 4.28. Menlo Park WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.29 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Menlo Park.

				Con	trol Meas	ure Catego	ories			
	igation	and asures	stems	Building	nwater cture	Operat Mainte Prac	Operation and Maintenance Practices		oed PCBs-	Aercury- roducts
WMA ID	Source Property Invest	Green Infrastructure Treatment Control Me	Trash Full Capture Sys	Managing PCBs during I Demolition	Managing PCBs in Storr Conveyance Infrastru	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastew Treatment Faciliti	Addressing Illegally Dump containing Waste	Reduction/Recycling of containing Devices & P
1012	E	Р		Р		E	E			E
1014	E	E/P		Р		E	E			E
238	E	E/P		Р		E	E			E
239	E	Р		Р		E	E			E
247		E/P		Р		E	E			E
252		E/P		Р		E	E			E
66	E	E/P		Р		E	E			E
71	E	E/P		Р		E	E			E
332	E			Р		E	E			E
378				Р		E	E			E
MPK	E	E/P		Р		E	E			E

Table 4.29. Existing (E) and planned (P) PCBs and mercury control measures in Menlo Park WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of Menlo Park to-date in the eight WMAs shown in Table 4.29. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Menlo Park treat **145 acres** of land, of which **33 acres** is comprised of old industrial and **55 acres** is comprised of old urban land use. Of this total, **32.84 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.30). An additional **70 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

	WMA	Total		Land Use	Category (A	cres)	
Project Type	ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other
	66	3.76	3.76	0	0	0	0
	71	1.60	0	1.60	0	0	0
	238	13.20	13.20	0	0	0	0
Parcel-based	247	5.87	0	5.87	0	0	0
or Retrofit	252	1.55	1.55	0	0	0	0
	1014	2.83	0	2.83	0	0	0
	MPK	4.03	0	4.03	0	0	0
	Total	32.84	18.51	14.33	0	0	0

Table 4.30 Land area in Menlo Park WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Menlo Park or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.11. City of Millbrae

Watershed Management Areas

Table 4.31 lists the four WMAs identified to-date in the City of Millbrae, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
395		480	2%	94%	5%	0%	0%
401		52	13%	85%	2%	0%	0%
1005	San Bruno	791	7%	65%	27%	0%	1%
MIL		1,309	0%	85%	13%	0%	2%

Table 4.31.	Millbrae	WIMAs	and	associated	land	uses.

Existing and Planned Control Measures Summary

Table 4.32 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Millbrae.

				Con	trol Meas	ure Catego	ories			
14/15/4-0	/estigation	ure and Measures	Systems	ng Building n	tormwater structure	Operation and Maintenance Practices		tewater ilities	umped PCBs- astes	of Mercury- & Products
WMA ID	Source Property Inv	Green Infrastruct Treatment Control	Trash Full Capture	Managing PCBs duri Demolitio	Managing PCBs in S Conveyance Infra	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Was Treatment Fac	Addressing Illegally Du containing W	Reduction/Recycling containing Devices
395				Р		E	E			E
401				Р		E	E			E
1005	E	E		Р		E	E			E
MIL		E		Р		E	E			E

Table 4.32. Existing (E) and planned (P) PCBs and mercury control measures in Millbrae WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of Millbrae to-date in WMA 1005 (Table 4.11). Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in Millbrae treat **15 acres** of land, all of which is comprised of old urban land use. None of this GI was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17). Additional new or redevelopment projects are not currently under construction or planned. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Millbrae or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.12. Town of Portola Valley

Watershed Management Areas

Table 4.33 lists the one WMA identified to-date in the Town of Portola Valley, and its total land area and associated land uses.

Table 4.33. Portola Valley WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
PVY		5,790	0%	51%	36%	14%	0%

Existing and Planned Control Measures Summary

Table 4.34 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Portola Valley.

				Con	trol Meas	ure Catego	ories			
	tigation	e and easures	stems	Building	mwater ucture	Operat Mainte Prac	Arrian Sector And Arrived Arri	Mercury- roducts		
WMA ID	Source Property Invest	Green Infrastructure Treatment Control Me	Trash Full Capture Sy	Managing PCBs during Demolition	Managing PCBs in Stor Conveyance Infrastru	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastev Treatment Faciliti	Addressing Illegally Du PCBs-containing Wa	Reduction/Recycling of I containing Devices & P
PVY				Р		E	E			E

Table 4.34. Existing (E) and planned (P) PCBs and mercury control measures in Portola Valley WMAs.

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Portola Valley todate.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites have not been built since 2005 (the PCBs TMDL loading baseline year) in Portola Valley, and there are no projects under construction or planned. It should be noted that the information on GI reported in this section is preliminary and may be revised in the future as additional information becomes available.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Portola Valley or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.13. City of Redwood City

Watershed Management Areas

Table 4.35 lists the 24 WMAs identified to-date in the City of Redwood City, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
253	Unincorporated SM County	280	6%	93%	1%	0%	0%
254		39	11%	83%	6%	1%	0%
261	Atherton	1,679	0%	99%	1%	0%	0%
266	Unincorporated San Mateo County	91	4%	92%	0%	4%	0%
267		75	21%	54%	2%	23%	0%
269		45	9%	0%	16%	74%	0%
323		185	1%	99%	0%	0%	0%
324		44	2%	98%	0%	0%	0%
325		21	5%	95%	0%	0%	0%
327		126	5%	94%	1%	0%	0%
333		15	29%	18%	0%	53%	0%
334		19	18%	33%	10%	39%	0%
335		24	0%	96%	4%	0%	0%
336		66	7%	93%	1%	0%	0%
337		138	11%	89%	0%	0%	0%
379	Unincorporated SM County	802	14%	85%	1%	0%	0%
388		42	1%	99%	0%	0%	0%
405		22	100%	0%	0%	0%	0%
407		18	53%	20%	9%	19%	0%
1000		148	75%	4%	9%	12%	0%
1011	Belmont/San Carlos	507	12%	50%	10%	20%	8%
1013		40	9%	76%	14%	0%	0%
1014	Menlo Park	176	11%	89%	0%	0%	0%
RCY		6,030	0%	64%	15%	21%	0%

 Table 4.35. Redwood City WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.36 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Redwood City.

				Con	trol Meas	ure Catego	ories			
				b0		Operat	ion and		3s-	<u>'</u>
	ion	res	SL	ding	ateı 'e	Mainte	enance	<u>ب</u>	PCE	cur
	gat	ano	ten	nilo		Prac	tices	ate	s ed	1er odi
WMA ID	Source Property Investi	Green Infrastructure Treatment Control Mea	Trash Full Capture Sys	Managing PCBs during B Demolition	Managing PCBs in Storm Conveyance Infrastruc	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastew Treatment Facilitie	Addressing Illegally Dump containing Waste	Reduction/Recycling of M containing Devices & Pr
253	E	E		Р		E	E			E
254	E	E		Р		E	E			E
261		E/P		Р		E	E			E
266		E		Р		E	E			E
267	E			Р		E	E			E
269				Р		E	E			E
323	E			Р		E	E			E
324	E	E/P		Р		E	E			E
325		Р		Р		E	E			E
327	E	E/P		Р		E	E			E
333	E			Р		E	E			E
334				Р		E	E			E
335				Р		E	E			E
336		E/P		Р		E	E			E
337	E	E/P		Р		E	E			E
379	E	E/P		Р		E	E			E
388	E	E		Р		E	E			E
405				Р		E	E			E
407	E			Р		E	E			E
1000	E	E		Р		E	E			Ē
1011	E	E		Р		E	E			E
1013				Р		E	E			E
1014	E	E - (=		P		E	E			E
RCY	E	E/P		Р		E	E			E

Table 4.36. Existing (E) and planned (P) PCBs and mercury control measures in Redwood City WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of Redwood City to-date in the 15 WMAs shown in Table 4.36. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline

year) in Redwood City treat **164 acres** of land, of which **16 acres** is comprised of old industrial and **79 acres** is comprised of old urban land use. Of this total, **58 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17)(Table 4.37). An additional **49 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Redwood City has three existing regional green street project on public lands and ROWs, one that was constructed in 2008 and treats **3.55 acres**, and two that were constructed in 2014 and treat **2.4 acres** of old industrial and old urban land use (Table 4.37). These projects include bioretention facilities and vegetated swales. The City is also planning to construct seven additional regional green streets on public lands or ROWs that will treat 10.4 acres of land. These include two green street projects recently awarded funding via a Proposition 1 stormwater implementation grant administered by the State Water Resources Control Board: Middlefield Road Streetscape and Kennedy Middle School Safe Routes to School. These green streets were originally included as a project concept in the Stormwater Resource Plan that SMCWPPP recently developed to ensure San Mateo County MRP Permittees would be eligible to compete for this type of funding. SMCWPPP also prepared the successful grant proposal for the City.

		Total	Total Land Use Category (Acres)						
Project Type	WMA ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other		
	253	0.45	0	0	0	0	0		
	254	3.91	3.91	0	0	0	0		
	261	4.19	0	4.19	0	0	0		
Parcel-based	266	10.77	4.65	6.12	0	0	0		
	324	2.24	0	2.24	0	0	0		
	327	4.46	0	4.46	0	0	0		
New/Redevelopment	336	5.88	0	5.88	0	0	0		
or Retront	379	5.10	5.10	0	0	0	0		
	388	1.19	1.19	0	0	0	0		
	1014	1.09	0	1.09	0	0	0		
	RCY	18.75	0	3.01	15.74	0	0		
	Total	58.03	14.85	27.44	15.74	0	0		
	1000	1.66	1.66	0	0	0	0		
Green Streets or Regional Retrofit	RCY	0.74	0	0	0.74	0	0		
	Total	2.40	1.66	0	0.74	0	0		

Table 4.37 Land area in Redwood City WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Redwood City or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.14. City of San Bruno

Watershed Management Areas

Table 4.38 lists the five WMAs identified to-date in the City of San Bruno, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
290	Unincorporated San Mateo County	2,017	0%	76%	24%	0%	0%
291	South San Francisco	194	33%	65%	2%	0%	0%
292	South San Francisco	220	17%	83%	1%	0%	0%
296	South San Francisco	1,272	1%	77%	23%	0%	0%
SBO		542	0%	74%	26%	0%	0%

Table 4.38. San Bruno WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.39 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Bruno.

				Con	trol Meas	ure Catego	ories			
	gation	and asures	tems	uilding	nwater cture	Operat Mainte Prac	ion and enance tices	ater ss	ed PCBs- s	1ercury- oducts
WMA ID	Source Property Investi	Green Infrastructure Treatment Control Me	Trash Full Capture Sys	Managing PCBs during B Demolition	Managing PCBs in Storn Conveyance Infrastru	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastew Treatment Facilitie	Addressing Illegally Dump containing Waste	Reduction/Recycling of M containing Devices & Pr
290		E/P		Р		E	E			E
291	E			Р		E	E			E
292	E			Р		E	E			E
296	E			Р		E	E			E
SBO				Р		E	E			Е

Table 4.39. Existing (E) and planned (P) PCBs and mercury control measures in San Bruno WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of San Bruno to-date in the three WMAs shown in Table 4.39. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in San Bruno treat **22 acres** of land, of which **7 acres** is comprised of old industrial and **15 acres** is comprised of old urban land use. Of this total, **11.5 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17)(Table 4.40). An additional **3.4 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

		Total		Land Us	e Category (Acres)	
Project Type	WMA ID	D Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based	290	11.50	7.00	4.50	0	0	0
or Retrofit Subtotal	Total	11.50	7.00	4.50	0	0	0

1001C 4.40 Land a calli Jan Diuno WWAS licalcu DV ai Duni Inoni July 1. 2013 lo June JO. 2017.	Table 4.40 Land area in San Bruno WMAs treated b	v GI built from July	/ 1. 2013 to June 30	. 2017 . ^{1,2,3,4}
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1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in San Bruno or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.15. City of San Carlos

Watershed Management Areas

Table 4.41 lists the 11 WMAs identified to-date in the City of San Carlos, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
31		99	27%	72%	0%	0%	0%
32	Belmont	67	3%	96%	0%	0%	0%
57		63	6%	92%	2%	0%	0%
59		28	32%	68%	0%	0%	0%
75		66	58%	42%	0%	0%	0%
80		21	5%	95%	0%	0%	0%
207		82	8%	90%	2%	0%	0%
210		141	23%	77%	0%	0%	0%
1011	Redwood City	507	12%	50%	10%	20%	8%
1016		142	19%	44%	3%	0%	34%
SCS		2,517	0%	85%	15%	0%	0%

Table 4.41. San	Carlos V	WMAs and	associated	land uses.

Existing and Planned Control Measures Summary

Table 4.42 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Carlos.

				Con	trol Meas	ure Catego	ories			
	igation	and asures	stems	Building	nwater cture	Operat Mainte Prac	Operation and Maintenance Practices		umped stes	Mercury- roducts
WMA ID	Source Property Invest	Green Infrastructure Treatment Control Me	Trash Full Capture Sys	Managing PCBs during l Demolition	Managing PCBs in Storr Conveyance Infrastru	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastew Treatment Faciliti	Addressing Illegally Du PCBs-containing Wa	Reduction/Recycling of N containing Devices & Pi
31	E	E/P		Р		E	E			E
32	E			Р		E	E			E
57		Р		Р		E	E			E
59	E	E		Р		E	E			E
75	E			Р		E	E			E
80				Р		E	E			E
207		Р		Р		E	E			E
210	E			Р		E	E			E
1011	E	E/P		Р		E	E			E
1016	E	E/P		Р		E	E			E
SCS	E	E/P		Р		E	E			E

Table 4.42. Existing (E) and planned (P) PCBs and mercury control measures in San Carlos WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of San Carlos to-date in the 8 WMAs shown in Table 4.43. WMA 31 and WMA 210, referred to respectively as the Pulgas Creek pump station north and south drainages, have been a particular focus areas for source property investigation work over the past 15 years. These primarily old industrial catchments have the most elevated concentrations of PCBs in MS4 sediment and stormwater runoff samples collected to-date from WMAs in San Mateo County. Collectively they were designated as a "pilot watershed" for the grant funded Clean Watershed for a Clean Bay (CW4CB) project (CW4CB 2017a). Two source properties (discussed below) have been identified in these WMAs to-date: (1) 977 and 1007/1011 Bransten Road in WMA 31 and (2) 1411 Industrial Road in WMA 210. However, based on the spatial distribution of PCBs in MS4 and street dirt sediments collected in these WMAs, it appeared that other source(s) remain unidentified in WMA 210. Additional sediment samples were collected in WMA 210 during spring 2017 and analyzed for PCBs in an attempt to identify additional source properties. The results are currently under evaluation. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

SMCWPPP anticipates submitting a minimum of three source property referrals (all in San Carlos) to the Regional Water Board over the next fiscal year. The total combined acreage of these properties is about 13 acres, resulting in an estimated projected 26 g/year load reduction credit (see Sections 5.1 and 5.2) when these properties are formally referred and the associated enhanced municipal O&M is implemented adjacent to the properties, per MRP requirements. The three source properties are described below.

1411 Industrial Road, San Carlos

A sediment sample with a very elevated PCBs concentration (193 mg/kg) was collected from a storm drain inlet located in the parking lot of 1411 Industrial Road in San Carlos (CW4CB 2017a). This about 1.3 acre property in WMA 210 drains to the MS4 at a sidewalk manhole where other elevated sediment samples have been collected. Since 2012 the occupant of this property has been a Habitat for Humanity Re-Store. Before that the property was occupied by an auto body shop and an automotive paint company. Between 1958 and 1994, Adhesive Engineering / Master Builders, Inc. was the occupant and conducted manufacturing, research and development of construction grade epoxy resin and products. Adhesive Engineering / Master Builders, Inc. had a history of violations for leaky wastewater drums and improper storage of hazardous wastes in the late 1980s and early 1990s, and PCBs were reportedly used on the site in the past. An environmental assessment report conducted as part of a business closure in 1994 revealed that 93 mg/kg PCBs was found in a soil sample collected in 1987. The soil sample was collected beneath an aboveground tank that was heated by oil-containing PCBs circulating in coils around the tank. The report also described the removal in 1987 of 44 cubic yards of contaminated soil from the area where the tank was located. As part of the 1994 environmental assessment, a soil sample was collected from the same area and PCBs were not detected at that time, but soil samples from other areas on the property were not collected and tested for PCBs. The above information suggests that the 1411 Industrial Road property is a source of PCBs to the MS4.

977 and 1007/1011 Bransten Road, San Carlos

Street dirt and sediment samples with elevated PCBs have been collected in front of and in the vicinity of 977 Bransten Road in San Carlos (CW4CB 2017a). The current occupant of this about two acre property in WMA 31 is GC Lubricants. 977 Bransten Road is a DTSC cleanup site due to soil and groundwater contamination with PCBs and other pollutants associated with activities at GC Lubricants and California Oil Recyclers, Inc., a previous tenant at the site. 1007/1011 Bransten Road is an about one acre property located adjacent to and immediately north of 977 Bransten Road and designated the "Estate of Robert E. Frank." A DTSC "Site Screening Form" describes PCBs in subsurface on both sides of border between the two properties and states there may have been a historic source on both sides of the property line. Abatement measures have been implemented to reduce movement of contaminated soils from the properties, including a concrete cap over contaminated areas. However, the available information suggest that soils/sediments with PCBs are migrating from these properties into the public ROW, including the street and the MS4.

270 Industrial Road and 495 Bragato Road, San Carlos

270 Industrial Road is located in WMA 1011 in San Carlos. This property is occupied by the Delta Star facility where transformers are manufactured, including transformers with PCBs historically (from 1961 to 1974). This is a Regional Water Board cleanup site with elevated PCBs found in on-site soil and groundwater samples, in a storm drain sediment sample collected from a location adjacent to the property, and in a urban runoff sample collected downstream of the facility. A "Removal Action" under

DTSC oversight was implemented between June 1989 and January 1991 to remove soil impacted with PCBs exceeding 25 ppm. Adjacent to 270 Industrial Road is 495 Bragato Road (Tiegel Manufacturing), a roughly three acre site that is largely unpaved. PCBs appear to have migrated to this property from the Delta Star property. The above information suggests that the 270 Industrial Road and 495 Bragato Road properties are a source of PCBs to the MS4.

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in San Carlos treat **39 acres** of land, of which **30 acres** is comprised of old industrial and **9 acres** is comprised of old urban land use. Of this total, **36 acres** were built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17)(Table 4.43). An additional **21 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

San Carlos also has an existing regional green street project that was constructed in 2014 in the public ROW along Bransten Road, which is located in an old industrial area (CW4CB 2017c). These bioretention facilities were constructed within curb extensions and treat **0.54 acres** of old industrial land use.

		Total		Land Use	e Category (A		
Project Type	WMA ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other
	59	18.50	18.50	0	0	0	0
Parcel-based	1011	9.74	9.74	0	0	0	0
or Retrofit	SCS	7.95	0	7.95	0	0	0
	Total	36.19	28.24	7.95	0	0	0
Green Streets or	31	0.54	0.54	0	0	0	0
Regional Retrofit	Total	0.54	0.54	0	0	0	0

Table 4.43 Land area in San Carlos WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

- 2 GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.
- 3 GI and treatment controls may include proprietary vault-based systems.
- 4 The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

As part of the CW4CB project, in 2013 San Carlos conducted a street flushing pilot project to test the effectiveness of this type of control measure in reducing PCBs and mercury in stormwater runoff (CW4CB 2017b). Additional street flushing is not currently planned in San Carlos or other locations in San Mateo County.

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in San Carlos or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.16. City of San Mateo

Watershed Management Areas

Table 4.44 lists the 18 WMAs identified to-date in the City of San Mateo, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
25		219	3%	97%	0%	0%	0%
89		98	10%	88%	1%	0%	0%
90		21	1%	99%	0%	0%	0%
92		136	3%	97%	0%	0%	0%
101		221	4%	96%	0%	0%	0%
111		95	5%	93%	2%	0%	0%
114		85	9%	91%	0%	0%	0%
120		10	5%	95%	0%	0%	0%
149	Burlingame	480	1%	98%	1%	0%	0%
156		40	17%	82%	1%	0%	0%
399		32	5%	95%	0%	0%	0%
403		48	1%	99%	0%	0%	0%
408		43	16%	82%	2%	0%	0%
1007		87	8%	90%	2%	0%	0%
1008		111	0%	98%	1%	0%	0%
1009		175	24%	75%	0%	0%	0%
1017		19	21%	78%	1%	0%	0%
SMO		5,800	1%	85%	9%	4%	0%

Table 4.44. City of Sall Maleo WIMAS and associated failu uses
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Existing and Planned Control Measures Summary

Table 4.45 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Mateo.

		Control Measure Categories											
	_			50	<u> </u>	Operat	ion and		Bs-	ہ خ			
	tion	d Ires	ns	din	ate re	Maintenance		5	РС	cur			
	igat	an asu	ster	Buil	nw ctu	Prac	tices	/ate es	bed	Mer rod			
WMA ID	Source Property Invest	Green Infrastructure Treatment Control Me	Trash Full Capture Sys	Managing PCBs during l Demolition	Managing PCBs in Storr Conveyance Infrastru	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastew Treatment Faciliti	Addressing Illegally Dump containing Waste	Reduction/Recycling of containing Devices & P			
25	E			Р		E	E			E			
89	E	E		Р		E	E			E			
90		E		Р		E	E			E			
92		E/P		Р		E	E			E			
101	E			Р		E	E			E			
111	E	E/P		Р		E	E			E			
114	E			Р		E	E			E			
120		E		Р		E	E			E			
149	E	E		Р		E	E			E			
156	E	E		Р		E	E			E			
399				Р		E	E			E			
403	E			Р		E	E			E			
408	E			Р		E	E			E			
1007	E	E		Р		E	E			E			
1008		E		Р		E	E			E			
1009	E	E/P		Р		E	E			E			
1017				Р		E	E			E			
SMO	E	E/P		Р		E	E			E			

 Table 4.45. Existing (E) and planned (P) PCBs and mercury control measures in City of San Mateo WMAs.

Source Property Investigation

Source property investigative work has been conducted in the City of San Mateo to-date in the 12 WMAs shown in Table 4.45. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in the City of San Mateo treat **46 acres** of land which is comprised of **14 acres** of old industrial and **32 acres** of old urban land uses. Of this, **31 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.46). An additional **99 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City of San Mateo also plans to build two green street projects (East Poplar Avenue and San Mateo Drive) and one green parking lot (Beresford Park) in public lands or ROW. These projects were recently awarded funding via a Proposition 1 stormwater implementation grant administered by the State Water Resources Control Board. They were originally included as a project concept in the Stormwater Resource Plan that SMCWPPP recently developed to ensure San Mateo County MRP Permittees would be eligible to compete for this type of funding. SMCWPPP also prepared the successful grant proposal for the City of San Mateo. The City also plans to build a green street project at 4th Avenue and Fremont (with curb extension and bioretention) outside of the Stormwater Resource Plan and Proposition 1 grant process.

		Total Area	Land Use Category (Acres)						
Project Type	WMA ID	(Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other		
	90	1.12	1.12	0	0	0	0		
	149	3.08	3.08	0	0	0	0		
	156	3.31	0	3.31	0	0	0		
Parcel-based New/	1007	0.29	0	0	0	0	0		
Redevelopment or Retrofit Subtotal	1008	3.53	3.53	0	0	0	0		
	1009	4.48	4.48	0	0	0	0		
	SMO	15.29	0	14.29	1.00	0	0		
	Total	31.10	12.50	17.60	1.00	0	0		

Table 4.46 Land area in City of San Mateo WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 – GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in the City of San Mateo or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.17. Unincorporated San Mateo County

Watershed Management Areas

Table 4.47 lists the ten WMAs identified to-date in unincorporated County of San Mateo, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
71	Menlo Park	1394	2%	92%	2%	4%	
77	Belmont	86	5%	89%	0%	6%	0%
181	Daly City	75	16%	64%	20%	0%	0%
247	Menlo Park	239	9%	91%	1%	0%	0%
253	Redwood City	280	6%	93%	1%	0%	0%
266	Redwood City	91	4%	92%		4%	
290	San Bruno	2,017		76%	24%		
379	Redwood City	802	14%	85%	1%	0%	0%
1001	South San Francisco	439	27%	67%	6%		
SMC		18,203	4%	33%	43%	0%	20%

Table 4.47. Unincorporated County of San Mateo WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.48 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in unincorporated County of San Mateo.

Table 4.48. Existing (E) and planned (P) PCBs and mercury control measures in unincorporated San Mateo
County WMAs.

				Con	trol Meas	ure Catego	ories			
	gation	and asures	tems	auilding	nwater cture	Operat Mainto Prac	ion and enance tices	ater 25	ed PCBs- s	Aercury- oducts
WMA ID	Source Property Investi	Green Infrastructure Treatment Control Me.	Trash Full Capture Sys	Managing PCBs during E Demolition	Managing PCBs in Storr Conveyance Infrastru	Street Sweeping or Flushing	Inlet Cleaning	Diversion to Wastew Treatment Faciliti	Addressing Illegally Dump containing Waste	Reduction/Recycling of N containing Devices & Pr
71	E	E/P		Р		E	E			E
77		E		Р		E	E			E
181		E		Р		E	E			E
247				Р		E	E			E
253	E			Р		E	E			E
266		E		Р		E	E			E
290		Р		Р		E	E			E
379	E	E/P		Р		E	E			E
1001	E	Р		Р		E	E			E
SMC	E	E		Р		E	E			E

Source Property Investigation

Source property investigative work has been conducted in unincorporated County of San Mateo to-date in the five WMAs shown in Table 4.48. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in unincorporated County of San Mateo treat **247 acres** of land which includes **4 acres** of old industrial and **63 acres** of old urban land uses. Of this, **230 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.49). An additional **4 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

Unincorporated County of San Mateo also has four existing regional green street projects on public lands and ROWs that treat **4.04 acres** of old urban land use.

		Total	Land Use Category (Acres)						
Project Type	WMA ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other		
Parcel-based New/Redevelopment	71	7.93	0	7.93	0	0	0		
	77	2.19	2.19	0	0	0	0		
	181	0.99	0	0.99	0	0	0		
	266	5.41	0	0	5.41	0	0		
or Retrofit Subtotal	379	1.87	1.44	0	0	0	0		
	SMC	212.02	0	26.38	0	185.64	0		
	Total	230.41	3.63	35.73	5.41	185.64	0		
Green Streets or	SMC	4.04	0	4.04	0	0	0		
Regional Retrofit Subtotal	Total	4.04	0	4.04	0	0	0		

Table 4.49 Land area in Unincorporated County of San Mateo WMAs treated by GI built from July 1, 2013 to June30, 2017.

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 - GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in unincorporated County of San Mateo or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.18. City of South San Francisco

Watershed Management Areas

Table 4.50 lists the 27 WMAs identified to-date in the City of South San Francisco, and their total land areas and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
291	San Bruno	194	33%	65%	2%	0%	0%
292	San Bruno	220	17%	83%	1%	0%	0%
293		654	9%	77%	14%	0%	0%
294		67	31%	69%	0%	0%	0%
295		25	12%	70%	4%	0%	14%
297		30	7%	93%	0%	0%	0%
298		122	3%	87%	10%	0%	0%
306		37	18%	82%	0%	0%	0%
307	Daly City	1,277	0%	84%	15%	1%	0%
311		111	3%	96%	1%	0%	0%
313		77	14%	82%	4%	0%	0%
314		66	5%	89%	6%	0%	0%
315		108	32%	68%	0%	0%	0%
316		117	22%	78%	0%	0%	0%
317		32	27%	73%	0%	0%	0%
318		70	45%	54%	1%	0%	0%
319		99	31%	69%	0%	0%	0%
352		40	17%	83%	0%	0%	0%
354		10	45%	55%	0%	0%	0%
356		10	18%	81%	1%	0%	0%
357		17	18%	78%	3%	0%	0%
358		32	22%	78%	0%	0%	0%
359		23	51%	49%	0%	0%	0%
362		18	52%	45%	1%	0%	2%
1001	Unincorporated SM County	439	27%	67%	6%	0%	0%
1002		316	23%	70%	5%	2%	0%
SSF		1,554	0%	75%	12%	1%	12%

Table 4.50. City of South San Francisco WMAs and associated land uses.

Existing and Planned Control Measures Summary

Table 4.51 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of South San Francisco.

		Control Measure Categories											
		nt				Operat	ion and	ut	γ	I			
	uc	me	S	ing	e ter	Mainte	enance	me	CB	ury cts			
	atio	eat	Б	pliu	wat	Prac	tices	eat	р	erc			
	stig	es es	ysti	^g BL	, nct	ing		Т.	וחם tes	Pro			
14/8.4.0	ive	anc	e S	on	Sto asti	hsh		atei is	Jun Vas ⁻	g of			
	y Ir	ure Aea	otur	du bliti	nfr		вu	itie	8 8	cling			
	ert	ol N	Cap	CBS	CBs ce l	о Б	ani	asti acil	lgal nin	icy o			
	rop	stru	E I	g P(an an	pin	Cle	≥≞	Ille	/Re Ig D			
	БР	fra: Co	4 4	ũ.	gin vey	/ee	let	n to	col	ion inir			
	onu		ras	lana	Son	Sv	드	sio	ess	uct nta			
	Sc	lee.		Ĕ	Σ̈́	eet		ver	ddr	sed co			
		ษั				Str		Ō	∢	-			
291	E	E		Р		E	E			E			
292	E	E		Р		E	E			E			
293	E	E/P		Р		E	E			E			
294	E			Р		E	E			E			
295	E	- 1-		Р		E	E			E			
297		E/P		Р		E	E			E			
298				Р		E	E			E			
306	E	E		Р		E	E			E			
307		E		P		E	E			E			
212		D		P D						C			
21/	 	Г		r D		F	F			F			
314	F	F		P		F	F			F			
316	 F	E/P		P		F	F			 F			
317	E	L/ 1		P		E	E			E			
318	E	E/P		P		E	E			E			
319	E	Ē		Р		E	E			E			
352				Р		E	E			E			
354	E			Р		E	E			E			
356	E			Р		E	E			E			
357	E	Р		Р		E	E			E			
358	E	E		Р		E	E			E			
359	E	Р		Р		E	E			E			
362	E	E		Р		E	E			E			
1001	E	E/P		Р		E	E			E			
1002	E	E/P		Р		E	E			E			
SSF	E	E/P		Р		E	E			E			

Table 4.51.	Existing (E) and planned	(P) PCBs and	d mercury contro	ol measures in Sout	n San Francisco WMAs.
10010 11011		_,	(.)		in inicaban co ini ooaa	

Source Property Investigation

Source property investigative work has been conducted in the City of South San Francisco to-date in the 22 WMAs shown in Table 4.51. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites built since 2005 (the PCBs TMDL loading baseline year) in the City of South San Francisco treat **277 acres** of land which includes **207 acres** of old industrial and **64 acres** of old urban land uses. Of this, **66 acres** was built between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) (Table 4.52). An additional **67 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. It should be noted that the acres treated by GI reported in this section are preliminary and may be revised in the future as additional information becomes available.

The City of South San Francisco is also evaluating building a GI facility at Orange Memorial Park with \$9.5 million in funding from Caltrans. This regional stormwater capture project would treat a large multi-jurisdictional area that would be primarily comprised of old urban land uses.

	WMA	Total	Land Use Category (Acres)						
Project Type	ID	Area (Acres)	Old Industrial	Old Urban	New Urban	Open Space	Other		
Parcel-based New/ Redevelopment or Retrofit	291	10.62	10.62	0	0	0	0		
	292	26.10	26.10	0	0	0	0		
	307	10.19	0	10.19	0	0	0		
	316	3.13	3.13	0	0	0	0		
	319	8.30	8.30	0	0	0	0		
	1001	6.66	6.66	0	0	0	0		
	1002	0.78	0.78	0	0	0	0		
	Total	65.78	55.59	10.19	0	0	0		

Table 4.52 Land area in City of South San Francisco WMAs treated by GI built from July 1, 2013 to June 30, 2017.^{1,2,3,4}

1 – Preliminary - may not include all acres currently treated by GI and treatment controls.

2 – GI includes (1) parcel-based new development, redevelopment, or retrofit projects; and (2) green street projects or regional retrofit projects.

3 - GI and treatment controls may include proprietary vault-based systems.

4 – The land use at the point location for each project provided by Permittees was assumed to represent the land use for the entire project.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in the City of South San Francisco or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

4.19. Town of Woodside

Watershed Management Areas

Table 4.53 lists the one WMA identified to-date in the Town of Woodside, and its total land area and associated land uses.

Table 4.53. Woodside WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
WDE		7,286	0%	55%	5%	40%	0%

Existing and Planned Control Measures Summary

Table 4.54 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Woodside.

Control Measure Categories Operation and Addressing Illegally Dumped PCBs-Building Reduction/Recycling of Mercurycontaining Devices & Products Source Property Investigation Managing PCBs in Stormwater Treatment Control Measures Maintenance **Trash Full Capture Systems** Conveyance Infrastructure Green Infrastructure and **Diversion to Wastewater** Practices **Treatment Facilities** containing Wastes Managing PCBs during Demolition Street Sweeping or WMA Inlet Cleaning ID Flushing Е Ρ WDE Е Е Е Е

Table 4.54. Existing (E) and planned (P) PCBs and mercury control measures in Woodside WMAs.

Source Property Investigation

Source property investigative work has been conducted in the Town of Woodside to-date in WMA WDE. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2018).

Green Infrastructure

Applicable public and private properties undergoing new or redevelopment are subject to MRP requirements to treat stormwater via LID techniques or equivalent. Based on the information compiled to-date, GI at new and redevelopment project sites have not been built since 2005 (the PCBs TMDL loading baseline year) in Woodside, and there are no projects under construction or planned. It should be noted that the information on GI reported in this section is preliminary and may be revised in the future as additional information becomes available.

Other PCBs and Mercury Controls

SMCWPPP is continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M) are present in Woodside or should be planned there. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports.

5.0 PCBs and Mercury Loads Reduced

Preliminary PCBs and mercury loads reduced through stormwater control measures implemented in San Mateo County during the current MRP term are reported in this section. The loads reduced were quantified for those control measures and projects reported in Section 4.0 that were implemented and/or completed between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17). In addition, PCBs load reductions were projected for the remainder of the permit term, to the extent that relevant data are available at this time. The projected load reductions are based on GI projects that are currently designated under construction or planned and source property referrals anticipated to occur in FY 2017/18. The projections reflect a portion of the full load reduction that will be achieved once a complete inventory of controls implemented over the remainder of the permit term becomes available.

In general, the load reductions reported or projected in this section are preliminary and do not include all existing and planned control measures. For example, the load reductions reported in this section do not account for any contamination site cleanups or municipal O&M enhancements (e.g., channel desilting, enhanced street sweeping, inlet cleaning, inlet-based trash capture systems) implemented by Permittees during the permit term. Any load reductions during the permit term associated with these controls will be reported in future reports. The Countywide Program will continue to track all relevant control measures and update the associated load reduction calculations as additional information becomes available and as new or enhanced actions are implemented.

5.1. Summary of Loads Reduced Accounting Methodology

The accounting methodologies used to calculate the load reductions reported in this section were developed by BASMAA and approved by the Executive Officer of the Regional Water Board for the purpose of load reduction reporting during MRP 2.0. These methods and data inputs are described fully in the BASMAA Interim Accounting Methodology Report v.1.1 (BASMAA 2017). The equations and default data inputs that are used to calculate load reductions are summarized below. The data on acres addressed by each type of control measure that were reported in Section 4.0 were used in the equations below to calculate the PCBs and mercury load reductions.

Source Property Identification and Abatement

The projected POC loads reduced through source property identification and abatement were calculated using the equation below:

Load of POC Reduced = $SP_A \bullet (SP_Y - OU_Y)$

Where:

SP_A = Source property area (acres) SP_y = Source property POC yield

 OU_{Y} = Old Urban land use POC yield

Default inputs:

PCBs Source property yield = 4,065 mg/acre/year PCBs Old urban land use yield = 30.3 mg/acre/year Mercury Source property yield = 1,300 mg/acre/year Mercury Old urban land use yield = 215 mg/acre/year Fifty percent of the load reduced is projected here for each anticipated source property referral that was identified in Section 4.0. (Per the MRP, the remaining 50% will be credited upon completion of the abatement process, or at ten years, whichever occurs first.)

Green Infrastructure and Treatment Controls

Parcel-Based New Development, Redevelopment and Retrofit

The POC loads reduced through parcel-based new development, redevelopment, and retrofit projects were calculated using the equation below:

Load of POC Reduced = $P_A \cdot (P_Y - NU_Y)$

Where:

P _A	=	New development/redevelopment/parcel-based retrofit project area (acre)
Py	=	Existing PCBs or mercury yield (mg/acre/year)
NUy	=	New Urban PCBs or mercury yield (mg/acre/year)

Default inputs:

PCBs New Urban land use yield = 3.5 mg/acre/year Mercury New Urban land use yield = 33 mg/acre/year

Green Streets and Regional Retrofit Projects

The POC loads reduced due to green streets and regional retrofit projects were calculated using the equation and inputs provided below:

Annual Mass of PCB Reduced = $P_A \bullet P_Y \bullet E_f$

Where:

P _A	=	Tributary area treated by green infrastructure/retrofit treatment measure (acres)
Py	=	Area-weighted PCBs or mercury yield (mg/acre-year)
E _f	=	Efficiency factor for green infrastructure/retrofit treatment control measure
		(assumed to be 70%)

5.2. PCBs Loads Reduced

Preliminary Estimated PCBs Loads Reduced between July 1, 2013 and June 30, 2017

The preliminary estimated PCBs loads reduced by Permittees between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) are shown in Table 5.1. Table 5.2 shows the PCBs loads reduced, itemized by control measure category. New and re-development projects have been and continue to be ongoing across all San Mateo County Permittees. Over the permit term to-date, more than 640 acres have undergone new or redevelopment, including more than 164 acres of old industrial and 241 acres of old urban land uses. These projects currently account for 99% of the PCBs load reduction reported to-date. Green street and regional retrofit projects account for the remaining 1% (Table 5.2). It is important to emphasize that the PCBs loads reduced that are reported here are preliminary, and do not include all control measures that have been implemented by San Mateo County Permittees to-date. SMCWPPP will report on any additional controls and associated pollutant load reductions in future reports. Table 5.2 also illustrates that the 15 g/year PCBs load reduction through GI by the end of the permit term required by the MRP has already been achieved.

	PCBs Loads Reduced (g/year)									
Permittee	FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced					
Atherton	0.03				0.03					
Belmont				0.01	0.01					
Brisbane	0.75				0.75					
Burlingame		0.15	0.01	0.27	0.43					
Colma	0.005	0.001			0.01					
Daly City	2.17	0.18		0.41	2.76					
East Palo Alto	0.12	0.24	0.01	0.46	0.83					
Foster City	0.07		0.12	0.0005	0.19					
Hillsborough			0.004		0.004					
Menlo Park	0.23	0.21	1.49		1.92					
Millbrae										
Portola Valley										
Redwood City	0.20	1.21	0.66	0.04	2.11					
San Bruno	0.12		0.58		0.70					
San Carlos	1.80		0.81		2.61					
San Mateo City	0.56	0.50	0.27	0.19	1.51					
San Mateo County	0.55	0.37	0.62		1.54					
South San Francisco	3.84	0.77	0.25	0.04	4.89					
Woodside										
TOTAL	10.44	3.63	4.82	1.41	20.30					

 Table 5.1. Preliminary estimates of PCBs loads reduced by San Mateo County Permittees between July 1, 2013

 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Table 5.2. Preliminary estimates of PCBs loads reduced in San Mateo County by control measure category
between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Control Measure Category			Required Load Reductions (g/year)					
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced	2018	2020
Source Property Identification and Abatement ¹								
Green Infra- structure	Parcel-Based New or Redevelopment ²	10.26	3.54	4.80	1.41	20.01		15
and Treatment	Green Streets or Regional Retrofit ²	0.18	0.09	0.02	0	0.29		15
Controls	Trash Full Capture ^{3, 4}							
Enhanced O&	M Measures ⁴							
Manage PCBs	in Building Materials ⁴							
Manage PCBs	in Infrastructure ⁴							
Diversion to P	POTW⁴							
Source Contro	ols/Other ⁴							
	TOTAL	10.44	3.63	4.82	1.41	20.30	60	370

1. Load Reduced = (Source Property Area (acre)) x (4.065 – 0.0303 (g/acre/year)).

- For parcel-based projects, Load Reduced = (Project Area (acre)) x (Existing Yield 0.0035 (g/acre/year)). For green street or regional retrofit projects, Load Reduced = (Project Drainage Area (ac)) x (area-weighted PCBs yield (g/acre/year)) x 0.70. See Section 4.0 for acres associated with this control measure.
- 3. Load Reduced = (Project Drainage Area (acre)) x (area-weighted PCBs yield (g/acre/year)) x 0.20.
- 4. Loads reduced for these control measures will be provided in future reports, as appropriate.

Preliminary Projected PCBs Loads Reduced over Remainder of the Permit Term

Table 5.3 includes preliminary PCBs load reductions projected for the remainder of the permit term, to the extent that relevant data are currently available. The projections reflect a portion of the full load reduction that will be achieved once a complete inventory of controls implemented over the remainder of the permit term becomes available.

The projected load reductions are based on GI projects that are currently designated under construction or planned and source property referrals anticipated to occur in FY 2017/18. In addition to the completed projects that have been reported in Section 4.0, there are a number of new/redevelopment projects that are currently under construction in San Mateo County. Upon completion, these projects are estimated to reduce PCBs loads by an additional 8.90 g/year. Table 5.3 assumes that all of this credit will be realized in FY 2017/18. Additional projects are also in the planning stages, and based on current estimates of the area that is expected to be redeveloped, these projects would reduce PCBs loads by an additional 9.96 g/year. Table 5.3 assumes that this load reduction credit will be divided evenly over three fiscal years: FY 2017/18 through FY 2019/20.

Table 5.3. Preliminary estimates of PCBs loads reduced in San Mateo County by control measure category between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17) and preliminary load reductions projected over remainder of the permit term.^{1, 2, 3}

Control Measure Category		PCBs Loads Reduced (g/year)											
		Reported To-date			Projected			Cumulative	Required	Cumulative	Required		
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Load Reduced through June 2018	Load Reduction by June 2018 (g/year)	Load Reduced through June 2020	Load Reduction by June 2020 (g/year)	
Source Property Identification and Abatement						26			26		26		
Green Infra- structure and Treatment	Parcel-Based New or Redevelopment	10.26	3.54	4.8	1.41	12.22	3.32	3.32	32.23		38.87	15	
	Green Streets or Regional Retrofit	0.18	0.09	0.02	0				0.29		0.29	15	
Controls	Trash Full-Capture								0		0		
Enhanced O&M	I Measures								0		0		
Manage PCBs ir	n Building Materials	0	0	0	0	0	0	246.67	0		247		
Manage PCBs ir	n Infrastructure								0		0		
Diversion to POTW									0		0		
Source Controls/Other									0		0		
	TOTAL - ALL CONTROLS	10.44	3.63	4.82	1.41	38.22	3.32	249.99	58.52	60	311.83	370	

¹ Credit for all parcel-based GI projects designated as "under construction" (8.90 g/year) is applied to FY 2017/18.

² Credit for all parcel-based GI projects designated as "planned" (9.96 g/year) is divided evenly over three fiscal years: FY 2017/18 through FY 2019/20.

³ Assumes the collective PCBs load reduction credit of 246.67 grams/year for San Mateo County Permittees stipulated by the MRP, if all the Permittees implement by July 1,

2019 a program to manage PCBs in building materials during demolition, consistent with the permit requirements (see Section 3.4).

In addition, as described in Section 4.15, SMCWPPP anticipates submitting a minimum of three source property referrals (all in San Carlos) to the Regional Water Board over the next fiscal year. The total combined acreage of these properties is about 13 acres, resulting in an estimated projected 26 g/year load reduction (see Section 5.1 for the calculation methods) when these properties are formally referred and the associated enhanced municipal O&M is implemented adjacent to the properties, per MRP requirements.

Table 5.3 also shows the collective PCBs load reduction credit of 246.67 grams/year for San Mateo County Permittees stipulated by the MRP, if all the Permittees implement by July 1, 2019 a program to manage PCBs in building materials during demolition, consistent with the permit requirements (see Section 3.4).

Table 5.3 allows for comparison of the current reported and projected PCBs load reductions to MRP requirements. The MRP requires that, if regional targets are not met, a 60 g/year reduction must be achieved countywide by June 2018 and a 370 g/year PCBs load reduction must be achieved countywide by the end of the MRP 2.0 permit term. In addition, the MRP requires that at least 15 grams/year of the 370 grams/year is achieved via GI, a requirement that has already been met, as mentioned previously.

5.3. Mercury Loads Reduced

Preliminary Estimated Mercury Loads Reduced between July 1, 2013 and June 30, 2017

The preliminary estimated mercury loads reduced by Permittee between July 1, 2013 and June 30, 2017 (i.e., FY 2013/14 through FY 2016/17) are shown in Table 5.4. Table 5.5 shows the mercury loads reduced by control measure category. Similar to PCBs, new and re-development projects currently account for 99% of the mercury load reduction reported to-date. Green street and regional retrofit projects account for the remaining 1% (Table 5.5). Table 5.5 also illustrates that the 6 g/year mercury load reduction through GI by the end of the permit term required by the MRP has already been achieved.

Mercury Mass Collected via Countywide Hazardous Waste Collection Program

San Mateo County municipalities participate in San Mateo County Health Department's Household Hazardous Waste (HHW) Program and Very Small Quantity Generator Business Collection (VSQG) Program (see Section 3.8). The estimated mass of mercury collected in FY 2014/15 through FY 2016/17 via these programs is shown in Table 5.5. It should be noted that these mass estimates are not directly comparable to pollutant load reductions in stormwater runoff discharges.

	Mercury Loads Reduced (g/year)									
Permittee	FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced					
Atherton	0.21				0.21					
Belmont				0.06	0.06					
Brisbane	11.42				11.42					
Burlingame		1.30	0.09	4.04	5.43					
Colma										
Daly City	14.67	1.24		2.79	18.70					
East Palo Alto	1.63	3.53	0.07	6.63	11.86					
Foster City	0.47		0.82	0.00	1.29					
Hillsborough			0.03		0.03					
Menlo Park	2.63	2.48	20.95		26.06					
Millbrae										
Portola Valley										
Redwood City	2.52	15.41	7.72	0.27	25.91					
San Bruno	0.82		8.87		9.69					
San Carlos	25.57		12.34		37.91					
San Mateo City	8.55	7.41	1.82	1.25	19.04					
San Mateo County	5.24	2.41	4.19		11.84					
South San Francisco	56.57	11.67	3.80	0.24	72.29					
Woodside					0.00					
TOTAL	130.30	45.45	60.69	15.29	251.74					

Table 5.4. Preliminary estimates of mercury loads reduced by San Mateo County Permittees between July 1,2013 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Table 5.5. Preliminary estimates of mercury loads reduced in San Mateo County by control measure category
between July 1, 2013 and June 30, 2017 (FY 2013/14 through FY 2016/17).

Control Measure Category			Required Load Reductions (g/year)					
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	Cumulative Load Reduced	2018	2020
Source Property Identification and Abatement ¹								
Green Infra-	Parcel-Based New or Redevelopment ²	127.52	44.87	60.54	15.29	248.21		6
structure and	Green Streets or Regional Retrofit ²	2.79	0.58	0.15	0.00	3.52		U
Treatment Controls	Trash Full Capture ^{3, 4}							
Enhanced O&M Measures ⁴								
Diversion to POTW ⁴								
Source Cont	rols/Other ⁴							
	TOTAL	130.30	45.45	60.69	15.29	251.74		370

1. Load Reduced = (Source Property Area (acre)) x (1.033 – 0.215 (g/acre/year)).

For parcel-based projects, Load Reduced = (Project Area (acre)) x (Existing Yield – 0.033 (g/acre/year)). For green street or regional retrofit projects, Load Reduced = (Project Drainage Area (ac)) x (area-weighted mercury yield (g/acre/year)) x 0.70. See Section 4.0 for acres associated with this control measure.

3. Load Reduced = (Project Drainage Area (acre)) x (area-weighted mercury yield (g/acre/year)) x 0.20.

4. Loads reduced for these control measures will be provided in future reports, as appropriate.

	FY 1	4/15	FY 1	5/16	FY 16/17	
Mercury Containing Device/Equipment	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)	Total Amount of Devices Collected	Estimated Mass of Mercury Collected (kg)
Fluorescent Lamps (linear feet) ^{1,2}	25,532	0.05	89,662	0.19	93,896	0.19
CFLs (each) ³	1,881	0.01	17,211	0.08	17,354	0.08
Thermostats (each) ⁴	26	0.10	12	0.05	10	0.04
Thermometers (each) ⁵	313	0.19	13	0.01	19	0.01
Switches (each)	18	0.05	0	0	0	0
Total Mass of Mercu	0.40		0.32		0.32	

Table 5.6. Estimated mercury mass collected via the San Mateo County Health Department's Household Hazardous Waste (HHW) Program and Very Small Quantity Generator Business Collection (VSQG) Program

^[1]The County HHW Program reported the number of circle tubes and U-bent lights. A conservative assumption was made that all U-bent tubes were 22 inches and all circle tubes were 8 inches based on the most available, smallest sizes found on Internet searches.

^[2]The average mercury content for a four-foot linear fluorescent lamp is 8.3 milligrams (mg). This is equal to 2.075 mg per linear foot. Source: NEMA 2005. Fluorescent and Other Mercury-Containing Lamps and the Environment: Mercury Use, Environmental Benefits, Disposal Requirements. National Electrical Manufacturers Association. March 2005. 14p.

^[3]The National Electrical Manufacturers Association (NEMA) announced that under the new voluntary commitment, effective October 1, 2010, participating manufacturers will cap the total mercury content in CFLs that are under 25 watts at 4 mg per unit, and CFLs that use 25 to 40 watts of electricity will be capped at 5 mg per unit. Each CFL recycled is assumed to have an average mass of 4.5 mg mercury. New CFLs are also assumed to have 4.5 mg mercury on average. Source: NEMA 2010. NEMA Lamp Companies Agree to Reduction in CFL Mercury Content Cap. Available at http://www.nema.org/media/pr/20101004a.cfm. Accessed April 11, 2012.

⁽⁴⁾The amount of mercury in a thermostat is determined by the number of ampoules. There are generally one or two ampoules per thermostat (average is 1.4) and each ampoule contains an average of 2.8 grams (g) of mercury. Therefore, each thermostat recycled is assumed to contain approximately 4.0 g of mercury. Source: TRC 2008. Thermostat Recycling Corporation's Annual Report for the U.S. Prepared by the Thermostat Recycling Corporation. http://www.thermostat-recycle.org/files/u3/2008 TRC Annual Report.pdf.

^[5] USEPA reports that glass mercury fever thermometers contain about 0.61 g of mercury. Source: USEPA 2012. Thermometers. Available at http://www.epa.gov/mercury/thermometer-main.html. Accessed April 11, 2012.

6.0 DISCUSSION AND NEXT STEPS

The selection of WMAs and feasible and cost-effective control measures will be an ongoing and evolving process during the MRP 2.0 permit term as new data become available. Building on the efforts described in this report, SMCWPPP and San Mateo County MRP Permittees plan to continue to work together to conduct a variety of activities to continue addressing MRP 2.0 requirements for PCBs and mercury. The general categories of activities are summarized as follows:

- SMCWPPP will continue identifying areas that will be the focus of PCBs and mercury control
 measure implementation over the course of MRP 2.0, including refining and prioritizing the
 current list of WMAs, identifying new priority WMAs, and identifying source areas within WMAs.
 As part of these efforts, SMCWPPP is currently evaluating the results of its WY2017 POC
 monitoring program (stormwater runoff and sediment sampling conducted during spring 2017)
 that targeted selected catchments and parcels of interest. SMCWPPP is also evaluating the costeffectiveness of conducting additional WY2018 POC monitoring efforts (sediment and
 stormwater runoff sampling) that would further inform implementation of controls in priority
 WMAs.
- SMCWPPP and San Mateo County Permittees will continue planning scenarios for control measure implementation in priority WMAs in San Mateo County. High priority will continue to be given to the Pulgas Creek pump station north and south drainages (WMA 31 and WMA 210), which are the two WMAs in San Mateo County with the most elevated concentrations of PCBs in sediment and stormwater runoff samples to-date. The planning will be informed by the results of various pilot work conducted in these drainages and other locations in the Bay Area through CW4CB.
- SMCWPPP anticipates submitting a minimum of three source property referrals (all in San Carlos) to the Regional Water Board over the next fiscal year. SMCWPPP and San Mateo County Permittees will also evaluate submitting other referrals as appropriate, based on the ongoing evaluation of the results of its WY2017 POC monitoring program and other appropriate data.
- SMCWPPP will continue to work with San Mateo County Permittees to look for opportunities to take credit for PCBs and mercury loads avoided due to planned removals of sediments with elevated levels of pollutants. SMCWPPP will also continue to evaluate opportunities to optimize existing municipal O&M activities, enhance planned sediment removals, and/or identify new removal actions, as cost-effective.
- SMCWPPP will continue to evaluate opportunities to take credit for PCBs and mercury loads avoided due to existing PCBs contamination site cleanups in San Mateo County.
- SMCWPPP will continue to work with San Mateo County Permittees to develop a tracking mechanism for GI and stormwater treatment in San Mateo County and update the associated database. The preliminary database described in this report will be updated and load reductions will be calculated as appropriate. The effort to fill data gaps will focus especially on information needed to calculate pollutant load reductions (e.g., treatment areas). This tracking will continue to be integrated with the MRP Provision C.3.j.iv requirement for development and implementation of methods to track and report implementation of GI.
- SMCWPPP will continue participating in the BASMAA regional project to design and implement a study to evaluate the magnitude and extent of PCBs in caulks/sealants used in storm drain and roadway infrastructure in the Bay Area, per MRP Provision C.12.e.
Control Measure Plan for PCBs and Mercury in San Mateo County Stormwater Runoff

- SMCWPPP will continue participating in the ongoing BASMAA regional project to develop guidance materials, tools, protocols and training materials and conduct outreach to assist Permittees to develop local programs to prevent PCBs from being discharged to municipal storm drains due to demolition of applicable buildings, per MRP Provision C.12.f. SMCWPPP will also evaluate the need to tailor these materials for use in San Mateo County.
- SMCWPPP will continue to work with the San Mateo County Environmental Health Department on education and outreach efforts to San Mateo County residents likely to consume locallycaught fish from the Bay (e.g., maintenance of strategically placed signs, training of healthcare workers to disseminate information, and targeted social media posts).
- SMCWPPP will continue conducting a Reasonable Assurance Analysis (RAA) to support GI plan development and demonstration of mercury and PCBs load reductions to meet goals set by the MRP and TMDLs. The modeling system supporting the RAA will be used to test various combinations of green infrastructure projects within each city and unincorporated county jurisdiction, and will provide output that will support decision-making and the development of GI plans.
- With assistance and guidance from SMCWPPP, San Mateo County Permittees will develop GI Plans that integrate with the planning for the use of GI to reduce loads of PCBs and mercury. The MRP requires that the GI plans are submitted by September 2019 along with documentation of legal mechanisms to ensure implementation of the Plans.

7.0 REFERENCES

BASMAA (2017). *Interim Accounting Methodology for TMDL Loads Reduced*. Prepared by Geosyntec Consultants and EOA, Inc. for the Bay Area Stormwater Management Agencies Association (BASMAA). March 23, 2017.

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CW4CB (2017b). Street Flush and Capture Pilot Study, Pulgas Creek Pump Station Watershed, San Carlos, California. A Pilot Project of the Clean Watersheds for a Clean Bay (CW4CB) USEPA Grant-Funded Project. May 2017.

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SMCWPPP (2017b). *Pollutants of Concern Monitoring Report, Water Year 2017 Accomplishments and Water Year 2018 Planned Allocation of Effort*. Prepared for San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) by EOA, Inc., Oakland, California. DRAFT October 16, 2017.

Appendix A

Maps for each San Mateo County Permittee showing WMAs and GI/LID facilities



Figure A-1. WMAs and GI/LID in Atherton Atherton Watershed Management Area Map





Figure A-2. WMAs and GI/LID in Belmont Belmont Watershed Management Area Map





Figure A-3. WMAs and GI/LID in Brisbane Brisbane Watershed Management Area Map





Figure A-4. WMAs and GI/LID in Burlingame Burlingame Watershed Management Area Map





Figure A-5. WMAs and GI/LID in Colma Colma Watershed Management Area Map



Ν

0.9

Miles



Figure A-6. WMAs and GI/LID in Daly City Daly City Watershed Management Area Map



Permittee Boundary





0.225

0

0.45

0.9

Miles

Permittee Boundary



Foster City Watershed Management Area Map





Figure A-9. WMAs and GI/LID in Hillsborough Hillsborough Watershed Management Area Map





Figure A-10. WMAs and GI/LID in Menlo Park Menlo Park Watershed Management Area Map





Figure A-11. WMAs and GI/LID in Millbrae Millbrae Watershed Management Area Map





Figure A-12. WMAs and GI/LID in Portola Valley Millbrae Watershed Management Area Map





Figure A-13. WMAs and GI/LID in Redwood City Redwood City Watershed Management Area Map





Figure A-14. WMAs and GI/LID in San Bruno San Bruno Watershed Management Area Map



2 Miles



Figure A-15. WMAs and GI/LID in San Carlos





Figure A-16. WMAs and GI/LID in San Mateo San Mateo Watershed Management Area Map





Figure A-17a. WMAs and GI/LID in San Mateo County San Mateo County Watershed Management Area Map









Figure A-17c. WMAs and GI/LID in San Mateo County San Mateo County Watershed Management Area Map





Figure A-17d. WMAs and GI/LID in San Mateo County San Mateo County Watershed Management Area Map





Figure A-18. WMAs and GI/LID in South San Francisco South San Francisco Watershed Management Area Map





Figure A-19. WMAs and GI/LID in Woodside Woodside Watershed Management Area Map

