



February 3, 2014

Bruce H. Wolfe, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Dear Mr. Wolfe:

Enclosed is the February 2014 Long-Term Trash Load Reduction Plan for the City of Richmond, which is required by and in accordance with Provision C.10.c in National Pollutant Discharge Elimination System (NPDES) Permit Number CAS612008 issued by the San Francisco Bay Regional Water Quality Control Board and/or by Provision C.10.c in NPDES Permit Number CA0083313 issued by the Central Valley Regional Water Quality Control Board.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Very truly yours,

A handwritten signature in blue ink, appearing to read "William Lindsay".

William Lindsay
City Manager

Enclosure
Richmond Trash Load Reduction Plan

City of Richmond
Trash Management Plan
2014-2022

Submitted to the
California Regional Water Quality Control Board for the San Francisco Bay Region
February 1, 2014
in compliance with Provision C.10 of the Municipal Regional Stormwater Permit

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Long-Term Trash Reduction plans by Trash Management sub area

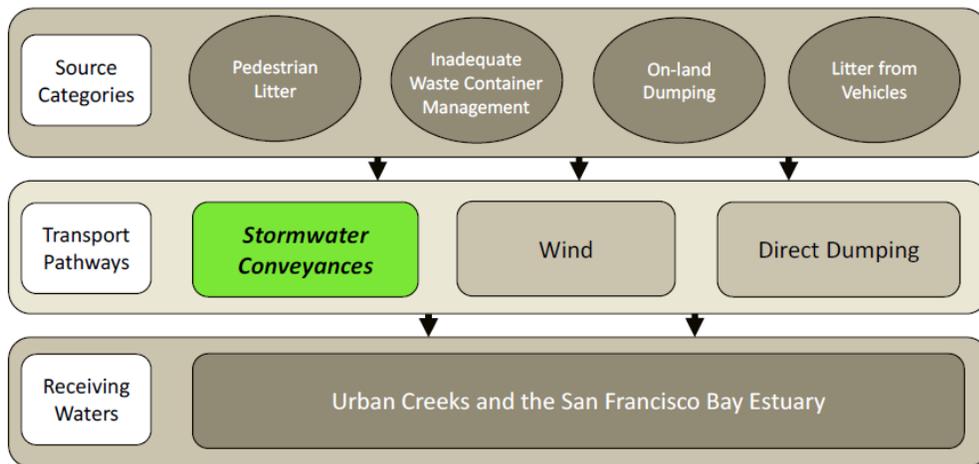
1. Introduction by the Contra Costa Clean Water Program (CCCWP)

Contra Costa municipalities have prepared Long-Term Trash Reduction Plans (Plans) in compliance with Provision C.10.c. of the Municipal Regional Stormwater Permit¹ (MRP). Each municipal plan describes control measures and best management practices (BMPs) designed to attain a 70% trash load reduction by July 1, 2017 and a 100% reduction by July 1, 2022.

A. Trash Sources, Pathways, and Loadings

Figure 1 illustrates sources and pathways of trash that enters the region’s creeks and San Francisco Bay. Trash has multiple sources—all of which are episodic and widely dispersed.

In Figure 1, *Stormwater Conveyances* is highlighted because *only this pathway* is subject to MRP trash-reduction requirements. In reality, the other pathways are equally significant, depending on time and location. In practical terms, the pathways are intertwined. For example, on-land clean-ups reduce trash entering storm drains and also reduce wind-blown trash. When visible trash is reduced, litter and dumping



from all sources tends to become less frequent and severe.

Figure 1. Trash sources and transport pathways.

Municipalities must balance their commitment to MRP compliance with their commitment to preserving and enhancing local environmental quality and quality of life for their residents. That is, municipalities seek to reduce trash on local streets and roads, and to reduce the *total* amount of trash in their creeks and on their shorelines—in addition to fulfilling the Water Board’s mandate to eliminate trash that flows through storm drains.

For these reasons, Contra Costa municipalities address trash holistically and comprehensively, integrating a variety of strategies, and uses a variety of methods to assess the success of those strategies.

B. Background for this Plan

MRP Provision C.10 requires the Permittees to reduce trash loads from their storm drains by 40% by 2014, 70% by 2017, and 100% by 2022.

¹ Order R2-2009-0074, issued by the California Regional Water Quality Control Board for the San Francisco Bay Region, became effective on December 1, 2009 and applies to 76 cities, towns, counties, and flood control districts.

Provision C.10.a.ii. required each Permittee to determine a baseline trash load and a method for tracking reductions in trash loads. Working collectively through the Bay Area Stormwater Management Agencies Association (BASMAA)—and in close collaboration with Water Board staff—the Permittees developed methods, including a calculator, for tracking loads and load reductions.

The Permittees used these methods to develop Short-Term Trash Load Reduction Plans by February 1, 2012, and are implementing those plans through July 1, 2014 to achieve the 40% reduction. Progress has been documented in the Permittees' 2012 and 2013 Annual Reports.

Following their review of the Short-Term Plans, Water Board staff requested Permittees to change the methods used to evaluate trash load reductions. Working collectively through BASMAA—and again in close collaboration with Water Board staff—the Permittees developed the framework and planning tools to be used in the Permittees Long-Term Plans.

C. Framework for Long-Term Trash Management

The following 8-step framework was developed²:

1. Identify high, medium, and low trash generation areas, based on land use and other geographic data, local knowledge, and field verification.
2. Attempt to identify sources in high and medium trash generation areas to assist in focusing control measures.
3. Prioritize areas and problems/types.
4. Identify options (tools) for dealing with prioritized areas/problems.
5. Define success/goals and measurement type.
6. Select and implement tools.
7. Evaluate success.
8. Modify as needed.

Steps 5 and 7 of this framework acknowledge fundamental challenges presented by Provision C.10—how to define and evaluate success.

D. Identifying High-Trash Areas

To implement the first step of the framework—to identify high, medium, and low trash-generation areas—the Permittees collectively, through BASMAA, developed and calibrated a predictive model of trash generation.³ Model variables are designated land use and 2010 median household income; the model was calibrated based on trash collected in full-trash-capture devices (BASMAA, 2012a, BASMAA, 2012b).

The Permittees applied the model as follows: The model was used to generate a preliminary map designating very high, high, moderate, and low trash generation areas. Local municipal staff reviewed the preliminary map and identified areas that had incorrect designations based on local knowledge of actual land uses and of trash generation rates (CCCWP, 2013). Specific methods used to verify local trash generation rates are documented in Section 2 below and may include queries of municipal staff or members of the public, reviews of municipal operations data, viewing areas using Google Maps and Street View, application of BASMAA's On-Land Visual Trash Assessment Protocol (BASMAA, 2013), or other methods.

² The framework was developed in a November 1, 2012 meeting at Water Board staff offices and was refined in subsequent meetings with Water Board staff.

³ "Generation" is understood to be the volume of trash potentially available to be transported from the urban watershed (per acre, per year) into the storm drains in the absence of any control measures and BMPs.

E. Trash Management Strategy

Municipalities delineated Trash Management Areas (TMAs) within their jurisdictions. TMA boundaries are based on land uses, drainage areas, management areas, and/or geographic considerations, and are drawn to facilitate focused and efficient efforts to reduce trash in areas with very high, high, and medium trash generation rates. The rationale for delineating TMAs in the specific municipality, an overview of the municipality's trash management approach, and a description of activities that apply throughout the municipality (including hot spot cleanups, jurisdiction-wide policies, and jurisdiction-wide public outreach) is in Section 3.

Section 4 consists of individual summary plans for each municipal TMA. Each TMA plan describes the key TMA characteristics, summarizes control measures, and describes methods for evaluating effectiveness of efforts within the TMA.

F. Assessing Effectiveness

Each TMA summary plan includes methods to evaluate effectiveness. As indicated in the framework, the primary purpose of these evaluations is to facilitate continuous improvement of control measures within the TMA. Continuous improvement requires TMA-specific interpretation of results, including consideration of factors that may have contributed to success, or lack of success, at that locale during the evaluation period. Evaluations of effectiveness and adjustments to the TMA summary plans will be included in each annual report.

A secondary purpose of the evaluation methods is to contribute evidence toward an annual general evaluation of progress toward MRP goals. Such an evaluation will be based on weight-of-evidence, using the results from TMA-level evaluations of the effectiveness of specific actions within the TMA, and of the total of TMA-level actions, during the reporting period. A jurisdiction-wide assessment of progress will be compiled by combining this TMA-level evidence with the results of hot spot cleanups, visual assessments of creeks and shorelines, and observations by local residents and cleanup participants. As additional outcome-based assessment methods are devised and pilot tested—regionally and statewide—information derived from these methods will be incorporated into annual progress assessments.

2. City of Richmond Trash Management Overview

A. Characteristics Affecting Trash Generation and Management

Demographic data from the 2010 census is presented in Table 2-1.

Table 2-1. 2010 Census Data

Population	103,701
Under 20	27.8%
20-24	7.1%
25-44	29.7%
45-64	25.2%
65 and older	10.2
Median household income	\$54,012

Richmond is one of the larger cities in Contra Costa County with just under 2/3 of the population younger than 45 years old. More than 40% of the households in Richmond have an income less than \$50,000 per year and the per capita income for Richmond residents is \$24,847.

Table 2-2 presents summarizes land uses within City of Richmond

Table 2-2. 2005 Land Uses (ABAG)

Land Use Category	Jurisdictional Area (in acres)	% of Jurisdictional Area
Commercial and Services	939.8	5.4%
Industrial	1,773.0	10.3%
Residential	5,009.6	29.0%
Retail	385.7	2.2%
K-12 Schools	326.2	1.9%
Urban Parks	426.8	2.5%
Other (including open space)	8,423.7	48.7%

Historically Richmond was a farming community, converting marshes to flat fertile farmland. Grazing still makes up a portion of larger watersheds in the upper area. In World War II Richmond was a ship building community. A large boom of residential population occurred and continued to grow after the war. This led to a City poised for industrialization with a need for more housing. The farmlands became subdivisions, and drainages were addressed in a variety of ways. Some creeks remained above ground, others partially in collection systems, and some systems completely underground. Presently the largest land category in the city limits is some form of open space or land use which does not generate trash at a visual impact. The second largest land use category is residential. The diversity of housing includes homes on the shorelines in old industrial areas, in the flats of former farmlands, and on the hillsides. Trash generation in residential areas varies from low to very high. Richmond has a high portion of industrial area in the southern and western region of the City. Trash generation in these areas is generally moderate. Commercial and Services land use is about half the size of industrial and a fifth the size of residential. These properties are found within both industrial and residential areas. They are also generally moderate in land use, but may reflect the trash generation of the residential area. Retail land use is 40 percent that of commercial, and it generally is high to very high in trash generation. Parks and schools are high in real trash generation. However, best practices already in place at these areas generally create low trash reaching the gutters of the collection system. An average of moderate was used for this plan. Main source of trash is predominantly littering from pedestrians and vehicle traffic.

Table 2-3 summarizes trash generation by land use:

Table 2-3. Trash Generation Category by Land Use								
Trash Generation Category	Jurisdictional Area (Acres)	Commercial and Services	Industrial	Residential	Retail	K-12 Schools	Urban Parks	Other
Very High	269.4	0.0%	0.0%	40.2%	59.8%	0.0%	0.0%	0.0%
High	1773.9	0.0%	0.0%	88.8%	11.2%	0.0%	0.0%	0.0%
Medium	4537.7	19.1%	39.1%	23.6%	1.6%	7.2%	9.4%	0.0%
Low	10704	0.0%	0.0%	21.3%	0.0%	0.0%	0.0%	78.7%

Visual assessments of land generation rates confirmed that commercial, industrial, K-12 schools, Urban Parks, and a few small retail centers generate only moderate levels of trash. With those few exceptions, retail falls in the high to very high generation rate. Residential areas can vary from low to very high trash levels. Residential in hill areas, shorelines and the central northern part of the City are low in trash generation. Residential areas in the southern portion of Richmond range from low to very high in trash generation. Other patterns include trash visual impairments higher on arterials. Audits of non-jurisdictional transportation systems (BART and railroads) show low trash generation. Non-jurisdictional transit stations (BART, Amtrack) and freeways, however, were very high in trash generation.

The general strategy for the City is to initiate and/or maintain the following programs:

- 1) Business best management practices tracking and incorporating BASMAA visual assessments
- 2) Cleaning of stormdrains and full trash capture devices
- 3) Abatement crews tracking neighborhoods and assessing visual impairments on land
- 4) Volunteer opportunity campaign - Adopt a block, creek or shoreline for trash clean-up
- 5) Neighborhood ownership of trash with Love your Block Program coordinated with Code Enforcement
- 6) Movable cameras for capturing illegal dumping
- 7) Enforce uncovered loads at transfer station
- 8) Product bans for only compostable foodware containers, no plastic bags or polystyrene products
- 9) Work with Cal Trans to fund full trash capture devices crossing interstate 580
- 10) Investigate funding for additional full trash capture devices
- 11) Investigate using smart phone application linked to GIS tracking

These programs will focus greater resources and/or start their focus in the very trash high generation areas, then advance to high generation areas, and incorporate and encourage better practices in moderate trash generation areas as possible with resources available. For example, the City will launch the volunteer program neighborhood programs, prioritizing the very high and high trash generating residential communities first, while encouraging any neighborhood with interest to participate. The business inspection portion of the stormwater program will incorporate a goal of reducing all very high and high trash generating retail businesses to moderate rates within the next three years. They businesses will be given priority status to insure they are inspected annually to assess improvement. Permit language will be adjusted as needed to assure best management practiced are addressed.

The ideal goal is to reduce trash to no visual impairment, based on 303.d listing of water bodies for trash. The plan assumes low trash generation (0-5 gallons per acre per trash generated per year) and uses an

assessment model of no visual trash to be the surrogate for no visual impairment for a receiving water body. On the maps these areas are represented in green. Given the estimate that very high trash generation rate (shown as purple on the maps) is greater than 50 gallons trash per acre per year, very high areas generate more than 13,470 gallons of trash annually. To reach a goal of green on the map, these areas need to reduce 12,123 gallons of trash. Taking a median estimate of 30 gallons of trash per year, high trash generation areas generate 53,217 gallons of trash annually and need to reduce 44,347.5 gallons to turn red areas to green. A median rate of moderate trash generation at 7.5 gallons/acre/year, moderate trash generation is 34,033 gallons/year. To turn these yellow areas to green, these areas need to reduce 11,344.25 gallons of trash annually. The total trash rate from these three generation types to move to green is estimated at 67,815 gallons of trash annually. This plan assumes 100% trash reduction at 67,815 gallons annually and 70% at 47,470 gallon annually. The goal for 70% reduction would be to move very high and high trash generation rates to moderate (15,325 gallon reduction) and install trash capture devices in drainages with retail or very high trash generation rates. Presently trash capture is estimated to reduce 8,000 gallons of trash. Additional full trash capture at two additional locations is estimated to reduce trash an additional 25,000 gallons annually. This brings the total reduction to an estimated 48,000 gallon reduction. Analysis of neighborhood trash generation reduction program and the actual trash captured in full trash capture devices will inform the programs direction for reaching 67,815 gallons of trash reduced annually. The City of Richmond will enter into dialogue with Cal Trans for installing full trash capture devices in collection systems as they cross interstate 580. The feasibility of these installations is unknown at this time.

B. Drainage System and Water Resources Affected by Trash

The City of Richmond has 14 major drainages all with the mouth of the drainage to the Bay within the City Limits. Eight (8) watersheds are shared with other municipalities and/or Contra Costa County. Southeastern and Southwestern watersheds terminate in Central San Francisco Bay. Central and Northern Watersheds terminate in San Pablo Bay.

The southeastern watersheds: Cerrito Creek Drainage, Quinvelt drainage originating near Mount Rust and terminating in Hoffman slough, Baxter Creek with four tributaries and Central Richmond with its 4 sub-drainages terminating in the arm of Meeker Slough all originate in the El Cerrito Hills in residential areas. The upper portions of watersheds are in unincorporated Contra Costa County or the City of El Cerrito. The lower portions and mouths of the watersheds all lie in Richmond. The profile of these drainages is steep in the upper portions, and as it levels out the drainages contain commercial areas. These flat areas in Richmond are high to very high in trash generation around commercial arterials and three shopping centers. Residential areas in hill portion of the profile are low in trash generation and moderate from parks and schools. Residential areas in the flat areas generally range from low to high in trash generation. Two neighborhoods generate very high rates of trash. Cerrito Creek and Baxter Creek are listed as impaired for trash on the 303.d list.

Southwestern watersheds: The Richmond Inner Harbor and West Point Richmond all drain the southern and western portion of a prior island. Inner Richmond Harbor Channel has eight sub drainages terminating in the Marina or Harbor Channel. This area is flat with the Point Richmond Hill flanking it to the west. Historically this area was marshland and the west side of an island (now Pt. Richmond) which was converted to farmland and eventually to dense housing or industrial as it supported the railroad and shipbuilding effort of World War II. The southern portion (south of present day I-580) is mostly industrial with residential housing around the Marina and in Point Richmond. Shoreline residential is low in trash generation, and contains private collections systems and outfalls to the Marina and Inner Richmond Harbor. Hillside residential is also low in trash generation and surrounds a historic commercial area with businesses high in trash generation. Two small shopping areas and one fast food establishment in the

industrial area are very high in trash generation. The northern area (north of I-580) is mixed industrial, commercial and residential. This area is between moderate to high generation with very high trash generation along Macdonald Avenue and in two neighborhoods. West Point Richmond is made up of numerous small drainages and sheet flow on the Western side of the Point Richmond. It is mostly open space with some residential, industrial and commercial areas. These areas are mostly low with some moderate trash generation rates in commercial areas and parklands.

Central watersheds: Castro Creek Drainage in the west is low in open space and moderate in trash generation in the industrial areas. The eastern residential portion is mostly high trash generation. The City of Richmond encompasses mostly the upper watershed and the mouth of Wildcat Creek and San Pablo Creek. Both ends of the watersheds are significantly low in trash generation. One exception is a high trash generation area associated with a recalcitrant homeless encampment. Richmond does have small sections of residential and commercial in the highly urbanized portion of these watersheds, however the majority these watersheds' urban area lies in unincorporated Contra Costa County or the City of San Pablo. San Pablo Creek is listed as impaired for trash based on assessments outside of Richmond. Rheem Creek's upper watershed and mouth are also in Richmond. This small watershed is all urban with parkland and open space dominating the mouth. The watershed headwaters are in a cemetery. The upper portion of the watershed before the San Pablo City limits is mostly low generation residential use area in Richmond. The lower section of this watershed in Richmond drains is mostly low trash generation areas with some moderate trash generation in from commercial land use.

Northern Richmond Watersheds: Parchester drainage terminating in Dotson Marsh, the western side of Point Pinole, and Point Pinole drainage to Whittel Marsh, all represent watersheds with drainages contained within Richmond. The residential areas are low in trash generation, the commercial and industrial areas are moderate in trash generation. Are the commercial areas in these watersheds develop they include full trash capture on site in the form of bio-swales and inserts in the streets. Though this area is currently open space and low in trash generation, it potentially would be moderate in generation rate once developed. Garrity Creek watershed has a small portion of its headwaters in unincorporated Contra Costa County and is the only watershed in Richmond which terminates outside the City limits. Approximately the lower third of the watershed lies in unincorporated Contra Costa County. The residential areas are low in trash generation, the commercial areas are moderate, and the retail is moderate to high in trash generation.

C. Trash Problems and Priorities

In consultation with abatement crew leader and review of operations data, areas were confirmed to correspond to land use. Updates were made such as changing the homeless encampment on San Pablo Creek to a high generation rate. Areas were assessed for accuracy using the BASMAA On-Land Visual Assessment Protocol. Most of the areas were assessed in May and June 2013. Several areas were revisited in November and December 2013. Several areas needed refinements. Most of these adjustments were to move moderate and a few high generation areas to low. Cultures in certain neighborhoods created lower trash generation than projected. In a few instances trash in the blocks surround schools in these areas was higher than the moderate school property itself, and significantly higher than the low trash generation in the rest of the neighborhoods. Maps were adjusted to reflect these visual assessments.

The southern drainages suffer the most significantly from higher trash generation rates. In the northern portion of Richmond, the high generation rate is associated with a large retail mall and neighboring restaurants. These areas are candidates for full trash capture devices.

3. City of Richmond Trash Management Strategy

The following trash management strategy is designed to attain a 70% trash load reduction by July 1, 2017 and a 100% reduction by July 1, 2022. The strategy may be updated and revised in response to changing conditions, including the amounts and location of trash generation, effectiveness of management actions, and available resources. Updates will be documented in Annual Reports.

Given the large percentage of high and very high trash generation areas in Richmond, the City will focus on residential and affect commercial areas in very high trash generation. This will be followed by programs in high trash generation with the goal to move these areas to medium trash generation by 2017.

A. Delineation of Trash Management Areas

Strategizes for trash management were originally based on trash generation rate. Factors of land use, transit barriers and watershed boundaries also played a role. Generally Trash Management Areas (TMAs) were created with similar land use. The area for TMA 1 is the commercial area in the Cerrito Creek Watershed. The area for TMA 4 is a residential area uniquely different from the surrounding industrial commercial area. The areas for TMA 5 in west Richmond and TMA 9 in east Richmond are mainly open space with residential and small pockets of commercial. Natural transit boundaries also formed TMAs. The areas for TMA 2 and TMA 3 are separated by interstate 580. Watershed boundaries can form a TMA. Examples are TMA 6, Castro Creek Watershed and TMA7, Wildcat Creek. Other instances a watershed were combined based on similar age of development. The area in TMA 2 and TMA 8 combine several watersheds then divide them out into further subsections to facilitate trash reduction implementation. Trash Management Area (TMA) 2 was broken up into drainages that would be treated by a full trash capture device. Since the majority of high and very high generation rates were in drainages crossing interstate 580 before discharging into San Francisco Bay, the plan includes the possibility of full trash capture devices at these junctures. The area, TMA 2, is divided into subsections each with a different discharge point. The subsections in TMA 8 also reflect potential full trash capture implementation.

TMA	Jurisdictional Area (Acres)	Trash Generation Category			
		Very High	High	Medium	Low
TMA 1	153	23%	50%	1%	27%
TMA 2	3510	14%	27%	34%	25%
TMA 3	1505	7%	1%	75%	17%
TMA 4	228			28%	73%
TMA 5	1887			4%	96%
TMA 6	2056	10%	6%	50%	34%
TMA 7	621		10%	17%	73%
TMA 8	3564	2%	2%	23%	73%
TMA 9	5108			1%	99%

B. Area-Specific Control Measures, Implementation Schedules, and Effectiveness Assessment

Long-Term Trash Reduction Plans for each Trash Management Area, including control measures, detailed implementation plans, and methods of assessing the effectiveness of control measures are in Section 4.

C. Creek and Shoreline Cleanups

Table 3-2. Creek and Shoreline Cleanups

Location	Description	Cleanup Frequency			
		Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Location 1	Baxter Creek Booker T Anderson Park		daily	X	X
Location 2	Baxter Creek San Pablo Avenue		Hot spot	X	X
Location 3	Garrity Creek prior to detention basin		Hot spot	X	X
Location 4	Castro Reach at 7 th Street		Hot spot	X	X
Location 5	Shimada Strand	1 x per year	1-2 x per year	X	X
Location 6	Shorelines in South and Western Richmond	1 x per year	1-2 x per year	X	X
Location 7	Shorelines in Northern Richmond		1 x every other year	X	X

Baxter Creek is impaired for trash based on photos from SWAMP water quality monitoring at Booker T Anderson Park and the section west of San Pablo Avenue. The observations were made after a major layoff of staff occurred. Parks staffers were not able to address the trash in the creek. Since then efforts of staff and volunteers keep the creek clear of trash to no visual impact. The reach of Baxter Creek near San Pablo Avenue is impacted by: blown trash from the freeway and San Pablo Avenue, detritus from homeless encampments under the BART tracks, trash bins not maintained by stores, litter from day laborers, folks using the trail and adjacent commercial areas, and charitable organizations bringing food to the site. The site is cleaned by City Staff and is also a hot spot which is assessed annually. Development in the area will require businesses to maintain the creek through agreements. Garrity Creek is cleaned annually. One outfall now has a full trash capture device with is cleaned quarterly. Castro Reach at 7th Street is cleaned annually. A full trash capture directly upstream will be installed in 2014. Shorelines in southern and western Richmond are part of the coastal clean-ups both annual and through community service. Shimada Strand is the assessed for trash and reported annually as a hot spot, but it is not required by the Municipal Regional Permit.

D. Trash Reduction Policies

City of Richmond adopted an ordinance banning polystyrene foam food service ware at the point-of-sale. The food ware ordinance prohibits the distribution of polystyrene foam single-use food and beverage ware at all food service vendors. The ordinance became effective in August 2010. The City of Richmond adopted an ordinance prohibiting the distribution of single-use carryout plastic bags and a 5 cent fee on all paper bags. The ordinance becomes effective January 2014 and will be enforced in coordination with San Pablo and El Cerrito. Effectiveness will be assessed at hot spots

E. Public Education, Outreach, and Community Involvement

Through the CCCWP, the Permittees conducted a “Litter Travels, But It Can Stop with You” multi-year campaign beginning in FY 2009-2010. The multi-media campaign was designed to educate Contra Costa’s citizens about the impacts of trash and litter in the County’s waterways and how they can help address this problem and included TV spots, billboards, posters at BART stations, placards on transit buses, print ads and updates to the CCCWP website. Other outreach included more than 10,000 letters to County residents, contact with youth sports leagues, outreach to the 17 school districts in the County, and distribution of flyers to students in 5 of those districts. Pre and post-campaign surveys were conducted.

Public Education of community leaders occurs thru neighborhood coordinating councils information sharing. Residents participate in several community involvement events. Annual efforts occur at Coastal Clean-up and Martin Luther King Day of Community Service. In addition local efforts occur throughout the spring. Schools groups and scouts take on creek and beach clean-up activities. Clean-ups also occur in the Fall before the rains. Veolia Water, collection system contractor, conducts 2-3 clean-up along shorelines in West Richmond Watershed. Chevron conducts shoreline clean-ups in the Castro Watershed. One non-profit, All One Ocean, is working to set up and support boxes with recycled coffee bags for folks to clean up beaches in Richmond on a daily basis.

F. Jurisdiction-wide Progress Assessment and Continuous Improvement

Presently the city has in place bans on non-compostable food ware, all polystyrene products that can compromise creek trash impairment, and plastic bags from retail stores. These true source controls are applied jurisdiction-wide. Assessments will be made by audits of both full trash capture devices and on land visual assessments. The process for continuous improvement includes tracking by the collection system crew, abate crew leader, parks supervisors, and source control inspectors. The information provided will assist in assessing the progress in residential, parks/shorelines, and retail areas as well as report changes in areas not presently high in trash generation. Code Enforcement Supervisor, Parks Superintendent and Stormwater Manager will work together to solve issues that arise. The Stormwater Program Manager will determine, approve, and implement changes to the Trash Management Strategy in order to meet 70% and 100% trash reduction goals.

4. Trash Management Area Plans

A. TMA-Specific Plans

TMA-specific plans for 26 areas are attached.

5. References

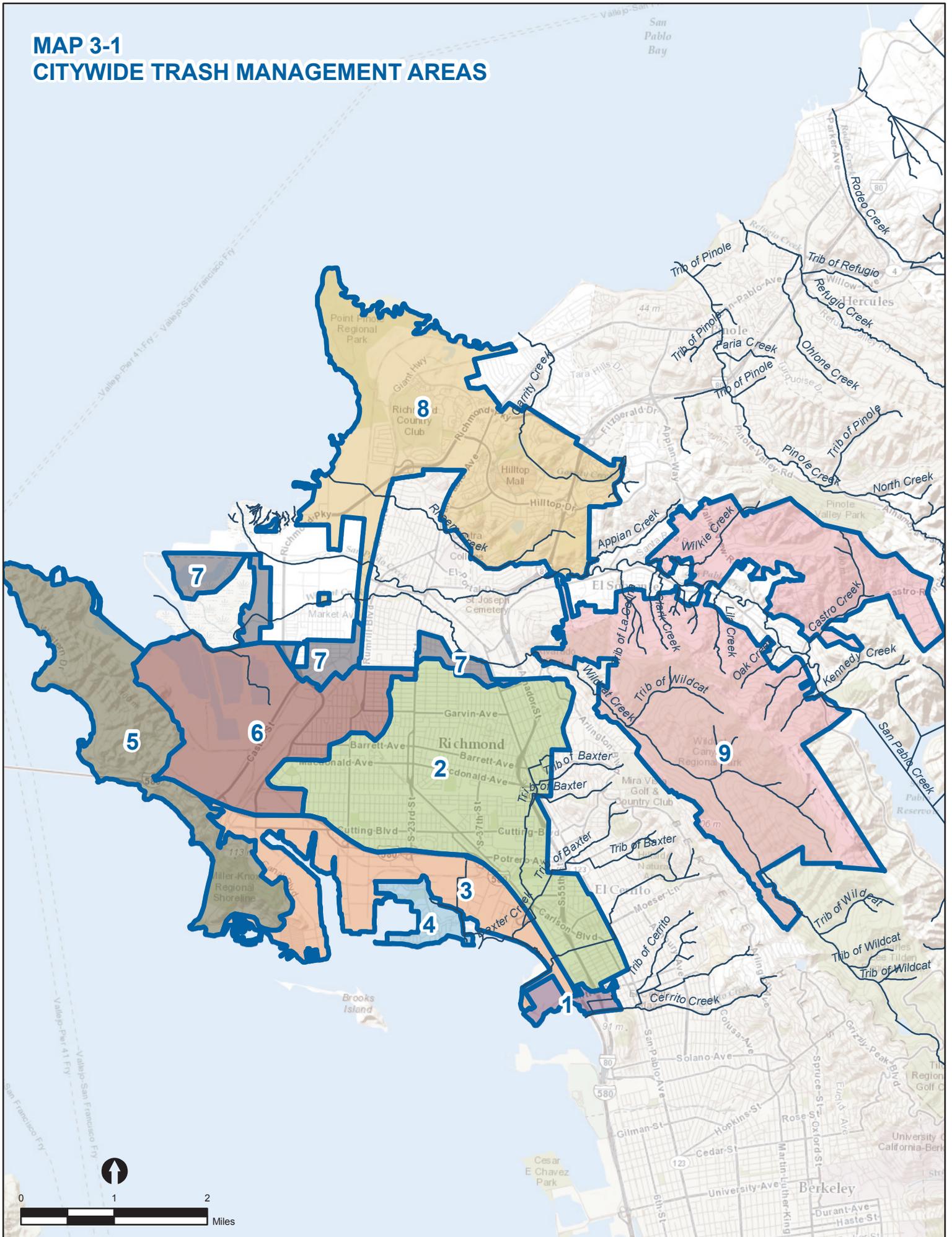
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BASMAA 2012b. Baseline Trash Generation Rates, Preliminary Calibration of Modeled Results, Presentation to BASMAA Trash Committee, September, 2012. Prepared by EOA, Inc.

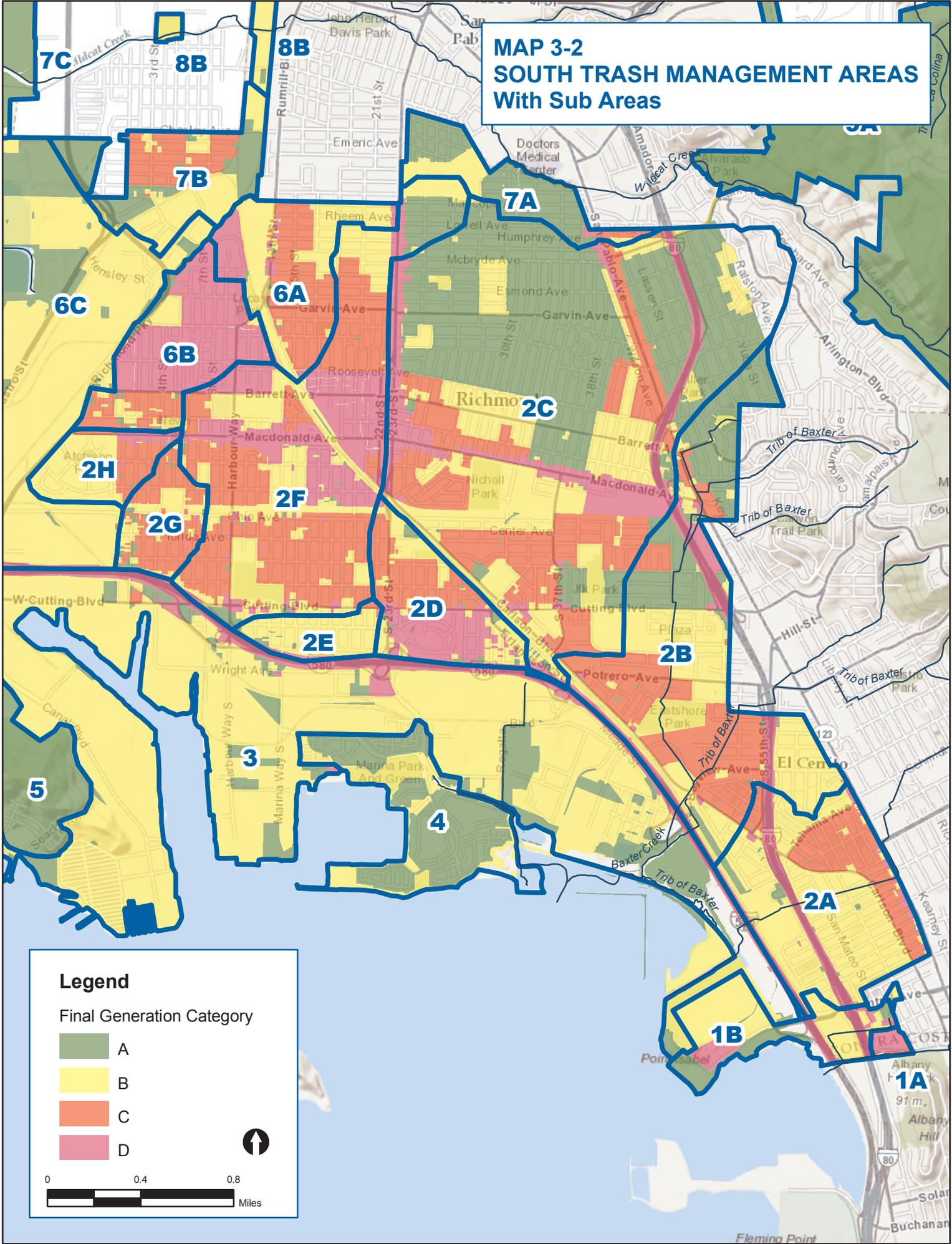
BASMAA 2013a. Visual On-Land Trash Assessment Protocol for Stormwater, Version 1.0 (Draft). April 30, 2013. Prepared by EOA, Inc.

CCCWP, 2013. Contra Costa Clean Water Program. Long-Term Trash Load Reduction Plan Development—Trash Generation Map Refinements. Technical Memorandum, May 20, 2013. Prepared by EOA, Inc.

MAP 3-1 CITYWIDE TRASH MANAGEMENT AREAS



**MAP 3-2
SOUTH TRASH MANAGEMENT AREAS
With Sub Areas**



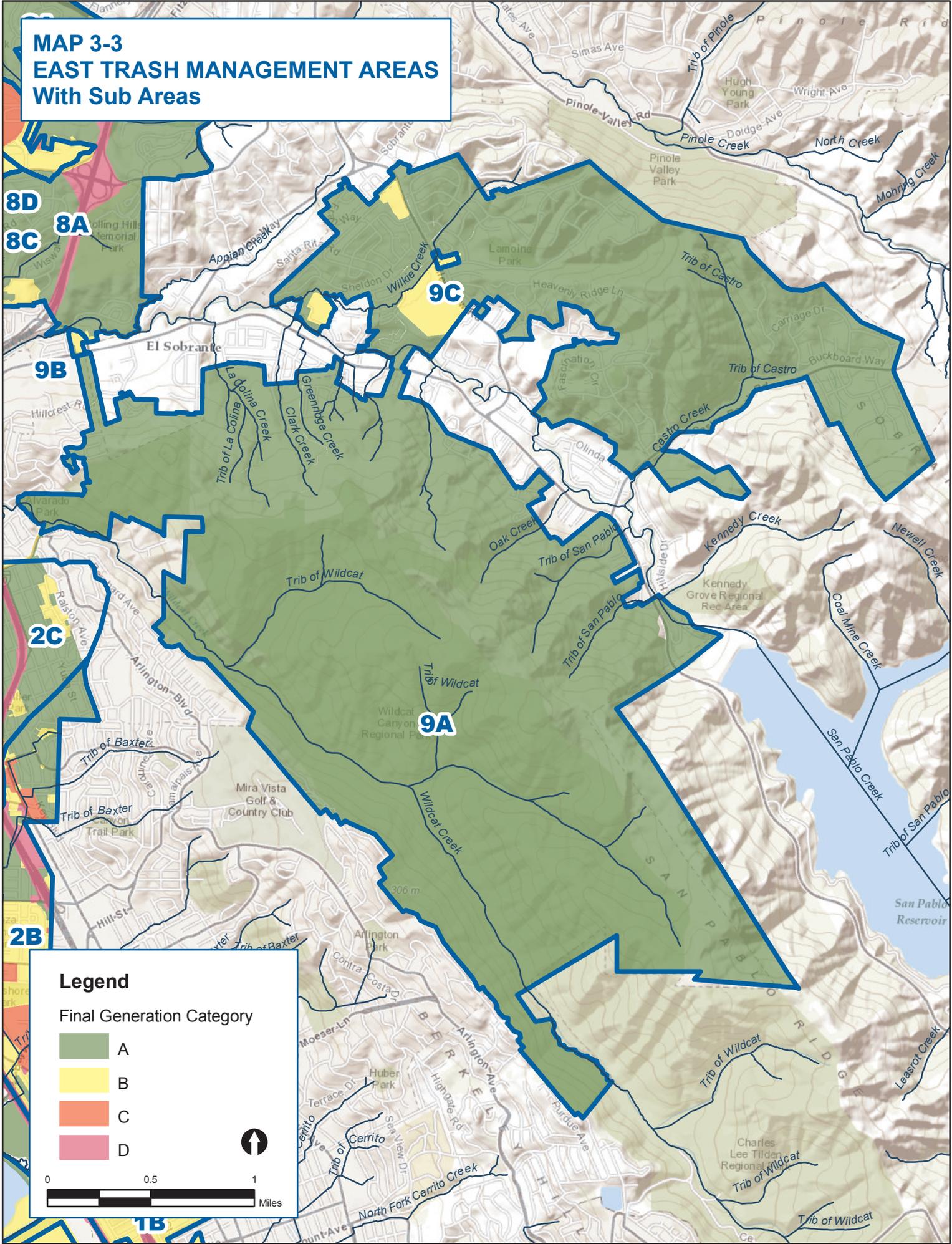
Legend

Final Generation Category

- A
- B
- C
- D



MAP 3-3 EAST TRASH MANAGEMENT AREAS With Sub Areas

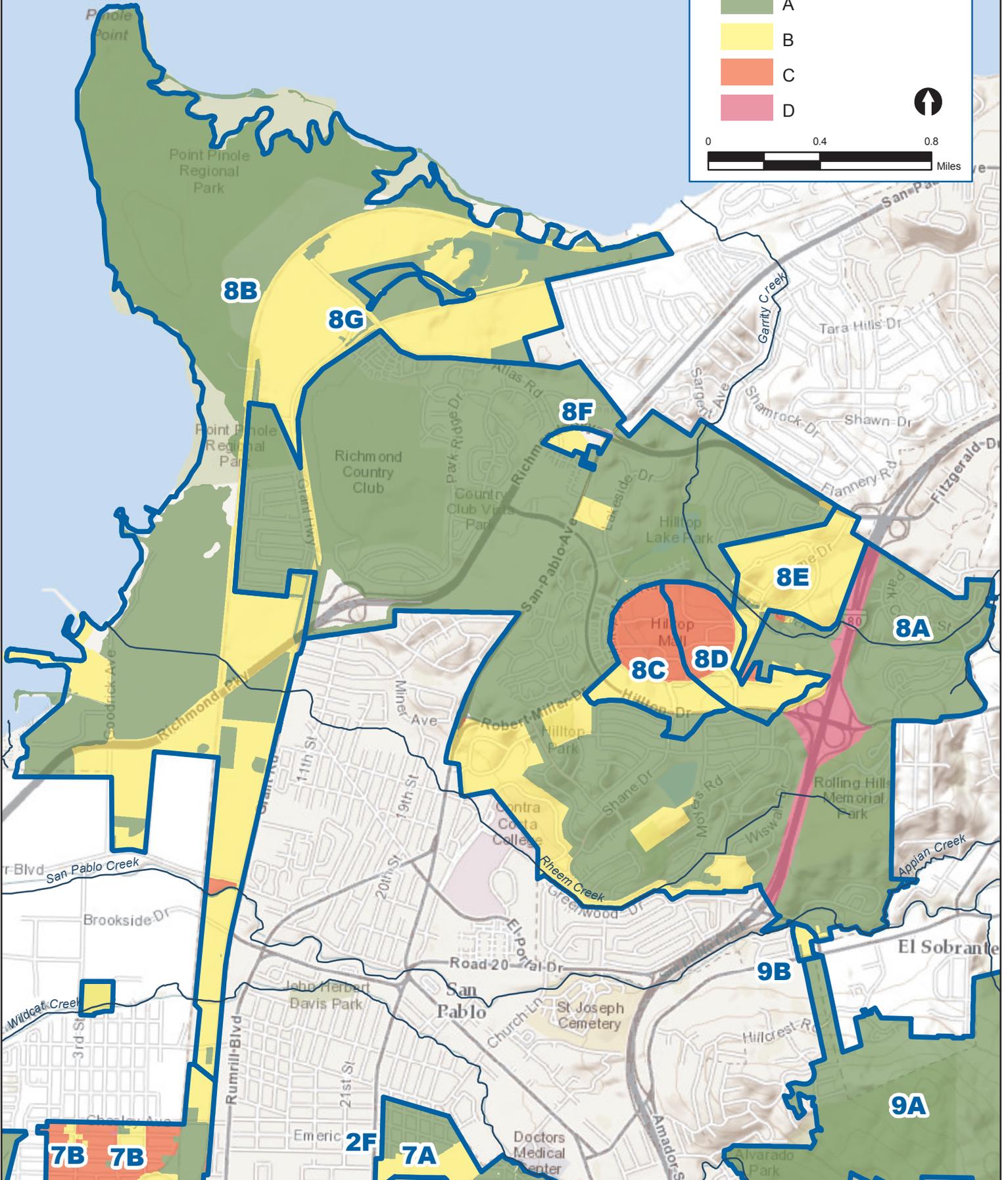
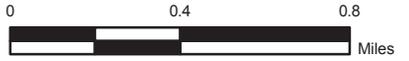


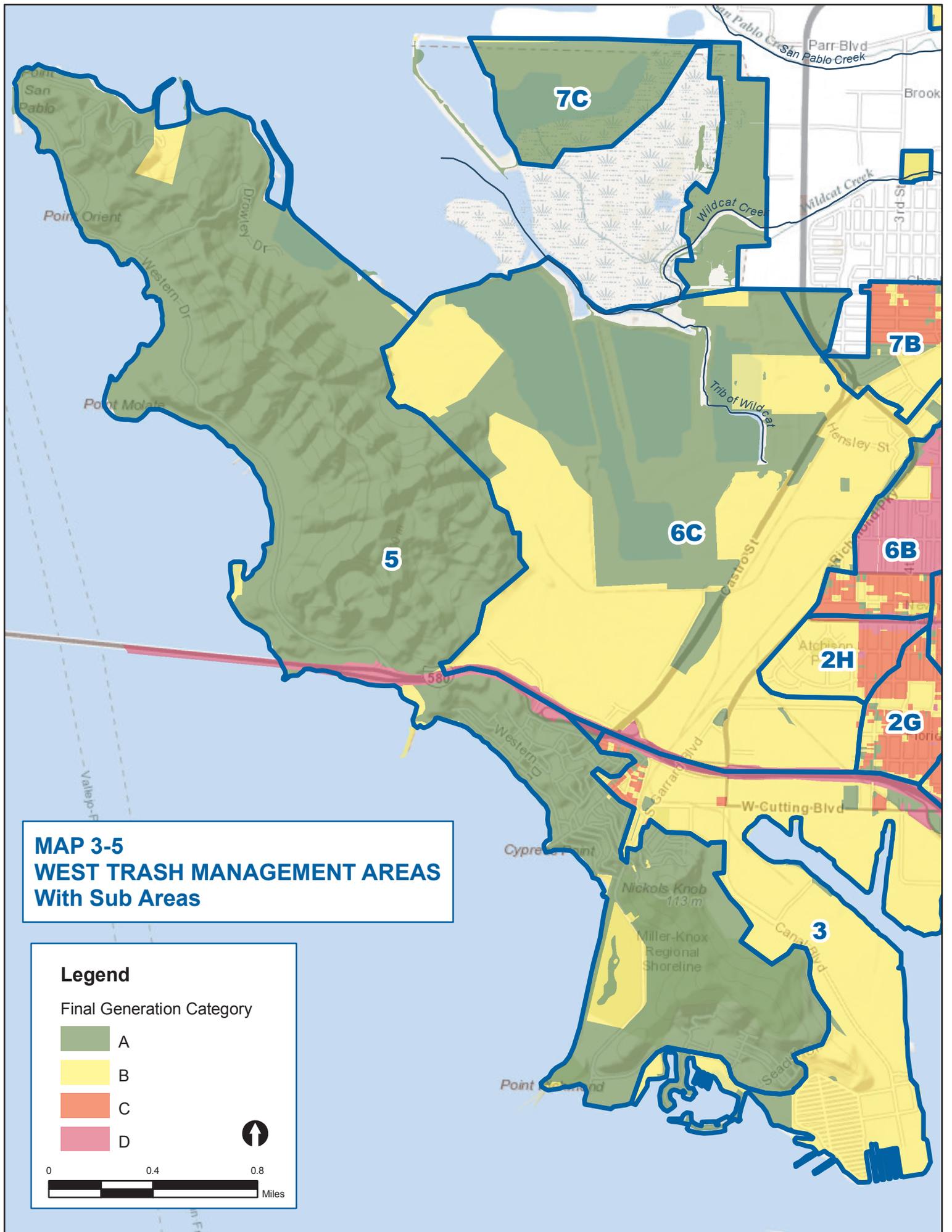
MAP 3-4 NORTH TRASH MANAGEMENT AREAS With Sub Areas

Legend

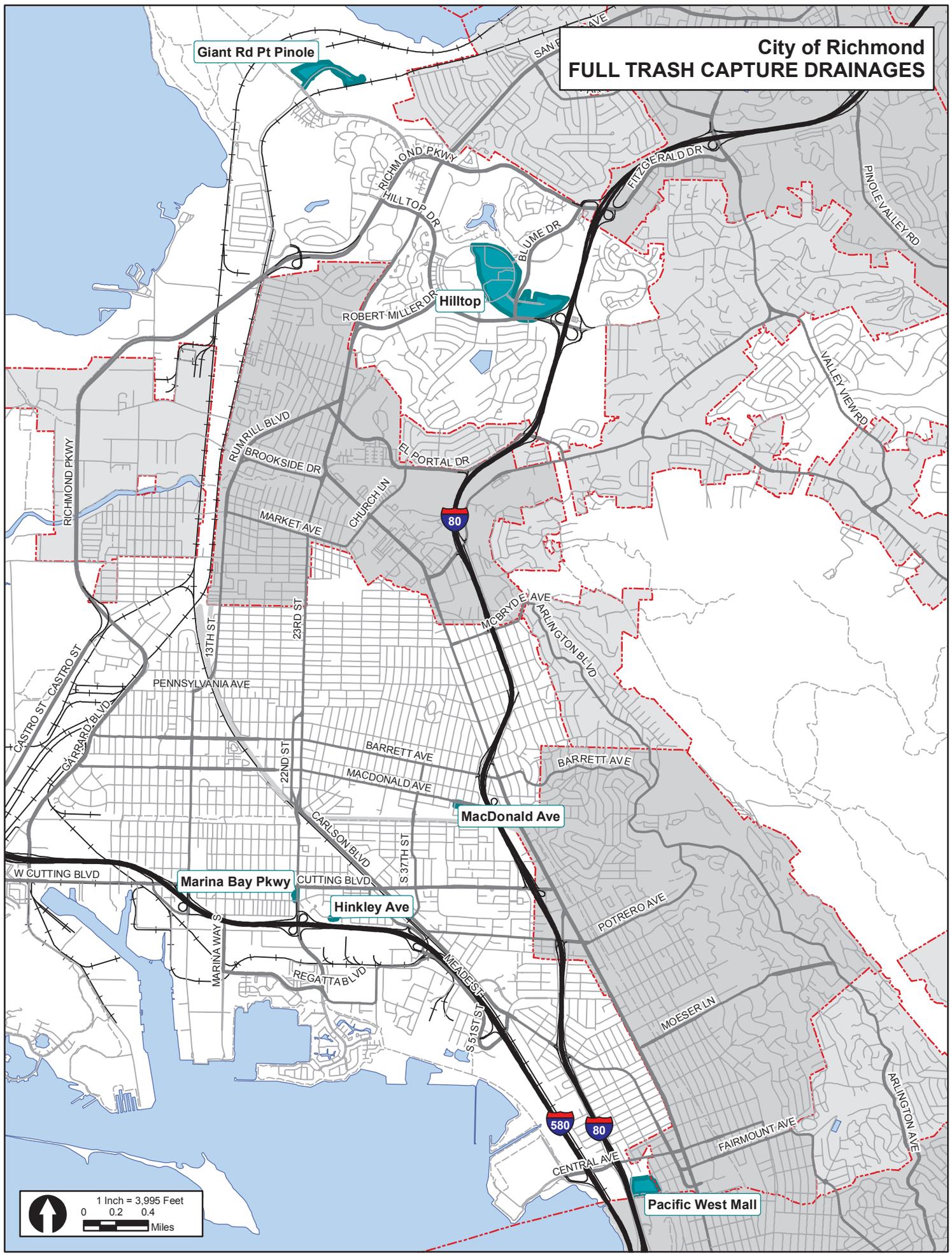
Final Generation Category

- A
- B
- C
- D





City of Richmond FULL TRASH CAPTURE DRAINAGES



Giant Rd Pt Pinole

Hilltop

Marina Bay Pkwy

Hinkley Ave

MacDonald Ave

Pacific West Mall

1 Inch = 3,995 Feet
0 0.2 0.4
Miles

The characteristics of TMA #1 are the commercial and retail areas of the Cerrito Creek watershed in the City limits. This sub section is comprised of the stores and parkinglot of Pacific East Mall.

Key Characteristics of Trash Management Area 1a

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
11	87	13	0	0	Retail	Shopper-generated litter

Trash generation in this area was verified as very high based on visuals of the full trash capture devices in the storm drains and the history of complaints of trash from the Friends of Cerrito Creek.

Summary of Control Measures and Implementation Schedule for Trash Management Area 1a

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	Kristar units in parkinglot drains for 12 acres of high and very high generation areas (installed 2008)	X	X	X	X
On-land Trash Cleanups	Business responsible for cleaning up trash blown from parking lot	X	X	X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X

In 2008, Kristar filters to protect against spills lines were placed in all the storm drains in the parking lots. This was part of an enforcement corrective action stemming from an accidental discharge from an improper grease trap clean out procedure which discharged to the creek. The filters act as full trash capture device, as trash cannot bypass the media filters. In 2007, improper herbicide application on the creek banks resulted in a management plan with the property owners. The plan includes weekly trash management by landscaping contractor and daily observations by security which can increase trash management.

Evaluation of Program Effectiveness for Trash Management Area 1a

Control Measure	Evaluation Method	Evaluation Method Details
On land trash management	Visual observation and tracking of citizen complaints	Staff will track notifications from citizen of trash on the creek bank. If calls increase, visual assessments can be used.

The characteristics of TMA #1 are the commercial and retail areas of the Cerrito Creek watershed in the City limits. This subsection is the area not presently managed with full trash capture units.

Key Characteristics of Trash Management Area 1b

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
141	22	0	54	24	Commercial, Retail, Industrial, and shoreline trail	Pedestrian/shopper-generated litter

Visual observations confirmed industrial, commercial and shoreline trails are low to moderate in trash generation. Three areas of retail are very high in trash generation.

Summary of Control Measures and Implementation Schedule for Trash Management Area 1b

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Shoreline Cleanups	Annual shoreline cleanup				X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X

Retail businesses in this TMA are under permit with the City. Permits issued in 2013 contain best management practices for trash. Inspections will assess compliance and follow up as needed. Volunteers currently clean the shoreline north and south of this TMA area on the annual coastal clean-up. One year Richmond received a report that volunteers were plentiful and included the shoreline in this TMA in the clean-up. Richmond will encourage this area be included in annual clean-ups.

Evaluation of Program Effectiveness for Trash Management Area 1b

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Retail business in high generation areas will be visually assessed at inspection and generation rate tracked.

South Richmond Residential Long-Term Trash Reduction

TRASH MANAGEMENT AREA

2a

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection includes the Cerrito and Quinvelt Watersheds. Land use also includes commercial use on San Pablo Ave, and limited section on Carlson Boulevard at I-80.

Key Characteristics of Trash Management Area 2a

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
355	13	22	62	3	Residential	Pedestrian-generated litter

Visual observations confirmed predominantly moderate and high generation rates. This area is a moderate priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2a

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	CDS unit for 355 acres of high and very high generation areas (installed 2017-2022)				X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in commercial areas		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X

The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area. The City will discuss with Cal Trans coordinated efforts to install a full trash capture device after the collection system crosses interstate 580.

Evaluation of Program Effectiveness for Trash Management Area 2a

Control Measure	Evaluation Method	Evaluation Method Details
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Full Capture	Document Maintenance	Track amount of trash removed if implemented
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments

This area will be a priority for visual assessments to assess the trash generation rate in high and very high rated areas. Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

South Richmond Residential Long-Term Trash Reduction

TRASH MANAGEMENT AREA

2b

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection includes the Baxter Creek Watershed. Land use also includes commercial use on a limited section San Pablo Ave, and limited sections of Carlson Boulevard.

Key Characteristics of Trash Management Area 2b

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
590	9	31	36	24	Residential	Pedestrian-generated litter

Visual observations confirmed predominantly moderate and high generation rates. This area is a high priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2b

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	In flow screens 5 or more units for a total of 509 acres of medium to very high generation areas (installed 2017-2022)				X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in areas		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "One block at a time"	cleaned blighted neighborhoods with residents and City crews twice in permit issuance		X		
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X
School Outreach	Educational Programs to Youth			X	X

Given the layout of the collection system, this drainage presents challenges in providing full trash capture. At the end of the drainage the water drains from side by side cement culverts. The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this

management area. In coordination with other municipalities in Contra Costa County, the City plans to meet with representatives of the West Contra Costa Unified School District and develop a plan for reaching students, and reducing litter at the source.

Evaluation of Program Effectiveness for Trash Management Area 2b		
Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed if implemented
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments

This area will be a priority for visual assessments to assess the trash generation rate in high and very high rated areas. Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

South Richmond Residential Long-Term Trash Reduction

TRASH MANAGEMENT AREA

2c

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection drains to Meeker Slough via the engineered channel which runs parallel to Regatta Boulevard. This area includes significant commercial and retail areas along arterial routes.

Key Characteristics of Trash Management Area 2c

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
1436	10	18	24	46	Residential, commercial and retail	Pedestrian-vehicle generated litter

Visual observations confirmed low to very high generation rates on residential and commercial areas, and very high trash generation rates in retail areas. This area is a high priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2c

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	REM full trash capture curb inlet unit for 2.4 acres installed 2010 in very high trash generation area. CDS unit for 355 acres of high and very high generation areas (installed 2017-2022)		X	X	X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in commercial areas.		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "One block at a time"	cleaned blighted neighborhoods with residents and City crews twice in permit issuance		X		
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X

The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area. The City

will discuss with Cal Trans coordinated efforts to install a full thrash capture device after the collection system crosses interstate 580. In coordination with other municipalities in Contra Costa County, the City plans to meet with representatives of the West Contra Costa Unified School District and develop a plan for reaching students, and reducing litter at the source.

Evaluation of Program Effectiveness for Trash Management Area 2c		
Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed if implemented
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

This area will be a priority for visual assessments to assess the trash generation rate in high and very high rated areas. Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

South Richmond Residential Long-Term Trash Reduction

TRASH MANAGEMENT AREA

2d

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection drains to Meeker Slough with outfall near Marina Way Parkway. Land use in this area includes industrial use and a limited retail area on Cutting at 23rd Street.

Key Characteristics of Trash Management Area 2d

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
176	37	34	26	3	Residential, Industrial	Pedestrian-generated litter

Land use in this area varies by watershed and contains drainage with predominantly moderate and high generation rates. This area is a very high priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2d

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	2 REM full trash capture curb inlet unit for 4 acres installed 2010 in very high trash generation area. Additional unit for 176 acres of high and very high generation areas (install 2017-2022)		X	X	X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in commercial and industrial areas		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X

The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area. The City will discuss with Cal Trans coordinated efforts to install a full trash capture device after the collection system crosses interstate 580.

Evaluation of Program Effectiveness for Trash Management Area 2d

Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed if implemented
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

This area will be a very priority for visual assessments to assess the trash generation rate in high and very high rated areas. Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

South Richmond Residential Long-Term Trash Reduction

TRASH MANAGEMENT AREA

2e

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection drains to Meeker Slough with outfall near Marina Way Parkway. This area contains a limited portion of industrial area.

Key Characteristics of Trash Management Area 2e

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
66	9	3	85	3	Residential	Pedestrian- vehicle generated litter

Visual observations confirmed predominantly moderate generation rates. High and very high generation rates are associated with the interstate 580.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2e

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	CDS unit for 66 acres of high and very high generation areas (install 2017-2022)				X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in commercial and industrial areas		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X

Given the layout of the collection system, this drainage presents challenges in providing full trash capture. At the end of the drainage the water drains from side by side cement culverts. The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area.

Evaluation of Program Effectiveness for Trash Management Area 2e

Control Measure	Evaluation Method	Evaluation Method Details
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Full Capture	Document Maintenance	Track amount of trash removed if implemented
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments

This area will be a lower priority for visual assessments to assess the trash generation rate in moderate rated areas. High and very high areas are associated with I-580. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection drains to Parr Canal. This area contains commercial retail areas along the arterial routes.

Key Characteristics of Trash Management Area 2f

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
695	26	40	28	6	Residential and retail	Pedestrian- vehicle generated litter

Land use in this are varies by watershed and contains drainage with predominantly high generation rates. This area is a very high priority area for trash reduction do to size and percentage of very high trash generation rates.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2f

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	CDS unit for 695 acres of high and very high generation areas (install 2017-2022)				X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in commercial and industrial areas		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
On-land Trash Cleanups "One block at a time"	cleaned blighted neighborhoods with residents and City crews twice in permit issuance		X		
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X

The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area. The City will discuss with Cal Trans coordinated efforts to install a full thrash capture device after the collection system crosses interstate 580. In coordination with other

municipalities in Contra Costa County, the City plans to meet with representatives of the West Contra Costa Unified School District and develop a plan for reaching students, and reducing litter at the source.

Evaluation of Program Effectiveness for Trash Management Area 2f		
Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed if implemented
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

This area will be a very priority for visual assessments to assess the trash generation rate in high and very high rated areas. Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

South Richmond Residential Long-Term Trash Reduction

TRASH MANAGEMENT AREA

2g

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection drains to Lauritzen Canal access. This area contains commercial and industrial sections.

Key Characteristics of Trash Management Area 2g

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
95	2	65	28	5	Residential	Pedestrian-vehicle generated litter

Land use in this area varies by watershed and contains drainage with predominantly high generation rates. This area is a high priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2g

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	CDS unit for 95 acres of high and very high generation areas (install 2017-2022)				X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in commercial and industrial areas		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "One block at a time"	cleaned blighted neighborhoods with residents and City crews twice in permit issuance		X		
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X

The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area. The City will discuss with Cal Trans coordinated efforts to install a full trash capture device after the collection system crosses interstate 580. In coordination with other municipalities in Contra Costa County, the City plans to meet with representatives of

the West Contra Costa Unified School District and develop a plan for reaching students, and reducing litter at the source.

Evaluation of Program Effectiveness for Trash Management Area 2g		
Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed if implemented
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

This area will be a priority for visual assessments to assess the trash generation rate in high and very high rated areas. Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

South Richmond Residential Long-Term Trash Reduction

TRASH MANAGEMENT AREA

2h

The characteristics of TMA #2 are the residential areas in south Richmond north of I-580. It includes commercial and retail areas as well as K-12 schools and urban parks. This subsection drains to Boat Ramp Road shoreline access. This area includes a limited amount of commercial and retail land use.

Key Characteristics of Trash Management Area 2h

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
94	10	25	64	1	Residential	Pedestrian-generated litter

Visual observations confirmed predominantly moderate and high generation rates. This area is a moderate priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 2h

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	CDS unit for 94 acres of moderate to very high generation areas (install 2017-2022)				X
Street Sweeping	Increased signage to provide curb sweeping. Increased frequency to weekly on arterial routes in commercial areas		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X

The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area. The City will discuss with Cal Trans coordinated efforts to install a full trash capture device after the collection system crosses interstate 580.

Evaluation of Program Effectiveness for Trash Management Area 2h

Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed if implemented

Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

This area will be a medium priority for visual assessments to assess the trash generation rate in high and very high rated areas. Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

The characteristics of this TMA are the predominantly industrial areas in south Richmond south of I-580. It includes commercial, urban parks on the shoreline as well as small retail areas.

Key Characteristics of Trash Management Area 3

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
1504	7	1	75	17	Industrial, Commercial, and Parkland	Pedestrian-generated litter

Visual observations confirmed industrial, commercial and shoreline trails are low to moderate in trash generation. Three areas of retail, relatively small in size, are very high in trash generation. Another retail area in a hillside neighborhood is high in trash generation rate.

Summary of Control Measures and Implementation Schedule for Trash Management Area 3

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Street Sweeping	Increased frequency to weekly on arterial routes in commercial and industrial areas		X	X	X
Shoreline Cleanups	Shoreline parks annually by coastal clean-up volunteers	X	X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X

Street sweeping increased in 2010 to weekly sweep arterial routes in this TMA. Retail businesses in this TMA are under permit with the City. Permits issued in 2013 contain best management practices for trash. Inspections will assess compliance and follow up as needed. Volunteers currently clean the shoreline of this TMA area on the annual coastal clean-up.

Evaluation of Program Effectiveness for Trash Management Area 3

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Retail business in high generation areas will be visually assessed at inspection and generation rate tracked.

The characteristics of this TMA are the residential and urban parks around the Richmond Marina. The southern shoreline communities are gated with private stormdrain systems discharging directly into the Richmond Inner Harbor.

Key Characteristics of Trash Management Area 4

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
228	0	0	28	72	Residential	Pedestrian -generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and arterial street sweeping.

Summary of Control Measures and Implementation Schedule for Trash Management Area 4

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
Shoreline Cleanups	Shoreline parks annually by coastal clean-up volunteers	X	X	X	X

This TMA has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Volunteers currently include the shoreline in this TMA as part the annual coastal clean-up, however the majority of trash collected on the clean-up is gathered east of the TMA in the sloughs and marshes. The majority of trash along the shoreline is flotsam and jetsam that wash ashore.

Evaluation of Program Effectiveness for Trash Management Area 4

Control Measure	Evaluation Method	Evaluation Method Details
Illegal Dumping	Field crew reports	Field crews track calls and material removed from neighborhoods.

Crew leader for the litter abatement field teams tracks the frequency trash related calls are made regarding a neighborhood. If tracking indicates a change in neighborhood behavior, visual audits can be performed to see if generation rates have changed.

The characteristics of this TMA are the industrial open space, urban parks, and residential in Point Richmond. The southern shoreline communities are private stormdrain systems discharging directly into Central San Francisco Bay. The Western Shore line residential is a mix of private and public stormdrain systems.

Key Characteristics of Trash Management Area 5

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
1887	0	0	4	96	Open Space and Residential	Pedestrian generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and street sweeping.

Summary of Control Measures and Implementation Schedule for Trash Management Area 5

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
Shoreline Cleanups	Shoreline parks annually by coastal clean-up volunteers	X	X	X	X

This TMA has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Volunteers currently include the shoreline in the parks in this TMA as part the annual coastal clean-up. In addition local businesses sponsor additional clean-ups during the year. The majority of trash along the shoreline is flotsam and jetsam that wash ashore.

Evaluation of Program Effectiveness for Trash Management Area 5

Control Measure	Evaluation Method	Evaluation Method Details
Illegal Dumping	Field crew reports	Field crews track calls and material removed from neighborhoods.

Crew leader for the litter abatement field teams tracks the frequency trash related calls are made regarding a neighborhood. If tracking indicates a change in neighborhood behavior, visual audits can be performed to see if generation rates have changed.

The characteristics of TMA #7 are the commercial and residential areas in the Wildcat Creek Drainage. This subsection includes the residential section that borders Wildcat Creek.

Key Characteristics of Trash Management Area 7a

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
121	2	4	22	72	Residential	Pedestrian - vehicle generated litter

Visual observations confirmed low to very high generation rates on residential and commercial areas, and very high trash generation rates in retail areas. High generation is on the arterial. Very high on interstate 80. This area is a low priority area for trash reduction due to predominantly low trash generation rate.

Summary of Control Measures and Implementation Schedule for Trash Management Area 7a

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X

This area has little to no trash issues in the residential areas, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates. Inspections will be conducted at business and best management practices watched to move high generation rates to low.

Evaluation of Program Effectiveness for Trash Management Area 7

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Retail businesses are inspected. If a change in generation rate is noted, areas will be visually assessed, generation rate tracked and property owner notified of corrective action needed.

The characteristics of TMA #7 are the commercial and residential areas in the Wildcat Creek Drainage. This subsection includes the drainage to the North Richmond Pump Station.

Key Characteristics of Trash Management Area 7b

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
191	0	29	38	33	Commercial and Residential	Pedestrian - generated litter

Visual observations confirmed low to high generation rates on residential and commercial areas, and very high trash generation rates in retail areas. This area is a priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 7b

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
On-land Trash Cleanups "One block at a time"	cleaned blighted neighborhoods with residents and City crews twice in permit issuance		X		
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X
Full Capture Treatment Devices	CDS unit for 191 acres of high and very high generation areas (installed 2017-2022)]				X

The City will work with the neighborhood to provide an outreach campaign and volunteer program to reduce the generation rate in this management area. If funds can be provided for a full trash capture device at the pump station, installation will occur in 2017-2022. City will pursue disadvantage community grants for this device.

Evaluation of Program Effectiveness for Trash Management Area 7b

Control Measure	Evaluation Method	Evaluation Method Details
Visual on land Assessments	BASMAA trash protocol	Priority area for audits of visual assessments
Full Capture	Document Maintenance	track amount of trash removed

This area will be a priority for visual assessments to assess the trash generation rate in high and very high rated areas. The City will work with the County in coordinated efforts in this area. Assessments will inform volunteer program efforts and City efforts to reduce trash in this area.

The characteristics of TMA #7 are the commercial and residential areas in the Wildcat Creek Drainage. This subsection includes the parkland section that borders Wildcat Creek at its mouth.

Key Characteristics of Trash Management Area 7c

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
308	0	0	1	99	Parkland	Pedestrian - generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and monitoring of businesses in the area.

Summary of Control Measures and Implementation Schedule for Trash Management Area 7c

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X

This TMA has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Evaluation of Program Effectiveness for Trash Management Area 7

Control Measure	Evaluation Method	Evaluation Method Details
Illegal Dumping	Field crew reports	Field crews track calls and material removed from neighborhoods.
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Crew leader for the litter abatement field teams tracks the frequency trash related calls are made regarding a neighborhood. Inspections will track businesses. If tracking indicates a change in neighborhood behavior, visual audits can be performed to see if generation rates have changed.

The characteristics of TMA #8 are the light industrial, commercial, retail, park lands and residential areas in the northern part of Richmond. It includes Garrity Creek, Parchester Creek, Rheem Creek and the mouth of San Pablo Creek Watersheds. This subsection includes the residential area of this TMA. This subsection covers the residential portion of this TMA.

Key Characteristics of Trash Management Area 8a

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
1878	4	0	7	89	Residential	Pedestrian - generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and street sweeping. The very high trash generation area is interstate 80.

Summary of Control Measures and Implementation Schedule for Trash Management Area 8a

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
On-land Trash Cleanups "Love your Block"	Volunteer program to adopt a block, park or trail and keep it clean			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X

This TMA has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Evaluation of Program Effectiveness for Trash Management Area 8a

Control Measure	Evaluation Method	Evaluation Method Details
Illegal Dumping	Field crew reports	Field crews track calls and material removed from neighborhoods.

Crew leader for the litter abatement field teams tracks the frequency trash related calls are made regarding a neighborhood. If tracking indicates a change in neighborhood behavior, visual audits can be performed to see if generation rates have changed.

The characteristics of TMA #8 are the light industrial, commercial, retail, park lands and residential areas in the northern part of Richmond. It includes Garrity Creek, Parchester Creek, Rheem Creek and the mouth of San Pablo Creek Watersheds. This subsection includes the shoreline and parkland area of this TMA.

Key Characteristics of Trash Management Area 8b

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
1408	0	0	35	65	Commercial, open space and Industrial	Pedestrian -generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and street sweeping.

Summary of Control Measures and Implementation Schedule for Trash Management Area 8b

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X

This TMA has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Evaluation of Program Effectiveness for Trash Management Area 8b

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated
Illegal Dumping	Field crew reports	Field crews track calls and material removed from neighborhoods.

Retail business in high generation areas will be visually assessed at inspection and generation rate tracked. Crew leader for the litter abatement field teams tracks the frequency trash related calls are made regarding a neighborhood. If tracking

indicates a change in neighborhood behavior, visual audits can be performed to see if generation rates have changed.

The characteristics of TMA #8 are the light industrial, commercial, retail, park lands and residential areas in the northern part of Richmond. It includes Garrity Creek, Parchester Creek, Rheem Creek and the mouth of San Pablo Creek Watersheds. This subsection includes the West side of Hilltop Mall.

Key Characteristics of Trash Management Area 8c

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
82	0	53	37	10	Commercial and Retail	Pedestrian/shopper -generated litter

Visual observations confirmed predominantly moderate and high generation rates. This area is a high priority area for trash reduction.

Summary of Control Measures and Implementation Schedule for Trash Management Area 8c

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Full Capture Treatment Devices	CDS unit for 82 acres of high and very high generation areas (installed 2014- 2017)			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X

Businesses in this trash management area with potential stormwater impact are inspected as per the City of Richmond Business Plan. Inspections for trash generation at these businesses will continue in this area to assist with lower trash accumulation rates in the capture device. The City plans to install, a full trash capture device if funding is available. The device would capture the trash from the western portion of Hilltop Shopping area and adjacent commercial and retail businesses.

Evaluation of Program Effectiveness for Trash Management Area 8c

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated
Full Capture	Document Maintenance	Track amount of trash removed

Retail businesses are inspected and best management practices for trash assessed. Visual assessments using BASMAA protocol will be included. When installed, maintenance of the full trash capture device will track dates, percentage of device occupied with trash and debris, volume removed, and general percentage of trash in amount removed.

The characteristics of TMA #8 are the light industrial, commercial, retail, park lands and residential areas in the northern part of Richmond. It includes Garrity Creek, Parchester Creek, Rheem Creek and the mouth of San Pablo Creek Watersheds. This subsection includes the East side of Hilltop Mall which flows to a full trash capture device.

Key Characteristics of Trash Management Area 8c

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
75	0	52	42	6	Commercial and Retail	Pedestrian/shopper -generated litter

Summary of Control Measures and Implementation Schedule for Trash Management Area 8c

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Full Capture Treatment Devices	Roscoe Moss Flo Thru Screen for 64 acres of high and very high generation areas (installed 2012)]		X	X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X

In 2012, a full trash capture device was installed in the drainage just upstream of the Garrity Creek hot spot assessment area. It captures the trash from the eastern portion of Hilltop Shopping area and adjacent commercial and retail businesses. Businesses in this trash management area with potential stormwater impact are inspected as per the City of Richmond Business Plan. Inspections for trash generation at these businesses will continue in this area to assist with lower trash accumulation rates in the capture device.

Evaluation of Program Effectiveness for Trash Management Area 8c

Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed

Maintenance of the full trash capture device will track dates, percentage of device occupied with trash and debris, volume removed, and general percentage of trash in amount removed.

The characteristics of TMA #8 are the light industrial, commercial, retail, park lands and residential areas in the northern part of Richmond. It includes Garrity Creek, Parchester Creek, Rheem Creek and the mouth of San Pablo Creek Watersheds. This section includes the commercial area east of Hilltop Mall.

Key Characteristics of Trash Management Area 8e

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
95	0	0	93	7	Commercial and Parkland	Pedestrian/shopper-generated litter

This TMA is predominantly moderate in trash generation from commercial businesses.

Summary of Control Measures and Implementation Schedule for Trash Management Area 8e

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Enhanced Street Sweeping	Frequency increase from monthly to weekly on arterial routes		X	X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X

This area has moderate trash issues. Street sweeping increased in 2010 to weekly sweep arterial routes in this TMA. Retail businesses in this TMA are under permit with the City. Permits issued in 2013 contain best management practices for trash. Inspections will assess compliance and follow up as needed.

Evaluation of Program Effectiveness for Trash Management Area 8e

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Retail businesses are inspected. If a change in generation rate is noted, areas will be visually assessed, generation rate tracked and property owner notified of corrective action needed.

The characteristics of TMA #8 are the light industrial, commercial, retail, parklands and residential areas in the northern part of Richmond. It includes Garrity Creek, Parchester Creek, Rheem Creek and the mouth of San Pablo Creek Watersheds. This section includes the commercial on Richmond Parkway.

Key Characteristics of Trash Management Area 8f

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
10	0	0	71	29	Commercial and Retail	Pedestrian/shopper-generated litter

This TMA is predominantly moderate in trash generation from commercial businesses.

Summary of Control Measures and Implementation Schedule for Trash Management Area 8f

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X

This area has moderate trash issues. Street sweeping increased in 2010 to weekly sweep arterial routes in this TMA. Retail businesses in this TMA are under permit with the City. Permits issued in 2013 contain best management practices for trash. Inspections will assess compliance and follow up as needed.

Evaluation of Program Effectiveness for Trash Management Area 8f

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Retail businesses are inspected. If a change in generation rate is noted, areas will be visually assessed, generation rate tracked and property owner notified of corrective action needed.

The characteristics of TMA #8 are the light industrial, commercial, retail, parklands and residential areas in the northern part of Richmond. It includes Garrity Creek, Parchester Creek, Rheem Creek and the mouth of San Pablo Creek Watersheds. This section includes the commercial on Giant Highway with full trash capture devices.

Key Characteristics of Trash Management Area 8g

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
14	0	0	23	77	Commercial and Retail	Pedestrian/shopper-generated litter

This TMA is presently predominantly low with some moderate areas in trash generation from commercial businesses. This potentially will increase to moderate as commercial areas are developed.

Summary of Control Measures and Implementation Schedule for Trash Management Area 8g

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
[Full Capture Treatment Devices]	REM inserts unit for 14 acres of potentially moderate generation areas (installed 2013)		X	X	X

In 2013, full trash capture inserts were placed in all curb inlets. Businesses in this trash management area with potential stormwater impact are inspected as per the City of Richmond Business Plan. Inspections for trash generation at these businesses will continue in this area to assist with lower trash accumulation rates in the capture devices.

Evaluation of Program Effectiveness for Trash Management Area 8g

Control Measure	Evaluation Method	Evaluation Method Details
Full Capture	Document Maintenance	Track amount of trash removed

Maintenance of the full trash capture device will track dates, percentage of device occupied with trash and debris, volume removed, and general percentage of trash in amount removed.

The characteristics of TMA #9 are the upper San Pablo Creek and upper Wildcat Creek Watersheds. This subsection represents the residential and open space areas of this TMA.

Key Characteristics of Trash Management Area 9a

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
5171	0	0	20	80	Residential and Open Space	Pedestrian and vehicle generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and street sweeping.

Summary of Control Measures and Implementation Schedule for Trash Management Area 9a

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Street Sweeping	Increased signage to provide curb sweeping			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X

This TMA has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Evaluation of Program Effectiveness for Trash Management Area 9

Control Measure	Evaluation Method	Evaluation Method Details
Illegal Dumping	Field crew reports	Field crews track calls and material removed from neighborhoods.

Crew leader for the litter abatement field teams tracks the frequency trash related calls are made regarding a neighborhood. If tracking indicates a change in neighborhood behavior, visual audits can be performed to see if generation rates have changed.

Upper San Pablo Creek Watershed Long-Term Trash

TRASH MANAGEMENT AREA

9b

The characteristics of TMA #9 are the upper San Pablo Creek Watershed. This subsection included commercial district on San Pablo Dam Road

Key Characteristics of Trash Management Area 9a

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
5	0	0	80	20	Commercial	Pedestrian and vehicle generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and street sweeping.

Summary of Control Measures and Implementation Schedule for Trash Management Area 9a

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X

This area has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Evaluation of Program Effectiveness for Trash Management Area 9

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Retail businesses are inspected. If a change in generation rate is noted, areas will be visually assessed, generation rate tracked and property owner notified of corrective action needed.

Upper San Pablo Creek Watershed Long-Term Trash

TRASH MANAGEMENT AREA

9c

The characteristics of TMA #9 are the upper San Pablo Creek Watershed. This subsection included commercial district on Valley View Road.

Key Characteristics of Trash Management Area 9a

Total Jurisdictional Area (Acres)	Percent in Trash Generation Category				Dominant Land Uses	Dominant Types and Sources of Trash
	Very High	High	Medium	Low		
4	0	0	80	20	Retail and Commercial	Pedestrian and vehicle generated litter

This TMA is predominantly low in trash generation and management will continue to be addressed through product bans and street sweeping.

Summary of Control Measures and Implementation Schedule for Trash Management Area 9a

Control Measure	Control Measure Details	Pre-MRP	12/2009 to 7/2014	7/2014 to 7/2017	After 7/2017
Business Trash Management	Business inspections and enforcement include litter management, trash bins/compactor management, storm drain inlet maintenance			X	X
Polystyrene in Foodware Ban	In effect July 2010		X	X	X
Plastic Bag Ban	Initiated January 2014		X	X	X
Illegal Dumping	Crews respond to citizen calls and drive establish routes	X	X	X	X

This area has little to no trash issues, and we will continue our municipal activities as they address the trash in this area to produce low trash generation rates.

Evaluation of Program Effectiveness for Trash Management Area 9

Control Measure	Evaluation Method	Evaluation Method Details
Business Trash Management	Business inspections	Business permits issued with trash best management practices that will be evaluated

Retail businesses are inspected. If a change in generation rate is noted, areas will be visually assessed, generation rate tracked and property owner notified of corrective action needed.