ALAMEDA COUNTYWIDE CLEAN WATER PROGRAM

MERCURY AND PCBS CONTROL MEASURES IMPLEMENTATION STATUS REPORT

MEMBER AGENCIES:

Alameda

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Fremont

Hayward

Livermore

Newark

Oakland

Piedmont

Pleasanton

San Leandro

Union City

County of Alameda

Alameda County Flood Control and Water Conservation District

Zone 7 Water Agency

Report prepared by

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Submitted to:

California Regional Water Quality Control Board, San Francisco Bay Region

FINAL

March 31, 2016

Protecting Alameda County Creeks, Wetlands & the Bay

Acknowledgements

Geosyntec Consultants contributed substantially to this report and to the specific activities described herein.

Preface

This *Mercury and PCBs Control Measures Implementation Status Report* was prepared by the Alameda Countywide Clean Water Program (ACCWP) per the Municipal Regional Permit (MRP NPDES Permit No. CAS612008; Order No. R2-2015-0049) for urban stormwater issued by the San Francisco Bay Regional Water Quality Control Board. This report fulfills the requirements of MRP Provisions C.11.a.iii.(1) and C.12.a.iii.(1) for reporting progress toward developing a list of the watershed and management areas where mercury and PCBs control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit.

This report is submitted by ACCWP on behalf of the following Permittees:

- The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City;
- Alameda County;
- Alameda County Flood Control and Water Conservation District and
- Zone 7 of the Alameda County Flood Control and Water Conservation District (Zone 7 Water Agency)

List of Acronyms

Acronym	Definition
ACCWP	Alameda Countywide Clean Water Program
BASMAA	Bay Area Stormwater Management Agencies Association
mg/kg	milligram per kilogram
MPC	Monitoring and Pollutants of Concern Committee
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
POC	Pollutants of Concern
RWQCB	Regional Water Quality Control Board
SF	San Francisco
SFEI	San Francisco Estuary Institute
TMDL	Total Maximum Daily Load
WY	Water Year

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1 Introduction

This *Mercury and PCBs Control Measures Implementation Status Report* was prepared by the Alameda Countywide Clean Water Program (ACCWP) in accordance with the Municipal Regional Permit (MRP; NPDES Permit No. CAS612008; Order No. R2-2015-0049) for urban stormwater issued by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB). This report fulfills the requirements of MRP Provisions C.11.a.iii.(1) and C.12.a.iii.(1) for reporting progress toward developing a list of the watershed and management areas where mercury and polychlorinated biphenyls (PCBs) control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit.

The following MRP reporting requirements are addressed within this report:

- Preliminary list of planned or potential watersheds and management areas.
- The monitoring data and other information being used to select these watersheds and management areas.

This report is organized into the following sections:

1. Introduction
2. Background
3. PCBs Source Area Identification Process
4. Potential Watersheds/Management Areas
5. Control Measures
6. Ongoing PCBs Source Area Identification Implementation

2 Background

2.1 Mercury and PCBs Total Maximum Daily Loads

Fish tissue monitoring in San Francisco Bay (Bay) has revealed bioaccumulation of PCBs, mercury, and other pollutants. The levels found are thought to pose a health risk to people consuming fish caught in the Bay. As a result of these findings, California's Office of Environmental Health Hazard Assessment issued an interim advisory on the consumption of sport fish from the Bay. The advisory led to the Bay being designated as an impaired water body on the Clean Water Act "Section 303(d) list" due to PCBs and mercury. In response, the California Regional Water Quality Control Board, San Francisco Bay Region (SFRWQCB) developed Total Maximum Daily Load (TMDL) water quality restoration programs targeting PCBs and mercury in the Bay. The general goals of the TMDLs are to identify sources of PCBs and mercury to the Bay and implement actions to control the sources and restore water quality.[1]

Municipal separate storm sewer systems (MS4s) are one of the PCBs and mercury source/pathways identified in the TMDLs. Local public agencies (i.e., Permittees) subject to requirements via National Pollutant Discharge Elimination System (NPDES) permits are required to implement control measures in an attempt to reduce PCBs and mercury from entering stormwater runoff and the Bay. These control measures, also referred to as best management practices (BMPs), are the tools that Permittees can use to assist in restoring water quality in the Bay.

2.2 Municipal Regional Permit

NPDES permit requirements associated with Phase I municipal stormwater programs and Permittees in the Bay area are included in the MRP, which was issued to 76 cities, counties and flood control districts in 2009 and reissued in revised form in 2015. Consistent with the TMDLs, Provisions C.11.a. and C.12.a. of the MRP require the implementation of source and treatment control measures and pollution prevention strategies to reduce mercury and PCBs in urban

[1] As stated in the MRP Fact Sheet on page Attachment A-106, "Many or most of the control measures that will generate mercury reduction benefits will be chosen based on the benefit for PCBs load reductions." Thus the remainder of this report will describe efforts to prioritize watersheds and management areas based on potential for reducing PCB loads.

stormwater runoff to achieve specified load reductions throughout the permit area. Specifically, the MRP requires the Permittees to:

1. Identify the watersheds or portions of watersheds (management areas) in which PCBs control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit;
2. Identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area;
3. Submit a schedule of control measure implementation; and
4. Implement sufficient control measures to achieve the mercury and PCBs load reductions stated in the permit.

This report has been prepared to address MRP Provisions C.11.a.iii.(1) and C.12.a.iii.(1), which require the Permittees to report progress toward developing a list of the watersheds and management areas where mercury and PCBs control measures are currently being implemented and those in which control measures will be implemented during the term of the permit, as well as the monitoring data and other information used to select these watersheds and management areas.

This list should include watersheds containing contaminated sites referred to the SFRWQCB as well. The sites that have been referred to the SFRWQCB as of early March 2016 are listed in Table 1 below. These referrals were developed as an outcome of efforts conducted in Task 3 of the Clean Watersheds for a Clean Bay (CW4CB) project.[2]

[2] The primary objective of the CW4CB Task 3 pilot projects was to identify on-land sources of PCBs for referral to appropriate regulatory agencies in five pilot watersheds, including the Ettie Street Pump Station (ESPS) watershed in West Oakland, California. The CW4CB Task 3 effort in the ESPS watershed built upon the ACCWP's 2000-2002 Watershed Sediment Sampling Program to generate baseline information on contaminant concentrations, the City of Oakland's 2004-2006 PCBs Abatement Grant Project in the ESPS watershed to identify PCBs sources as part of a Proposition 13 grant, and additional work in 2007 to evaluate the effectiveness of abatement using impervious surface power washing at the request of the SFRWQCB Toxics Division. As part of the 2012-2013 CW4CB Task 3 effort, the City of Oakland further characterized potential PCBs sources in the ESPS watershed through reviewing existing records, performing facility inspections, and conducting surface soil/sediment sampling.

Table 1: Contaminated Sites Referred to the SFRWQCB

SITE NAME	LOCATION
Asbestos Management Group (AMG)	3438 Helen Street, Oakland
Custom Alloy Scrap Sales (CASS)	2730 Peralta Street, Oakland
Former Giampolini Painting	2838 Hannah Street, Oakland

2.3 General Approach

ACCWP and Permittee staff have been conducting a PCBs source area identification screening program in order to identify areas where PCBs control measures would be the most beneficial for consideration in focused implementation planning for PCBs and mercury load reductions. At the beginning of the PCBs source area identification screening program, representatives of ACCWP and other Bay Area stormwater programs collaborated in BASMAA's Monitoring and Pollutants of Concern Committee (MPC) to develop a general approach for identifying potential source properties (included as Appendix A).

The PCBs source area identification screening program consists of two stages. In the first stage, source areas and properties (identified as "Old Industrial" land use and other relevant historical land uses) are screened using multiple lines of evidence (e.g., institutional knowledge, records review, windshield surveys, facility inspections, and sampling results). As a result of this screening, areas and properties are systematically categorized as High, Moderate, or Low/No Likelihood to be a source of PCBs into the storm drain system. The second phase of the program is to identify and prioritize control measure implementation. The implementation of this program by the ACCWP and Permittee staff is described in Sections 3 through 5 of this report.

3 PCBs Source Area Identification Process

3.1 Approach

In May 2014, the ACCWP prepared a preliminary source property database/Excel workbook, guidance document, and map files based on the 2014 IMR Part C[3] maps to assist in identifying potential PCBs source areas and properties. The database was derived from the Old Industrial layer in the IMR Part C maps. Each row represented a single parcel in the Old Industrial area with columns for existing ownership information and space for Permittees to fill in historical use, previous violations, desktop and field observations and a recommendation for the likelihood as a source of PCBs after the desktop and field evaluations were completed. Parcels that were redeveloped or did not meet criteria outlined in the screening guidance document were characterized as moderate or low/no likelihood and saved in the master database for tracking.

As a first step, the Permittees[4] carefully reviewed the parcel database through a desktop screening process. The ACCWP conducted field training to demonstrate the windshield survey process and how to assess sites for the opportunity to sample sediment. The Permittees then conducted windshield surveys of those properties that were considered High Likelihood after the desktop screening. Areas outside of the Old Industrial mapped areas and adjacent parcels that were suspect were also considered and added to the database if found to be High Likelihood areas. If a parcel met the High Likelihood criteria, it was put on a list to sample. Sample locations were aimed at track-out or erosion of sediment from an individual property and where there was enough sediment present to sample. If these conditions did not exist at the site, the site remained on the list to be tracked for a future opportunity to sample. In some cases, composite samples were analyzed to screen a larger area, which could later be potentially narrowed down to pinpoint an individual source parcel(s). Ongoing screening will consider sites that have not been sampled yet, sites that may not have been included in the preliminary database, and/or non-jurisdictional sites that have evidence pointing to potential high concentration of PCBs in sediment that may migrate off the parcel into the municipal storm drain system.

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[3] Alameda Countywide Clean Water Program Integrated Monitoring Report Part C: PCB and Mercury Load Reduction Planning. 14 March 2014.

[4] The City of Hayward conducted desktop screening within their jurisdiction. Geosyntec Consultants conducted desktop screening for all other Permittees within Alameda County.

Each sample was analyzed for PCBs (EPA Method 8082), Mercury, Total Organic Carbon (TOC) and Grain Size. Source properties are those with sediment that has confirmed concentrations greater than or equal to 1 mg/kg along with other lines of evidence that the sediment had very likely originated from the property. These source properties will be documented and considered for future referral to the SFRWQCB. Prior to referral, the Permittee will attempt to engage the source property owner to address the onsite contamination and sediment that is migrating into the storm drain system and will assess the need for interim enhanced operation and maintenance (O&M) measures (e.g., street sweeping, drain inlet cleaning, and/or storm drain cleanout) in the right-of-way and/or storm drain infrastructure adjacent to the source property during the source property abatement process.

3.2 Initial Results

Table 2 below lists the numbers of parcels in Alameda County that have been screened to date. The preliminary source property database was based on land use (i.e., parcels located in Old Industrial land use). Through the screening process, Permittees ranked the parcels and placed them into a moderate or low opportunity-level if they did not meet the criteria for a High Likelihood Source. The third column lists the number of parcels that were deemed to be High Likelihood Source parcels after desktop and windshield screening. The fourth column lists the number of sites that have been sampled based on the site's ability to meet the criteria for sampling and the fifth column lists the number of samples with PCBs concentration greater than 0.5 mg/kg.

Table 2: PCBs Source Property Screening by ACCWP Permittees in FY 2014-15

AGENCY	# OF PARCELS SCREENED	REVISED # OF HIGH LIKELIHOOD PARCELS	# OF ROW SAMPLES COLLECTED	# OF ROW SAMPLES w/PCBs > 0.5 mg/kg
Oakland (Ettie Street Pump Station Watershed and San Leandro Bay "Swath")	1,060	202	16	4
Oakland (Remaining Area)	1,385	262	0	0
Berkeley, Emeryville	1,002	96	16	1
Hayward, San Leandro, Union City	2,117	234	10	0
All Others	654	100	0	0
Total	**6,218**	**894**	**42**	**5**

4 Potential Watersheds/Management Areas

The screening results have been added to the revised source area map to identify and display Interim results of screening for potential PCB source areas and management opportunities as of early March 2016. Figures 1 – 12 illustrate the interim results of the screening in a series of maps. A list of the maps with description and additional comments is provided in Table 3 below. Figures 2, 3 and 5-10 show screening results for regions within Alameda County. The orange, yellow, and green colored areas were screened via virtual survey (i.e., using Google Earth aerial photographs and Google Maps Street View), parcel data, EPA datasets (e.g., Envirostor, Geotracker, and EPA records), existing monitoring data, site practices (e.g., metals recycling), and visible exposed sediment that could migrate offsite via track-out or natural mobilization (wind, rain). Dark orange areas are parcels that were identified as High Likelihood areas/parcels and are an indication of the potential priority management areas. Sampled points are indicated by color relating to the measured PCBs concentration; both historic monitoring (squares) and 2015 monitoring results (triangles) are provided on the maps. Figure 12 provides a map of non-jurisdictional areas within Alameda County.

Table 3: Description of Map Figures 1-12

FIGURE #	MAP TITLE	Description
1	Alameda County Preliminary Source Area Land Use Map	This is the IMR Part C map for Alameda County, which was used to start the screening process. Land uses (Old Industrial, Old Urban, New Urban, Open Space, and Other) are shown. A key for Figures 2 – 10 is provided. Watersheds above reservoirs are cross-hatched. Areas outside city boundaries are Unincorporated County (not labeled). Note that Old Industrial areas are arranged predominantly along the Bay Margin.
2	North Alameda County Potential Priority Management Areas	This is the first in a series of maps listing screening results at a regional scale (Berkeley, Emeryville, and the northern portion of Oakland).
3	West Oakland, Central Oakland, and City of Alameda Potential Priority Management Areas	This is the second in the series of regional maps that list the High Likelihood areas in the west and central portions of Oakland and the City of Alameda. This map shows the areas that drain to San Leandro Bay in the City of Oakland (a Regional Monitoring Program (RMP) Priority Margin Unit). The dark orange cross-hatched area is the Alameda Point former naval air station.

FIGURE #	MAP TITLE	Description
4	Ettie Street Pump Station Watershed Potential Priority Management Areas	This map zooms into the Ettie Street Pump Station watershed. The watershed boundary is shown in blue. CW4CB Task 3 led to the referral of three sites shown here: Asbestos Management Group (AMG), a demolition debris recycler; the former Giampolini Painting site; and Custom Alloy Scrap Sales (CASS), a foundry and scrap metal recycler. Note two locations in the ESPS watershed had sediment concentrations greater than 1 mg/kg in FY 15/16. One sample location was adjacent to the Former Giampolini Painting site; the other site, which is associated with old railroad property, is under investigation as a potential referral site.
5	East Oakland and San Leandro Potential Priority Management Areas	This is the third regional map that lists the High Likelihood areas in East Oakland and the City of San Leandro.
6	Hayward Potential Priority Management Areas	This is the fourth regional map that lists the High Likelihood areas in the City of Hayward. Also shown on this map are one location (Zone 4-Line A) where stormwater monitoring has historically been conducted and 2 locations where stormwater monitoring was conducted by SFEI in FY 15/16 (Line 4-B-1 and Line 4-E).
7	Union City Potential Priority Management Areas	This is the fifth regional map that lists the High Likelihood areas in the southern portion of the City of Hayward and Union City.
8	Fremont and Newark Potential Priority Management Areas	This is the sixth regional map that lists the High Likelihood areas in the cities of Fremont and Newark.
9	East Alameda County Potential Priority Management Areas	This is the seventh regional map that lists the High Likelihood areas in the eastern portion of Alameda County (Dublin, Pleasanton, and Livermore). Lawrence Livermore National Laboratory is shown as a High Likelihood parcel in Livermore.
10	Unincorporated Alameda County Potential Priority Management Areas	This is the eighth regional map that lists the High Likelihood areas in Unincorporated Alameda County. These parcels are all located in the western portion of the Unincorporated County; no High Likelihood parcels are located in the eastern portion of the Unincorporated County.
11	Alameda County Potential Priority Management Areas	This map lists the current High Likelihood PCBs management areas throughout Alameda County in dark orange that have been identified as a result of the source property screening that has been conducted to date. This map is a composite of the maps shown in Figures 2 – 10.
12	Alameda County Non-Jurisdictional Areas	This map shows the extent of non-jurisdictional High Likelihood areas throughout the County that have been identified to date (i.e., railroads, electrical utilities, airport, military, and individual discharge permit holders) and PCBs-contaminated sites. These areas fall outside the jurisdiction of the Program, even though some of them may be potential sources of PCBs into the MS4 right-of-way.

5 Control Measures

This section provides a general overview of the types of control measures that are currently being implemented or will be implemented by the Permittees during this and future permit terms to control PCBs and mercury. Specific control measures for the priority management areas will be identified in the 2016 Annual Report.

5.1 Source Property Identification and Abatement

5.1.1 Program Description

As part of PCBs source property identification and abatement program, the Permittees will perform investigations starting with High Likelihood parcels to identify PCBs sources in and/or to their storm drain systems and refer those sources to the SFRWQCB for investigation and abatement by the SFRWQCB (or other appropriate regulatory agencies with investigation and cleanup authorities). Source property identification and abatement involves investigations of properties located in historically industrial land use or other land use areas where PCBs were used, released, and/or disposed of and/or where sediment concentrations are significantly elevated above urban background levels in order to identify potential source properties for referral for clean-up and abatement. The Permittees will also quantify and report the amount of PCBs loads reduced through implementation of this source area identification screening program per MRP Provisions C.11.b/C.12.b.

5.1.2 Control Measure Implementation

The Permittees will conduct reconnaissance surveys of old industrial and similar areas to determine whether runoff from potential source properties is likely to convey soils/sediments with significantly elevated PCBs concentrations to the municipal storm drain system. Permittees will also develop, in cooperation with the SFRWQCB, an approach to addressing properties that fall into the following special source categories: electrical utilities, railroads, and NPDES-permitted properties (e.g., Caltrans, Phase 2 Permittees, Industrial General Permit facilities, and individually-permitted industrial facilities).

The Permittees will validate the existence of significantly elevated PCBs concentrations through surface soil/sediment sampling in the right-of-way where visual inspections and/or other information suggest that a specific property is a potential source of significantly elevated PCBs concentrations into the storm drain. Where data confirm significantly elevated PCBs concentrations (e.g., greater than 1.0 mg/kg) are present in soil/sediment from a potential source property or in stormwater samples, the Permittees will refer that property to the

SFRWQCB to facilitate their issuance of orders for further investigation and remediation of the subject property.

For each identified source property, the applicable Permittee will then conduct an investigation to determine if significant quantities of soils/ sediment are present in the street and/or storm drain adjacent to the identified source property and if those soils/sediment have significantly elevated PCBs concentrations. If such soils/sediment are found to be present in significant quantities, the Permittee will take actions to cause erosion and sediment controls to be applied to the source property and will implement or cause to be implemented, where appropriate, one or a combination of interim enhanced O&M measures (e.g., street sweeping, drain inlet cleaning, pump station cleaning, street flushing, and/or storm drain cleanout) in the streets and/or storm drain infrastructure adjacent to the source property during the source property abatement process.

The Permittees will quantify and report the amount of PCBs loads reduced as a result of implementation of this program using the methods adopted in the MRP (i.e., the PCBs Load Reduction Interim Accounting Methodology).

5.1.3 2016 Implementation

- Continued reconnaissance surveys of old industrial and adjacent areas with sampling and chemical analyses to confirm elevated sources as needed. Review all data results to look for false negatives.
- Quantify (map) special source categories: electrical utilities, railroads, federal facilities, and NPDES-permitted properties (e.g., Caltrans, Phase 2 Permittees, and individually-permitted industrial facilities).
- Participate in the BASMAA Regional Project to develop detail and guidance for Interim Accounting System and load reduction reporting.
- 2016 Annual Report: identify the potential high source property areas where this program is currently being implemented and the monitoring data and other information used to select these areas. Identify control measures that will be implemented and a schedule.
- Refer confirmed source properties to the SFRWQCB after confirmation of the source property by multiple lines of evidence (e.g., institutional knowledge, records review, windshield surveys, facility inspections, and sampling results).

5.2 Green Infrastructure / Treatment Measures

5.2.1 Program Description

The Permittees will complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements (per MRP Provision C.3.j). Permittees will implement green infrastructure and treatment measure projects to achieve some portion of the PCBs load reductions shown in MRP Table 12.1 over the final three years of the permit term. These include projects implemented during new development and redevelopment, generally on private properties, and retrofit of existing infrastructure in public right-of-way areas and on public properties if possible.

5.2.2 Control Measure Implementation

The Permittees will implement the following control measures as part of this program:

1. Prepare a framework (i.e., a plan containing specific tasks and timeframes) for development of a Green Infrastructure Plan and have the framework approved by the Permittee's governing body, mayor, city manager, or county by June 30, 2017.

2. Prepare a list of green infrastructure projects that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.

3. Develop, individually or collectively, regionally-consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels. The methods should also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.

5.2.3 2016 Implementation

1. Develop the Green Infrastructure Plan framework.

2. Submit the list and a summary of planning or implementation status of early implementation green infrastructure projects with the 2016 Annual Report.

3. Identify green infrastructure and C.3 projects in old industrial and old urban areas that were constructed since 2002, but were not reported in the 2014 IMR.

4. Develop, individually or collectively, regionally-consistent methods to track and report implementation of green infrastructure measures.

5.3 Manage PCBs In Building Materials and Infrastructure

5.3.1 Program Description

This program involves managing PCBs-containing materials in applicable building structures at the time such structures undergo demolition as well as infrastructure improvement projects. The PCBs management framework should be managed so that PCBs are not likely to be released off the site during or after building demolition or infrastructure improvements through vehicle track-out, airborne releases, soil erosion, or stormwater runoff. Applicable building demolition projects include, at a minimum, commercial and industrial structures constructed or remodeled between the years 1950 and 1980. Wood frame structures are exempt.

5.3.2 Control Measure Implementation

During the first three years of the permit term, the Permittees will develop a framework, to include establishing any necessary authority, for managing PCBs-containing materials in applicable structures at the time such structures undergo demolition. The PCBs management framework will be implemented at the start of the fourth year of the permit term.

5.3.3 2016 Implementation

The ACCWP and Permittees will participate in two BASMAA regional projects that will assist Permittees in complying with MRP Provision C.12.f by developing a framework for managing PCBs in building materials during demolition. The first BASMAA regional project is underway. This project is preparing a scope of work and budget for a larger, multi-year BASMAA regional project that will develop an implementation framework, guidance materials, and tools for local agencies to use to manage PCBs-containing materials and wastes during building demolition. For the first project, the ACCWP and select Permittees will participate in a workgroup that will review and provide input on the scope of work and budget for the larger regional project.

5.4 Enhanced Operation and Maintenance

5.4.1 Program Description

Routine MS4 operation and maintenance (O&M) activities include street sweeping, drain inlet cleaning, and pump station maintenance. In addition, culverts and channels are also routinely maintained (i.e., desilted). Enhancements to routine operations and new actions such as storm drain line and street flushing may enhance the Permittees' ability to reduce PCBs and mercury in stormwater.

5.4.2 Control Measure Implementation

PCBs load reductions achieved through implementation of enhanced O&M control measures may be counted as part of the overall load reductions expected during this permit term. Each Permittee will account for load reductions achieved through enhanced O&M measures, if implemented, using the accounting methods established in the Interim Accounting Methodology for TMDL Loads Reduced Report. Load reductions from enhanced control measures implemented prior to the effective date of the MRP may be counted toward the required load reductions if the control measures were established or implemented during the last permit term, but load reductions from the activity were not realized or credited in the 2014 IMR.

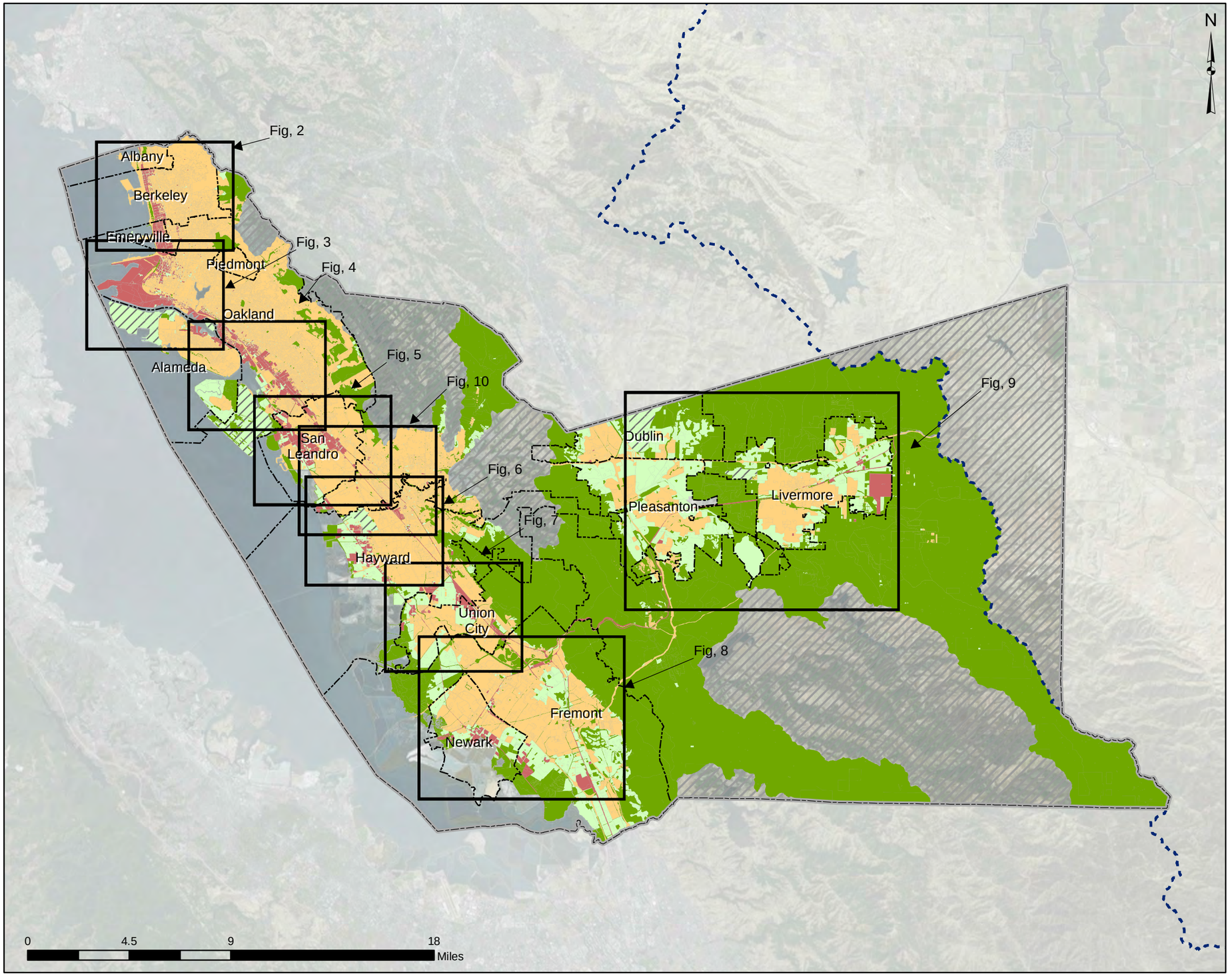
6 Ongoing PCBs Source Area Identification Implementation

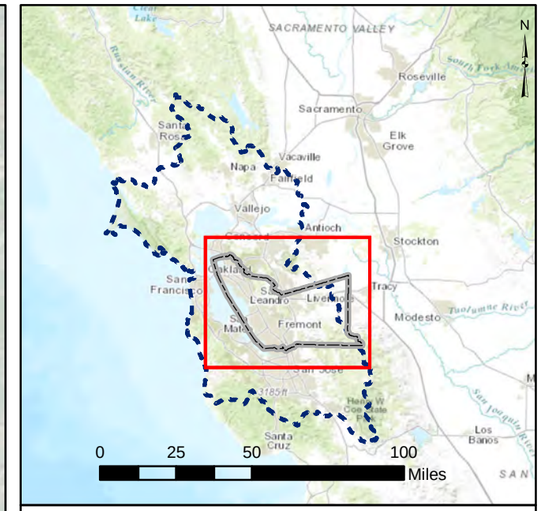
The ACCWP and Permittees will continue to implement the PCBs source area identification screening program. City of Oakland staff and Program staff/consultants have prepared a draft ESPS Watershed Focused Implementation Plan (FIP) for internal review that lists a variety of proposed controls for implementation in the ESPS Watershed. The Program and Permittees are developing implementation plans for the other priority management areas, building on lessons learned and model concepts from the ESPS Watershed FIP. The Program and Permittees will also continue to coordinate with the other Programs and MRP Permittees in their efforts for PCBs control measure planning and implementation.

Specifically, the following ongoing activities are being implemented by the Program and Permittees:

- Continued POCs monitoring/source property investigation.
- Refer confirmed source properties to the SFRWQCB after confirmation of the source property by the results of sampling and chemical analysis.
- Collaborate with BASMAA to develop the Interim Accounting Methodology for TMDL Loads Reduced Report in accordance with MRP Provisions C.11.b.iii.(1) and C.12.b.iii.(1).
- Collaborate with BASMAA to begin development of a Reasonable Assurance Analysis (RAA) methodology in accordance with MRP Provision C.12.c.
- Collaborate with BASMAA to begin development of a protocol for managing PCBs containing materials and wastes during building demolition activities in accordance with MRP Provision C.12.f.

FIGURES





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary
- Upstream of Reservoir

Land Use Classification

- Old Industrial
- Old Urban
- New Urban
- Open Space
- Other (Airport, Military)

Notes:

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

Alameda County
Preliminary Source Area Land Use Map

Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016

Figure 1

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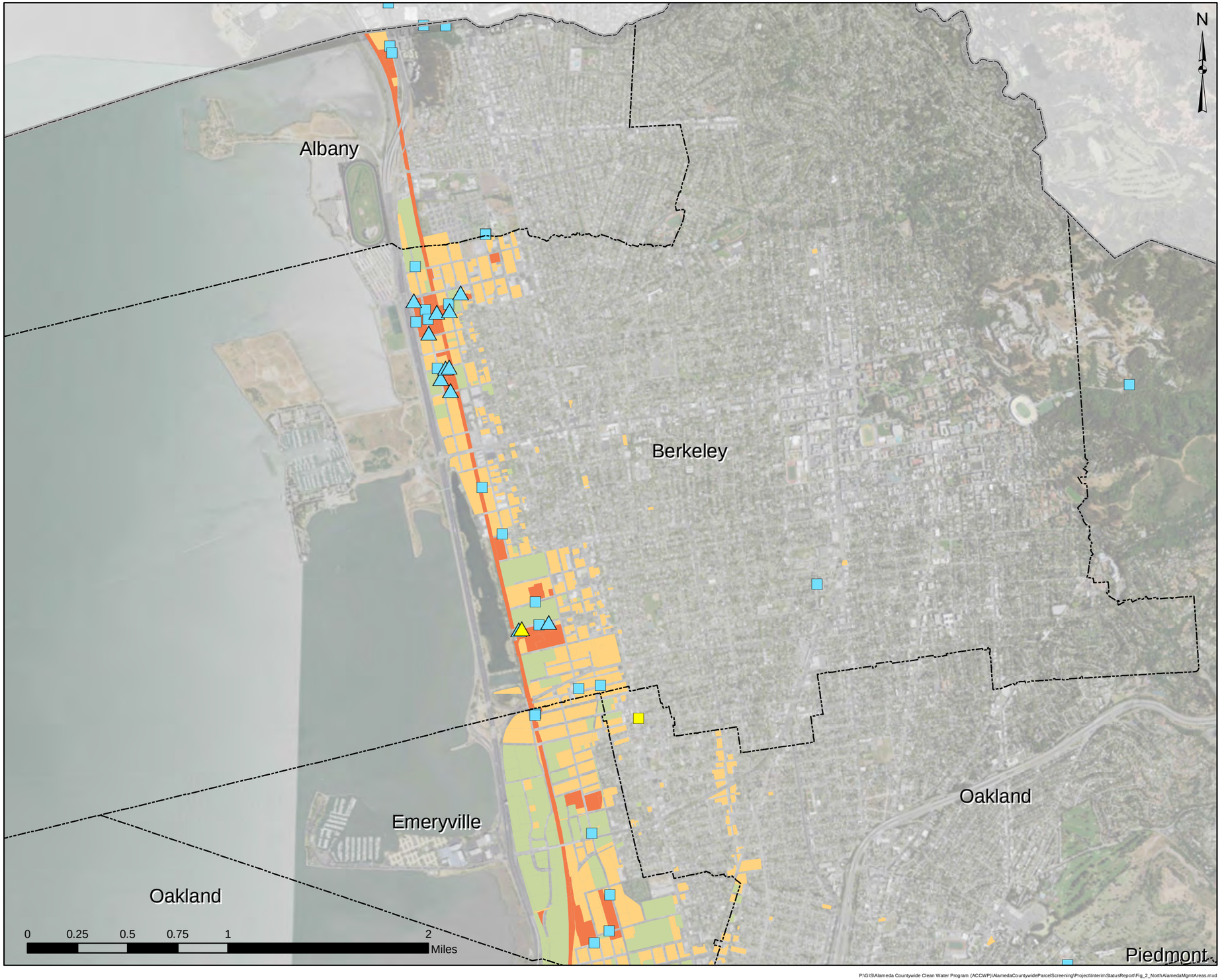
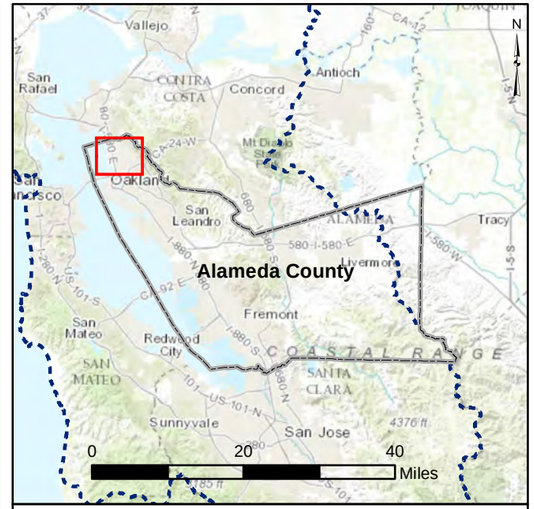




Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

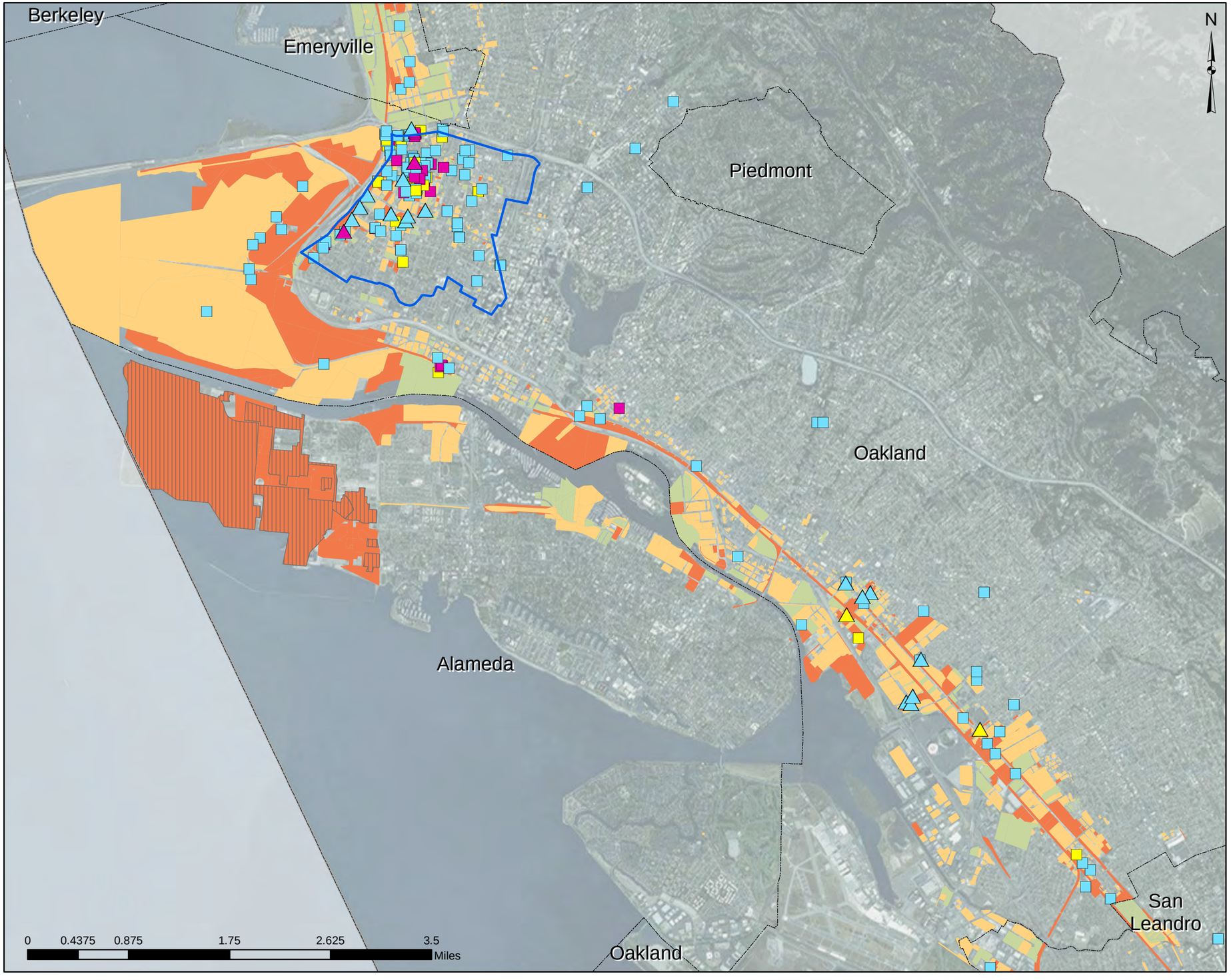
North Alameda County Potential Priority Management Areas

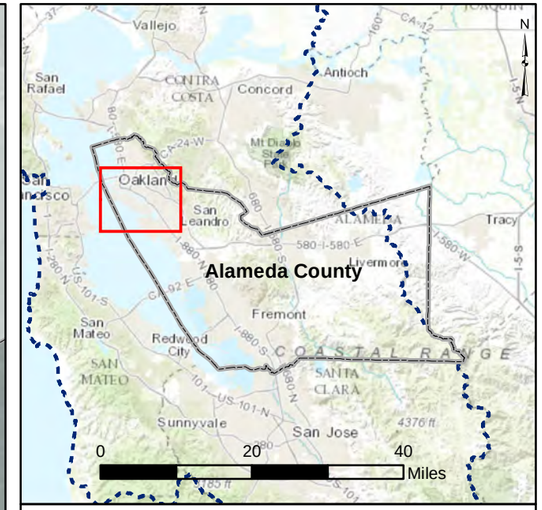
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 2**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_2_NorthAlamedaMgmtAreas.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary
- ESPS Watershed

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

Non-Jurisdictional Properties

- Alameda Military Base

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

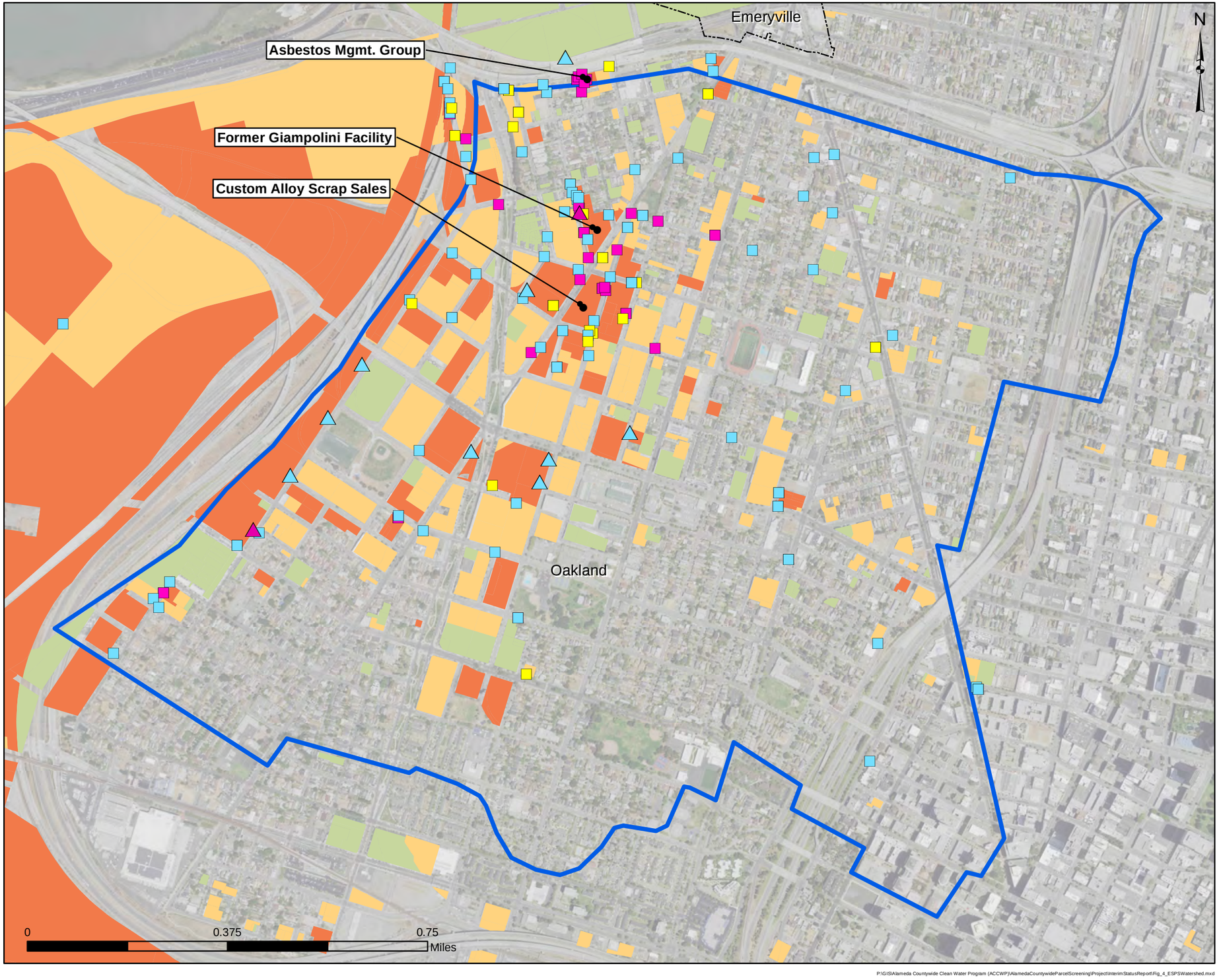
West Oakland, Central Oakland, and City of Alameda
Potential Priority Management Areas

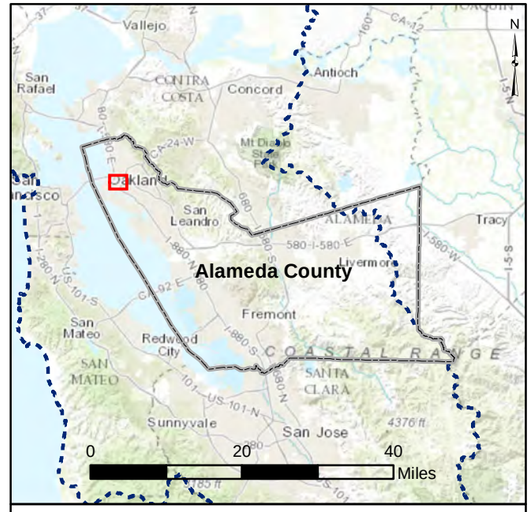
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 3**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_3_AlamedaCentralWestOakland.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary
- Referred Sites
- ESPS Watershed

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

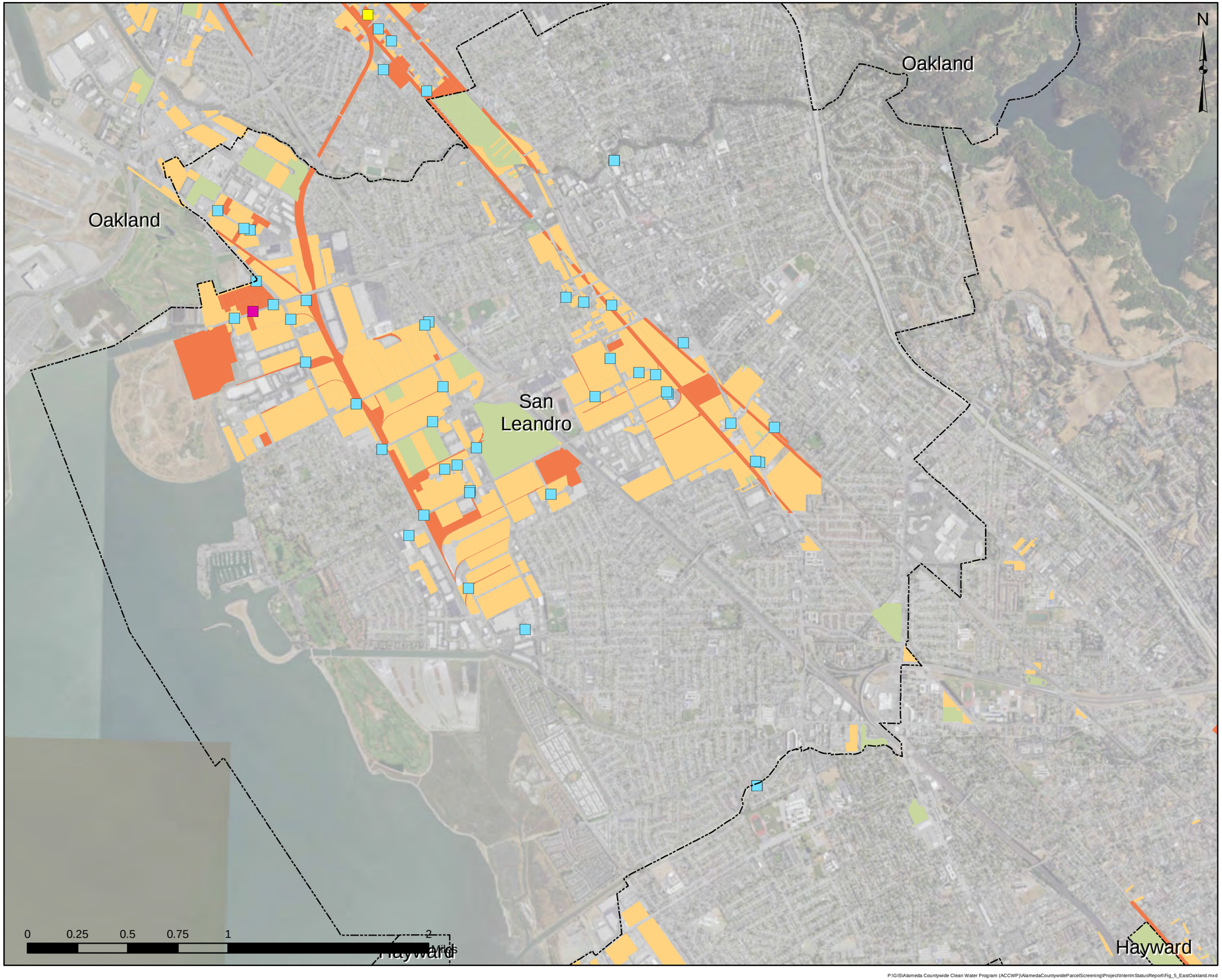
Ettie Street Pump Station Watershed
Potential Priority Management Areas

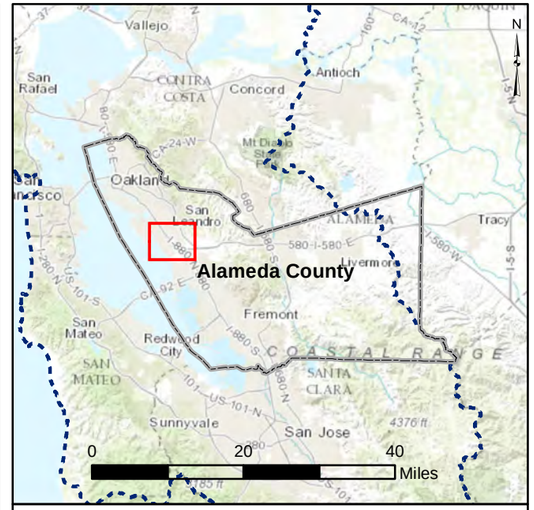
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 4**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_4_ESPSWatershed.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

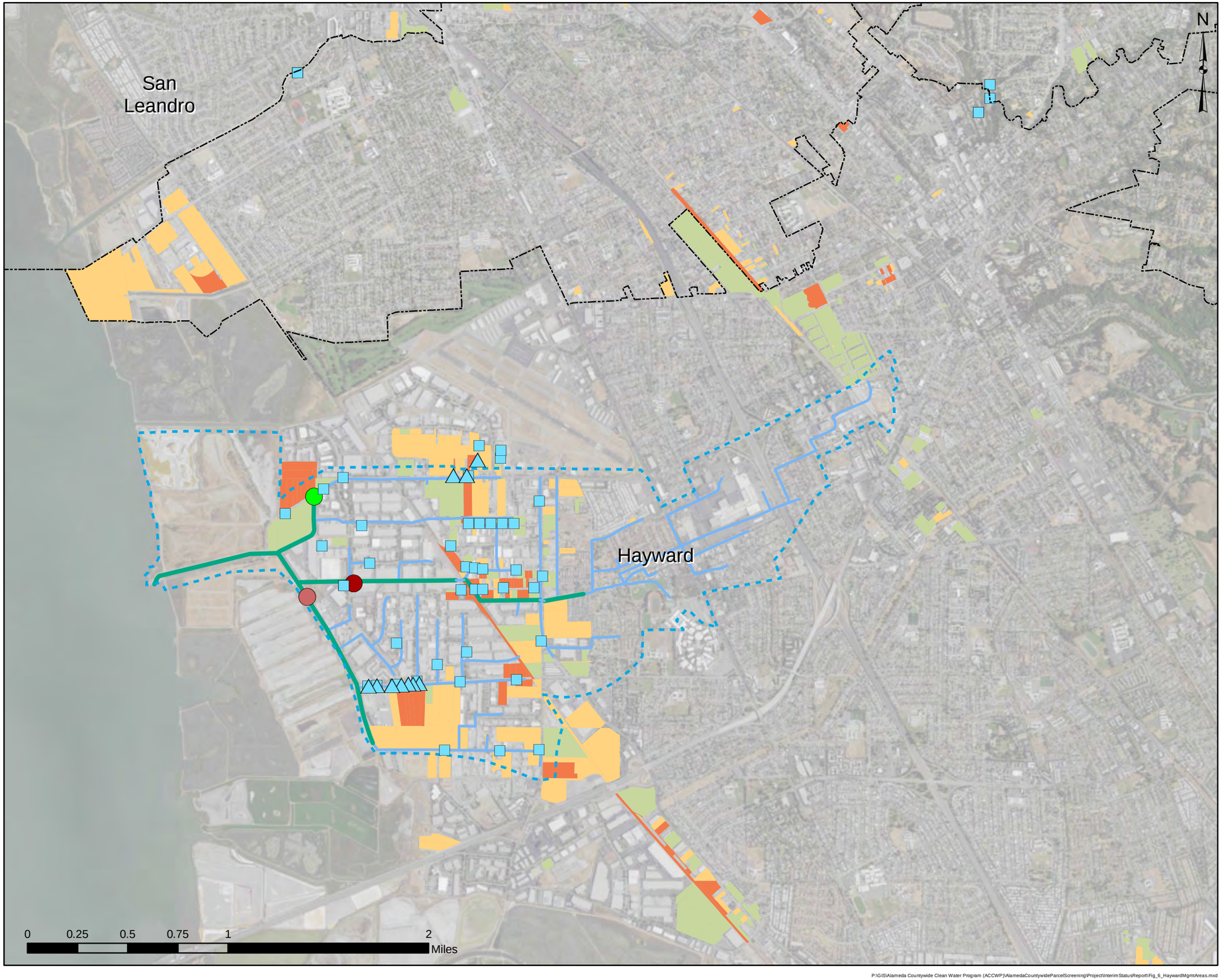
East Oakland and San Leandro Potential Priority Management Areas

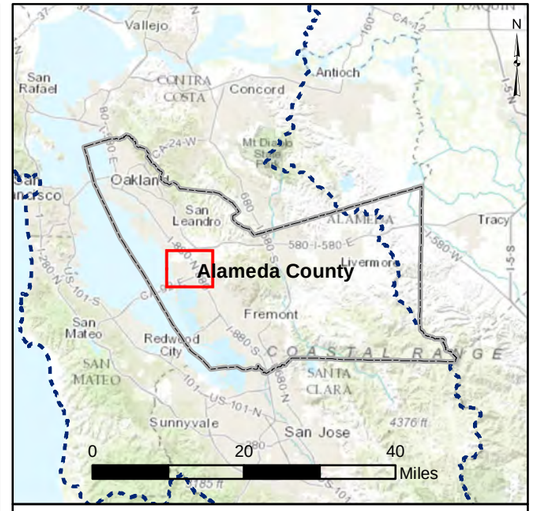
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 5**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_5_EastOakland.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

Stormwater Monitoring Site

- Line 4-A
- Line 4-B-1
- Line 4-E
- ACFC Zone 4 Line A Watershed
- Open Channel
- Storm Drain

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

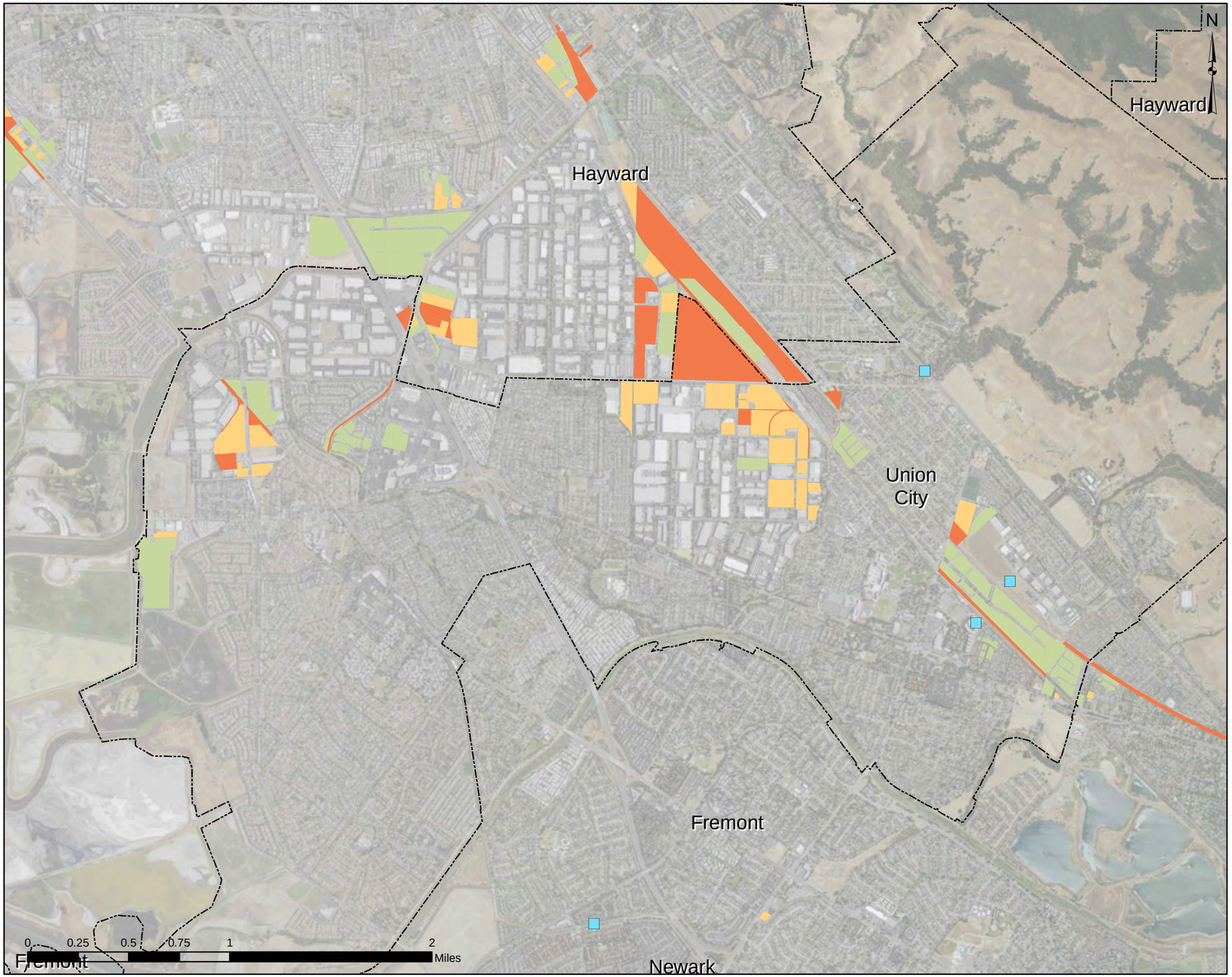
Hayward Potential Priority Management Areas

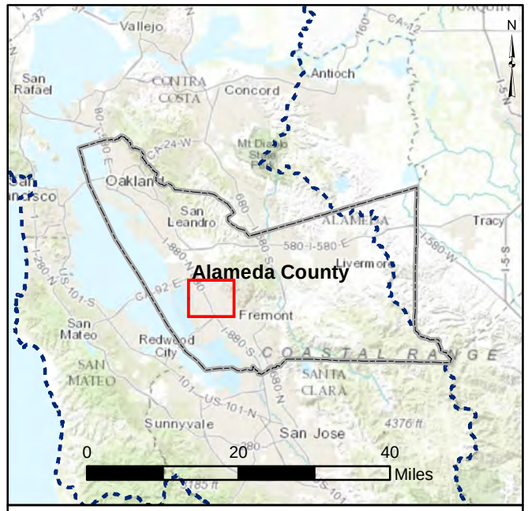
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 6**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_6_HaywardMgmtAreas.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

Union City Potential Priority Management Areas

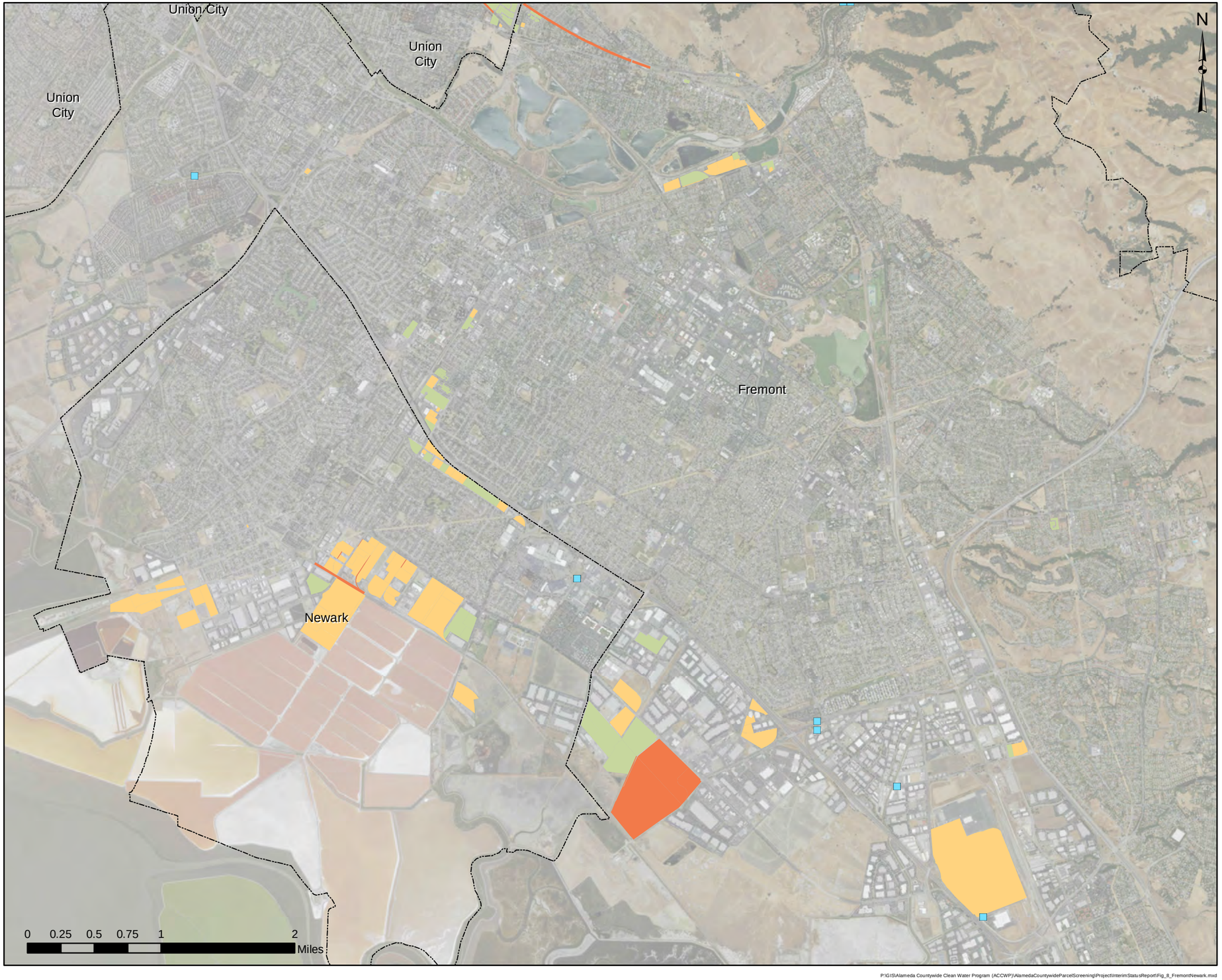
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

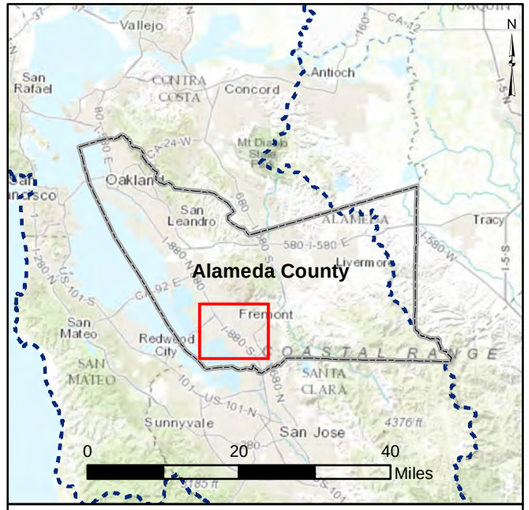
Geosyntec consultants

Oakland | March 2016

Figure 7

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_7_UnionCity.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

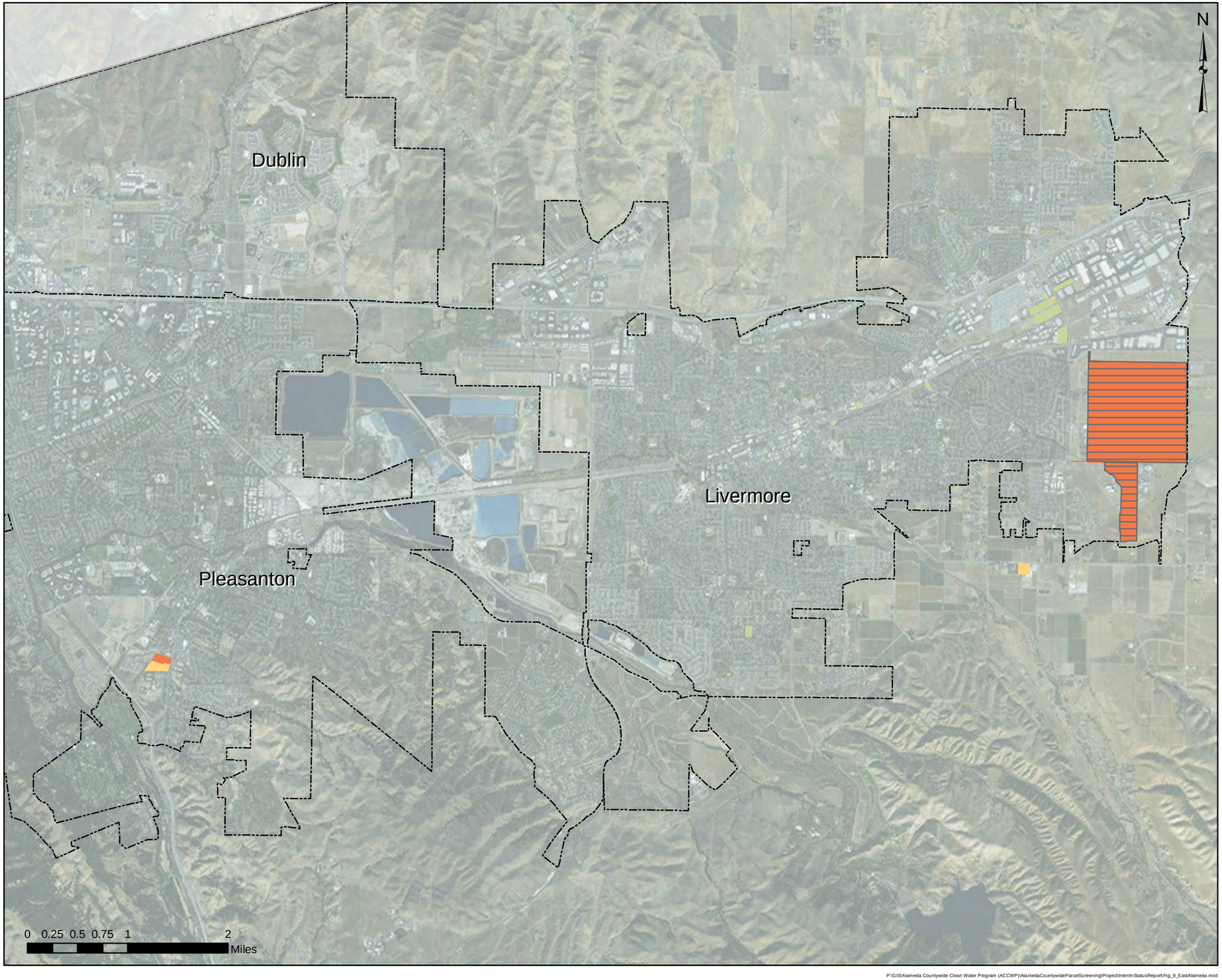
Fremont and Newark
Potential Priority Management Areas

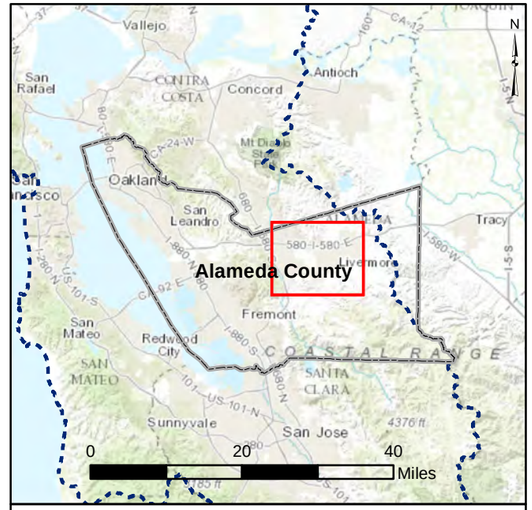
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 8**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\ProjectInterimStatusReport\Fig_8_FremontNewark.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

Non-Jurisdictional Properties

- Lawrence Livermore National Laboratory

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

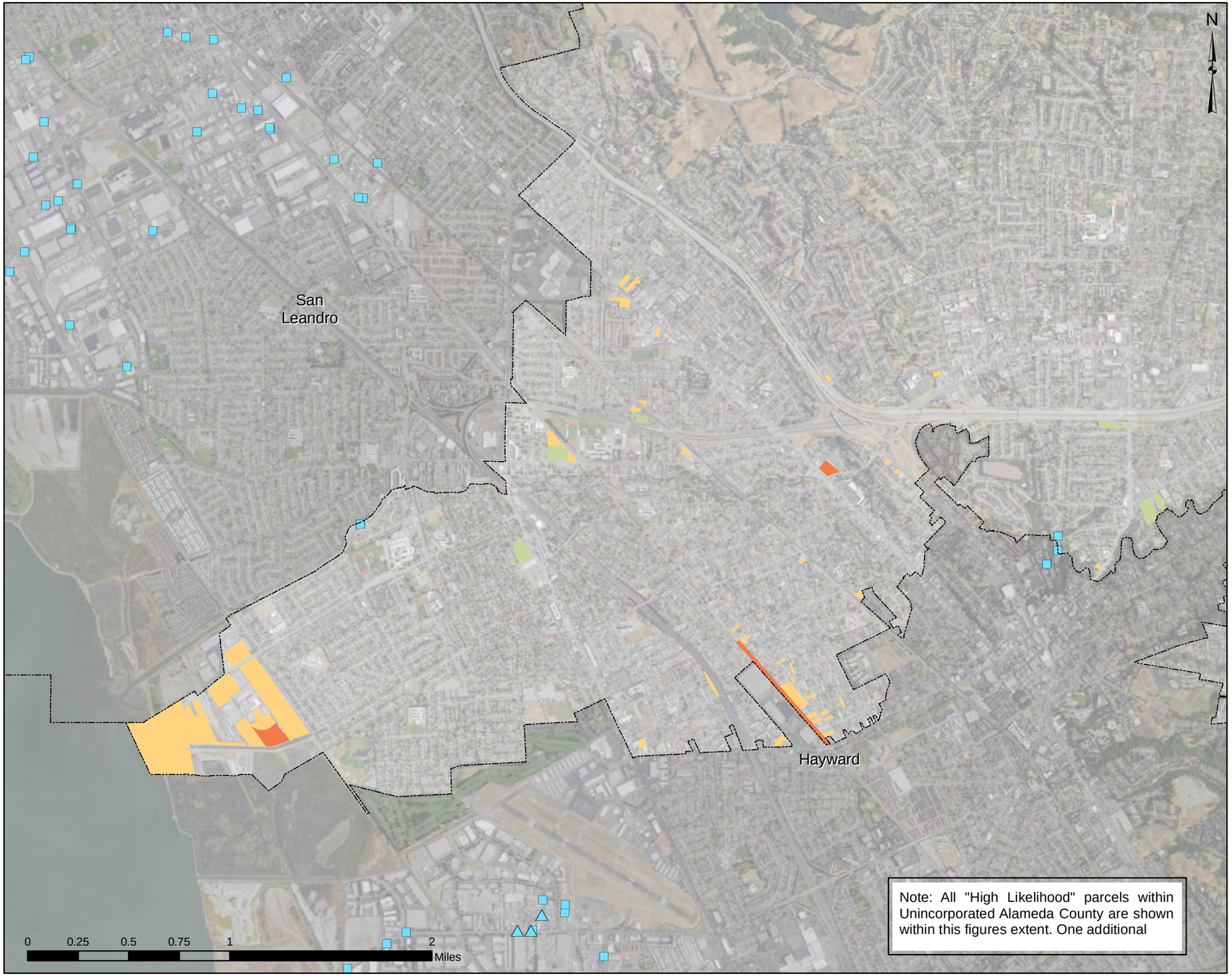
East Alameda County Potential Priority Management Areas

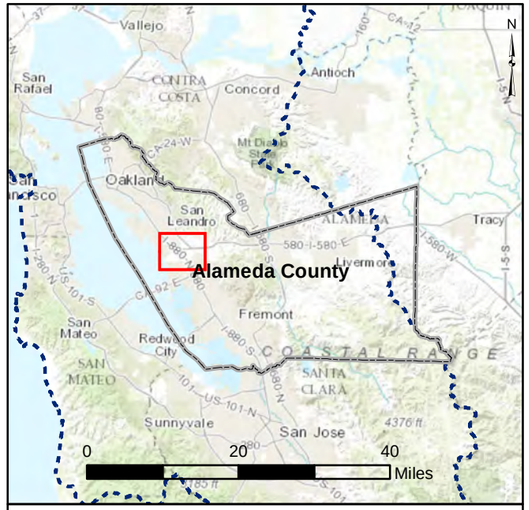
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	Figure 9

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_9_EastAlameda.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary

ACCWP 2015 PCBs Concentration Data

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

SFEI and CW4CB PCBs Concentration Data (2001-2013)

- < 0.5 mg/kg
- 0.5 - 1.0 mg/kg
- > 1.0 mg/kg

2015 Parcel Screening Results

- High Likelihood
- Moderate Likelihood
- Low No Likelihood

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

Note: All "High Likelihood" parcels within Unincorporated Alameda County are shown within this figures extent. One additional

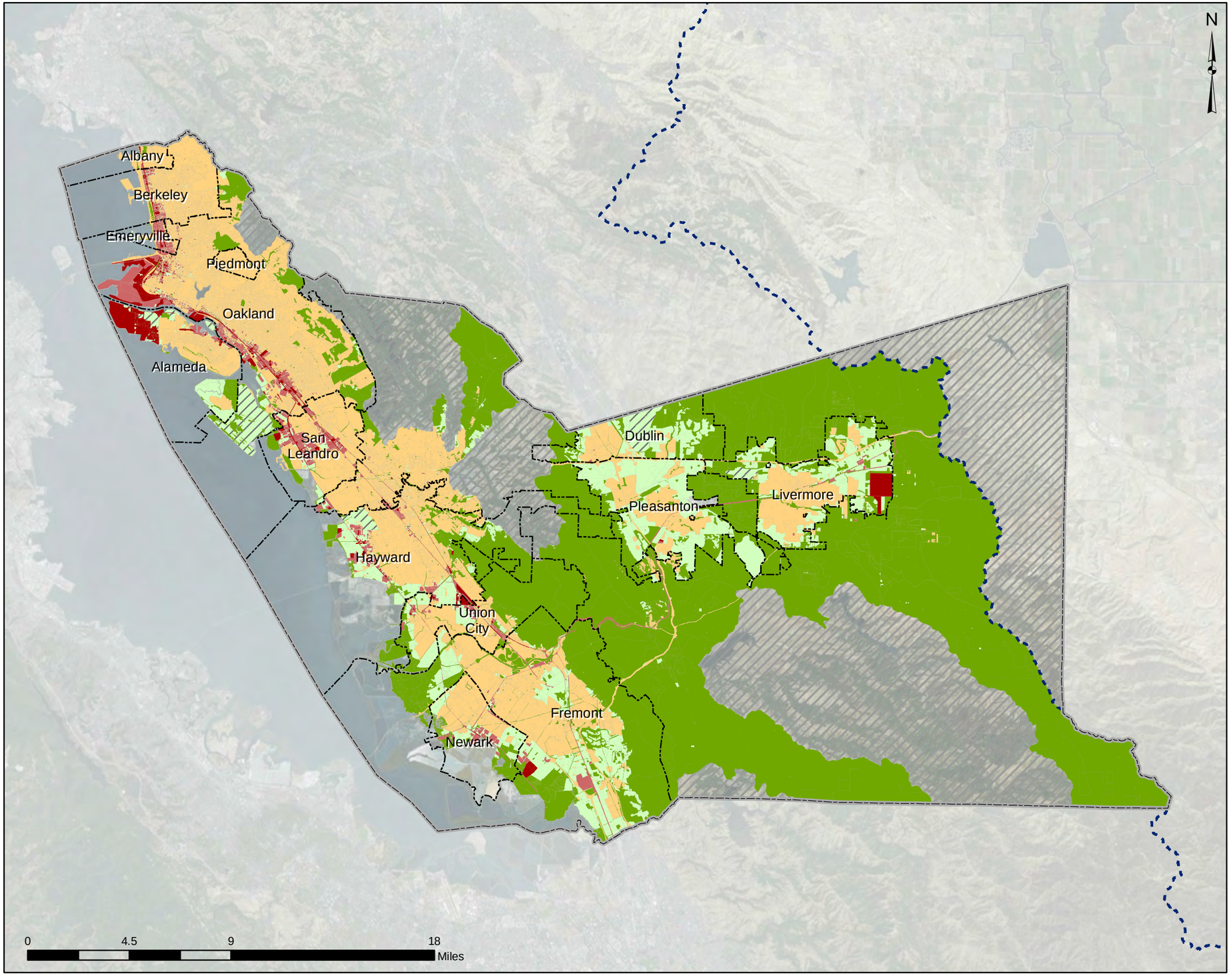
Unincorporated Alameda County Potential Priority Management Areas

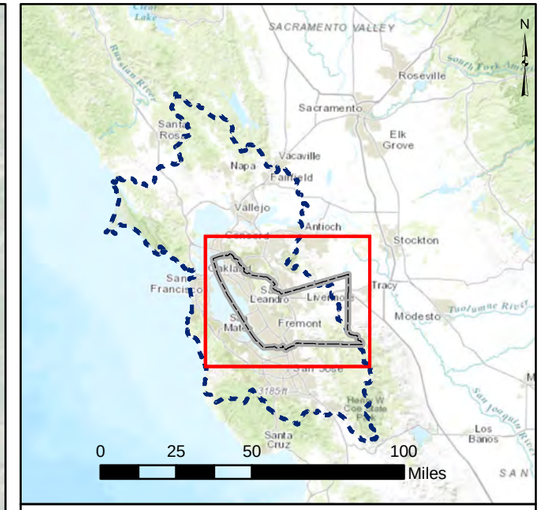
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 10**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_10_UnincorporatedAlamedaCountyMgmtAreas.mxd





Legend

- Alameda County Boundary
- City Boundaries
- MRP Region 2 Boundary
- Upstream of Reservoir

2015 Parcel Screening Results

- High Likelihood

Land Use Classification

- Old Industrial
- Old Urban
- New Urban
- Open Space
- Other (Airport, Military)

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

Alameda County
Potential Priority Management Areas

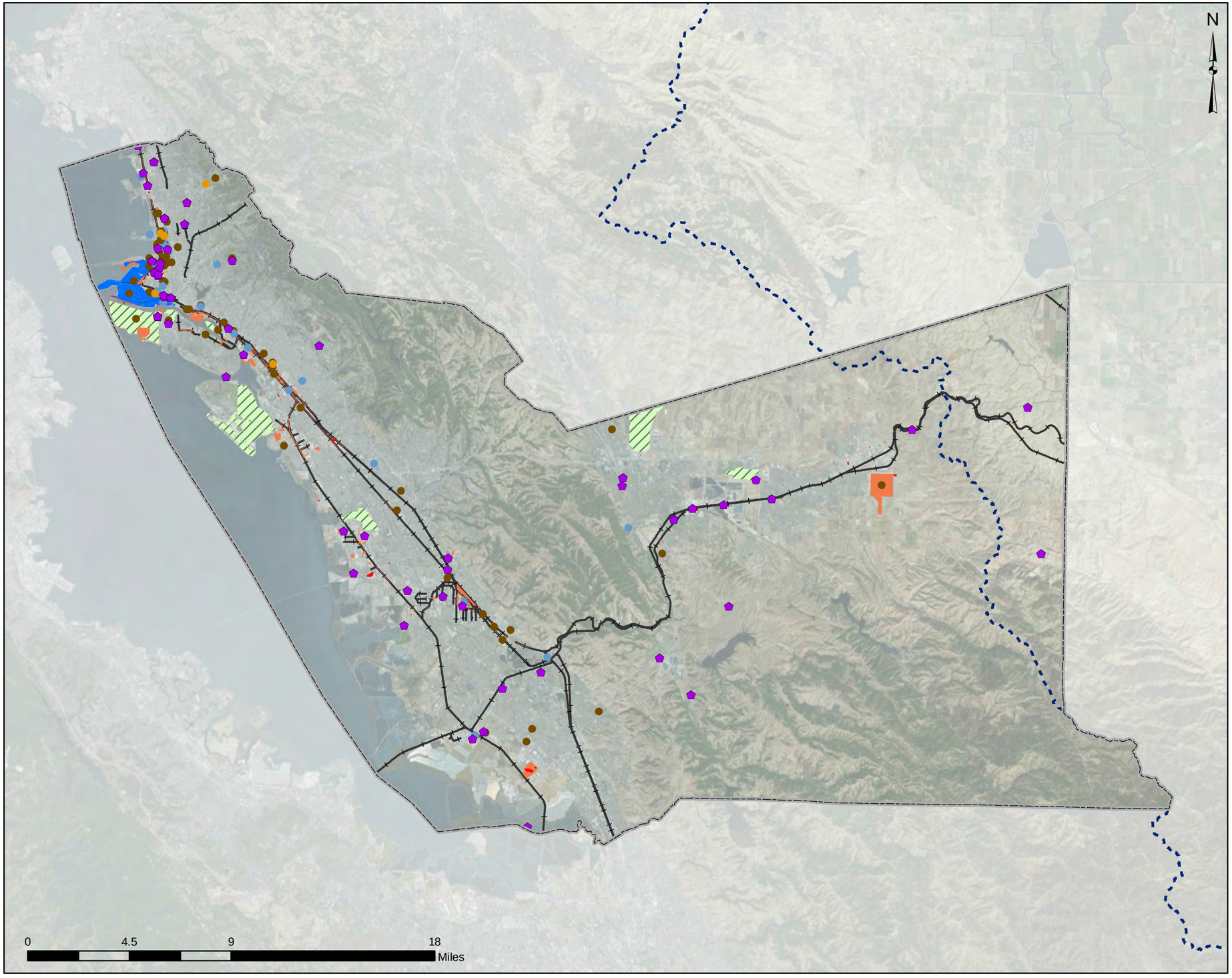
Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

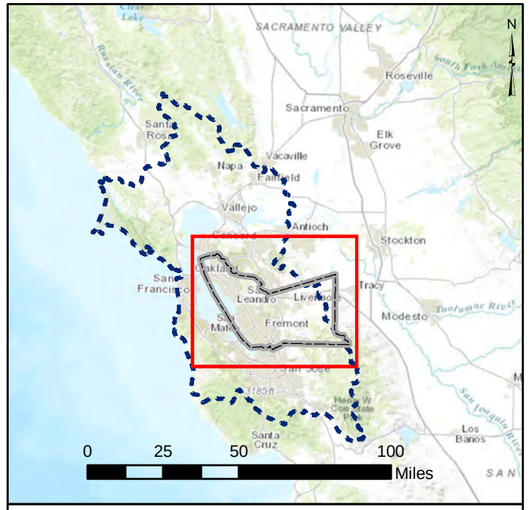
Geosyntec consultants

Oakland	March 2016

Figure 11

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_11_AlamedaCountyHOA_Overview.mxd





Legend

- Alameda County Boundary
- MRP Region 2 Boundary
- Railroad
- Port Property
- Electrical Property
- Airport and Military
- NPDES Individually Permitted Facility

2015 Parcel Screening Results

- High Likelihood

PCB Sites

- EPA
- EnviroStor
- GeoTracker

Notes:

Interim results of screening for potential PCB source areas and management opportunities as of April 1, 2016.

See report text and Appendix A for potential exclusions including but not limited to non-jurisdictional properties and other special source categories.

Alameda County
Non-Jurisdictional Areas

Alameda Countywide Clean Water Program
Mercury and PCBs Control Measures Implementation Status Report

Geosyntec consultants

Oakland	March 2016	**Figure 12**

P:\GIS\Alameda Countywide Clean Water Program (ACCWP)\AlamedaCountywideParcelScreening\Project\InterimStatusReport\Fig_12_NonJurisdictionalAreas.mxd

Appendix A

BASMAA Monitoring / POCs Committee
PCB Source Property Screening Criteria

The purpose of this document is to describe the criteria that the MRP Permittees are using for preliminary screening of potential PCB source properties (identified as "Old Industrial" land use and other significant historical land uses) into high, medium, or low likelihood to be a source of PCBs into the storm drain system. See flow chart for additional PCB implementation planning steps.

Starting Place:

- Assume that all parcels listed in the database are Moderate Likelihood Sources unless there is a reason to change it.
- If a parcel is borderline between Moderate Likelihood and Low Likelihood, it is preferred to keep the Moderate designation.
- If a parcel is borderline between Moderate Likelihood and High Likelihood, it is preferred to keep the High designation.
- The High Likelihood Source parcels will be revisited and may be reassigned with future efforts, but parcels with Moderate and Low Likelihood designations are unlikely to be revisited.

Change to High Likelihood Source if:

- The parcel has significant unpaved areas.
- The parcel has rail lines that have not been paved over.
- Site is dirty, poorly maintained, or the pavement is deteriorating.
- The parcel has a history of PCB related activities. These include Metals Manufacturing, Transportation/Shipping, Cement, Recycling (metals, auto, waste, drums), Cremation, Electrical, or Remediation Site (Envirostor, GeoTracker, EPA, or other database). Many of these are identified as 'Source Points' in the KMZ/GIS file.

The following factors may not be sufficient on their own, but combinations of these observations can lead to a High Likelihood Source designation:

- Presence of containers/trucks/debris/stockpiling/machinery/equipment (especially hydraulic equipment).
- Adjacent monitoring that indicates a PCB concentration ≥ 0.5 mg/kg.
- Proximity to remediation site (Envirostor, GeoTracker, EPA).

Change to Low Likelihood Source if:

- Site has been redeveloped or is currently undergoing redevelopment.

The following factors may not be sufficient on their own, but when all or most of the following conditions are met, the site may be designated as Low Likelihood Source:

- Site including pavement and rooftop are exceptionally well maintained.
- No outdoor storage or operations are occurring on the site.
- No unpaved areas besides well-tended landscaping occur on the site.
- No indication of industrial activity on the site (e.g., clearly commercial or office building).

List of Terminology:

1. High Likelihood Source - areas mainly within Old Industrial and other significant historical land use areas with suspected PCB sources that could be transported to the MS4.
2. High Opportunity Areas - These areas provide relatively high opportunity for cost-effective controls.
3. High Source Areas – areas with confirmed relatively high concentrations of PCBs in street dirt or sediment removed from the MS4 (≥0.5 ppm) and/or in stormwater runoff.
4. Moderate Likelihood Source - old industrial areas that are not High Source Areas and have not been redeveloped and old urban land use areas (likely excluding residential, school, and university land uses).
5. Moderate Opportunity Areas - These are areas where additional PCB load reductions could be achieved as the urban landscape is potentially redeveloped and/or retrofitted with Green Infrastructure, providing the opportunity for integration of PCBs/mercury load reductions with other drivers and funding sources such as transportation projects.
6. Moderate Source Areas - areas with moderate concentrations of PCBs in street dirt or sediment removed from the MS4 (<0.5 ppm) and/or in stormwater runoff.
7. Low Likelihood Source - newly urbanized areas, redeveloped areas, open spaces, and parks where PCBs were unlikely to have been used, transported, or recycled.
8. Low/No Opportunity Areas – these areas provide low or no opportunity for cost-effective controls.
9. Low Source Area - PCB concentrations in street dirt, sediment removed from the MS4, or in stormwater runoff from these areas are near, at, or below analytical detection limits.
10. New Urban Land Use - urbanized areas that were developed after 1974.
11. Old Industrial Land Use - land use areas that were industrialized between the late 1920's and the late 1970's, the timeframe when PCB and mercury production was the greatest in the U.S.
12. Old Urban Land Use – urbanized areas that were developed prior to 1974.
13. Other Significant Historical Land Uses - PCB sources are generally associated with areas where equipment containing PCBs was transported or used and facilities that recycle PCBs or PCB-containing devices and equipment. These sources include current and historic metal, automotive, and hazardous waste recycling and transfer stations; electrical properties and power plants; and rail lines.

PCBs Source Property Screening Process