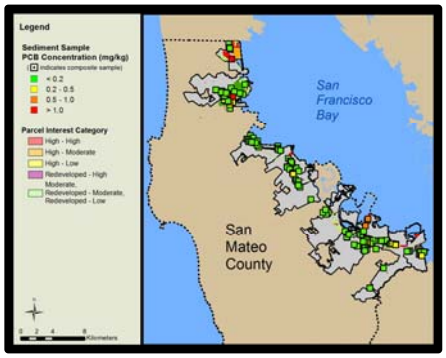
SAN MATEO COUNTYWIDE
Water Pollution
Prevention Program

Updated Control Measures Plan

for PCBs and Mercury in San Mateo County Stormwater Runoff



September 30, 2018

TABLE OF CONTENTS

List of Tables

List of Figures

List of Appendices

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

1.1. Background

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 pilot-scale work to focused implementation and defined load reduction goals (e.g., 3 kg/year PCBs across the MRP 2.0 area by June 30, 2020). 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, such as enhancements to municipal operation and maintenance (O&M) activities that remove sediments containing PCBs and/or mercury.

In compliance with Provisions C.11 and C.12, the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) is continuing to work with San Mateo County municipal agencies to identify control measures for PCBs and mercury that reduce discharges from their MS4s. This plan documents the approaches taken and progress made to-date, including summaries of:

- The pertinent MRP 2.0 permit requirements;
- Progress to-date identifying sources of and controls for PCBs and mercury discharges in San Mateo County stormwater runoff;
- The types of control measures typically used to control PCBs and mercury discharges in stormwater runoff from local watersheds surrounding San Francisco Bay;

- Documentation of existing and planned PCBs and mercury control measures for each San Mateo County MRP 2.0 Permittee;
- Updated estimates of the reductions in PCBs and mercury loads from San Mateo County stormwater runoff during the MRP 2.0 term that have been quantified to-date, calculated using the interim accounting methodology described later (see Section 5.0); and
- Next steps.

This plan provides an update to the plan that was submitted with the FY 2016/17 Annual Report in September 2017 (SMCWPPP 2017b), including updated estimates of the PCBs and mercury load reductions achieved in San Mateo County this permit term (including a period immediately preceding the permit term, as explained later, see Section 4.0) that have been quantified to-date. Consistent with the Provision C.11/12 requirements, the information contained within this plan will continue to be updated periodically during MRP 2.0 as new information is developed about control measures and associated pollutant load reductions.

1.2. Summary of 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 (accomplished by SMCWPPP 2016b).[1] 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.

In subsequent Annual Reports, Permittees are required to provide updates to the initial information presented with the FY 2015/16 Annual Report.

The MRP also requires that Permittees demonstrate and report on achievement of PCBs load reductions and ancillary load reduction benefits for mercury during the term of the Permit. 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 (which was referred to as the interim accounting methodology (BASMAA 2017), that updates the load reduction accounting system outlined in the MRP 2.0 factsheet. Permittees were required to use the assessment methodology to quantify in a technically

[1] The MRP also required submittal of an initial progress report by April 1, 2016 (accomplished by SMCWPPP 2016a).

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 are required to report on the use of the methodology to demonstrate progress toward achieving the PCBs and mercury load reductions required this permit term (accomplished by SMCWPPP 2017b), with updates provided in subsequent Annual Reports.

2.0 PROGRESS TO-DATE IDENTIFYING PCBS AND MERCURY SOURCES AND CONTROLS

The below sections briefly summarize progress to-date identifying sources of and controls for PCBs and mercury discharges in San Mateo County stormwater runoff and related efforts such as developing the interim accounting methodology.

In addition to the efforts described in the below sections, during the past several years the Regional Monitoring Program for Water Quality in San Francisco Bay (RMP) has conducted stormwater runoff monitoring in San Mateo County and other parts of the Bay Area through its Small Tributary Load Strategy (STLS). The monitoring in San Mateo County has been coordinated with SMCWPPP, with SMCWPPP staff often assisting with selection of sampling stations and coordination with staff from local agencies. Monitoring objectives have included characterizing PCBs and mercury concentrations in stormwater runoff from the bottom of selected urban catchments with potential pollutant source areas (referred to as Watershed Management Areas or WMAs, see below discussion for further details) and estimating pollutant loading rates from some catchments. SMCWPPP (2017a and 2018) include additional information on the STLS efforts in San Mateo County.

2.1. 2000 through 2015

From 2000 to 2015, SMCWPPP and others conducted periodic sediment sampling programs in San Mateo County to begin to characterize the distribution of PCBs in various land uses throughout the urban landscape and identify catchments and properties within catchments that are potential sources of PCBs to the MS4. During this period, over 270 sediment samples were collected in San Mateo County, mainly from streets and MS4s in the public right-of-way (e.g., storm drain lines accessed via manholes, storm drain inlets, drainage channels, and pump station sumps). The samples were analyzed for PCBs congeners, total mercury, and ancillary analytes (KLI and EOA 2002; SMSTOPPP 2002, 2003, 2004; Yee and McKee 2010; SMCWPPP 2015; and CW4CB 2017a).

The initial step in the sediment sampling programs was a 2000 and 2001 collaborative project among SMCWPPP and other Bay Area countywide stormwater programs referred to as the Joint Stormwater Agency Project (JSAP). The JSAP measured concentrations of PCBs, mercury and other pollutants in embedded sediments collected from stormwater conveyance systems in San Mateo County and other parts of the Bay Area (KLI and EOA 2002). The primary goal was to characterize the distribution of pollutants among land uses in watersheds draining to the Bay.

In follow-up to the JSAP regional survey, SMCWPPP and other Bay Area countywide stormwater programs began performing “case studies” in some areas where relatively elevated PCBs were found during the JSAP. The primary goals were to develop methods to identify PCBs sources and begin to identify measures to address any controllable sources found. The techniques employed included collection and analysis of embedded stormwater conveyance sediment samples and research on historical and current land use. In the early 2000s, SMCWPPP completed PCBs case study work in four San Mateo County areas where elevated levels of PCBs were found during the JSAP survey. The case studies investigated the Bradford and Broadway pump station drainages in Redwood City, the South Maple pump station drainage in South San Francisco, an area in the vicinity of Colma Creek, and the Pulgas Creek pump station drainage in San Carlos (SMSTOPPP 2002, 2003, and 2004).

In 2007, a State of California Proposition 13 grant-funded study by the San Francisco Estuary Institute (SFEI) collected street dirt and MS4 sediment samples in the City of San Carlos in San Mateo County and other parts of the Bay Area (Yee and McKee 2010). In addition, beginning in 2010 SMCWPPP partnered with the Bay Area Stormwater Management Agencies Association (BASMAA) in the USEPA grant-funded Clean Watersheds for a Clean Bay (CW4CB) project to conduct additional investigation of PCBs sources to the MS4 in the Pulgas Creek pump station drainage in San Carlos (CW4CB 2017a).

In 2014, SMCWPPP worked with San Mateo County MRP Permittees to conduct a process to screen for "high interest parcels" for PCBs in the county. The screening covered all land areas in the county that drain to the Bay. The process was generally consistent with a framework developed through a collaboration of SMCWPPP and the other Bay Area countywide stormwater programs in consultation with Regional Water Board staff. 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, 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 about 1,600 high interest parcels for PCBs in San Mateo County.

In January and February 2015, SMCWPPP designed a monitoring plan based on the above screening for high interest parcels and then collected 101 sediment samples from the urban storm drainage system (e.g., beneath manholes, storm drain inlets) and public right-of-way surfaces (e.g., street gutters). The general goal was to continue attempting to identify potential source areas for PCBs. Samples were distributed among the nine municipalities that collectively encompass 93% of the old industrial land use in San Mateo County that drains to San Francisco Bay.

2.2. FY 2015/16

In FY 2015/16, SMCWPPP 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 were defined as 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 right-of-way (ROW)). 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).[2] The process identified 110 catchments with high densities of high

[2] 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).

interest parcels (and generally with existing pollutant controls), and an additional 26 catchments with pollutant controls only, for a total of about 130 WMAs (SMCWPPP 2016a and b).

In FY 2015/16, SMCWPPP also participated in a 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).

Also in FY 2015/16, SMCWPPP worked with San Mateo County MRP Permittees to develop a 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 and planned GI and treatment facilities constructed in 2005 or later (SMCWPPP 2016b).

Finally, during the 2015/16 rainy season SMCWPPP collected eight composite samples of stormwater runoff. The samples were collected from outfalls at the bottom of WMAs that contain high interest parcels (i.e., with land uses associated with PCBs such as old industrial, electrical and recycling, as described above). 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 2017a).

2.3. FY 2016/17

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

- Worked 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 (SMCWPPP 2017b).
- 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 (2018) provides further details.
- Collected 68 sediment samples as part of the program to attempt to identify source properties within WMAs. These samples were collected in the public ROW, including locations adjacent to high interest parcels. 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 (2018) provides further details.
- Continued updating and prioritizing the list of WMAs in San Mateo County (SMCWPPP 2017b).

- Summarized the preliminary PCBs and mercury load reductions achieved this permit term that had been quantified to-date (SMCWPPP 2017b).

2.4. FY 2017/18

During FY 2017/18, SMCWPPP continued identifying areas of interest and opportunity for PCBs and mercury controls, including refining the list of WMAs and their prioritization. This 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. Consistent with MRP requirements, the focus remained on PCBs, with ancillary/secondary benefits assumed to be realized for controlling mercury. SMCWPPP's major FY 2017/18 efforts related to PCBs and mercury load reduction included the following:

- 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 LID measures at redevelopment sites. The database includes existing GI and treatment facilities constructed in 2005 or later and all known planned facilities (see Section 4.0).
- Submitted two source property referrals (both in San Carlos) to the Regional Water Board concurrent with its FY 2017/18 Annual Report (see Section 4.15):
    - 270 Industrial Road / 495 Bragato Road, San Carlos
    - 977 and 1007/1011 Bransten Road, San Carlos
- Summarized the preliminary PCBs and mercury load reductions achieved this permit term that had been quantified to-date (see Section 5.0).
- Collected 12 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. The full results of this WY 2018 Pollutants of Concern (POC) monitoring program will be reported with the Urban Creeks Monitoring Report that is due March 2019.
- Collected 50 sediment samples as part of the program to attempt to identify source properties within WMAs. These samples were collected in the public ROW, including locations adjacent to high interest parcels. Individual and composite sediment samples collected from manholes, storm drain inlets, driveways, and sidewalks were analyzed for PCBs congeners, total mercury, and other analytes. The full results of this WY 2018 POC monitoring program will be reported with the Urban Creeks Monitoring Report that is due March 2019.
- Evaluated opportunities to take credit for PCBs and/or mercury loads avoided due to contaminated site cleanups (referred to as "self-abatements") 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.

- Worked with San Mateo County Permittees to evaluate new or enhanced municipal 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 PCBs load reduction credited when a source property is referred to the Regional Water Board is directly proportional to the area of the referred property (acres is the unit used in the calculation). SMCWPPP recently completed an analysis of total industrial area and average industrial parcel size among the four most populous counties in the MRP area, based on county assessor parcel data. Table 2.1 and Figure 2.1 show the results (it is important to note that the y-axis of Figure 2.1 is on a log scale). The total industrial acreage and average industrial parcel size are much lower in San Mateo County relative to the other counties, illustrating the challenge for San Mateo County Permittees to achieve PCBs load reductions via source property referrals compared to the other counties. In particular, even though the total population of Contra Costa County is roughly only 50% greater than San Mateo County, the total industrial acreage and average industrial parcel size in Contra Costa County exceeds San Mateo County by roughly a factor of four and six, respectively.

Table 2.1 Total Industrial Acreage and Average Industrial Parcel Size in Most Populous MRP Counties

	San Mateo County	Alameda County	Contra Costa County	Santa Clara County
Total Industrial Area (acres)	3,043	14,034	12,833	16,039
Average Industrial Parcel Size (acres)	1.25	2.03	7.55	3.00

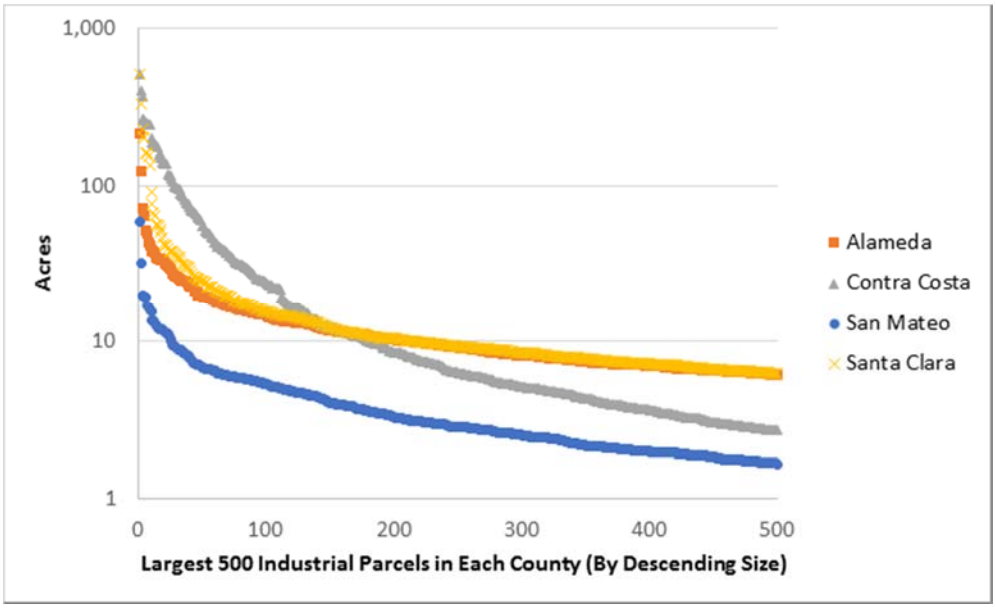


Figure 2.1. Area of 500 Largest Industrial Parcels in Most Populous MRP Counties

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 discharge these pollutants to the MS4s. One typical mechanism is for on-site contaminated surface soils to be mobilized by stormwater runoff, wind and/or vehicles and enter on-site or off-site storm drains. Identification and subsequent abatement of these properties

and/or focused control measure implementation in the public ROW around source properties 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 continue to implement a program to attempt to identify source properties in priority WMAs. 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 is submitting two source property referrals (both in San Carlos) to the Regional Water Board concurrent with its FY 2017/18 Annual Report (Section 4.15). In addition, SMCWPPP and San Mateo County Permittees will continue attempting to identify source properties for referral to the Regional Water Board, based on the evaluation of the results of the WY 2018 POC monitoring program and other appropriate data, as it becomes available.

Review of Contaminated Site Cleanups (Potential Self-Abatements)

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 referred to as “self-abatements” and 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 is reviewing 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; and
- 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 include 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 FYs 2016/17 and 2017/18, 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. In addition, C/CAG recently received an Adaptation Planning Grant from Caltrans that will be used to develop the "San Mateo Countywide Sustainable Streets Master Plan" to prioritize locations for integrating green stormwater infrastructure into roadways. This project will include developing a San Mateo County tracking tool that will meet the requirements in MRP Provision C.3.j.iv for development and implementation of methods to track and report implementation of GI. See Section 3 of SMCWPPP's 2017/18 Annual Report for more information about the project.

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 (CW4CB 2017b). 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 from about 1950 through 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 begin implementing 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

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 recently completed a regional project to address this permit requirement on behalf of all Permittees. The results of the study are documented in a project report that was submitted with SMCWPPP's FY 2017/18 Annual Report.

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 2017/18 via these programs is presented in Section 5.0.

4.0 EXISTING AND PLANNED CONTROL MEASURES

SMCWPPP is tracking all existing and 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 and MRP 2.0 load reduction requirements. 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 year was selected because load reductions due to controls fully implemented before 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, including a period immediately preceding the permit term.[3] In addition to credit towards TMDL goals, such controls should result in credit towards the MRP 2.0 requirement that a 3,000 grams/year PCBs load reduction is achieved across the MRP 2.0 area by the end of the permit term. Of this, an interim 500 grams/year reduction is required by June 2018. This interim load reduction has been achieved (see Section 5.2) In addition, MRP 2.0 requires that at least 15 grams/year PCBs load reduction in San Mateo County is achieved via GI by the end of the permit term. The permit also requires a 6 grams/year mercury load reduction in San Mateo County via GI by the end of the permit term. The GI load reductions have already been achieved (see Sections 5.2 and 5.3).

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 may not include all existing or planned control measures. The inventory will continue to be updated and refined as additional information becomes available. The land uses referenced in this report, including Sections 4.1 through 4.19, are described in Appendix B.

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.

Table 4.1. Atherton WMAs and associated land uses.

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

[3] 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.

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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
ATH		E/P		P		E	E			E

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 from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (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.

During FY 2017/18, Atherton continued pursuing a new potential GI facility in Holbrook-Palmer Park to help reduce existing flooding issues in the lower reaches of Atherton Creek and reduce pollutant loads. The Town hired a consultant that developed a preliminary project design in early 2018. The project was presented at the Town's Park and Recreation Committee and Town Council multiple times. The project received significant public opposition with respect to siting the project in the Town's only park. As a result, the Council directed Town staff to evaluate other potential project locations at which a facility could be sited and still take advantage of the $13.6 million funding commitment for the project from Caltrans. Efforts to identify an alternative location are currently ongoing. The Town has created a page on their website that includes details on the proposed project.

Table 4.3 Land area in the Atherton WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

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

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

The Town of Atherton conducted a one-time desilting of the Atherton Channel at Watkins Avenue and Station Lane in 2004/2005. Approximately 25 cubic yards of sediment was removed during this activity. However, the sediment was not tested for PCBs and mercury. If the Town were to repeat this enhanced municipal O&M activity in the future it may be possible to test the sediment removed for PCBs and mercury and estimate the pollutant loads avoided.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures 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.

Table 4.4. Belmont WMAs 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	Unincorporated 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%

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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1011	E	E		P		E	E			E
60	E	P		P		E	E			E
77		P		P		E	E			E
BEL		E/P		P		E	E			E

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 2019).

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 **16.25 acres** of land, of which **10.87 acres** is comprised of old urban land use. Of this total, **4.03 acres** were built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (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 by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	BEL	4.03	0	4.03	0	0	0
	Total	**4.03**	**0**	**4.03**	**0**	**0**	**0**

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 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.

Table 4.7. Brisbane WMAs 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%

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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
17	E	E/P		P		E	E			E
1004	E	E		P		E	E			E
BRI		P		P		E	E			E

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 2019).

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 **38.43 acres** of land which is comprised of old industrial land use. All of this GI was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (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.

Table 4.9 Land area in the Brisbane WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	17	21.02	21.02	0	0	0	0
	1004	17.41	17.41	0	0	0	0
	Total	**38.43**	**38.43**	**0**	**0**	**0**	**0**

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

Brisbane may cleanout sediment in mixing basins that are downstream of an area where elevated PCBs in storm drain sediments have been observed. If the City were to conduct this enhanced municipal O&M activity it may be possible to test the sediment removed for PCBs and mercury and estimate the pollutant loads avoided.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures 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.

Table 4.10. Burlingame WMAs 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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
16	E	P		P		E	E			E
85	E			P		E	E			E
138				P		E	E			E
139		E		P		E	E			E
141	E	E		P		E	E			E
142	E	E		P		E	E			E
149	E	P		P		E	E			E
164	E	E		P		E	E			E
1006	E	E/P		P		E	E			E
BUR	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Burlingame to-date in the eight WMAs indicated by 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 2019).

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 **16.14 acres** of land which is comprised of **7.57 acres** of old industrial and **8.57 acres** of old urban land uses. Of this, **9.2 acres** was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.12). An additional **38 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. Burlingame also has four existing regional green street projects on public lands and ROWs that treat at least **2.2 acres** of old urban land use. Two of these project were completed during FY 2017/18, including the Carolan Avenue Complete Streets Project featuring rain gardens, and reconstruction of the U.S. 101 / Broadway interchange featuring bioretention areas. The Downtown Burlingame Streetscape Project

featuring curb extensions and rain gardens was completed in 2014. The Donnelly Avenue Sustainable Streets and Parking Lot Demonstration project also featuring curb extensions and rain gardens was completed in 2011. Burlingame is currently planning two additional green street projects, including the Public Parking Lot H on El Camino Real and Ralston Avenue featuring rain gardens, and the California Drive Roundabout project with bioretention facilities. 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.

Table 4.12 Land area in Burlingame WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	139	0	0	0.04	0	0	0
	164	4.57	4.39	0.18	0	0	0
	1006	2.79	0	2.79	0	0	0
	BUR	1.84	0	1.84	0	0	0
	Total	**9.2**	**4.39**	**4.81**	**0**	**0**	**0**
Green Streets or Regional Retrofit	139	0.04	0	0.04	0	0	0
	1006	0.81	0	0.81	0	0	0
	BUR	0.02	0	0.02	0	0	0
	Total	**0.87**	**0**	**0.87**	**0**	**0**	**0**

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.

Table 4.13. Colma WMAs 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%

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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
329		E		P		E	E			E
COL	E	E/P		P		E	E			E

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 2019).

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 **31.37 acres** of land which includes **23.82 acres** of old urban land uses. Of this, **16.42 acres** was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.15). An additional **8.46 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. Colma is currently planning to construct a second regional green street project on Mission Road. 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 4.15 Land area in Colma WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	COL	16.42	0	9.56	0	6.86	0
	Total	**16.42**	**0**	**9.56**	**0**	**6.86**	**0**
Green Streets or Regional Retrofit	COL	0.93	0	0.93	0	0	0
	Total	**0.93**	**0**	**0.93**	**0**	**0**	**0**

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.

Table 4.16. Daly City WMAs 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%

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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
181		E/P		P		E	E			E
329		E/P		P		E	E			E
350	E	E		P		E	E			E
DCY		E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Daly City to-date in WMA 350 (Table 4.17). Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2019).

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 **105.41** acres of land, all of which is comprised of old urban land use. All of this GI was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.18). An additional **56.92 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.

Table 4.18 Land area in the Daly City WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	329	103.24	0	103.24	0	0	0
	DCY	2.17	0	2.17	0	0	0
	Total	**105.41**	**0**	**105.41**	**0**	**0**	**0**

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.

Table 4.19. East Palo Alto WMAs 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%

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 measures in East Palo Alto WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1015	E	E/P		P		E	E			E
67	E	E/P		P		E	E			E
68		E		P		E	E			E
70	E	E/P		P		E	E			E
72	E	P		P		E	E			E
EPA	E	E		P		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 indicated by 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 2019).

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 from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (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.

Table 4.21 Land area in East Palo Alto WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	67	1.20	1.20	0	0	0	0
	68	1.77	0	1.77	0	0	0
	70	8.91	4.98	0.98	0	2.95	0
	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**

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

The City of East Palo Alto has reported preliminary information about potential opportunities to conduct sediment removal activities from locations that may have elevated PCBs concentrations. A large volume of soil (~150,000 cubic yards) resulting from past remediation activities (e.g., on the Stanford Campus) and believed to contain PCBs had been stockpiled on a private property at 391 Demeter Street in East Palo Alto. The owner had stockpiled soils there for decades and the site was under Regional Water

Board order until 2008. The City had asked for the order to be reopened and for the sediment to be addressed. The City is not responsible for removing this material but believes soils may be migrating into nearby wetlands. In general, the City is addressing this old industrial area as part of its Ravenswood Specific Plan Area. The site may be redeveloped in the next few years and the soil stockpiles may have been removed recently with testing of the soils for PCBs and other pollutants. SMCWPPP is currently in the process of obtaining more information from East Palo Alto staff.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures (e.g., enhanced municipal O&M, including channel desilting projects and cleanout of a stormwater pump station located at the east end of O'Connor Street and adjacent stormwater basin) 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 and associated land uses.

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.

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 **39.48 acres** of land, of which **16.36 acres** is comprised of old urban land use. Of this total, **30.24 acres** were built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.24). An additional **47.30 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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1010		E/P		P		E	E			E
FCY		E/P		P		E	E			E

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]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	1010	17.98	0	0	17.98	0	0
	FCY	12.26	0	7.12	3.30	1.84	0
	Total	**30.24**	**0**	**7.12**	**21.28**	**1.84**	**0**

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

Foster City conducted dredging in their lagoon in 2005 and removed about 100,000 cubic yards of sediment. The sediment may have been tested for PCBs, and efforts to track down these data are currently underway. This activity could be repeated in the future, presenting a potential opportunity to again test the sediment removed for PCBs and calculate loads avoided.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures 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.

Table 4.25. Hillsborough WMAs 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%

Existing and Planned Control Measures Summary

Table 4.26 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Hillsborough.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
HIL		E/P		P		E	E			E

Source Property Investigation

Source property investigative work has not been conducted in WMAs in the Town of Hillsborough 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 Hillsborough treat **0.12 acres** of land, all of which is comprised of old urban land use. All of this GI was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.27). An additional **5.63 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.

Table 4.27 Land area in Hillsborough WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	HIL	0.12	0	0.12	0	0	0
	Total	**0.12**	**0**	**0.12**	**0**	**0**	**0**

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.

Table 4.28. Menlo Park WMAs and associated land uses.

WMA ID	Other Permittees in WMA	Total Area (Acres)	% Old Indus-trial	% Old Urban	% New Urban	% Open Space	% Other
66		64	30%	36%	1%	34%	0%
71	East Palo Alto / Uninc. 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%

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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
1012	E	E		P		E	E			E
1014	E	E		P		E	E			E
238	E	E		P		E	E			E
239	E	E/P		P		E	E			E
247		E/P		P		E	E			E
252		E/P		P		E	E			E
66	E	E/P		P		E	E			E
71	E	E/P		P		E	E			E
332	E			P		E	E			E
378				P		E	E			E
MPK	E	E/P		P		E	E			E

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 2019).

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 **243.19 acres** of land, of which **105.56 acres** is comprised of old industrial and **69.29acres** is comprised of old urban land use. Of this total, **131.08 acres** were built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.30). An additional **60.84 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.

Table 4.30 Land area in Menlo Park WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	66	15.06	3.76	0.00	11.30	0	0
	71	10.96	6.52	4.44	0	0	0
	238	20.30	16.71	3.59	0	0	0
	239	9.69	9.69	0	0	0	0
	247	12.99	0	12.99	0	0	0
	252	1.55	1.55	0	0	0	0
	1012	47.35	47.35	0	0	0	0
	1014	9.12	5.19	3.93	0	0	0
	MPK	4.06	0	4.06	0	0	0
	Total	**131.08**	**90.77**	**29.01**	**11.30**	**0**	**0**

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

Menlo Park removed sediment from a section of the Atherton Channel at Haven Avenue and Bayfront Expressway (Highway 84) in 2007, 2008, 2009, 2011, 2013 and 2015. Each of these years the City removed about 500 cubic yards of sediment, except that only vegetation was removed in 2015. Since 2009, this cleaning has been performed every other year and the City anticipates continuing this schedule. Although the sediment has not been tested for PCBs to-date, the ongoing cleanout schedule provides a potential opportunity for future testing and calculation of load avoidance.

The Facebook West Campus is a 22 acre property located at 312-314 Constitution Avenue in Menlo Park. This site was identified in Envirostor as a voluntary PCBs cleanup site overseen by DTSC. The property is a former Raychem Corporation Facility, which later became Raychem/Tyco. The property was purchased by Facebook in 2011. Initial remedial actions at the site completed in 2007 included the excavation and off-site disposal of 6,561 cubic yards of contaminated soil and installation of a multi-media cap. Further remediation was conducted between 2012 and July 2013, and included excavation and off-site disposal of 1,800 cubic yards of PCBs contaminated soil with > 50 mg/Kg PCBs, and excavation and off-site disposal of 10,600 cubic yards of soil with < 50 mg/Kg PCBs. PCBs concentrations in the soil were as high as 2,600 mg/Kg prior to cleanup. The remediated soil cleanup concentration of <0.74 mg/Kg was achieved except for 100 cubic yards of soil with PCBs > 50 mg/Kg and 500 cubic yards of soil with PCBs < 50 mg/Kg that were left buried in place at 27 - 37 feet below the ground surface. SMCWPPP is evaluating whether a PCBs load reduction credit could be estimated as a self-abatement site.

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures 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.

Table 4.31. Millbrae WMAs 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%

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.

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
395				P		E	E			E
401				P		E	E			E
1005	E	E		P		E	E			E
MIL		E/P		P		E	E			E

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 2019).

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 from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18). Millbrae is currently planning to construct a green street project on Taylor Blvd and Almenar Street that will treat 0.5 acres with bioretention facilities. An additional **20.53 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.

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.

Source Property Investigation

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

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

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
PVY		E/P		P		E	E			E

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 Portola Valley treat **1.67 acres** of land, all of which is comprised of old urban land use. All of this total was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.35). An additional **11.6 acres** will be treated by new or redevelopment projects that are currently under construction or planned for construction. 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.

Table 4.35 Land area in Portola Valley WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	PVY	1.67	0	1.67	0	0	0
	Total	**1.67**	**0**	**1.67**	**0**	**0**	**0**

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

Table 4.36. Redwood City WMAs 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%

Existing and Planned Control Measures Summary

Table 4.37 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of Redwood City.

Source Property Investigation

Source property investigative work has been conducted in the City of Redwood City to-date in the 15 WMAs indicated by Table 4.37. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2019).

Table 4.37. Existing (E) and planned (P) PCBs and mercury control measures in Redwood City WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
253	E	E		P		E	E			E
254	E	E		P		E	E			E
261		E/P		P		E	E			E
266	E	E		P		E	E			E
267	E			P		E	E			E
269				P		E	E			E
323	E			P		E	E			E
324	E	E/P		P		E	E			E
325		P		P		E	E			E
327	E	E/P		P		E	E			E
333	E			P		E	E			E
334				P		E	E			E
335				P		E	E			E
336		E/P		P		E	E			E
337	E	E		P		E	E			E
379	E	E/P		P		E	E			E
388	E	E		P		E	E			E
405				P		E	E			E
407	E			P		E	E			E
1000	E	E		P		E	E			E
1011	E	E		P		E	E			E
1013				P		E	E			E
1014	E	E		P		E	E			E
RCY	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of Redwood City to-date in the 16 WMAs indicated by Table 4.37. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2019).

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 **195.33 acres** of land, of which **24.48 acres** is comprised of old industrial and **93.12 acres** is comprised of old urban land use. Of this total, **90.49 acres** were built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18)(Table 4.38). An additional **53 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 projects 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 new urban land use (Table 4.38). These projects include bioretention facilities and vegetated swales. The City is also planning to construct four additional regional green streets on public lands or ROWs that will treat 5.39 acres of land. These include two green street projects 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. During FY 2017/18, Redwood City continued designing these two green street projects, which were originally included as a project concept in the Stormwater Resource Plan that SMCWPPP 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. The two projects are currently out to bid and scheduled to be constructed in 2019.

SMCWPPP also developed a concept for regional stormwater retention facilities beneath playing fields at the City's Red Morton Park that would potentially manage runoff from up to 1,650 acres. The concept was presented to the City's Utilities Subcommittee, but there is currently no funding to move the project forward. City staff are evaluating options to further study the project's feasibility.

Other PCBs and Mercury Controls

SMCWPPP has also begun to evaluate the load reduction opportunity available through potential future sediment removal actions at a small stormwater detention pond in Redwood City. Areas draining to the pond include a portion of San Carlos with old industrial land uses that are associated with elevated PCBs in street and storm drain sediments, including the Delta Star / Tiegel site, a PCBs source property (see Section 4.15). There are currently no sediment removal actions conducted at the pond.

The stormwater detention pond is located within the Redwood Shores Ecological Reserve (Figure 4.1), which is owned and managed by the California Department of Fish and Wildlife. However, the Redwood City Public Works Department operates a pump station at the pond, including providing daily management of water levels in the pond and pump station maintenance as needed. As water levels in the pond rise, the pumps are turned on and water from the pond is pumped through a discharge pipe at the south-eastern edge of the pond into the adjacent Steinberger slough at discharge point A (Figure 4.1). A second discharge pipe conveys gravity-fed flow from the north-eastern edge of the pond into the Steinberger Slough at discharge point B (Figure 4.1). Both discharge pipe outfalls typically remains below the water surface in the slough, except at low tide.

Table 4.38 Land area in Redwood City WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	253	0.50	0	0.50	0	0	0
	254	3.91	3.91	0	0	0	0
	261	6.73	0.99	5.74	0	0	0
	266	7.17	4.65	2.52	0	0	0
	324	2.24	2.24	0	0	0	0
	327	5.47	0	5.47	0	0	0
	336	5.88	0	5.88	0	0	0
	337	0.61	0	0.61	0	0	0
	379	8.84	8.84	0	0	0	0
	388	1.19	1.19	0	0	0	0
	1009	0.14	0	0.14	0	0	0
	1014	1.09	1.09	0	0	0	0
	RCY	46.72	0	21.27	15.43	10.02	0
	Total	**90.49**	**22.91**	**42.13**	**15.43**	**10.02**	**0**
Green Streets or Regional Retrofit	1000	1.66	1.66	0	0	0	0
	RCY	0.77	0	0	0.77	0	0
	Total	**2.43**	**1.66**	**0**	**0.77**	**0**	**0**

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.

SMCWPPP previously conducted a site visit to the pond with representatives from Redwood City Public Works and the California Fish and Wildlife Department. Based on the observations made during the visit, SMCWPPP identified several potential tasks that could be implemented as initial steps that would help inform the costs and benefits of implementing enhanced sediment removal activities at the site. The tasks under consideration include:

- Characterizing concentrations of PCBs and mercury in sediments that have accumulated in the pond;
- Characterizing concentrations of PCBs and mercury in sediments that have accumulated in the adjacent slough near the pond's outfalls and upstream and downstream, to better understand whether polluted sediment are transported from the pond to the slough;
- Monitoring stormwater flows into and out of the pond for PCBs and mercury to estimate loads into the pond, and subsequently into the slough form the pond.
- Estimate annual stormwater loads of PCBs and/or mercury that flow to the pond from the adjacent old industrial source areas;

- Estimating pollutant loads avoided via one-time or periodic sediment removal actions (e.g., sediment dredging) and the costs of those actions;
- Estimate the mass of PCBs and mercury in annual stormwater flows that are deposited within the pond and could be removed through ongoing sediment-removal actions;

If such monitoring and evaluation indicates that sediment removal actions at the pond would be a cost-effective control for PCBs and mercury, SMCWPPP and/or the City would work with the appropriate agencies (e.g., California Department of Fish and Wildlife) to further identify logistical considerations (e.g., methods, permits, schedules).

SMCWPPP is also continuing to evaluate whether other relevant PCBs and mercury control measures 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.

Figure 4.1. Drainage catchment and storm drain lines for the Redwood Shores Ecological Reserve Stormwater Detention Basin in Redwood City (shown in blue). Point A is the pump station discharge pipe location. Point B is the gravity fed discharge pipe location. Both discharge pipes empty to the Steinberger Slough.

4.14. City of San Bruno

Watershed Management Areas

Table 4.39 lists the five WMAs identified to-date in the City of San Bruno, and their total land areas and associated land uses.

Table 4.39. San Bruno WMAs 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%

Existing and Planned Control Measures Summary

Table 4.40 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Bruno.

Table 4.40. Existing (E) and planned (P) PCBs and mercury control measures in San Bruno WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
290		E/P		P		E	E			E
291	E			P		E	E			E
292	E			P		E	E			E
296	E			P		E	E			E
307[1]		E								
1005[2]		P								
SBO				P		E	E			E

[1]This WMA is predominantly in Daly City, but a small portion is located within San Bruno.
[2]This WMA is predominantly in Millbrae but a portion is located within San Bruno.

Source Property Investigation

Source property investigative work has been conducted in the City of San Bruno to-date in the three WMAs indicated by Table 4.40. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2019).

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 from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18)(Table 4.41). An additional **11.4 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.

SMCWPPP also developed a project concept for a regional retention facility on Caltrans property between the I-280 and I-380 interchange. The project concept was responsive to an identified need for upstream retention in San Bruno's Storm Drain Master Plan to alleviate downstream flooding. The project concept was submitted to Caltrans for consideration for funding given that approximately 40 acres of Caltrans rights-of-way are in the project drainage area. The concept is currently on a list for Caltrans consideration in late 2018-19 for future funding, but it is currently anticipated to be a low priority project for Caltrans due to low overall benefit relative to Caltrans interests (primarily trash load reduction and then TMDL load reductions).

Table 4.41 Land area in San Bruno WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit Subtotal	290	11.54	7.00	4.54	0	0	0
	Total	**11.54**	**7.00**	**4.54**	**0**	**0**	**0**

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

Table 4.42. San Carlos WMAs 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%

Existing and Planned Control Measures Summary

Table 4.43 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Carlos.

Source Property Investigation

Source property investigative work has been conducted in the City of San Carlos to-date in the 8 WMAs indicated by Table 4.44. 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 potential source properties that have been identified in these WMAs to-date are: (1) 977 and 1007/1011 Bransten Road in WMA 31 and (2) 1411 Industrial Road in WMA 210. SMCWPPP and the City of San Carlos are referring the 977 and 1007/1011 Bransten Road Bransten Road property to the Regional Water Board, as described below. SMCWPPP and the City of San Carlos are working with the property owner on next steps at the 1411 Industrial Road property. The property owner has retained a consultant to investigate potential sources of PCBs associated with the property. The consultant has contacted Regional Water Board staff about this site.

Table 4.43. Existing (E) and planned (P) PCBs and mercury control measures in San Carlos WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
31	E	E/P		P		E	E			E
32	E			P		E	E			E
57		E/P		P		E	E			E
59	E	E		P		E	E			E
75	E			P		E	E			E
80				P		E	E			E
207		P		P		E	E			E
210	E			P		E	E			E
1011	E	E		P		E	E			E
1016	E	E/P		P		E	E			E
SCS	E	E/P		P		E	E			E

Based on the spatial distribution of PCBs in MS4 and street dirt sediments collected in WMA 31 and WMA 210, it appears that other source(s) remain unidentified in WMA 210. PCBs from unknown sources were previously found in inlets and manholes in the vicinity of Center, Washington and Varian Streets and Bayport Avenue in WMA 210. The PCBs in these samples could have originated from any of about 20 small industries on these streets. During WY 2017, seven additional samples were collected in this area. The results suggested that three small properties could be PCBs sources. Two samples collected from the driveways of 1030 Washington Street, a construction business, had elevated PCBs (1.29 and 3.73 mg/kg). A sample from the driveway of 1029 Washington Street was also elevated with a concentration of 5.64 mg/kg. In addition, samples from the driveway of 1030 Varian Street, an unpaved lot used for storage, had an elevated PCBs concentration of 1.84 mg/kg. It should be noted that all of the buildings in this area appear to be of the type and age that may have PCBs in building materials. SMCWPPP is currently working with the City of San Carlos to determine next steps for these properties.

Another source property identified through SMCWPPP's investigations is located at 270 Industrial Road / 495 Bragato Road in WMA 1011 in San Carlos. 270 Industrial Road is occupied by the Delta Star facility where transformers are manufactured, including transformers with PCBs historically (from 1961 to 1974). 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.

SMCWPPP and the City of San Carlos are submitting two source property referrals (both in San Carlos) to the Regional Water Board concurrent with its FY 2017/18 Annual Report:

- 270 Industrial Road / 495 Bragato Road, San Carlos (Delta Star / Tiegel)

- 977 and 1007/1011 Bransten Road, San Carlos

The total combined acreage of these properties is about 11 acres, resulting in an estimated about 22 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, per MRP requirements.

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 **42.32 acres** of land, of which **33.02 acres** is comprised of old industrial and **9.30 acres** is comprised of old urban land use. Of this total, **39.93 acres** were built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18)(Table 4.44). An additional **15.84 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.

Table 4.44 Land area in San Carlos WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit	57	0.37		0.37			
	59	18.22	18.22	0	0	0	0
	1011	13.39	13.39	0	0	0	0
	SCS	7.95	0	7.95	0	0	0
	Total	**39.93**	**31.61**	**8.32**	**0**	**0**	**0**
Green Streets or Regional Retrofit	31	0.54	0.54	0	0	0	0
	Total	**0.54**	**0.54**	**0**	**0**	**0**	**0**

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

Table 4.45. City of San Mateo WMAs 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	Redwood City	175	24%	75%	0%	0%	0%
1017		19	21%	78%	1%	0%	0%
SMO		5,800	1%	85%	9%	4%	0%

Existing and Planned Control Measures Summary

Table 4.46 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the City of San Mateo.

Table 4.46. Existing (E) and planned (P) PCBs and mercury control measures in City of San Mateo WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
25	E			P		E	E			E
89	E	E		P		E	E			E
90		E		P		E	E			E
92		E/P		P		E	E			E
101	E			P		E	E			E
111	E	E		P		E	E			E
114	E			P		E	E			E
120		E		P		E	E			E
149	E	E		P		E	E			E
156	E	E		P		E	E			E
399				P		E	E			E
403	E			P		E	E			E
408	E			P		E	E			E
1007	E	E		P		E	E			E
1008		E		P		E	E			E
1009	E	E/P		P		E	E			E
1017				P		E	E			E
SMO	E	E/P		P		E	E			E

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 4.46. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2019).

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 **49.65 acres** of land which is comprised of **13.69 acres** of old industrial and **30.94 acres** of old urban land uses. Of this, **34.45 acres** was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.47). An additional **122 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.

Due to escalating construction costs and unforeseen budget items, the City of San Mateo withdrew from its State Water Resources Control Board Proposition 1 stormwater implementation grant for two green streets and a green parking lot. These projects were originally included as project concepts in the Stormwater Resource Plan and SMCWPPP prepared the successful grant proposal for the City of San Mateo. The City still plans to build two green street projects with curb extensions and bioretention at 4th Avenue and as part of the San Francisco Estuary Partnership / BASMAA Urban Greening Bay Area grant from U.S. EPA through its San Francisco Bay Water Quality Improvement Fund. Both projects are in the design phase.

Table 4.47 Land area in City of San Mateo WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/ Redevelopment or Retrofit Subtotal	90	1.12	1.12	0	0	0	0
	111	0.28				0.28	
	149	3.08	3.08	0	0	0	0
	156	3.31	0	3.31	0	0	0
	1007	0.29	0.29	0	0	0	0
	1008	3.20	3.20	0	0	0	0
	1009	4.37	4.37	0	0	0	0
	SMO	18.8	0	14.76	1.17	2.87	0
	Total	**34.45**	**12.06**	**18.07**	**1.17**	**3.15**	**0**

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

Table 4.48. Unincorporated County of San Mateo WMAs 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%	0%
77	Belmont	86	5%	89%	0%	6%	0%
149	San Mateo City/Burlingame	480	1%	98%	1%	0%	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%	0%	4%	0%
290	San Bruno	2,017	0%	76%	24%	0%	0%
379	Redwood City	802	14%	85%	1%	0%	0%
1001	South San Francisco	439	27%	67%	6%	0%	0%
SMC		18,203	4%	33%	43%	0%	20%
SMO	City of San Mateo	5,800	1%	85%	9%	4%	0%

Existing and Planned Control Measures Summary

Table 4.49 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 4.49. Existing (E) and planned (P) PCBs and mercury control measures in unincorporated San Mateo County WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
71	E	E/P		P		E	E			E
77		E		P		E	E			E
149		E								
181		E		P		E	E			E
247				P		E	E			E
253	E			P		E	E			E
266	E			P		E	E			E
290		P		P		E	E			E
379	E	E/P		P		E	E			E
1001	E	P		P		E	E			E
SMC	E	E/P		P		E	E			E
SMO		E								

Source Property Investigation

Source property investigative work has been conducted in unincorporated County of San Mateo to-date in the six WMAs indicated by Table 4.49. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2019).

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 **492 acres** of land which includes **3.63 acres** of old industrial and **160 acres** of old urban land uses. Of this, **449.22 acres** were built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.50). An additional **5,719 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 five existing regional green street projects on public lands and ROWs that treat **3.30 acres** of old urban land use. The County is also constructing or planning to construct two additional green street projects on public lands. The first project is the reconstruction of 7th Avenue from Middlefield Road to Edison Way in the North Fair Oaks area in Menlo Park. The second project is the Middlefield Road Improvement Project which is currently planned to feature 20 curb bulb outs with bioretention facilities and flow-through planters.

Table 4.50 Land area in Unincorporated County of San Mateo WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/Redevelopment or Retrofit Subtotal	71	8.48	0	8.48	0	0	0
	77	2.19	2.19	0	0	0	0
	149	3	0	3	0	0	0
	181	0.99	0	0.99	0	0	0
	379	7.82	1.44	6.38	0	0	0
	SMC	425.93	0	114.88	0	311.80	0
	SMO	0.81	0	0.81	0	0	0
	Total	**449.22**	**3.63**	**133.79**	**0.00**	**311.80**	**0**
Green Streets or Regional Retrofit Subtotal	SMC	3.30	0	3.30	0	0	0
	Total	**3.30**	**0**	**3.30**	**0**	**0**	**0**

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

Table 4.51. City of South San Francisco WMAs 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 and San Bruno	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%

Existing and Planned Control Measures Summary

Table 4.52 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.

Table 4.52. Existing (E) and planned (P) PCBs and mercury control measures in South San Francisco WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
291	E	E		P		E	E			E
292	E	E		P		E	E			E
293	E	E/P		P		E	E			E
294	E			P		E	E			E
295	E			P		E	E			E
296		E/P								
297		E/P		P		E	E			E
298				P		E	E			E
306	E	E		P		E	E			E
307		E		P		E	E			E
311				P		E	E			E
313	E	E/P		P		E	E			E
314	E			P		E	E			E
315	E	E		P		E	E			E
316	E	E/P		P		E	E			E
317	E			P		E	E			E
318	E	E/P		P		E	E			E
319	E	E		P		E	E			E
352				P		E	E			E
354	E			P		E	E			E
356	E			P		E	E			E
357	E	P		P		E	E			E
358	E	E		P		E	E			E
359	E	E		P		E	E			E
362	E	E		P		E	E			E
1001	E	E/P		P		E	E			E
1002	E	E/P		P		E	E			E
SSF	E	E/P		P		E	E			E

Source Property Investigation

Source property investigative work has been conducted in the City of South San Francisco to-date in the 22 WMAs indicated by Table 4.52. Results of SMCWPPP's POC monitoring program will be discussed in future reports (e.g., the Urban Creeks Monitoring Report due in March 2019).

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 **297.89 acres** of land which includes **226.45 acres** of old industrial and **65.49 acres** of old urban land uses. Of this, **83.36 acres** was built from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) (Table 4.53). An additional **195.29 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 continues to pursue a regional retention facility at Orange Memorial Park with $9.5 million in funding from Caltrans. The City is in the design phase for a stormwater capture facility that will remove sediment and associated pollutants from Colma Creek before flowing into San Francisco Bay, and potentially provide for parkland irrigation at Orange Memorial Park. This regional stormwater capture project would potentially capture flows from a large multi-jurisdictional area of primarily old urban land uses. The City is exploring various project alternatives for initial community engagement in September 2018 and anticipates starting construction in 2019.

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.

Table 4.53 Land area in City of South San Francisco WMAs treated by GI built from July 1, 2013 to June 30, 2018.[1,2,3,4]

Project Type	WMA ID	Total Area (Acres)	Land Use Category (Acres)				
			Old Industrial	Old Urban	New Urban	Open Space	Other
Parcel-based New/ Redevelopment or Retrofit	291	5.32	5.32	0	0	0	0
	292	26.49	26.49	0	0	0	0
	293	3.55	2.86	0.69	0	0	0
	307	10.02	0.00	10.02	0	0	0
	313	7.63	7.63	0	0	0	0
	316	8.42	8.42	0	0	0	0
	318	4.80	4.80	0	0	0	0
	319	5.0	5.0	0	0	0	0
	359	3.36	3.36	0	0	0	0
	1001	7.92	6.66	1.26	0	0	0
	1002	0.85	0.85	0	0	0	0
	Total	**83.36**	**71.39**	**11.97**	**0**	**0**	**0**

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.

4.19. Town of Woodside

Watershed Management Areas

Table 4.54 lists the one WMA identified to-date in the Town of Woodside, and its total land area and associated land uses.

Table 4.54. 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 4.55 provides a preliminary list of PCBs and mercury control measures currently in place or planned for future implementation in the Town of Woodside.

Table 4.55. Existing (E) and planned (P) PCBs and mercury control measures in Woodside WMAs.

WMA ID	Control Measure Categories									
	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		Diversion to Wastewater Treatment Facilities	Addressing Illegally Dumped PCBs-containing Wastes	Reduction/Recycling of Mercury-containing Devices & Products
						Street Sweeping or Flushing	Inlet Cleaning			
WDE	E	E		P		E	E			E

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 2019).

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 from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18).

In general, the load reductions reported 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 (referred to as "self-abatements) 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. SMCWPPP 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* (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:

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

Where:

P_A	=	New development/redevelopment/parcel-based retrofit project area (acre)
P_Y	=	Existing PCBs or mercury yield (mg/acre/year)
NU_Y	=	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)
P_Y	=	Area-weighted PCBs or mercury yield (mg/acre-year)
E_f	=	Efficiency factor for green infrastructure/retrofit treatment control measure (assumed to be 70%)

5.2. PCBs Loads Reduced

Preliminary Estimated PCBs Loads Reduced from July 1, 2013 through June 30, 2018

The preliminary estimated PCBs loads reduced by San Mateo County Permittees from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) 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 municipalities. Over the permit term to-date, more than 1,064 acres have undergone new or redevelopment, including more than 291 acres of old industrial and 387 acres of old urban land uses. An additional 8 acres of green streets and regional retrofit projects have been constructed. 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.

In addition, as described in Section 4.15, SMCWPPP is submitting two source property referrals (both in San Carlos) to the Regional Water Board concurrent with its FY 2017/18 Annual Report. The total combined acreage of these properties is about 11 acres, resulting in an estimated about 22 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, per MRP requirements.

Table 5.1. Preliminary estimates of PCBs loads reduced by San Mateo County Permittees from July 1, 2013 through June 30, 2018 (FY 2013/14 through FY 2017/18).

Permittee	PCBs Loads Reduced (g/year)					
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	Cumulative Load Reduced
Atherton	0.031	0	0	0	0	**0.031**
Belmont	0	0	0	0.010	0.10	**0.11**
Brisbane	0.75	0	0	0	2.44	**3.19**
Burlingame	0	0.15	0.013	0.27	0.081	**0.51**
Colma	0.0047	0.020	0	0.001	0.26	**0.28**
Daly City	0.024	0.18	0	0.43	2.20	**2.84**
East Palo Alto	0.12	0.24	0.025	0.54	0	**0.93**
Foster City	0.070	0	0.12	0.0005	0.0012	**0.19**
Hillsborough	0	0	0.0027	0	0.0005	**0.0032**
Menlo Park	2.08	0.21	1.68	0.65	3.71	**8.32**
Millbrae	0	0	0	0	0	**0**
Portola Valley	0	0	0	0	0.045	**0.04**
Redwood City	0.16	1.13	0.84	0.36	0.66	**3.15**
San Bruno	0.12	0	0.58	0	0	**0.70**
San Carlos	1.74	0	0.75	0	21.96	**24.45**
San Mateo City	0.52	0.47	0.26	0.21	0.017	**1.49**
San Mateo County	3.37	0.34	0.42	0.05	0.037	**4.22**
South San Francisco	3.45	1.47	0	0.29	1.05	**6.25**
Woodside	0	0	0	0	0	**0**
TOTAL	**12.44**	**4.22**	**4.69**	**2.81**	**32.56**	**56.72**

Regional PCBs Loads Reduced from July 1, 2013 through June 30, 2018

The estimated cumulative mercury and PCBs loads reduced by all MRP Permittees over the time period of FY 2013/14 through FY 2017/18 are described in a document entitled *Regional PCBs and Mercury Load Reductions* (included in Appendix 11 of SMCWPPP's FY 2017/18 Annual Report). The estimated PCBs load reduction across the permit area over this time period is 691 g/yr, indicating that the MRP regional performance criterion of 500 g/yr of PCBs load reduced by July 2018 has been achieved.[4]

[4] It is important to note that the MRP allows Permittees to meet the regional criterion as a group – criteria for individual counties would only have been applicable if the regional group criterion had not been met.

Table 5.2. Preliminary estimates of PCBs loads reduced in San Mateo County by control measure category from July 1, 2013 through June 30, 2017 (FY 2013/14 through FY 2017/18).

Control Measure Category		PCBs Loads Reduced (g/year)					
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	Cumulative Load Reduced
Source Property Identification and Abatement[1]		0	0	0	0	21.58	**21.58**
Green Infra-structure and Treatment Controls	Parcel-Based New or Redevelopment[2]	12.33	4.14	4.68	2.81	10.96	**34.92**
	Green Streets or Regional Retrofit[2]	0.11	0.077	0.015	0	0.018	**0.22**
	Trash Full Capture[3, 4]	0	0	0	0	0	**0**
Enhanced O&M Measures[4]		0	0	0	0	0	**0**
Manage PCBs in Building Materials[4]		0	0	0	0	0	**0**
Manage PCBs in Infrastructure[4]		0	0	0	0	0	**0**
Diversion to POTW[4]		0	0	0	0	0	**0**
Source Controls/Other[4]		0	0	0	0	0	**0**
TOTAL		**12.44**	**4.22**	**4.69**	**2.81**	**32.56**	**56.72**

1. Load Reduced = (Source Property Area (acre)) x (4.065 – 0.0303 (g/acre/year)).
2. 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.

5.3. Mercury Loads Reduced

Preliminary Estimated Mercury Loads Reduced from July 1, 2013 through June 30, 2018

The preliminary estimated mercury loads reduced by Permittee from July 1, 2013 through June 30, 2018 (i.e., FY 2013/14 through FY 2017/18) are shown in Table 5.3. Table 5.4 shows the mercury loads reduced by control measure category. New and re-development projects currently account for 99% of the mercury load reduction reported to-date. Green streets and regional retrofit projects account for the remaining 1% (Table 5.4). Table 5.4 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.

Table 5.3. Preliminary estimates of mercury loads reduced by San Mateo County Permittees from July 1, 2013 through June 30, 2018 (FY 2013/14 through FY 2017/18).

Permittee	Mercury Loads Reduced (g/year)					
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	Cumulative Load Reduced
Atherton	0.21	0	0	0	0	**0.21**
Belmont	0	0	0	0.071	0.66	**0.73**
Brisbane	11.42	0	0	0	37.28	**48.69**
Burlingame	0	1.39	0.091	4.04	1.05	**6.57**
Colma	0	0.14	0	0	1.74	**1.88**
Daly City	0.16	1.24	0	2.90	14.88	**19.18**
East Palo Alto	1.63	3.53	0.17	7.17	0	**12.50**
Foster City	0.48	0	0.82	0	0	**1.30**
Hillsborough	0	0	0.018	0	0.0036	**0.022**
Menlo Park	30.83	2.48	22.24	8.98	55.76	**120.29**
Millbrae	0	0	0	0	0	**0**
Portola Valley	0	0	0	0	0.30	**0.30**
Redwood City	1.93	14.86	10.98	5.10	5.36	**38.22**
San Bruno	0.83	0	8.87	0	0	**9.69**
San Carlos	24.61	0	11.36	0	11.48	**41.65**
San Mateo City	7.99	7.06	1.99	1.43	0.10	**18.57**
San Mateo County	24.34	2.21	2.10	0.36	0.25	**29.26**
South San Francisco	50.44	22.34	0	3.98	15.87	**92.63**
Woodside	0	0	0	0	0	**0**
TOTAL	**154.86**	**55.25**	**58.65**	**34.03**	**144.72**	**447.52**

Table 5.4. Preliminary estimates of mercury loads reduced in San Mateo County by control measure category from July 1, 2013 through June 30, 2018 (FY 2013/14 through FY 2017/18).

Control Measure Category		Mercury Loads Reduced (g/year)					
		FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	Cumulative Load Reduced
Source Property Identification and Abatement[1]		0	0	0	0	5.81	**5.81**
Green Infra-structure and Treatment Controls	**Parcel-Based New or Redevelopment[2]**	153.27	54.70	58.54	34.03	138.78	**439.33**
	Green Streets or Regional Retrofit[2]	1.59	0.55	0.11	0	0.13	**2.38**
	Trash Full Capture[3, 4]	0	0	0	0	0	**0**
Enhanced O&M Measures[4]		0	0	0	0	0	**0**
Diversion to POTW[4]		0	0	0	0	0	**0**
Source Controls/Other[4]		0	0	0	0	0	**0**
TOTAL		**154.86**	**55.25**	**58.65**	**34.03**	**144.72**	**447.52**

1. Load Reduced = (Source Property Area (acre)) x (1.033 – 0.215 (g/acre/year)).
2. 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.

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 2017/18 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.

Table 5.5. 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

Mercury Containing Device/Equipment	FY 2014-15		FY 2015-16		FY 2016-17		FY 2017-18	
	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)	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	125,582	0.26
CFLs (each)[3]	1,881	0.01	17,211	0.08	17,354	0.08	18,689	0.08
Thermostats (each)[4]	26	0.10	12	0.05	10	0.04	11	0.04
Thermometers (each)[5]	313	0.19	13	0.01	19	0.01	0	0.00
Switches (each)	18	0.05	0	0.00	0	0.00	0	0.00
Total Mass of Mercury Collected (Kg)		**0.40**		**0.32**		**0.32**		**0.39**

[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 WY 2018 POC monitoring program (stormwater runoff and sediment sampling for PCBs and mercury) that targeted selected catchments and parcels of interest. SMCWPPP is also evaluating the results of PCBs and mercury samples collected in San Mateo County by the RMP during the STLS WY 2018 stormwater runoff monitoring program.
- During WY 2019 SMCWPPP plans to conduct an additional program of POC monitoring (25 sediment samples for PCBs and mercury) that target selected catchments and parcels of interest. SMCWPPP is also continuing to evaluate the cost-effectiveness of conducting additional POC monitoring efforts in future years (e.g., sediment and stormwater runoff sampling for PCBs and mercury, including the use of remote sediment samplers during storms) 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 greatest number of samples with elevated concentrations of PCBs in sediment and stormwater runoff samples to-date.
- SMCWPPP and San Mateo County Permittees will continue attempting to identify source properties for referral to the Regional Water Board, based on the evaluation of the results of the WY 2018 POC monitoring program and other appropriate data, as it becomes available.
- SMCWPPP will continue to evaluate opportunities to take credit for PCBs and mercury loads avoided due to “self-abatement” of existing PCBs contamination sites in San Mateo County.
- 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 work with San Mateo County Permittees to update the existing San Mateo County GI and stormwater treatment tracking database described in this report and calculate associated load reductions. The ongoing effort to fill data gaps will focus especially on information needed to calculate pollutant load reductions (e.g., treatment areas).
- With assistance and guidance from SMCWPPP, San Mateo County Permittees will continue developing 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.

- C/CAG received a $986,300 Adaptation Planning Grant from Caltrans (C/CAG will match with $145,185) that will be used to develop the "San Mateo Countywide Sustainable Streets Master Plan" to prioritize locations for integrating green stormwater infrastructure into roadways. This project will include a variety of tasks, including developing a San Mateo County tracking tool that will meet the requirements in MRP Provision C.3.j.iv for development and implementation of methods to track and report implementation of GI. See Section 3 of SMCWPPP's 2017/18 Annual Report for more information about the project.
- SMCWPPP will complete the RAA to support green infrastructure 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 green infrastructure plans.
- As described in more detail in Section 11 of the SMCWPPP FY 2017/18 Annual Report, MRP Provisions C.11/12.d require that Permittees prepare a plan and schedule for mercury and PCBs control measure implementation and a corresponding RAA demonstrating quantitatively that sufficient control measures will be implemented to attain the mercury and PCBs TMDL wasteload allocations by 2028 and 2030, respectively. The plan and schedule are due in September 2020. SMCWPPP has begun developing modeling approaches for quantifying mercury and PCBs loads in San Mateo County and conducting the RAA. SMCWPPP will continue these efforts into FY 2018/19, along with beginning to develop a longer-term control measures plan to attain the San Mateo County portions of the mercury and PCBs TMDL wasteload allocations.
- SMCWPPP will continue to participate in the BASMAA regional project to develop guidance materials, tools and training materials and conduct outreach to assist Permittees in developing programs to manage PCBs-containing materials and wastes during building demolition in compliance with Provision C.12.f. SMCWPPP will also assist San Mateo County Permittees to use the BASMAA project products to prepare for adoption of the new program and begin implementation as of July 1, 2019, per the requirements of C.12.f.
- SMCWPPP will continue to participate in the RMP PCBs Work Group to help oversee RMP studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas. One focus will be the conceptual model under development for Steinberger Slough 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 locally-caught fish from the Bay (e.g., maintenance of strategically placed signs, training of healthcare workers to disseminate information, and targeted social media posts).

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Appendix A

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

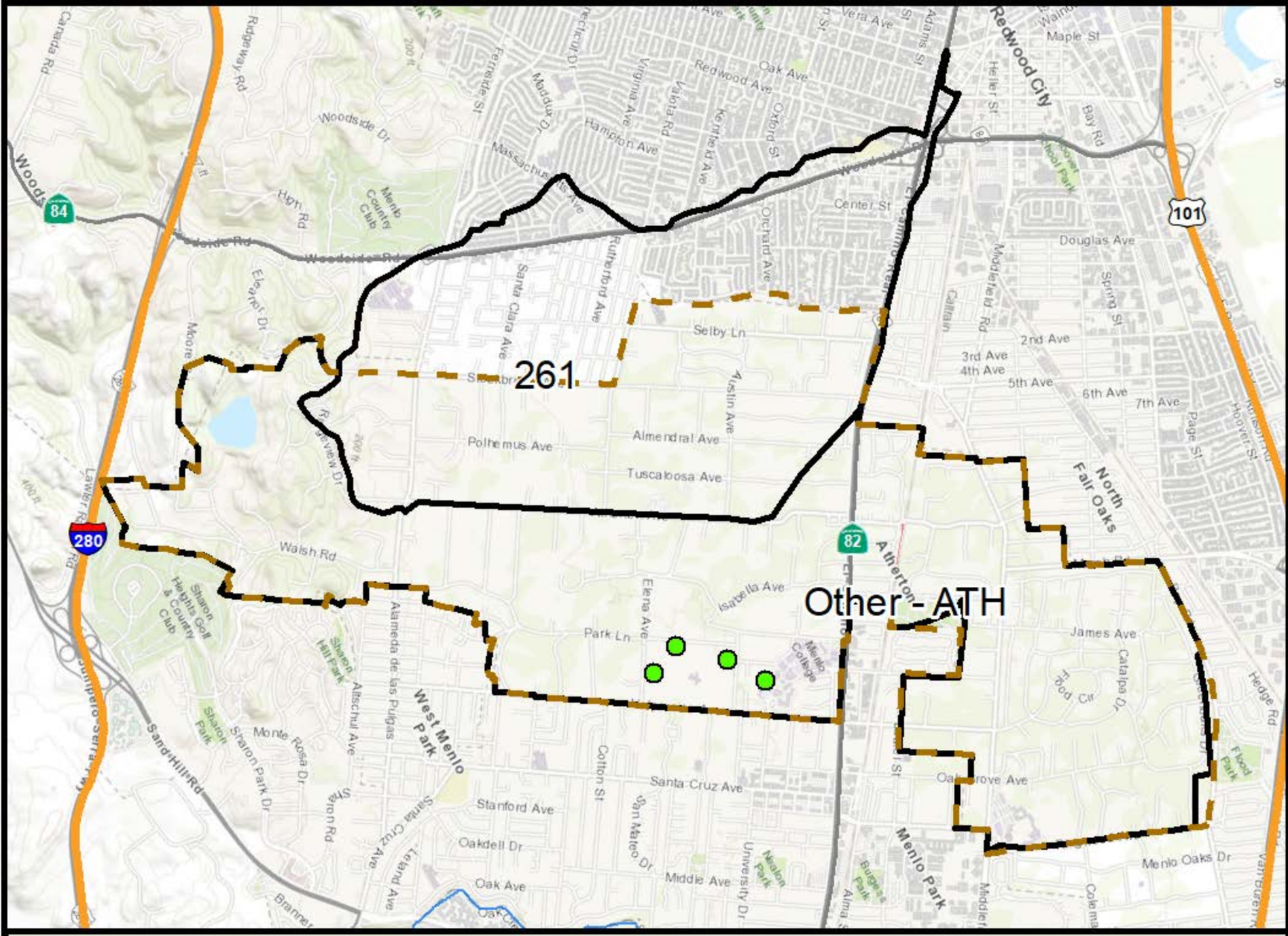

Figure A-1. WMAs and GI/LID in Atherton

Atherton Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.35 0.7 1.4 Miles

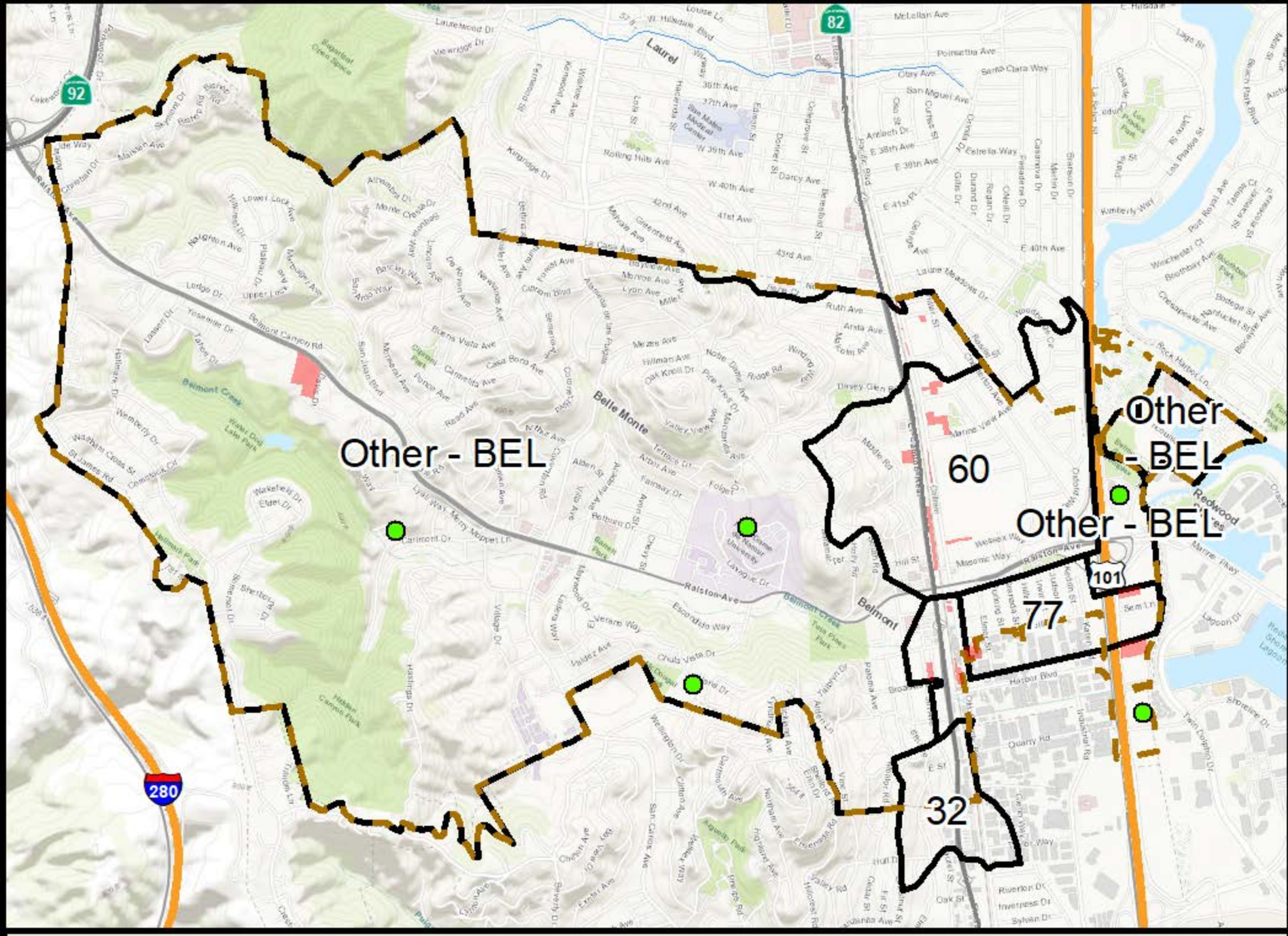

Figure A-2. WMAs and GI/LID in Belmont

Belmont Watershed Management Area Map

- ● GI/LID Location
- 🟥 High Interest Areas
- ☐ Watershed Management Area (WMA)
- ▭ Permittee Boundary

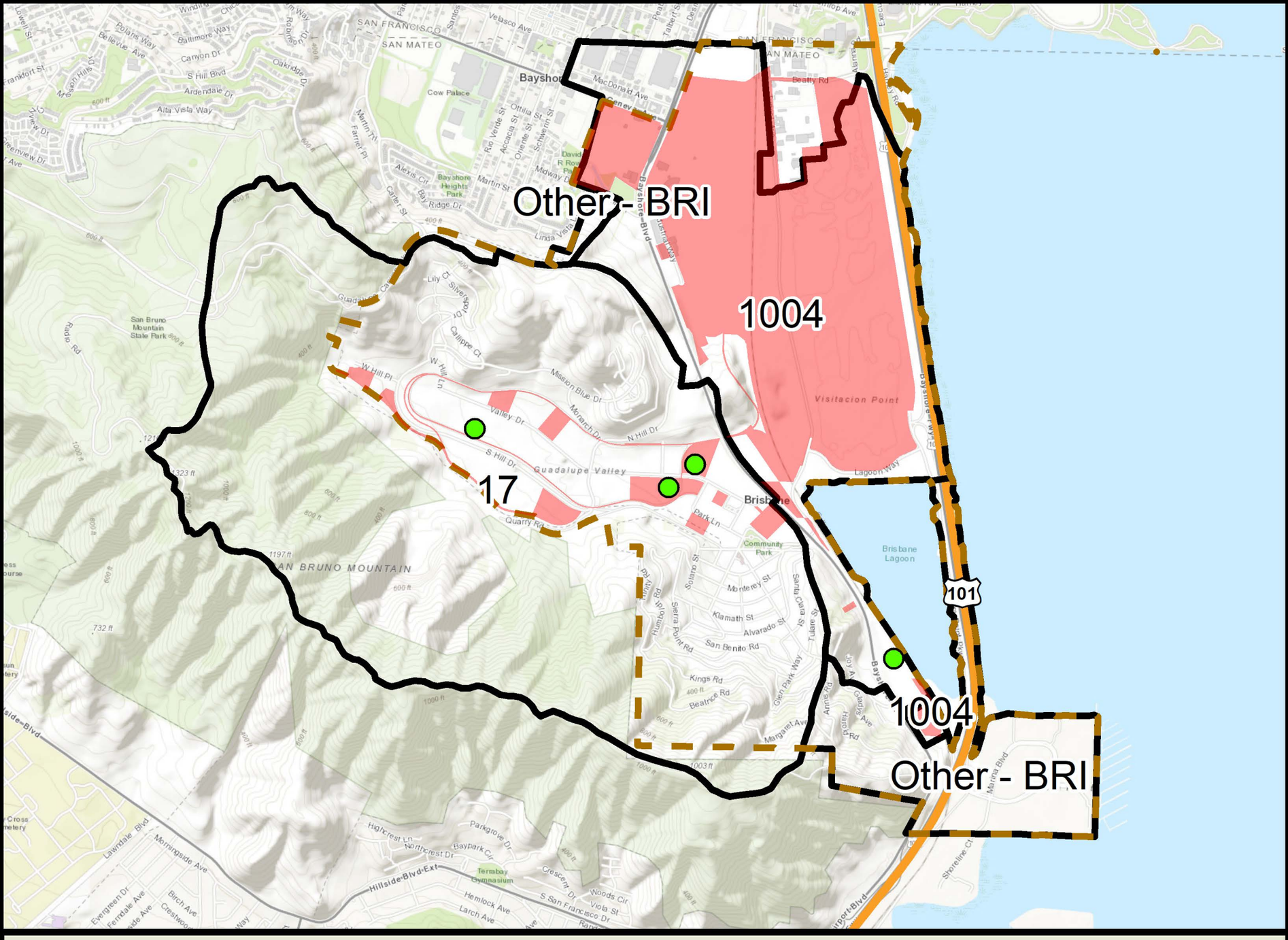

Figure A-3. WMAs and GI/LID in Brisbane

Brisbane Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

N

0 0.275 0.55 1.1 Miles

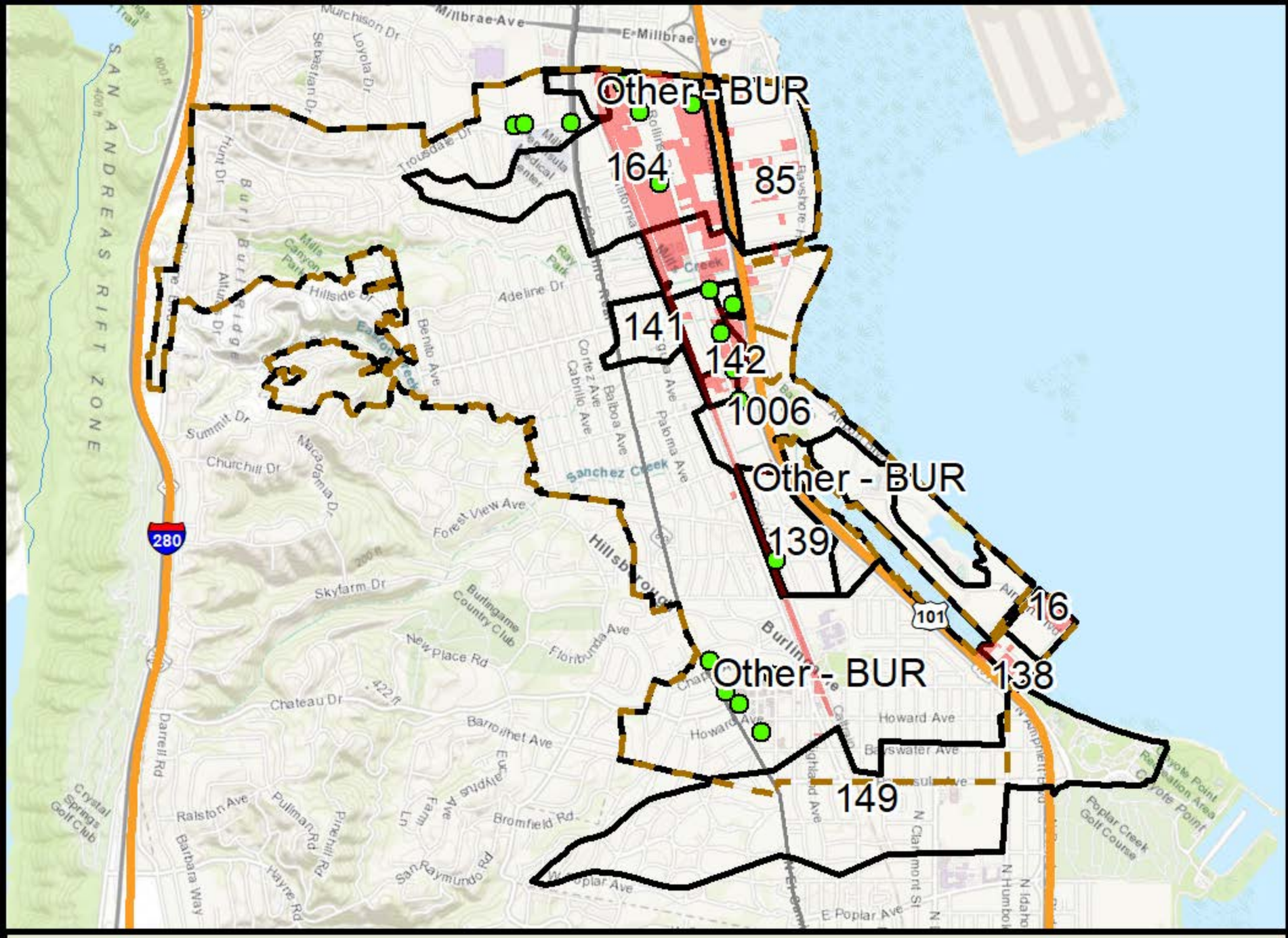

Figure A-4. WMAs and GI/LID in Burlingame

Burlingame Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

0 0.325 0.65 1.3 Miles

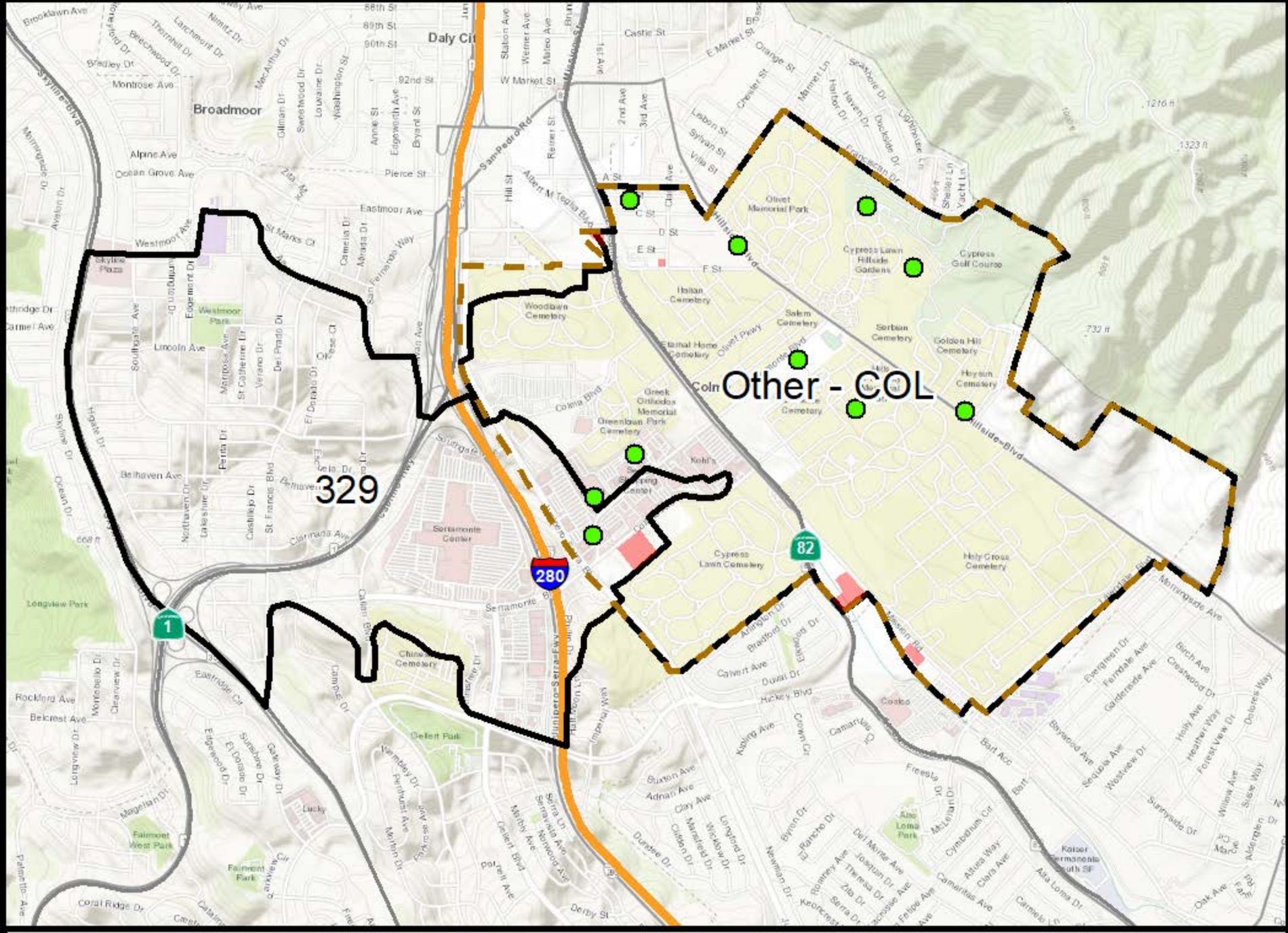

Figure A-5. WMAs and GI/LID in Colma

Colma Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.225 0.45 0.9 Miles

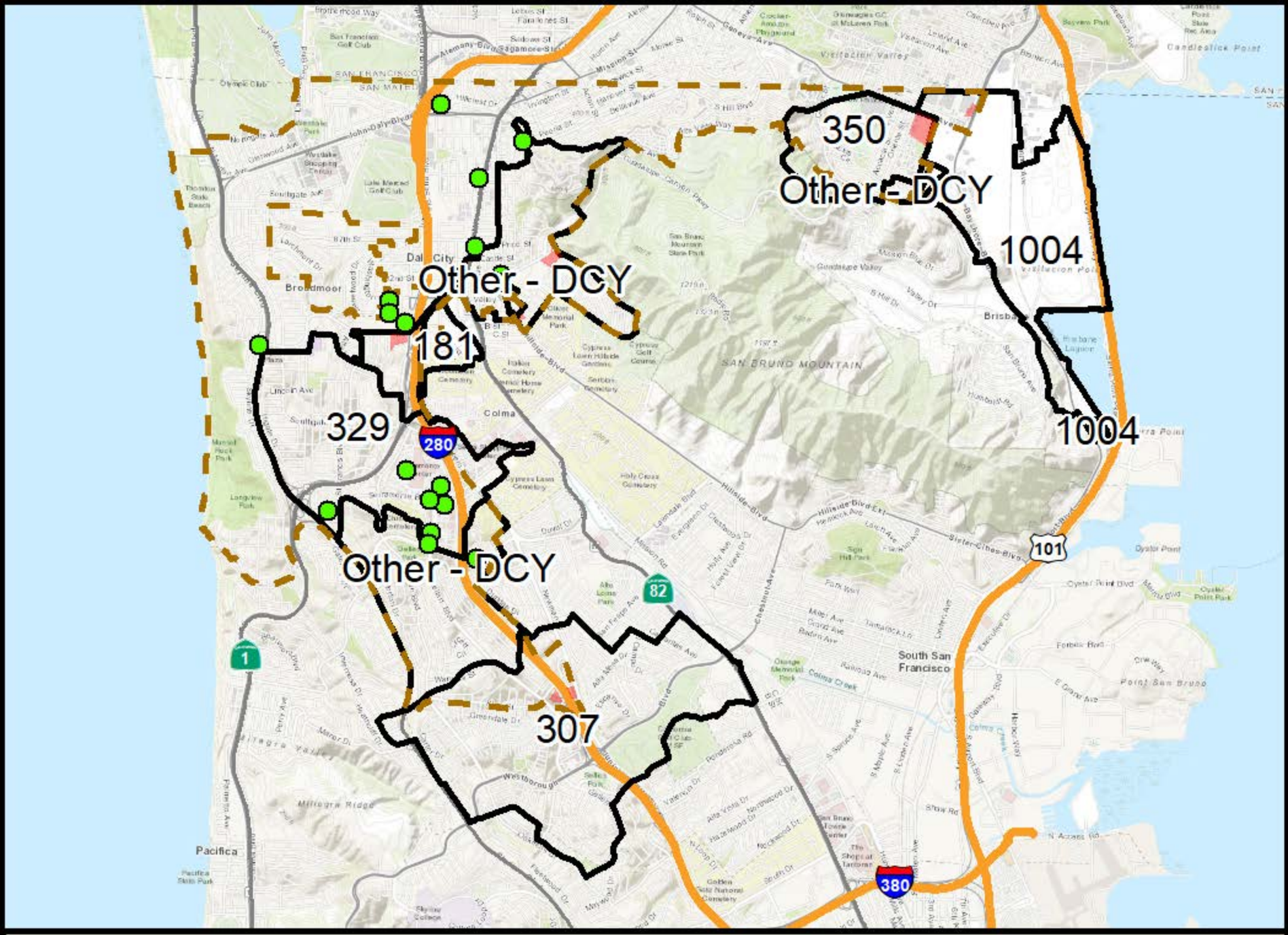

Figure A-6. WMAs and GI/LID in Daly City

Daly City Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.5 1 2 Miles

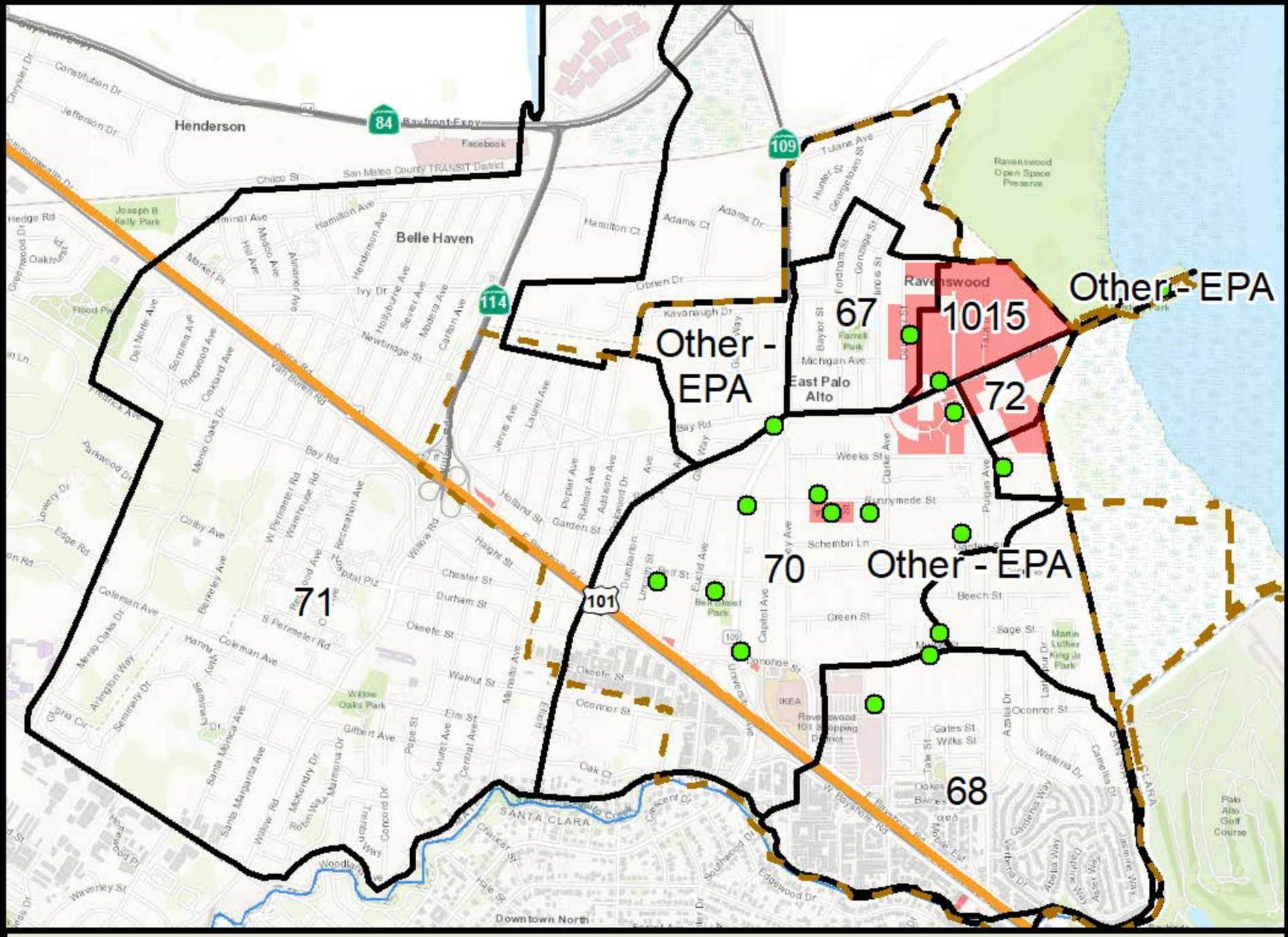

Figure A-7. WMAs and GI/LID in East Palo Alto

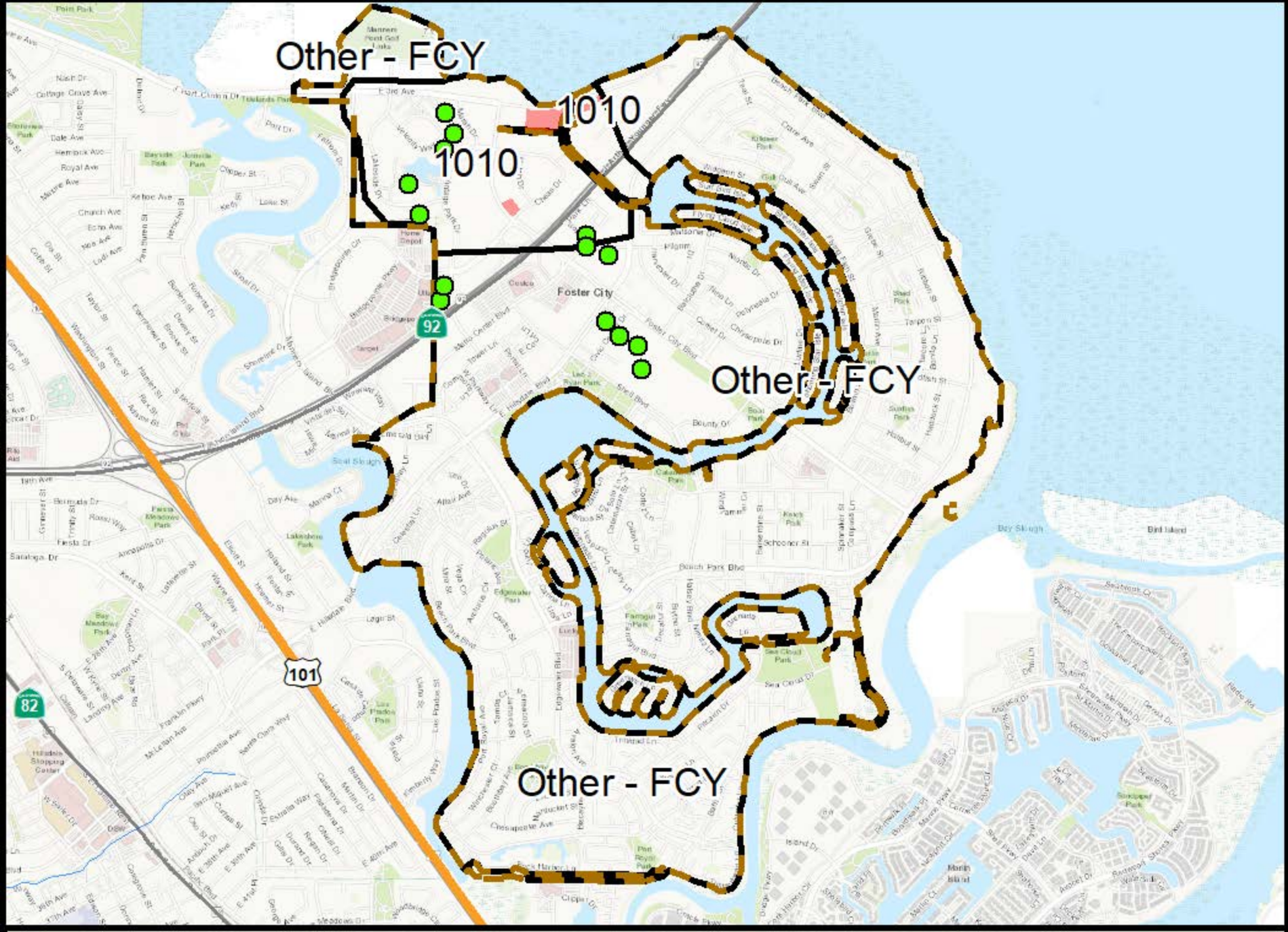

Figure A-8. WMAs and GI/LID in Foster City

Foster City Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.275 0.55 1.1 Miles

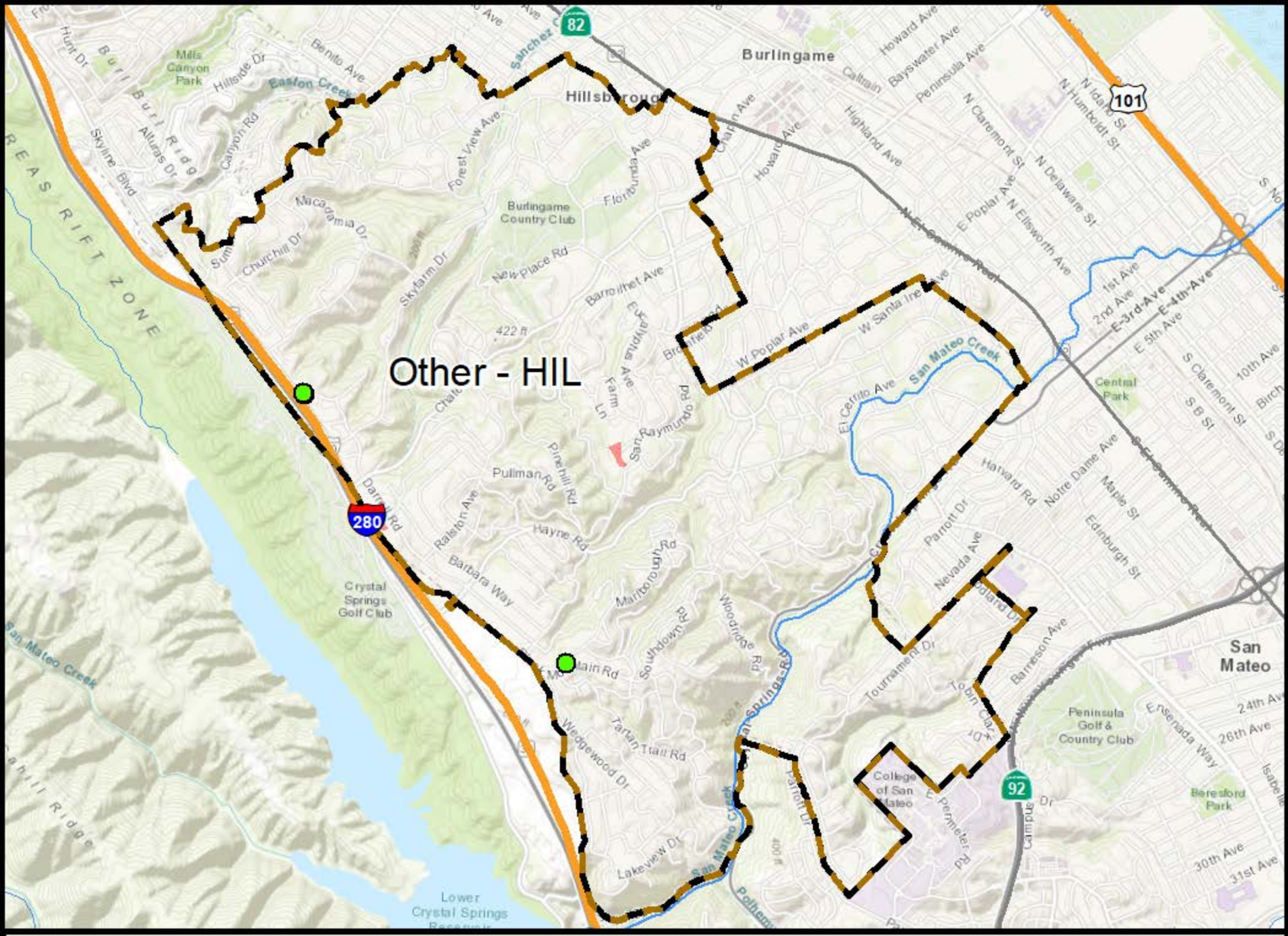

Figure A-9. WMAs and GI/LID in Hillsborough

Hillsborough Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

N

0 0.35 0.7 1.4 Miles

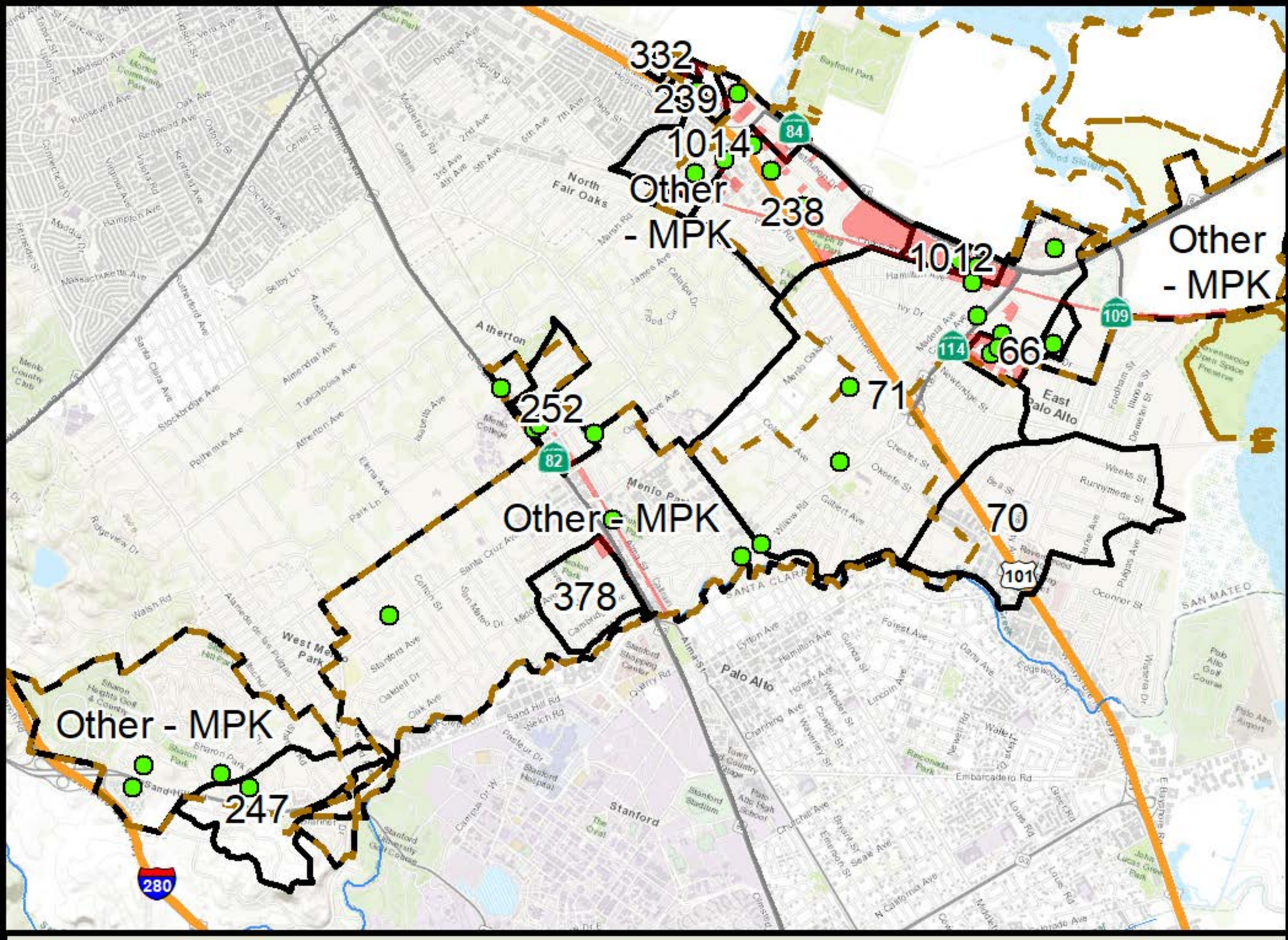

Figure A-10. WMAs and GI/LID in Menlo Park

Menlo Park Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.4 0.8 1.6 Miles

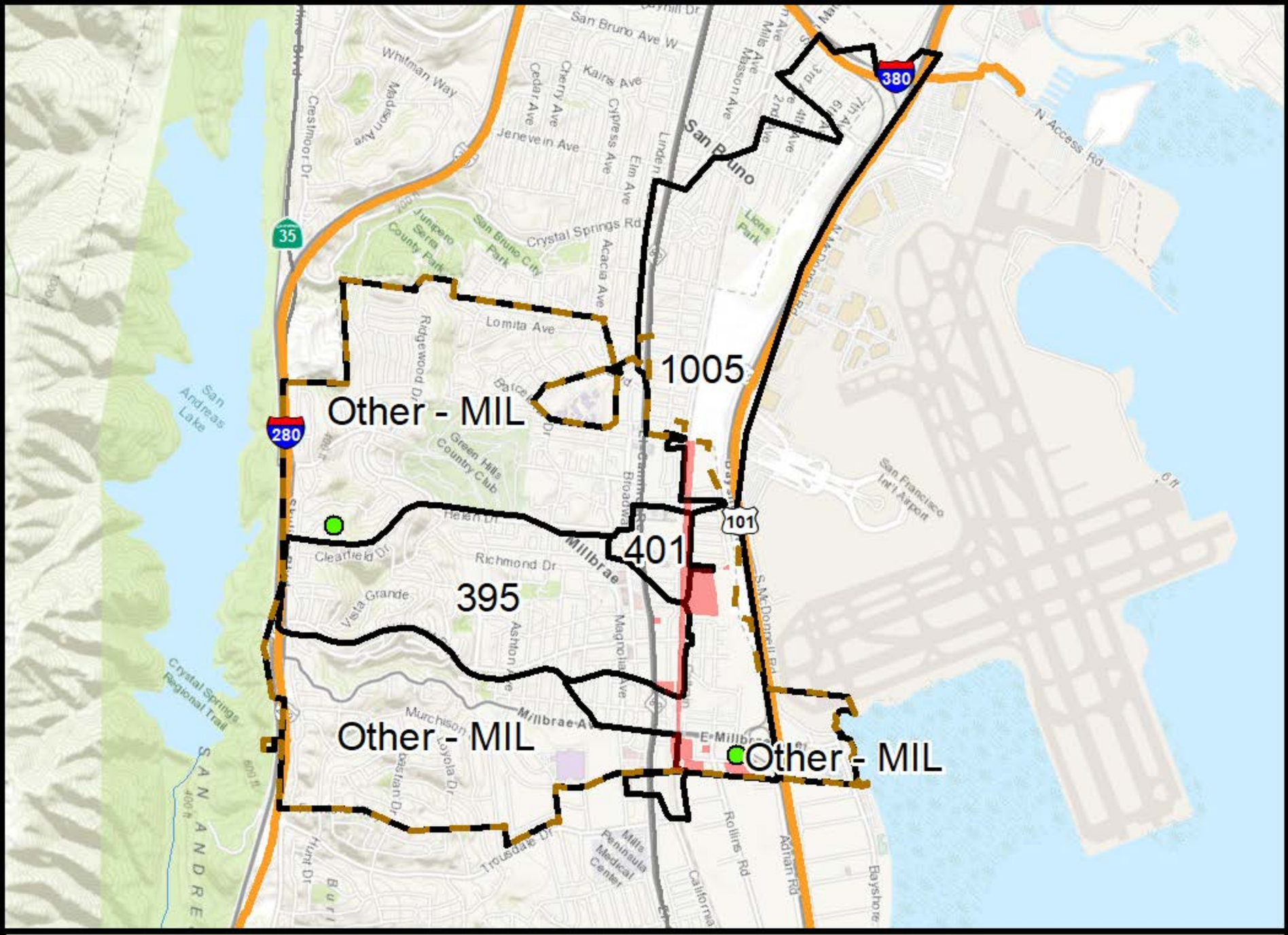

Figure A-11. WMAs and GI/LID in Millbrae

Millbrae Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

0 0.325 0.65 1.3 Miles

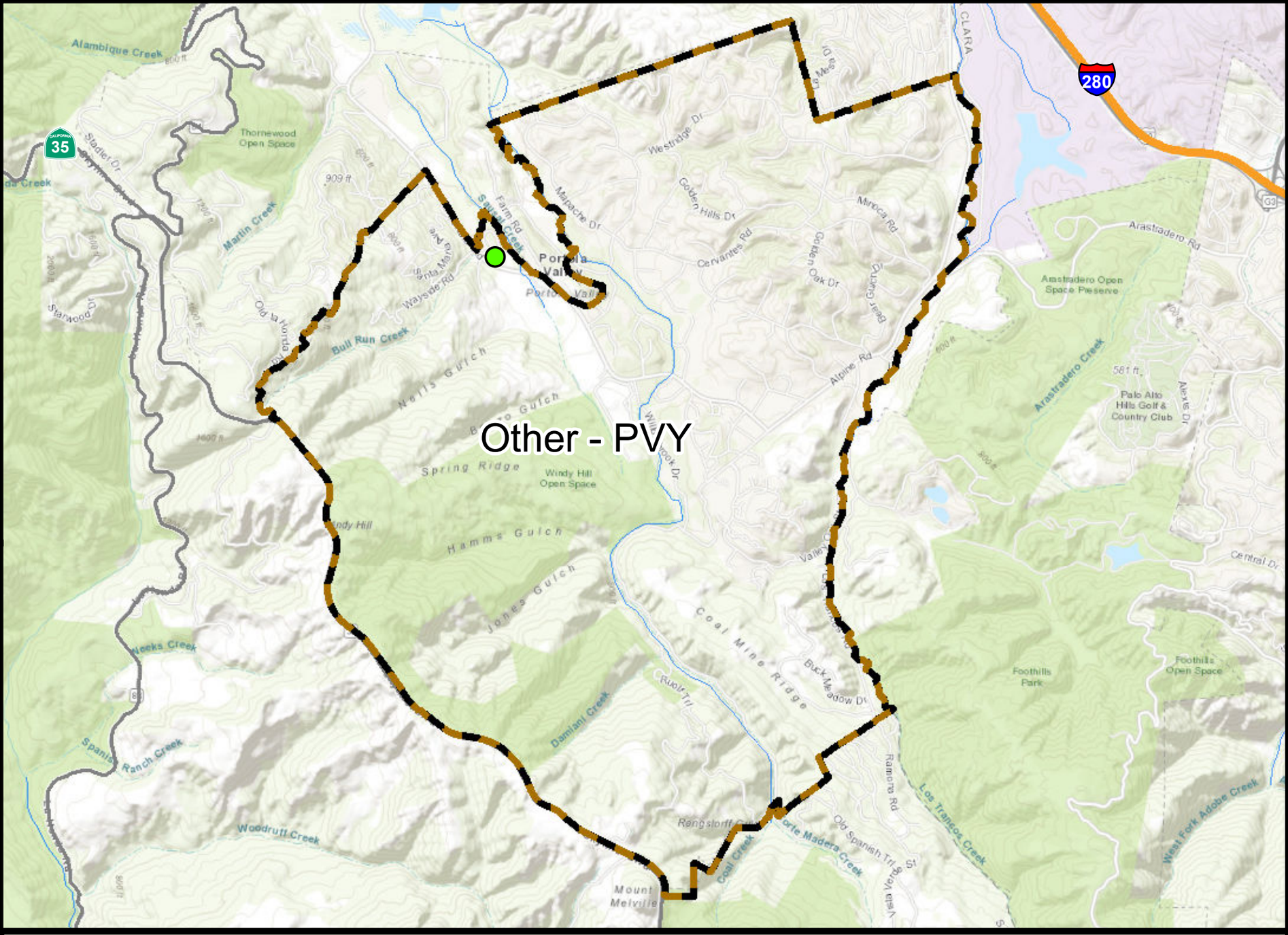

Figure A-12. WMAs and GI/LID in Portola Valley

Portola Valley Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

N

0 0.4 0.8 1.6 Miles

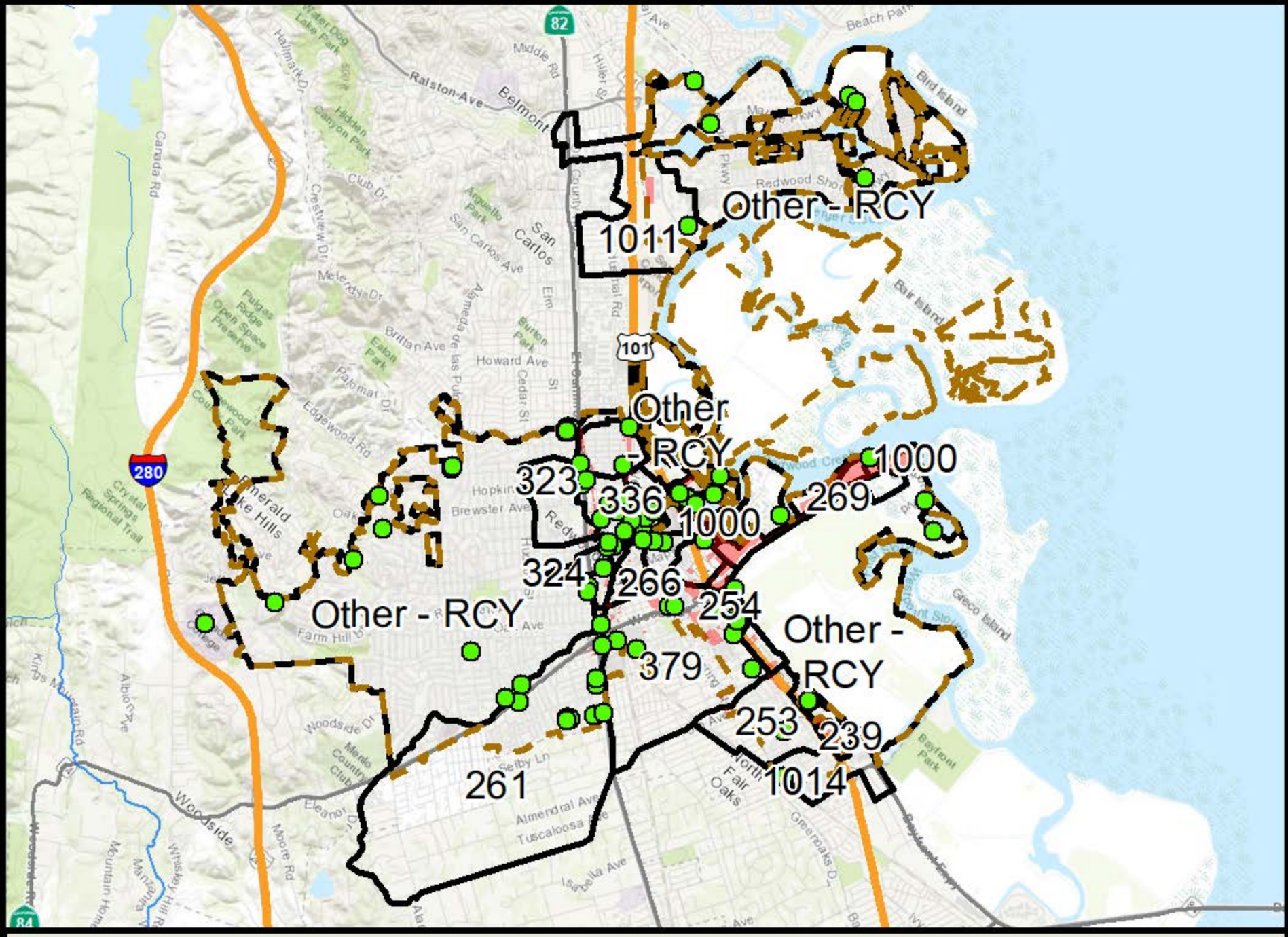

Figure A-13. WMAs and GI/LID in Redwood City

Redwood City Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

0 0.5 1 2 Miles

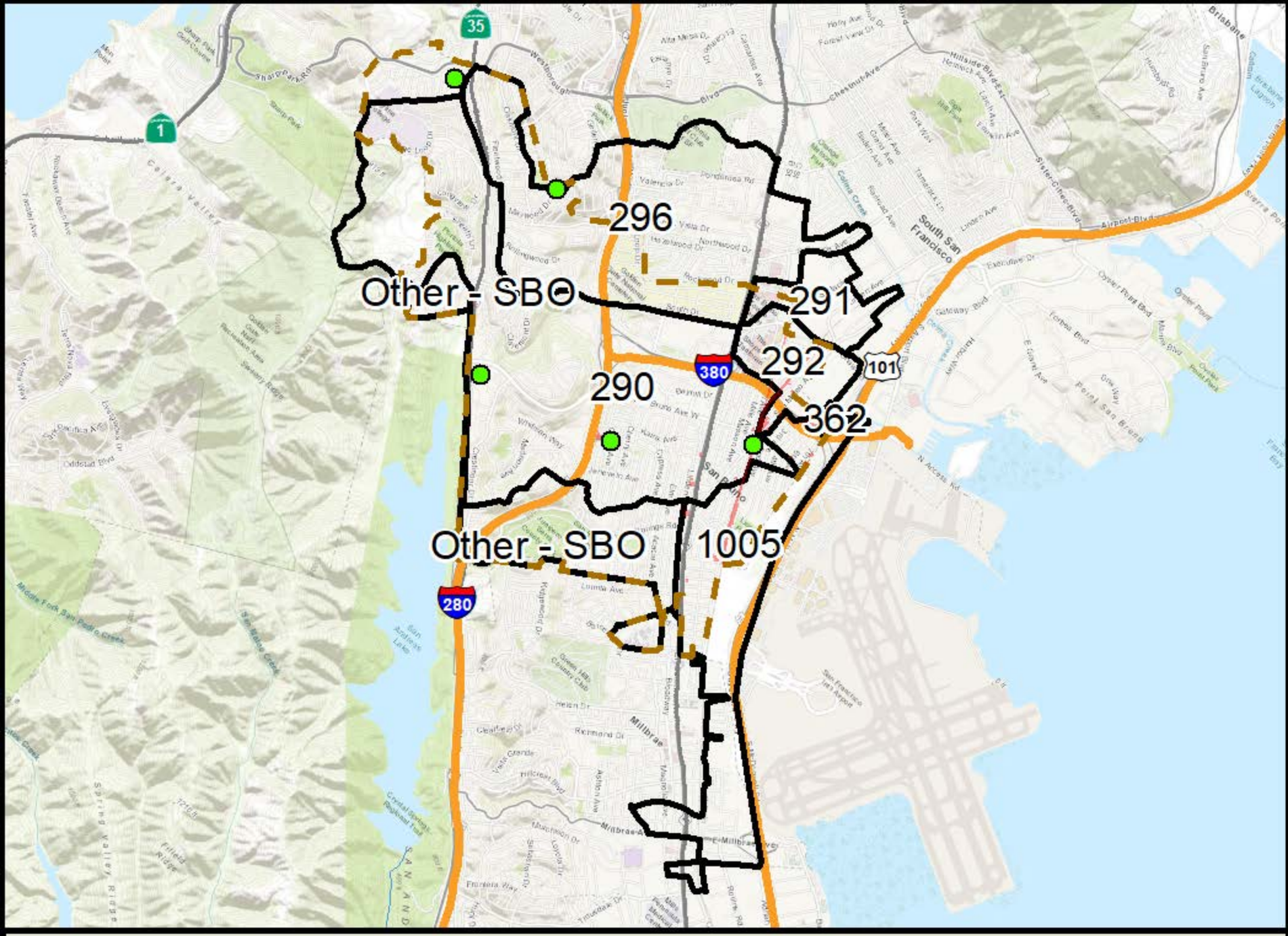

Figure A-14. WMAs and GI/LID in San Bruno

San Bruno Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.5 1 2 Miles

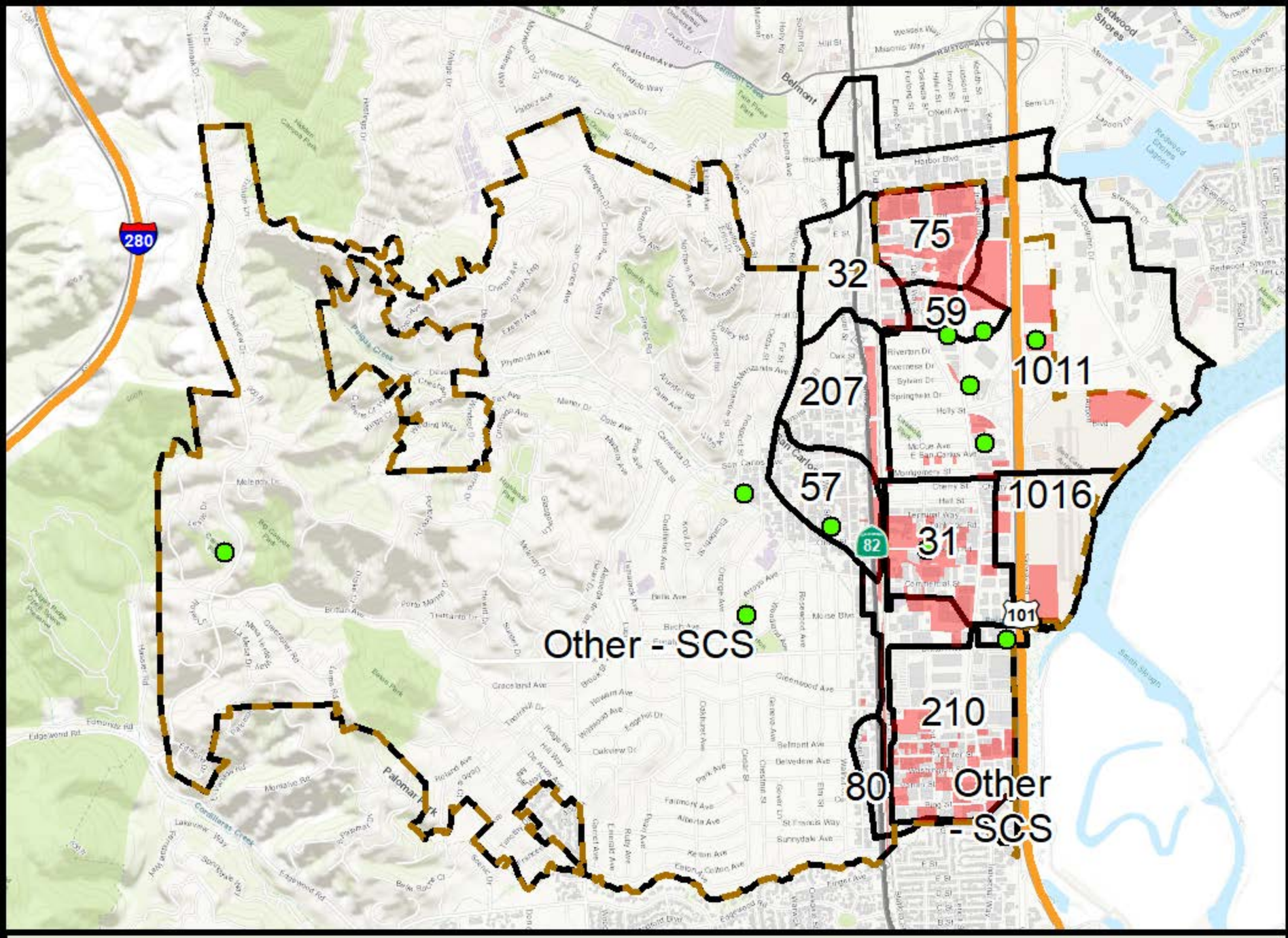

Figure A-15. WMAs and GI/LID in San Carlos

San Carlos Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

0 0.275 0.55 1.1 Miles

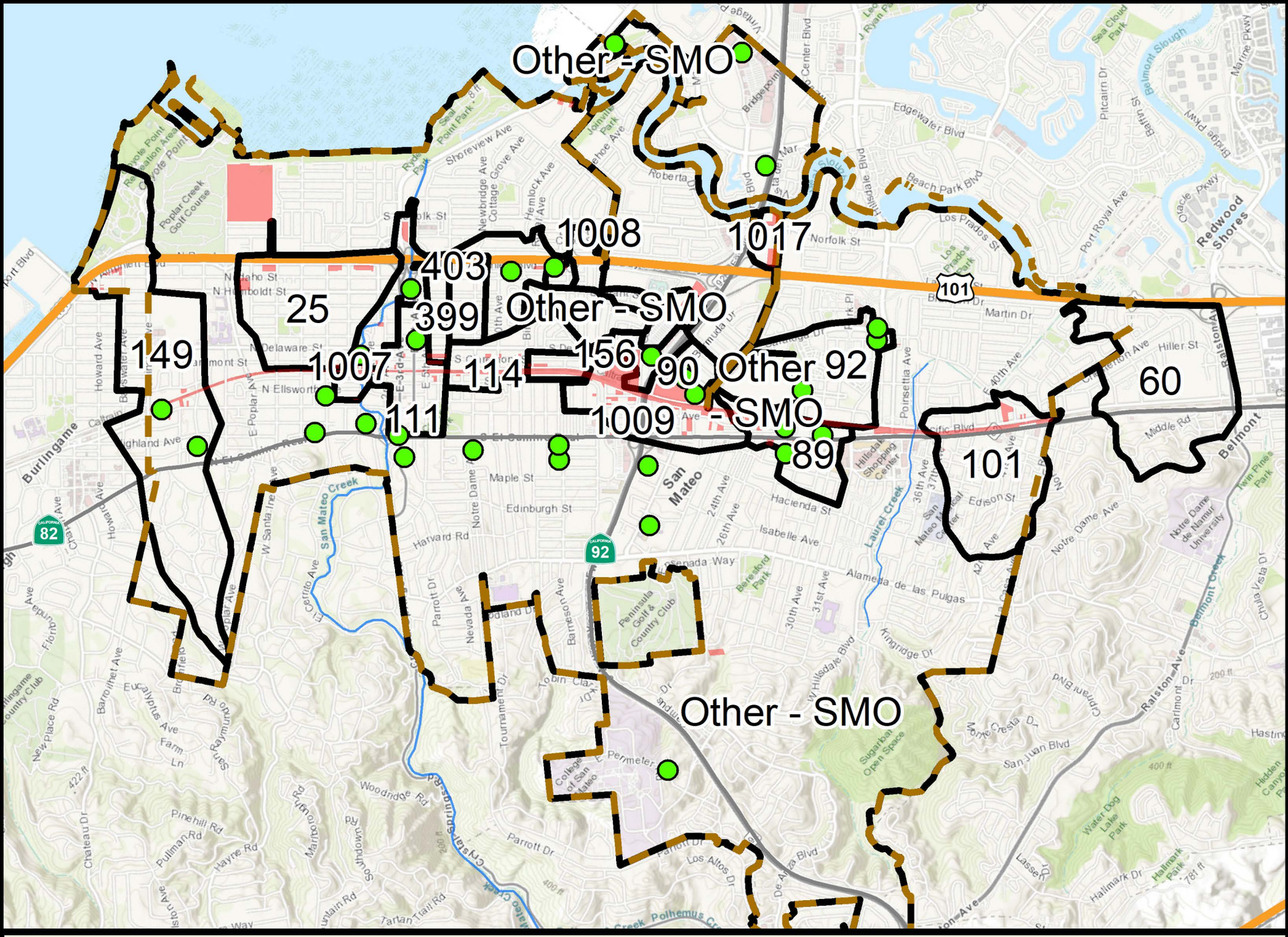

Figure A-16. WMAs and GI/LID in San Mateo

San Mateo Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

0 0.425 0.85 1.7 Miles

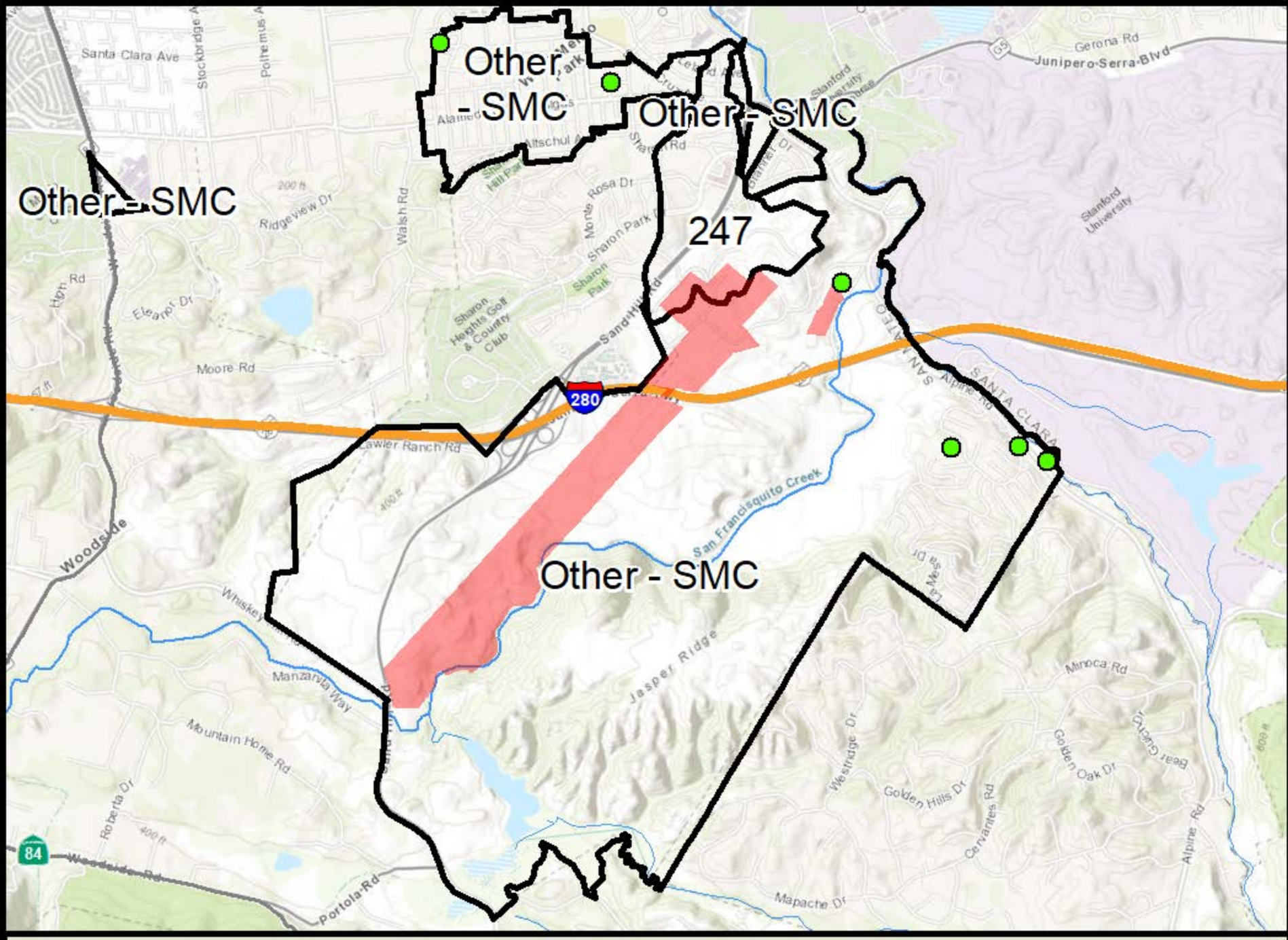

Figure A-17a. WMAs and GI/LID in San Mateo County

San Mateo County Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

N

0 0.35 0.7 1.4 Miles

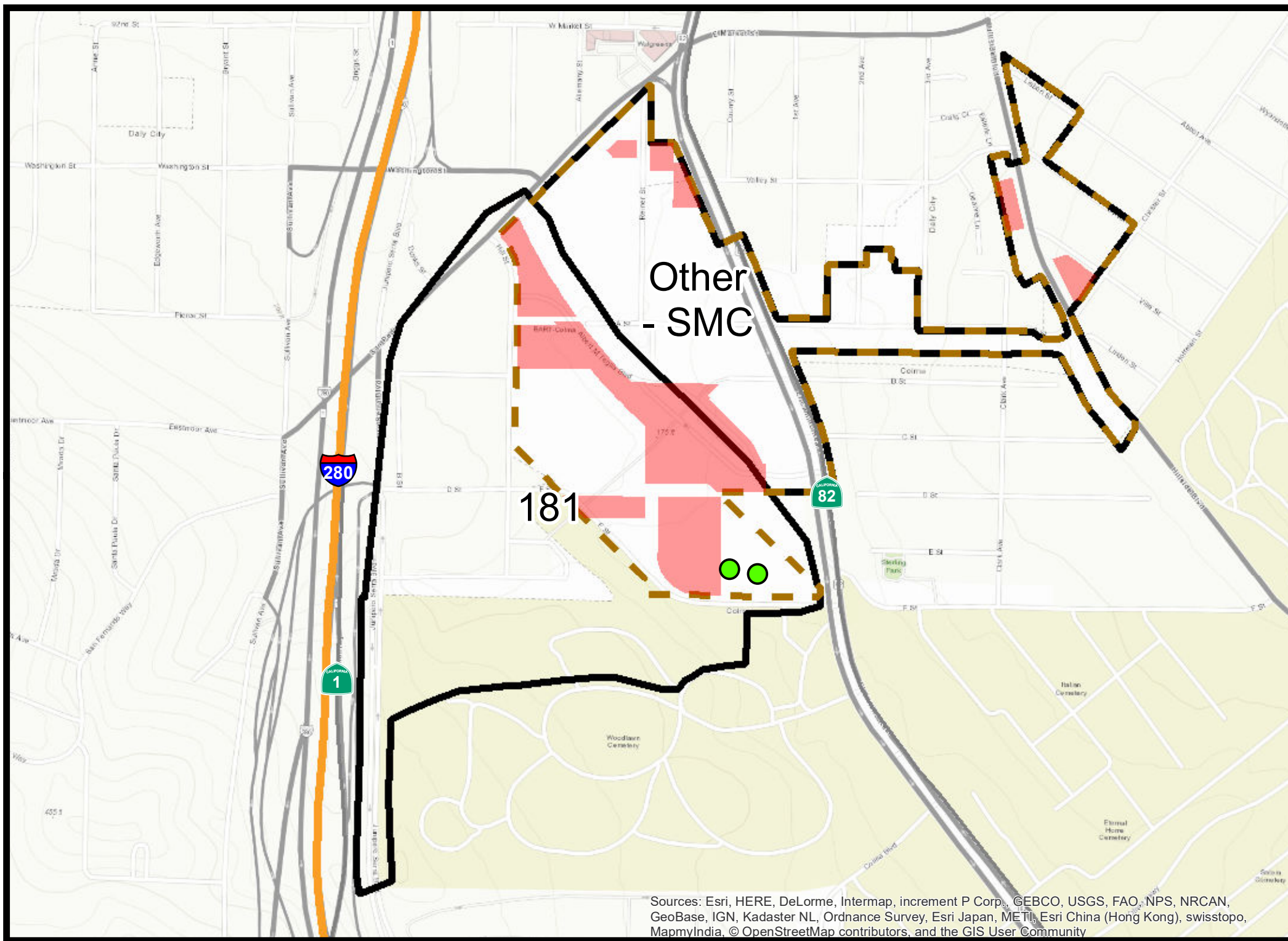

Figure A-17b. WMAs and GI/LID in San Mateo County

San Mateo County Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

N

0 0.075 0.15 0.3 Miles

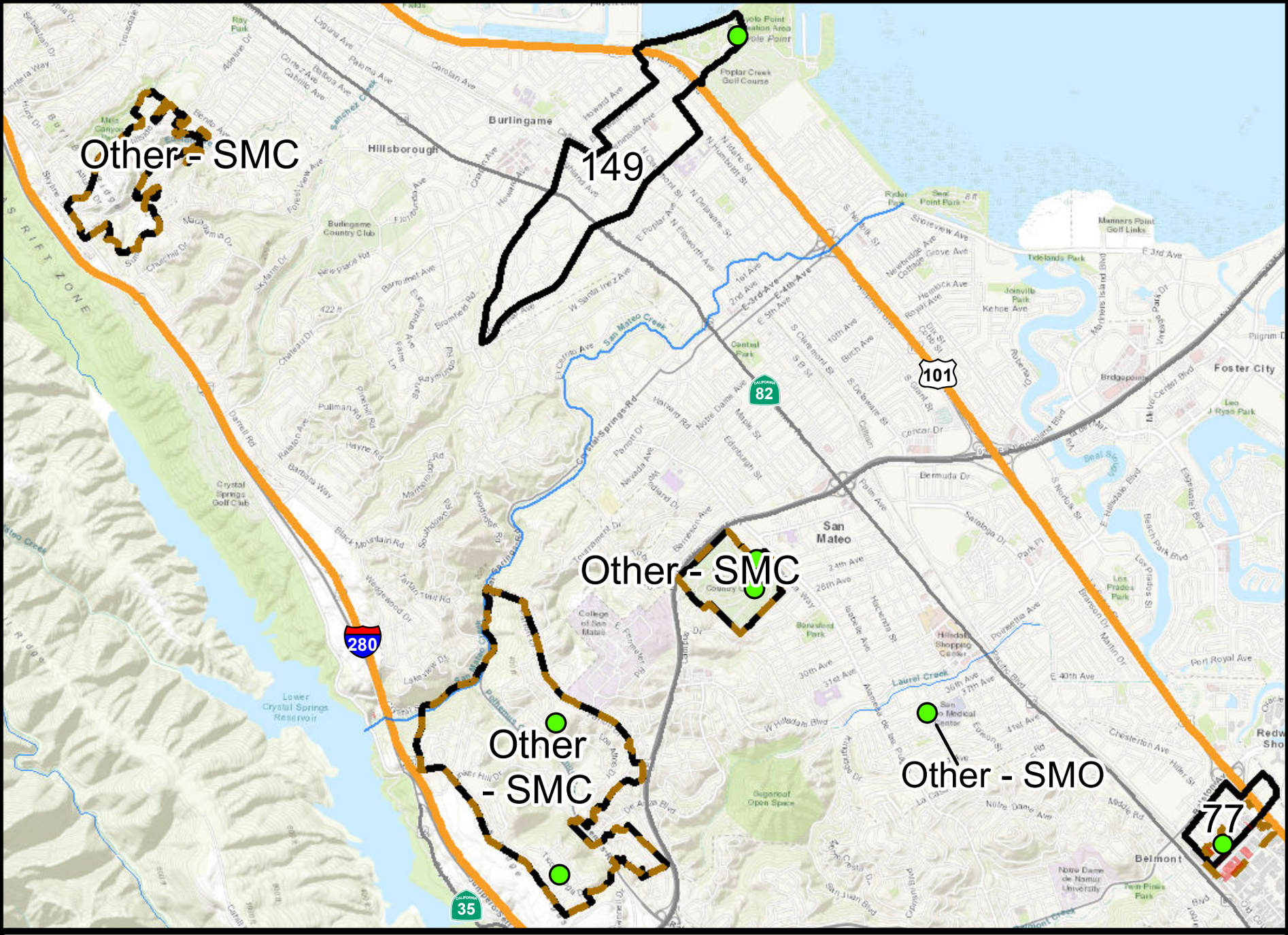

Figure A-17c. WMAs and GI/LID in San Mateo County

San Mateo County Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.5 1 2 Miles

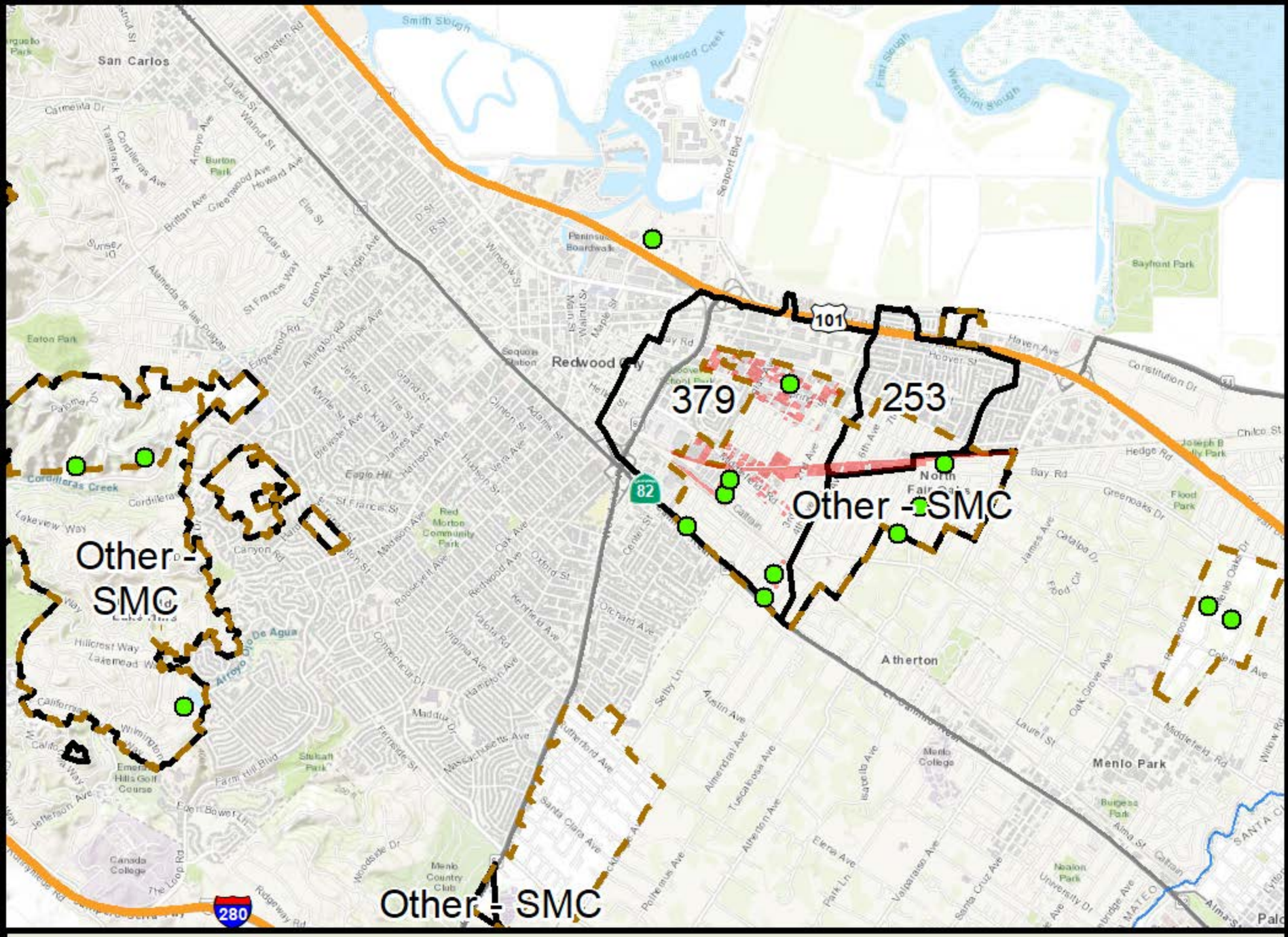

Figure A-17d. WMAs and GI/LID in San Mateo County

San Mateo County Watershed Management Area Map

GI/LID Location

High Interest Areas

Watershed Management Area (WMA)

Permittee Boundary

N

0 0.4 0.8 1.6 Miles

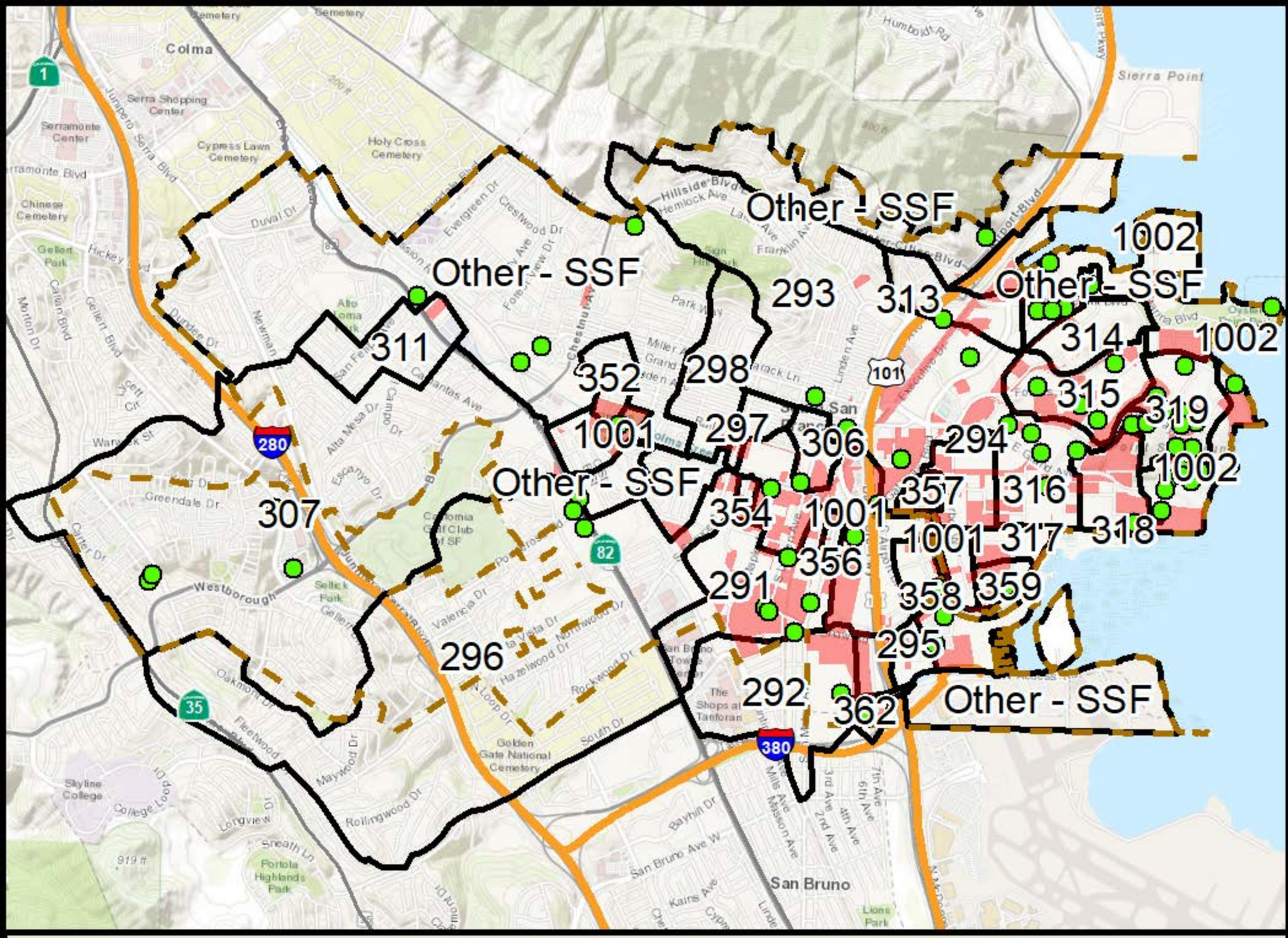

Figure A-18. WMAs and GI/LID in South San Francisco

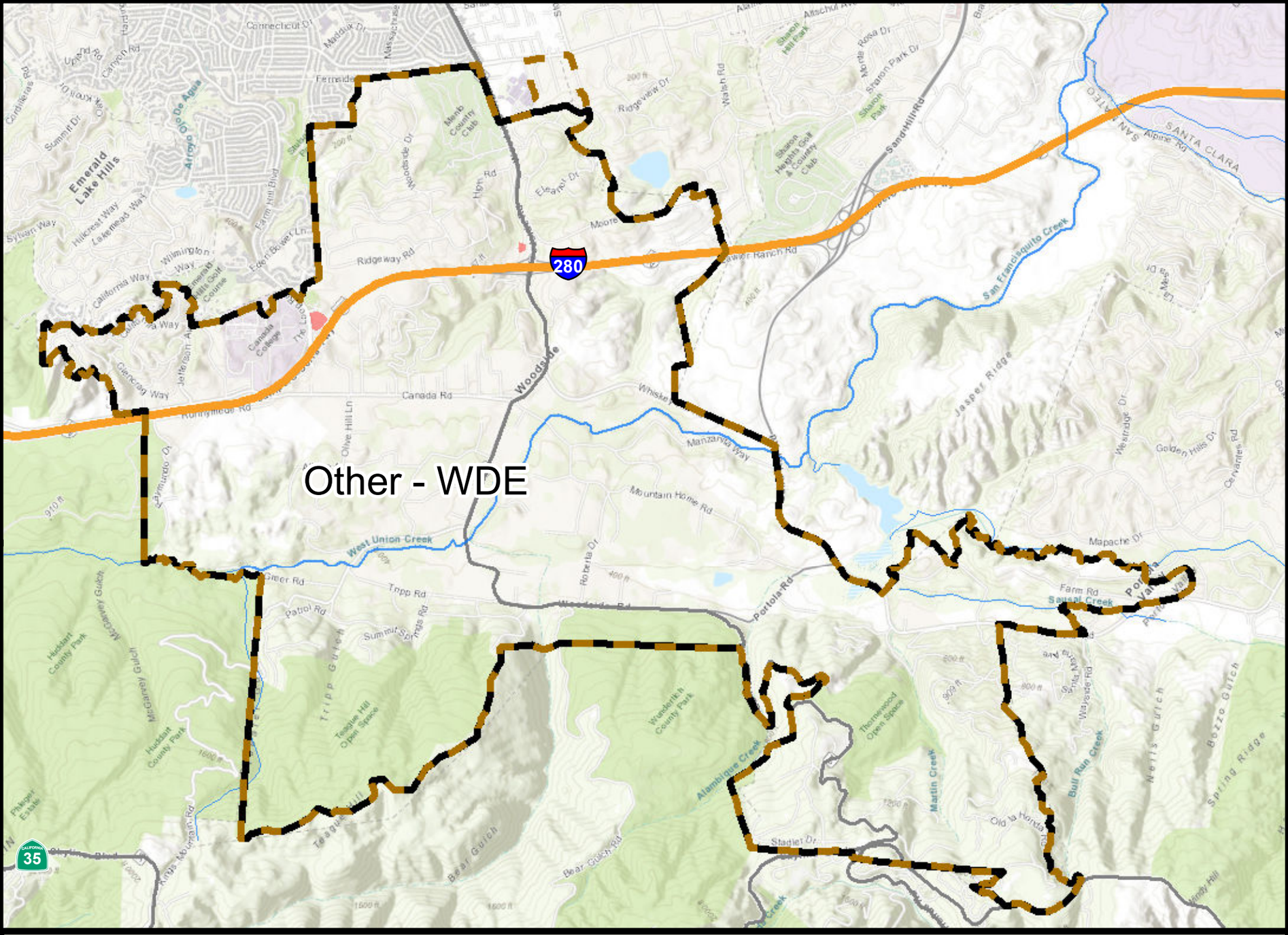

Figure A-19. WMAs and GI/LID in Woodside

Woodside Watershed Management Area Map

- GI/LID Location
- High Interest Areas
- Watershed Management Area (WMA)
- Permittee Boundary

N

0 0.475 0.95 1.9 Miles

Appendix B

Descriptions of Land Uses Referenced in this Report

Descriptions of Land Uses Referenced in this Report

Old industrial: Area developed as an industrial land use before 1980 and not redeveloped before 2002, including railroads.

Old urban: Area developed before 1980 as any land use other than industrial or airport.

New urban: Area developed or redeveloped after 1980.

Open space: Area that is not developed or mostly pervious including large urban parks, channels, golf courses, and cemeteries.

Other: Airports.