

Long-Term Trash Load Reduction Plan and Assessment Strategy

Submitted by:



**City of Foster City
610 Foster City Blvd.
Foster City, CA 94404**

In compliance with Provisions C.10.c of Order R2-2009-0074

January 30, 2014

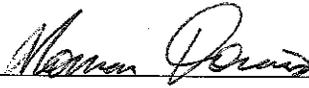
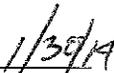
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**CITY OF FOSTER CITY
LONG-TERM TRASH LOAD REDUCTION PLAN AND
ASSESSMENT STRATEGY**

CERTIFICATION STATEMENT

"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 ensure that qualified personnel properly gather and evaluate 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."

Signature by Duly Authorized Representative:

 _____ 

[Norm Dorais]
[Public Works Maintenance Manager]

Date

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ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FY	Fiscal Year
GIS	Geographic Information System
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
Q	Flow
SFRWQCB	San Francisco Regional Water Quality Control Board
SWRCB	State Water Resource Control Board
TMA	Trash Management Area
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
Water Board	San Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements

PREFACE

This Long-Term Trash Load Reduction Plan and Assessment Strategy (Long-Term Plan) is submitted in compliance with provision C.10.c of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order No. R2-2009-0074). The Long-Term Plan was developed using a regionally consistent outline and guidance developed by the Bay Area Stormwater Management Agencies Association (BASMAA) and reviewed by San Francisco Bay Regional Water Quality Control Board staff. The Long-Term Plan is consistent with the Long-Term Trash Load Reduction Framework developed in collaboration with Water Board staff. Its content is based on the City of Foster City's current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with Municipal Separate Storm Sewer (MS4) discharges. This Long-Term Plan is intended to be iterative and may be modified in the future based on information gained through the implementation of trash control measures. The City of Foster City therefore reserves the right to revise or amend this Long-Term Plan at its discretion. If significant revisions or amendments are made by the City, a revised Long-Term Plan will be submitted to the Water Board through the City's annual reporting process.

1.0 INTRODUCTION

1.1 Purpose of Long-Term Trash Reduction Plan

The Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit for Phase I communities in the San Francisco Bay (Order R2-2009-0074), also known as the Municipal Regional Permit (MRP), became effective on December 1, 2009. The MRP applies to 76 large, medium and small municipalities (cities, towns and counties) and flood control agencies in the San Francisco Bay Region, collectively referred to as Permittees. Provision C.10.c of the MRP requires Permittees to submit a *Long-Term Trash Load Reduction Plan* (Long-Term Plan) by February 1, 2014. Long-Term Plans must describe control measures that are currently being implemented, including the level of implementation, and additional control measures that will be implemented and/or increased level of implementation designed to attain a 70% trash load reduction by July 1, 2017, and 100% (i.e. “No Visual Impact”) by July 1, 2022.

This Long-Term Plan is submitted by the City of Foster City in compliance with MRP provision C.10.c. Consistent with provision C.10 requirements, the goal of the Long-Term Plan is to solve trash problems in receiving waters by reducing the impacts associated with trash in discharges from the Foster City’s municipal separate storm sewer system (MS4) that are regulated by NPDES Permit requirements. The Long-Term Plan includes:

1. Descriptions the current level of implementation of trash control measures, and the type and extent to which new or enhanced control measures will be implemented to achieve a target of 100% (i.e. “No Visual Impact”) trash reduction from MS4s by July 1, 2022, with an interim milestone of 70% reduction by July 1, 2017;
2. A description of the *Trash Assessment Strategy* that will be used assess progress towards trash reduction targets achieved as a result of control measure implementation; and,
3. Time schedules for implementing control measures and the assessment strategy.

The Long-Term Plan was developed using a regionally consistent outline and guidance developed by the Bay Area Stormwater Management Agencies Association (BASMAA) and reviewed by the San Francisco Bay Regional Water Quality Control Board (Water Board) staff. The Long-Term Plan is consistent with the Long-Term Trash Load Reduction Framework (see section 1.2.1) developed in collaboration with Water Board staff. Its content is based on the Foster City’s current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with Municipal Separate Storm Sewer (MS4) discharges. The Long-Term Plan builds upon trash control measures implemented by the City prior to the adoption of the MRP and during the implementation of the Short-Term Trash Load Reduction Plan submitted to the Water Board on February 1, 2012.

1.2 Background

1.2.1 Long-Term Trash Load Reduction Plan Framework

A workgroup of MRP Permittee, Bay Area countywide stormwater program staff and Water Board staff met between October 2012 and March 2013 to better define the process for developing and implementing Long-Term Plans, methods for assessing progress toward reduction goals, and

tracking and reporting requirements associated with provision C.10. Through these discussions, an eight-step framework for developing and implementing Long-Term Plans was created by the workgroup (Figure 1).

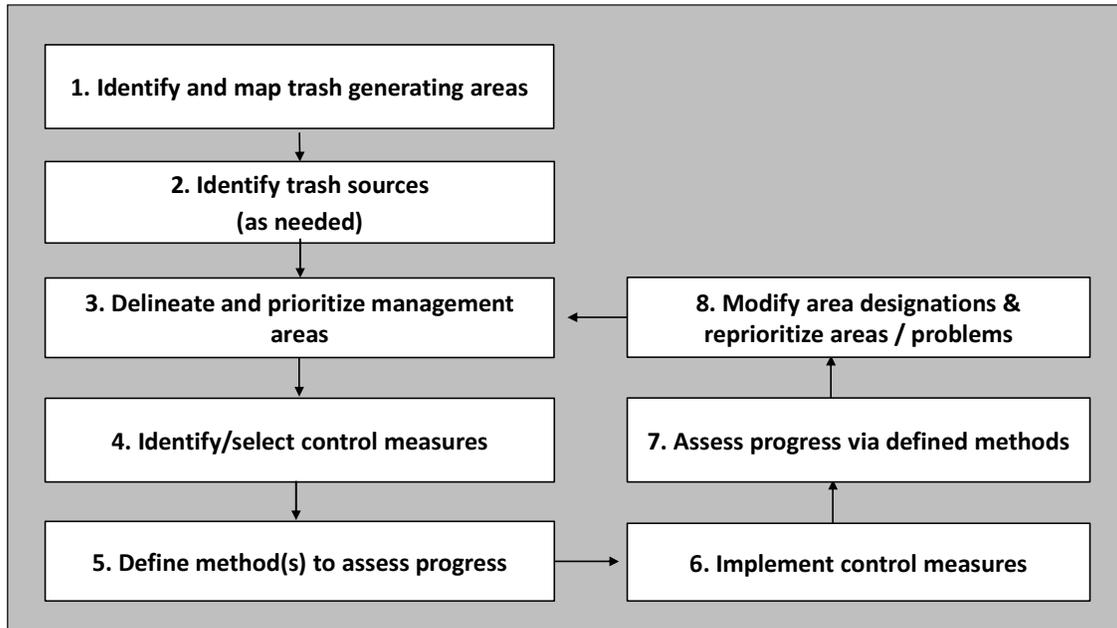


Figure 1. Eight-step framework for developing, implementing and refining Long-Term Trash Reduction Plans.

The workgroup agreed that as the first step in the framework, Permittees would identify very high, high, moderate, and low trash generating areas in their jurisdictional areas. Trash generation rates developed through the *BASMAA Baseline Trash Generation Rates Project* (as discussed below) were used as a starting point for differentiating and delineating land areas with varying levels of trash generation. Permittees would then use local knowledge and field and/or desktop assessments to confirm or refine the level of trash generation for specific areas within their jurisdiction. Each Permittee would then develop a map depicting trash generation categories within their jurisdiction.

As a next step, Permittees would then delineate and prioritize Trash Management Areas (TMAs) where specific control measures exist or are planned for implementation. TMAs delineated by Permittees are intended to serve as reporting units in the future. Reporting at the management area level provides the level of detail necessary to demonstrate implementation and progress towards trash reduction targets.

Once control measures are selected and implemented, Permittees will evaluate progress toward trash reduction targets using outcome-based assessment methods. As the results of the progress assessments are available, Permittees may choose to reprioritize trash management areas and associated control measures designed to improve trash reduction within their jurisdictions.

1.2.2 BASMAA Generation Rates Project

Through approval of a BASMAA regional project in 2010, Permittees agreed to work collaboratively to develop a regionally consistent method to establish trash generation rates within their jurisdictions. The project, also known as the *BASMAA Trash Generation Rates Project* (Generation

Rates Project) assisted Permittees in establishing the rates of trash generation and identifying very high, high, moderate and low trash generating areas.

The term “trash generation” refers to the rate at which trash is produced or generated onto the surface of the watershed and is potentially available for transport via MS4s to receiving waters. Generation rates do not explicitly take into account existing control measures that intercept trash prior to transport. Generation rates are expressed as trash volume/acre/year and were established via the Generation Rates Project.

In contrast to trash generation, the term “trash loading” refers to the rate at which trash from MS4s enters receiving waters. Trash loading rates are also expressed as trash volume/acre/year and are equal to or less than trash generation rates because they account for the effects of control measures that intercept trash generated in an area before it is discharged to a receiving water. Trash loading rates are specific to particular areas because they are dependent upon the effectiveness of control measures implemented within an area. Figure 2 illustrates the difference between trash generation and loading.

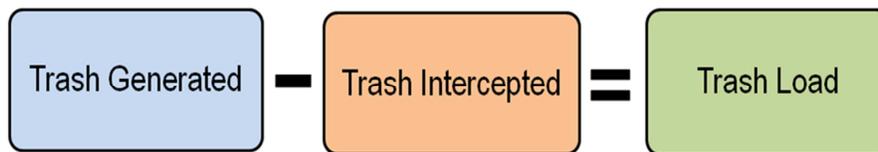


Figure 2. Conceptual model of trash generation, interception and load.

Trash generation rates were estimated based on factors that significantly affect trash generation (i.e. land use and income). The method used to establish trash generation rates for each Permittee builds off “lessons learned” from previous trash loading studies conducted in urban areas (Allison and Chiew 1995; Allison et al. 1998; Armitage et al. 1998; Armitage and Rooseboom 2000; Lippner et al. 2001; Armitage 2003; Kim et al. 2004; County of Los Angeles 2002, 2004a, 2004b; Armitage 2007). The method is based on a conceptual model developed as an outgrowth of these studies (BASMAA 2011b).

Trash generation rates were developed through the quantification and characterization of trash captured in Water Board-recognized full-capture treatment devices installed in the San Francisco Bay area. Trash generation rates estimated from this study are listed for each land use type in Table 1. Methods used to develop trash generation rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Table 1. San Francisco Bay Area trash generation rates by land use (gallons/acre/year).

Land Use	Low ^b	Best ^b	High ^b
Commercial & Services	0.7	6.2	17.3
Industrial	2.8	8.4	17.8
Residential ^a	0.3 - 30.2	0.5 - 87.1	1.0 - 257.0
Retail ^a	0.7 - 109.7	1.8 - 150.0	4.6 - 389.1
K-12 Schools	3	6.2	11.5
Urban Parks	0.5	5.0	11.4

^a For residential and retail land uses, trash generation rates are provided as a range that takes into account the correlation between rates and household median income.

^b For residential and retail land uses: Low = 5% confidence interval; Best = best fit regression line between generation rates and household median income; and, High = 95% confidence interval. For all other land use categories: High = 90th percentile; Best = mean generation rate; and, Low = 10th percentile.

1.2.3 Short-Term Trash Load Reduction Plan

In January 2012, the City of Foster City developed a Short-Term Plan that described the current level of control measures implementation and identified the type and extent to which new or enhanced control measures would be implemented to attain a 40% trash load reduction from its MS4 by July 1, 2014. Since that time, the City has begun to implement its Short-Term Plan. Control measures implemented to date via the Short-Term Plan include the following:

Single-use Carryout Bag Policy – The City Council added Chapter 8.09 (Reusable Bags) to Title 8 (Health and Safety) of the Foster City Municipal Code, effective April 22, 2013. The ordinance restricts the use of single-use carry-out bags by retailers, including grocery stores, convenience stores, pharmacies and other shops. “Single-use carry-out bag” means a bag other than a reusable bag provided at the check stand, cash register, point of sale or other point of departure, including department within a store, for the purpose of transporting food or merchandise out of the establishment. “Single-use carry-out bags” do not include bags without handles provided to the customer: (1) to transport prepared food, produce, bulk food, or meat from a department within a store to the point of sale; or (2) to segregate food or merchandise that could damage or contaminate other food or merchandise when placed together in a reusable bag or recycled paper bag. (Ord. 571 § 1 (part), 2013) The County of San Mateo Bag Ordinance was adopted by reference and became effective on April 22, 2013.

Polystyrene Foam Food Service Ware Policy –The City of Foster City adopted an ordinance October 17, 2011 banning polystyrene foam food service ware at the point-of-sale effective April 1, 2012. The City adopted Chapter 8.08.010 of the Foster City Municipal Code that adopted San Mateo County Ordinance Code Chapter 4.107 by reference. Chapter 4.107, Prohibition on the Use of Polystyrene Based Disposable Food Service Ware by Food Vendors, of the San Mateo County Ordinance Code, and any amendment thereto, were thereby adopted and made effective in the City. Chapter 8.08.020 Authorization of enforcement by San Mateo County personnel was also adopted, authorizing the County of San Mateo, its officers, employees and agents to enforce, on behalf of the City, Chapter 4.107, Prohibition on the Use of Polystyrene Based Disposable Food Service Ware by Food Vendors, of the San Mateo County Ordinance Code, and any amendments thereto, within the jurisdiction areas of this city. Such enforcement authority includes, but is not limited to, the collection of fees and fines, expending such revenue in the enforcement of the prohibition on the use of polystyrene based disposable food service ware by food vendors, holding hearings, suspending permits and issuing administrative fines. (Ord. 567 § 1 (part), 2011)

Public Education and Outreach Programs – Through participation and funding of the SMCWPPP’s Public Information and Public Information and Participation program (PIP), the City continued implementing SMCWPPP and BASMAA public education and outreach programs. One program of interest implemented by the City is the BASMAA Youth Outreach Campaign. This Campaign was launched in September 2011 and aims to increase the awareness of Bay Area Youth (ages 16-24) on litter and stormwater pollution issues, and eventually change their littering behaviors.

Improved Trash Bin/Container Management – The City maintains a list of trash bins and containers that City staff are responsible for managing. City Parks Department staff service trash bins/containers daily or every other day at all of the City parks and City buildings. The Parks Department maintains approximately 326 trash cans and 101 recycling cans at the parks and associated levees. Events at parks with more than 10 people require a City permit. Trash is picked up that day following conclusion of all such events. Foster City/San Mateo school district staff are responsible for trash management at the three elementary and one middle schools in the City. The City has a contract with Recology to empty trash bins/containers at the City Maintenance Yard. City Community Development Department staff notify businesses of any observed or reported instances of improper trash management. The City issues letters with deadlines to any such businesses. These trash management requirements are enforceable through provisions of the conditional use permits issued to businesses in the City. Residential and commercial trash bins/containers are required to be removed from the point of pickup the day of pickup. SamTrans is responsible for providing and servicing trash containers at transit stop locations. City ordinances prohibit smoking in parks or outside public areas so cigarette butt generation is minimal at those areas.

On-land Cleanups – Two City Public Works staff are responsible for catch basin cleaning and picking up trash as it is observed during their patrols around the City. There are no significant trash hot spots or illegal dumping areas throughout the City. There are only incidental amounts of trash picked up by Public Works staff. Trash removal is a high priority for City Parks Department staff and any trash observed within the parks or around City Buildings is promptly removed. The City is aware of volunteer groups that could be accessed to assist with trash cleanups. However, with the very low rate of trash generation within the City, there are no areas where it would be productive to send such groups. The City’s contract trash hauler responds to calls about trash spilled during pick-up days and sends out a separate truck to pick-up that trash. School Department staff are responsible for on-land clean-ups at schoolyards.

The several corporate campuses in the City are very meticulous about maintaining their properties and have their own staff or contractors to maintain the campuses, including trash pickup and removal. There are approximately 48 Home Owners Associations in the City that are also meticulous about maintaining their properties and typically contract out their property maintenance (generally done weekly). The City informs Caltrans when trash is observed to have accumulated around on and off ramps and other areas of Caltrans ownership/right of way. The City has no legal access to Caltrans property nor control over Caltrans’ schedule for responding to trash removal requests. The City will begin tracking and reporting the volume of trash collected beginning in early 2014.

Street Sweeping – The City continues to maintain a very comprehensive street sweeping program operated by a contractor. The City’s program includes sweeping streets in residential areas once every other week, and weekly sweeping of large arterial roads (e.g., Metro Center Boulevard, Foster City Boulevard, Hillsdale Boulevard). City streets are not posted “No Parking- Street Sweeping” but in nearly 100% of the retail/commercial areas (major boulevards) the outside curbs are red (i.e. no parking) resulting in a parking enforcement equivalent. In addition, cars do not park along the median curbs since it is an active lane of traffic. As a result, sweeping along the median curb and

along the red outside curb are effective since the sweeper is reaching the curb. Major boulevards are swept at night to allow for both curb sides and median sides to be swept.

In apartment complexes temporary signs are put up 48 hours in advance of sweeping to provide maximum access to the curb area. This signing is coordinated with the police department. Residential areas are not signed due to community opposition (aesthetics) but there is a high level of voluntary compliance. Street sweeping funding is included in the garbage collection rates so there is a stable and reliable source of funding. The contractor by July 1, 2014 will be installing GPS units in the street sweepers to record route logs, parked cars/trees and such blocking access to the curb, increased trash generation areas, etc. This information will be used to determine the need for and potential benefits from further enhancements to the street sweeping program.

Full-Capture Devices –As proposed in the Short-term Plan, the City has continued to investigate and evaluate the regulatory feasibility of installing enhanced screening (5 mm mesh panels) across the existing bar rack at the stormwater pump station serving the entire Foster City Lagoon (212 acres). That enhanced screening at the pump station would perform equivalently to a full capture device for potential trash entering the Lagoon from City land areas.

Creek Hot Spot Cleanup –The City has identified one waterway hot spot (i.e. FCY01) at the edge of Foster City Lagoon in the southeast portion of the City near Sea Cloud Drive and Park. Approximately 100 gallons of uncompacted trash is removed annually from this site. Cleanups have been occurring bimonthly since the adoption of the MRP.

Weekly the City also inspects and removes any observed trash from eight additional shoreline areas along the southeasterly (downwind) side of the Lagoon. The amounts of trash collected are typically negligible. The City also conducts weekly inspections by boat of the Lagoon for trash and related debris (e.g., tree limbs) from March 15th through October 15th and biweekly and/or prior to major storms the remainder of the year.

Control measures described in this Long-Term Plan build upon actions taken to-date via the City of Foster City’s Short-Term Plan. A full description of control measures implemented via short and long-term plans is included in section 3.2. Outcomes associated with short-term plan implementation will be reported in the City’s FY 2013-2014 Annual Report, scheduled for submittal to the Water Board by September 15, 2014.

1.3 Organization of Long-Term Plan

This Long-Term Plan is organized into the following sections:

- 1.0 Introduction;
- 2.0 Scope of the Trash Problem;
- 3.0 Trash Management Areas and Control Measures;
- 4.0 Progress Assessment Strategies; and
- 5.0 References

Section 2.0 is intended to provide a description of the extent and magnitude of the trash problem in the City of Foster City. Control measures that will be implemented by the City as a result of this Long-Term Plan are described in section 3.0. Section 4.0 describes the methods that will be used to assess progress toward trash reduction targets.

2.0 SCOPE OF THE TRASH PROBLEM

2.1 Permittee Characteristics

Incorporated in 1971, the City of Foster City covers 2,807 acres in San Mateo County, and has a jurisdictional area of 2,123 acres. According to the 2010 Census, it has a population of 30,567, with a population density of 1,540.6 people per square mile and average household size of 2.53. Of the 30,567 residents who call Foster City home, 22.6% are under the age of 18, 5.0% are between 18 and 24, 32.1% are between 25 and 44, 26.9% are between 45 and 64, and 32.1% are 65 or older. The median household income was \$114,720 in 2010. Top employers in the City of Foster City include Gilead Science, Visa, Electronics for Imaging, and Inovant.

Land uses within Foster City depicted in ABAG (2005) are provided in Table 2. The City is primarily comprised of six land uses. These include commercial and services, residential, retail, K-12 schools, urban parks, and other.

Table 2. Percentages of the Foster City's jurisdictional area¹ within land use classes identified by ABAG (2005)

Land Use Category	Jurisdictional Area (Acres)	% of Jurisdictional Area
Commercial and Services	157.7	6.9%
Industrial	218.5	9.5%
Residential	1,435.1	62.5%
Retail	78.9	3.4%
K-12 Schools	56.1	2.4%
Urban Parks	133.4	5.8%
Other	217.3	9.5%
Total	2,297	100.0%

2.2 Trash Sources and Pathways

Trash in San Francisco Bay Area creeks and shorelines originates from a variety of sources and is transported to receiving waters by a number of pathways (Figure 3). Of the four source categories, pedestrian litter includes trash sources from high traffic areas near businesses and schools, transitional areas where food/drinks are not permitted (e.g. bus stops), and from public or private special events with high volumes of people. Trash from vehicles occurs due to littering from automobiles and uncovered loads. Inadequate waste container management includes sources such as overflowing or uncovered containers and dumpsters as well as the dispersion of household and

¹ A Permittee's jurisdictional area is defined as the urban land area within a Permittee's boundary that is not subject to stormwater NPDES Permit requirements for traditional and non-traditional small MS4s (i.e. Phase II MS4s) or the California Department of Transportation, or owned and maintained by the State of California, the U.S. federal government or other municipal agency or special district (e.g., flood control district).

business-related trash and recycling materials before, during, and after collection. On-land illegal dumping of trash is the final source category.

Trash is transported to receiving waters through three main pathways: 1) Stormwater Conveyances; 2) Wind; and, 3) Direct Dumping. Stormwater or urban runoff conveyance systems (e.g., MS4s) consist of curbs/gutters, and pipes and channels that discharge to urban creeks and the San Francisco Bay shorelines. Wind can also blow trash directly into creeks or the Bay. Lastly, trash in receiving waters can also originate from direct dumping into urban creeks and shorelines.

This Long-term Plan and associated trash control measures described in Section 3.0 are focused on reducing trash from one of the transport pathways illustrated in Figure 3– **stormwater conveyances**. Specifically, the Long-term Plan is focused on reducing the impacts of discharges from MS4s to San Francisco Area receiving waters and the protection of associated beneficial uses.

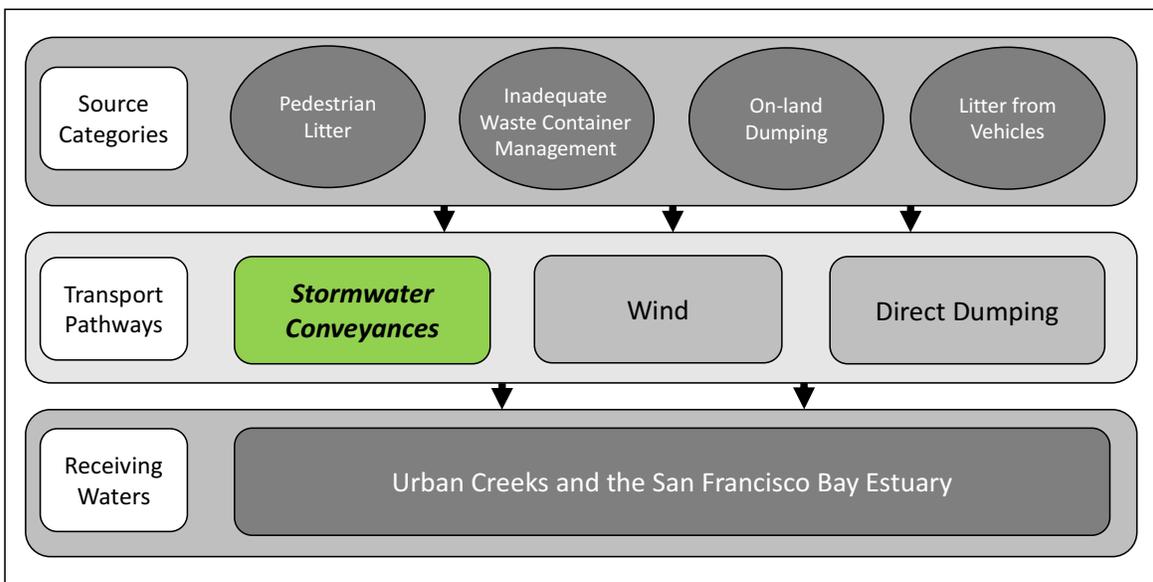


Figure 3. Trash sources categories and transport pathways to urban creeks.

2.3 Trash Generating Areas

2.3.1 Generation Categories and Designation of Areas

The process and methods used to identify the level of trash generation within the City of Foster City are described in this section and illustrated in Figure 4.

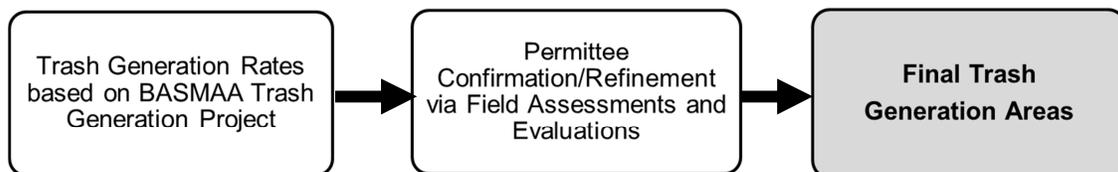


Figure 4. Trash sources categories and transport pathways to urban creeks.

As a first step, trash generation rates developed through *the BASMAA Trash Generation Rates Project* were applied to parcels within the City of Foster City based on current land uses and 2010 household median incomes. A Draft Trash Generation Map was created as a result of this application. The draft map served as a starting point for the City to identify trash generating levels. Levels of trash generation are depicted on the map using four trash generation rate (gallons/acre/year) categories that are symbolized by four different colors illustrated in Table 3.

Table 3. Trash generation categories and associated generation rates (gallons/acre/year).

Category	Very High	High	Moderate	Low
Generation Rate (gallons/acre/year)	> 50	10-50	5-10	< 5

The City of Foster City then reviewed and refined the draft trash generation map to ensure that trash generation categories were correctly assigned to parcels or groups of parcels. City staff refined maps using the following process:

1. Based upon knowledge of trash generation and problem areas within the City, staff identified areas on the draft map that potentially had incorrect trash generation category designations.
2. Trash generation category designations initially assigned to areas identified in step #1 were then assessed and confirmed/refined by the City using the methods listed below.

a. On-Land Visual Assessments

To assist Permittees with developing their trash generation maps, BASMAA developed a *Draft On-land Visual Trash Assessment Protocol (Draft Protocol)*. The Draft Protocol entails walking a street segment and visually observing the level of trash present on the roadway, curb and gutter, sidewalk, and other areas adjacent to the street that could potentially contribute trash to the MS4. Based on the level of trash observed, each segment (i.e., assessment area) was placed into one of four on-land assessment condition categories that are summarized in Table 4. Public Works Department staff reviewed the preliminary Trash Generation Map provided by SMCWPPP staff and divided the map into manageable sections for field verification and ground-truthing activities. Using the Draft Protocol, the City and its consultants assessed areas of the map indicated as high (red), medium (yellow), and low (green) trash generating areas. Assessments were conducted by visiting these areas, interviewing City staff, and by reviewing visual records available on Google Street Maps.

Table 4. Definitions of on-land trash assessment condition categories.

On-land Assessment Condition Category	Summary Definition
A (Low)	Effectively no trash is observed in the assessment area.
B (Moderate)	Predominantly free of trash except for a few pieces that are easily observed.
C (High)	Trash is widely/evenly distributed and/or small accumulations are visible on the street, sidewalks, or inlets.
D (Very High)	Trash is continuously seen throughout the assessment area, with large piles and a strong impression of lack of concern for litter in the area.

b. Querying Municipal Staff

Input and working field knowledge was gathered from Public Works Department staff. This input provided additional insight into the littering patterns and potential sources of trash around the City.

- Based on assessments conducted to confirm/refine trash generation category designations, the City created a final trash generation map that depicts the most current understanding of trash generation within the City of Foster City. The City documented this process by tracking the information collected through the assessments and subsequent refinements to the Draft Trash Generation Map. The City of Foster City’s Final Trash Generation Map is included as Figure 5.

2.3.2 Summary of Trash Generating Areas and Sources

Summary statistics for land use and trash generation categories generated through the mapping and assessment process are presented in Table 5.

Table 5. Jurisdictional area and percentage within the City of Foster City assigned to each trash generation category.

Trash Generation Category	Jurisdictional Area (Acres)	Commercial and Services	Industrial	Residential	Retail	K-12 Schools	Urban Parks	Other
Very High	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	108.7	19.4%	20.9%	0.0%	59.7%	0.0%	0.0%	0.0%
Low	2,187.4	6.2%	9.0%	65.6%	0.6%	2.6%	6.1%	9.9%

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Figure 5. Final Trash Generation Map for the City of Foster City.

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3.0 TRASH MANAGEMENT AREAS AND CONTROL MEASURES

This section describes the control measures that the City of Foster City has or plans to implement to solve trash problems and achieve a target of 100% (i.e. full) trash reduction from their MS4 by July 1, 2022. The selection of control measures described in this section is based on the City's current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with MS4 discharges. Information on the effectiveness of some trash control measures is currently lacking and therefore in the absence of this information, the City based its selection of control measures on existing effectiveness information, their experience in implementing trash controls and knowledge of trash problems, and costs of implementation. As knowledge is gained through the implementation of these control measures, the City may choose to refine their trash control strategy described in this section. If significant revisions or amendments are made, a revised Long-Term Plan will be submitted to the Water Board through the City's annual reporting process.

3.1 Management Area Delineation and Prioritization

Consistent with the long-term plan framework, the City of Foster City delineated and prioritized trash management areas (TMAs) based on the geographical distribution of trash generating areas, types of trash sources, and current or planned control measure locations. TMAs are intended to form the management units by which trash control measure implementation can be tracked and assessed for progress towards trash reduction targets. Once delineated, TMAs were also prioritized for control measure implementation. The City's primary management areas were selected based on the spatial distribution of trash generating areas and the location of specific existing or planned management actions within City's jurisdiction. As shown in Table 5 and Figure 5, the majority of the City (>95%) consists of low trash generation areas.

TMAs were developed to reflect the generally scattered nature of individual medium trash generation areas within the overall low trash generation areas. Public Works Department staff delineated four (4) Trash Management Areas (TMAs) based on a combination of land usage, geographic boundaries, drainage boundaries, trash generation rates and the potential for installation of full-capture devices.

TMA #1 consists of a polygon formed by the area south of Highway 92, north of Foster City Boulevard, east of East Hillsborough Boulevard, and bounded on the northwest by the Foster City Lagoon. A portion of that land is scheduled for redevelopment and there are plans in place for one full capture device to be installed serving five acres of TMA #1.

TMA #2 consists of the six individual parcels with moderate trash generation rates within the otherwise low generation rate areas north of East Hillsborough Boulevard. These represent grocery stores, wholesale retail (Costco), a hotel complex, restaurants, and a car wash/gas station.

TMA #3 consists of four isolated retail (grocery store/plaza) land uses within the primarily residential, low trash generation portion of the City south and east E. Hillsdale Boulevard.

TMA #4 consists of the portion of Metro Center Boulevard extending southwest from Foster City Boulevard to Edgewater Boulevard. Visual inspections showed the street itself to have a moderate

level of trash generation (accumulation) while the adjacent business/office park parcels (with the exception of Costco) generally had low trash general rates.

TMA 5 consists of the remaining area within the City, all with a low trash generation rate.

A map depicting the City’s TMAs is included as Figure 6. All jurisdictional areas within the City are included within a TMA. The amount of jurisdictional land area and associated trash condition categories for each TMA are included in Table 6.

Table 6. Jurisdictional area and percentage of each Trash Management Area (TMA) comprised of trash generation categories

TMA	Jurisdictional Area (Acres)	Trash Generation Category			
		Very High	High	Moderate	Low
1	37.0	0.0%	0.0%	100.0%	0.0%
2A	10.1	0.0%	0.0%	100.0%	0.0%
2B	10.5	0.0%	0.0%	100.0%	0.0%
2C	4.9	0.0%	0.0%	100.0%	0.0%
2D	3.6	0.0%	0.0%	86.9%	13.1%
2E	7.6	0.0%	0.0%	100.0%	0.0%
2F	2.4	0.0%	0.0%	100.0%	0.0%
3A	10.6	0.0%	0.0%	100.0%	0.0%
3B	7.0	0.0%	0.0%	100.0%	0.0%
3C	5.3	0.0%	0.0%	100.0%	0.0%
3D	2.8	0.0%	0.0%	100.0%	0.0%
4	7.3	0.0%	0.0%	100.0%	0.0%
5	2,186.9	0.0%	0.0%	0.0%	100.0%

The 13.1% low generation area in TMA #2D represents a bioswale included within the borders of the polygon assigned to delineate #2D.

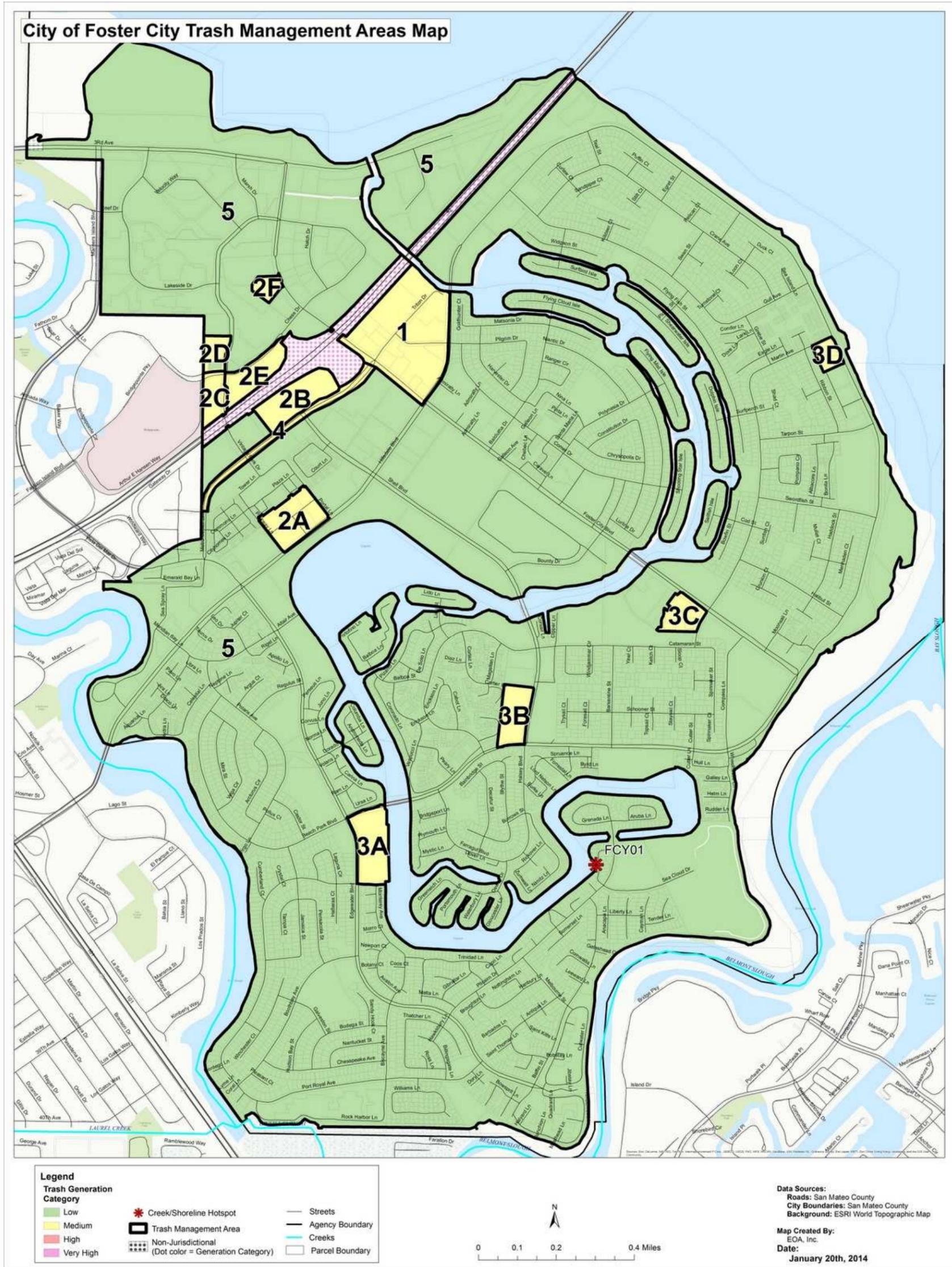


Figure 6. Trash Management Area Map for the City of Foster City.

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3.2 Current and Planned Trash Control Measures

The City of Foster City has taken an aggressive approach to trash reduction and has implemented a variety of trash control measures to reduce trash loads throughout the City. As illustrated in Figure 6, there are five trash management areas (TMA) within the City limits. Numerical map identification and designation of each TMA includes: one medium trash generating area constituting TMA #1, six medium trash generating parcels constituting TMA #2, four medium trash generating parcels constituting TMA #3, one medium trash generating street area constituting TMA #4, and the remainder of the City consisting of all low trash generating areas constituting TMA #5. Discussion of each TMA and associated current and planned control measures follows in the order of TMA #1 through TMA #5.

3.2.1 Jurisdiction-wide Control Measures

To reduce trash loads within the City, the following control measures are being implemented or are planned to be implemented at the jurisdiction-wide level:

► ON-LAND CLEANUPS

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, two employees had been patrolling and removing trash as needed from retail/commercial areas and catch basins during part of their routine rounds five days/week throughout the commercial portion of the City. This program has been successful at removing trash not otherwise captured by street sweeping or remedial activities conducted by businesses following reports of trash bin/container overflows.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The above trash patrolling during regular rounds program throughout the commercial portion of the City continued five days/week during this time period. The dominant types of trash removed were small items.

Planned for Future Implementation between July 2014 and July 2022:

- The City plans to continue its existing trash patrolling program with an increased focus on the moderate trash generation parcels in TMAs 1 – 4. The City will implement enhanced record keeping to include estimated volume of small trash collected in early 2014.

► IMPROVED TRASH BIN/CONTAINER MANAGEMENT

Implemented Prior to and Continued After MRP Effective Date:

- Cigarette butt litter is a minor trash type (by number count) observed on City streets and sidewalks. Smoking is prohibited outside public areas and in City parks. Prior to the effective date of the MRP, the City did not add specialty cigarette butt bins within public areas or consider adopting an ordinance that requires specific types of businesses (e.g., restaurants, liquor stores, convenience stores, bars, night clubs, coffee shops, bus stops) to provide specialty cigarette butt bins for the proper disposal of cigarette butt litter.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- Required new or redeveloped properties to install covered trash container enclosures sloped to convey runoff to a sanitary sewer inlet.
- Given the low rate of cigarette butt littering, the City did not add specialty cigarette butt bins within public areas. Nor did it consider adopting an ordinance that would require specific types of businesses (e.g., restaurants, liquor stores, convenience stores, bars, night clubs, coffee shops, bus stops) to provide specialty cigarette butt bins for the proper disposal of cigarette butt litter during this time period.

Planned for Future Implementation between July 2014 and July 2022:

- The City plans to evaluate the following for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - To further reduce cigarette butt litter, the City will consider the development of an ordinance that requires specific types of businesses to provide specialty cigarette butt bins for the proper disposal of cigarette butt litter. Each business would be responsible for maintaining their specialty cigarette butt bins. The City would be responsible for enforcing non-compliance with installation and maintenance. Affected businesses would be required to install specialty cigarette butt bins by **July 1, 2019** if a decision is made to require such bins.

► SINGLE-USE CARRYOUT BAG POLICIES

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, the City did not have single-use carryout bag policies restricting the use of single-use carry-out bags by retailers,

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City Council added Chapter 8.09 (Reusable Bags) to Title 8 (Health and Safety) of the Foster City Municipal Code, effective April 22, 2013. The ordinance restricts the use of single-use carry-out bags by retailers, including grocery stores, convenience stores, pharmacies and other shops. “Single-use carry-out bag” means a bag other than a reusable bag provided at the check stand, cash register, point of sale or other point of departure, including department within a store, for the purpose of transporting food or merchandise out of the establishment. “Single-use carry-out bags” do not include bags without handles provided to the customer: (1) to transport prepared food, produce, bulk food, or meat from a department within a store to the point of sale; or (2) to segregate food or merchandise that could damage or contaminate other food or merchandise when placed together in a reusable bag or recycled paper bag. (Ord. 571 § 1 (part), 2013) The County of San Mateo Bag Ordinance was adopted by reference and became effective on April 22, 2013.
 - The County of San Mateo Environmental Health Division will enforce the Reusable Bag Ordinance within the City limits. To date, San Mateo County Environmental Health staff has not provided a status result of any enforcement activities. Additional information about the Countywide Bag Ban is available on the San Mateo County website at www.smchealth.org/ban.

Planned for Future Implementation between July 2014 and July 2022:

- The City will continue supporting Chapter 8.09 (Reusable Bags) of Title 8 (Health and Safety) of the Foster City Municipal Code.

► POLYSTYRENE FOAM FOOD SERVICE WARE POLICIES

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, the City did not have polystyrene foam food service ware policies restricting the use of polystyrene by food vendors,

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City of Foster City adopted an ordinance October 17, 2011 banning polystyrene foam food service ware at the point-of-sale effective April 1, 2012. The City adopted Chapter 8.08.010 of the Foster City Municipal Code that adopted San Mateo County Ordinance Code Chapter 4.107 by reference. Chapter 4.107, Prohibition on the Use of Polystyrene Based Disposable Food Service Ware by Food Vendors, of the San Mateo County Ordinance Code, and any amendment thereto, were thereby adopted and made effective in the City.
- Chapter 8.08.020 Authorization of enforcement by San Mateo County personnel was also adopted, authorizing the County of San Mateo, its officers, employees and agents to enforce, on behalf of the City, Chapter 4.107, Prohibition on the Use of Polystyrene Based Disposable Food Service Ware by Food Vendors, of the San Mateo County Ordinance Code, and any amendments thereto, within the jurisdiction areas of this city. Such enforcement authority includes, but is not limited to, the collection of fees and fines, expending such revenue in the enforcement of the prohibition on the use of polystyrene based disposable food service ware by food vendors, holding hearings, suspending permits and issuing administrative fines.

Planned for Future Implementation between July 2014 and July 2022:

- The City will continue enforcing Chapters 8.08.010 and 8.08.020 of the Foster City Municipal Code in coordination with San Mateo County personnel.

► PUBLIC EDUCATION AND OUTREACH PROGRAMS

Implemented Prior to and Continued After MRP Effective Date:

The City of Foster City implemented the following public education and outreach programs prior to the effective date of the MRP and has continued to implement these programs since MRP adoption.

SMCWPPP Public Information and Participation Program (Countywide)

Through participation and funding of the San Mateo Countywide Water Pollution Prevention Program’s (SMCWPPP) Public Information and Participation program (PIP), the City of Foster City plans to continue implementing litter reduction outreach to school-age children and youth. SCWPPP currently oversees a contract to provide direct outreach to grades K-5 in a school setting on behalf of all Permittees. The contract is currently held by the Banana Slug String Band, which performs a presentation called “We All Live Downstream.” Through songs and interactive exercises, the message of not putting anything in the storm drains (including trash) is delivered, along with basic concepts of the water cycle and the impact of pollution on aquatic life. In

addition, SMCWPPP has developed a presentation entitled “Water Pollution Prevention: Problems and Solutions that is delivered to high school students. This presentation is dedicated to watershed and storm drain education, and the impact of litter on local creeks and waterways. Both efforts are managed to ensure that schools in each community in the County are reached. For communities without High Schools, the feeder schools in neighboring communities are specifically targeted for presentations. In addition to outreach at the school sites, a number of student activity guides and coloring books related to watershed health and littering are provided to children who attend outreach events. Schools are also directly targeted in promotion of Coastal Cleanup Day.

PIP also participates in a regional anti-littering campaign developed by BASMAA targeted at youth ages 14 to 24. As acting chair of the BASMAA PIP committee, SMCWPPP PIP has participated in the development and dissemination of campaign materials, and has conducted local events on behalf of all jurisdictions to promote the campaign. The campaign, entitled “Be The Street You Want to See”, will soon transition from building a community of youth dedicated to not littering to engaging that community in action.

SMCWPPP, through its PIP program, plans to continue to conduct community outreach events on behalf of Permittees who request support. Outreach materials related to litter that are distributed include, in addition to the children’s materials listed above under Outreach to School-age Children or Youth, a promotional sign for cigarette smokers to discourage cigarette litter, and pocket ashtrays are given out. A general stormwater pollution prevention flyer in English and Spanish that includes litter reduction in its messaging is distributed.

In addition to table outreach events conducted for specific Permittees, PIP also conducts a Countywide Event aimed to reach residents from throughout the County. PIP manages an online calendar which promotes clean-up events by non-profit organizations throughout the County. In FY 2012, PIP completed its 7th year acting as the county coordinator for Coastal Cleanup Day, increasing volunteer participation by 400% in that time, and trash removal increased by 300%.

During the term of the MRP, new outreach materials have been disseminated to the public, including reusable shopping bags to encourage reduction in use of carryout plastic bags; PIP has supported a countywide ban on carryout bags that began implementation on April 22, 2013. In addition, spring cleanups taking place in individual jurisdictions are promoted under one theme by PIP, entitled Spring Cleaning SMC. PIP assists in directing volunteers to cleanup events in their communities. SMCWPPP conducted a total of 11 outreach events on behalf of various jurisdictions within the County in the FY 2012-2013. SMCWPPP will also continue maintaining an online calendar of cleanups on a monthly basis. In addition to using the SMCWPPP website, flowstobay.org, to promote cleanups, PIP is actively involved in social media platforms such as Facebook, Twitter, You Tube, and Instagram to deliver anti-littering and cleanup messages.

Coastal Cleanup Day Promotion (Countywide)

On the countywide level, SMCWPPP also conducts annual press releases for Coastal Cleanup Day, and uses Twitter to promote cleanup events. These releases are intended to gain support and assistance for cleanup events conducted each September in local water bodies.

BASMAA Regional Media Relations Project (Regional)

Through participation and funding of the **BASMAA Regional Media Relations Project**, the City of Foster City is continuing to implement a media relations project partially designed to reduce littering from target audiences in the Bay Area. The goal of the BASMAA Media Relations Project is to generate media coverage that encourages individuals to adopt behavior changes to prevent water pollution, including littering. At least two press releases or PSAs focus on litter issues each

year (e.g., creek clean-up activities, preventing litter by using reusable containers, etc.). In FY 2012-2013, the Media Relations project developed a press release new and recent bag bans in cities around the region. The pitch included information on the litter caused by plastic bags. Information ran on KBAY, KCBS and on eight Bay Area Patch.com sites.

Implemented after MRP Effective Date and Prior to July 1, 2014:

In addition to the public education and outreach programs implemented after the adoption of the MRP, the City is currently implementing or planning to implement the following public education and outreach control measures that were initiated after the MRP was adopted.

BASMAA Youth Outreach Campaign (Regional)

Through participation and funding of the regional **BASMAA Youth Outreach Campaign**, the City of Foster City is implementing an outreach campaign designed to reduce littering from the target audience in the Bay Area. The Youth Outreach Campaign was launched in September 2011 and aims to increase the awareness of Bay Area Youth (ages 16-24) on litter and stormwater pollution issues, and eventually change their littering behaviors. Combining the ideas of Community Based Social Marketing with traditional advertising, the Youth Campaign aims to engage youth to enable the peer-to-peer distribution of Campaign messages. The Campaign will at least run through FY 2013-2014. A brief description of the Campaign activities is provided below:

- **Raising Awareness:** The Campaign is raising awareness of the target audience on litter and stormwater pollution issues. Partnerships with youth commissions, high schools, and other youth focused organizations have been developed to reach the target audience. Messages targeted to youth have been created and distributed via paid advertising, email marketing, Campaign website and social networking sites (e.g., Facebook and Twitter).
- **Engage the Youth** - The advertisements encourage the audience to participate in the Youth Campaign by joining a Facebook page, entering a contest, taking an online quiz, etc., and providing their contact information. At the beginning of FY 2012-2013, a video contest was launched to get Bay Area youth further involved in the Campaign. An online voting system was used to select the winning entry. Media advertising was conducted to promote the winning entry.
- **Change Behaviors:** To move the audience along the behavior change continuum, the Campaign is using electronic platforms such as email marketing and social networking sites to encourage participants to engage in increasingly more difficult behavior changes, such as participating in a clean-up, organizing a clean-up, etc.
- **Maintain Engagement:** The Campaign continues to interact with the target audience through email marketing and social media websites.

The Youth Campaign includes a pre and post campaign survey to evaluate the effectiveness of outreach. The pre-campaign survey was conducted in FY 2011-2012 and the post campaign survey will begin in FY 2013-2014. Other evaluation mechanisms, such as website hits, number of youth engaged in the Campaign's social networking website, etc. are also being used to evaluate its effectiveness in increasing awareness and changing behavior.

Activities in FY 2012-2013 included maintaining the website www.BetheStreet.org, Facebook page, and Instagram account. A video contest asking participants to submit their best anti-litter video was also conducted. The "Be the Street" campaign received 52 entries in response to the contest. The winning video was promoted on television, Pandora (online music site), YouTube, Google, and Facebook.

Planned for Future Implementation between July 2014 and July 2022:

- Through participation and funding of the SMCWPPP's Public Information and Public Information and Participation program (PIP), the City will continue implementing SMCWPPP and BASMAA public education and outreach programs during this time period.

3.2.2 Trash Management Area #1

Trash Management Area #1 (TMA #1) includes approximately 37 acres of land bordered by portions of Highway 92 to the northwest, E. Hillsdale Boulevard to the southwest, Foster City Boulevard to the southeast, and the Foster City Lagoon to the north east. Visual on-land assessments conducted by City staff and consultants within TMA #1 indicate that essentially 100% of the jurisdictional area is considered a medium trash generating area. TMA #1 includes a large portion of the commercial district and contains mostly retail and commercial land uses (four fast food restaurants) with some office buildings and with residential adjacent to these land uses. Full-capture devices have not been installed within TMA #1. To date, street sweeping and on-land clean-ups have been implemented to address trash. Most of the area is privately owned. Portions of the area are scheduled for redevelopment into mixed use (small office buildings with downstairs retail). TMA #1 has been identified as the first priority for the City due to having the highest level of trash generation of the TMAs.

► FULL-CAPTURE TREATMENT DEVICES

Implemented Prior to and Continued After MRP Effective Date:

- The City did not install any full-capture devices within TMA #1 prior to the effective date of the MRP.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City did not install any full-capture devices within TMA #1 during this time.

Planned for Future Implementation between July 2014 and July 2022:

- The City has plans to install one moderate size full-capture device servicing approximately a five acre area within the northwest portion of TMA #1. This requirement is in the conditions of approval for the redevelopment. The area has multiple fast food restaurants and portions are also proposed to be redeveloped during this time period. The device would treat flow from this area before it enters the Lagoon.
- TMA #1 is the highest trash generating area within the City. The City plans to evaluate the following for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - As part of the planned redevelopment of other portions of TMA #1, City will evaluate and determine the feasibility of installing additional moderate size full-capture devices (i.e., hydrodynamic separators or gross solids removal devices) to treat trash loads generated within TMA #1. If it is determined to be feasible and resources are available, the City will install one or more additional moderate size full-capture devices to treat some or all of the remainder of TMA #1 by **July 1, 2020**.

► STREET SWEEPING

Implemented Prior to and Continued After MRP Effective Date:

- The City implemented and continues to maintain a very comprehensive street sweeping program operated by a contractor (see more detailed discussion in Section 1.2.3 Short-term Plan above). The City's program includes once every other week sweeping of streets in residential areas, and weekly sweeping of large arterial roads (e.g., Metro Center Boulevard, Foster City Boulevard, E. Hillsdale Boulevard). In apartment complexes temporary signs are put up 48 hours in advance of sweeping to provide maximum access to the curb area.
- Street sweeping funding is included in the garbage collection rates so there is a stable and reliable source of funding.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- No additional street sweeping was implemented within TMA #1 during this time period. The street sweeping program has been designed to maximize effectiveness.
- The contractor by July 1, 2014 will be installing GPS units in the street sweepers to record route logs, parked cars/trees and such blocking access to the curb, increased trash generation areas, etc. This information will be used to determine the need for and potential benefits from further enhancements to the street sweeping program.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to increase street sweeping frequency within TMA #1 during this time period. However, the City plans to evaluate the following for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - Depending on the effectiveness of the GPS data collected by the street sweepers, consider the use of cameras mounted on sweepers to monitor sweeper effectiveness and to photograph license plates of cars parked in violation of posted signage or equivalent red curbs. Implementation will begin by **July 1, 2019** if a decision is made to use cameras on street sweepers.
 - The City will conduct visual on-land trash assessment of individual parcels within TMA #1 to monitor the rates of trash generation and the effectiveness of individual property owner's trash management activities. The City will determine if there are other feasible measures to be conducted, or existing measures to be enhanced (e.g., more frequent or more intensive parking lot sweeping and/or on-land trash pick-up) by the property owners. Implementation will begin by **July 1, 2019** if a decision is made to require owners to implement new measures (towards the goal of achieving "no adverse impacts") via enforcement of trash management requirements in their conditional use business permits.
 - As redevelopment progresses and increased multi-story residential units are constructed and occupancy increases, it is expected that trash generation will decrease to a low rate by 2017. Visual assessments will be conducted to verify this change.

► **ON-LAND CLEANUPS**

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, two employees had been patrolling and removing trash as needed during part of their rounds five days/week (Monday/Friday) on public areas adjacent to the privately owned TMA #1 parcels.
- City staff are not authorized to conduct on-land cleanups within the privately owned TMA #1 parcels.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- On-land cleanup activities continued within TMA #1. The City did not implement additional on-land cleanups during this time period since existing on-land cleanup efforts are already conducted five days/week (Monday/Friday).

Planned for Future Implementation between July 2014 and July 2022:

- Existing on-land cleanup activities will continue within TMA #1. The City has no additional on-land cleanups planned for TMA #1 since existing on-land cleanup efforts of City lands are already conducted five days/week (Monday/Friday). The majority of land area within TMA #1 will become privately owned during this time period.
- The City will conduct visual on-land trash assessment of individual parcels within TMA #1 to monitor the rates of trash generation and the effectiveness of individual property owner's trash management activities. The City will determine if there are other feasible measures to be conducted, or existing measures to be enhanced (e.g., more frequent on-land trash pick-up) by the property owners. Implementation will begin by **July 1, 2019** if a decision is made to require owners to implement new measures (towards the goal of achieving "no adverse impacts") via enforcement of trash management requirements in their conditional use permits.

► **IMPROVED TRASH BIN/CONTAINER MANAGEMENT**

Implemented Prior to and Continued After MRP Effective Date:

- The City's trash hauler, Recology, and private property owners, service trash containers and remove accumulated trash daily. Additional trash collection occurs by request of the owner or by notification to Recology of overflowing bins within TMA #1.
- The City has worked and will continue to work with Recology to identify businesses that do not subscribe to trash collection services by comparing Recology's list of subscribers with the City's business license list. The implementation of this monitoring program has resulting in few overflowing trash bins.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- There are no public trash bins/containers in TMA #1. The number of private trash bins is adequate to manage the volume of trash generated by customers.
- The City continued working with Recology during this time period to identify businesses that either did not subscribe to trash collection services or were not maintaining adequate capacity trash containers.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to add any public trash bins within TMA #1 during this time period. However, they are open to adding public trash bins in the future based on property owner, transit authority or other City department request.
- The City will continue working with Recology in the future to identify businesses that either did not subscribe to trash collection services or were not maintaining adequate capacity trash containers. The City will enforce these requirements as needed through existing conditions in businesses conditional use permits.

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Figure 7. Trash Full Capture Device Map for the City of Foster City.

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3.2.3 Trash Management Area #2

Trash Management Area #2 (TMA #2) consists of six discrete privately owned commercial parcels covering approximately 39 acres of land located within the general area bordered by E. Hillsdale Boulevard on the south, Foster City Boulevard on the east, and the City boundary along the north and west. Visual on-land assessments conducted by City staff and consultants within the TMA #2 parcels indicate that nearly 99% of the jurisdictional area is considered a medium trash generating area and the remaining 1 % a low generating area. The six individual parcels within TMA #2 include a supermarket (2A), wholesale retailer (2B), restaurant being rezoned for a hotel (2C), restaurant (2D), hotel (2E), and a drive through car wash with gas pumps (2F). To date, street sweeping and on-land clean-ups have been implemented within these parcels by the property owners and on adjacent City streets by City staff and the street sweeping contractor to address trash.

► FULL-CAPTURE TREATMENT DEVICES

Implemented Prior to and Continued After MRP Effective Date:

- The City did not install any full-capture devices addressing the individual TMA # 2 parcels prior to the effective date of the MRP.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City is in the process of investigating the feasibility of sites for installing a medium size full-capture device in the northern area of the City where Foster City Boulevard abuts the Vintage Street Channel, a concrete lined channel leading easterly to the Foster City Lagoon. A device installed in this area would intercept trash generated by TMAs 2C, 2D, 2E, and 2F entering the storm drainage system, and not otherwise retained and removed from catch basins. Those four parcels represent approximately 18.5 acres.

Planned for Future Implementation between July 2014 and July 2022:

- The City will continue inspecting and maintaining the proposed full-capture device serving TMAs 2C, 2D, 2E, and 2F to ensure proper performance. The City does not plan on installing additional medium size full-capture devices in TMA #2 since TMAs 2A and 2B are isolated parcels; unless it can be shown that 2A and 2B drain to a common storm drain and that it would be more cost-effective to install another medium full-capture size device than multiple small devices to serve both those areas.
- Parcel 2C is scheduled for redevelopment and the City will pursue requiring addition of full capture device(s), or equivalent as a condition of approval.

► PARTIAL-CAPTURE TREATMENT DEVICES

Implemented Prior to and Continued After MRP Effective Date:

- The City did not install any partial-capture devices prior to the effective date of the MRP.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City does not plan to require installation of any partial-capture devices in the TMA #2 parcels prior to July 1, 2014.

Planned for Future Implementation between July 2014 and July 2022:

- The City will work with private property owners to determine the need for, and if justified, options for enhanced street sweeping and on-land trash pick-up on parcels 2A – 2F. If these measures prove inadequate, the City will work with the private property owners to identify locations where partial capture devices will be required to be installed via enforcement of trash management requirements of their conditional use business permits.

► **STREET SWEEPING**

Implemented Prior to and Continued After MRP Effective Date:

- The City implemented and continues to maintain a very comprehensive street sweeping program operated by a contractor on public streets adjacent to TMAs 2A – 2F (see more detailed discussion in Section 1.2.3 Short-term Plan above). The City’s program includes sweeping streets in residential areas once every other week, and weekly sweeping of large arterial roads (e.g., Metro Center Boulevard, Foster City Boulevard, Hillsdale Boulevard). In apartment complexes temporary signs are put up 48 hours in advance of sweeping to provide maximum access to the curb area.
- Street sweeping funding is included in the garbage collection rates so there is a stable and reliable source of funding.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- No additional street sweeping was implemented on public streets adjacent to TMAs 2A – 2F during this time period. The street sweeping program has been designed to maximize effectiveness.
- The contractor by July 1, 2014 will be installing GPS units in the street sweepers to record route logs, parked cars/trees and such blocking access to the curb, increased trash generation areas, etc. This information will be used to determine the need for and potential benefits from further enhancements to the street sweeping program.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to increase street sweeping frequency adjacent to the six TMA #2 parcels during this time period. However, the City plans to evaluate the following for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - Depending on the effectiveness of the GPS data collected by the street sweepers, consider the use of cameras mounted on sweepers to monitor sweeper effectiveness and to photograph license plates of cars parked in violation of posted signage or equivalent red curbs. Implementation will begin by **July 1, 2019** if a decision is made to use cameras on street sweepers.
 - The City will conduct more frequent parking lot inspections and visual on-land trash assessment of individual parcels within TMA #2 to monitor the rates of trash generation and the effectiveness of individual property owner’s trash management activities. The City will determine if there are other feasible measures to be conducted, or existing measures to be enhanced (e.g., more frequent or more intensive parking lot sweeping) by the property owners. Implementation will begin by **July 1, 2019** if a decision is made to require owners to implement new measures (towards the goal of achieving “no

adverse impacts”) via enforcement of trash management requirements in their conditional use business permits.

► **ON-LAND CLEAN-UPS**

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, two employees had been patrolling and removing trash as needed during part of their rounds five days/week on public areas adjacent to the six privately owned TMA #2 parcels.
- City staff are not authorized to conduct on-land cleanups within the privately owned TMA #2 parcels.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- On-land cleanup activities continued as needed on public areas adjacent to the privately owned TMA #2 parcels. The City did not implement additional on-land cleanups during this time period since existing on-land cleanup efforts are already conducted five days/week (Monday/Friday).

Planned for Future Implementation between July 2014 and July 2022:

- Existing on-land cleanup activities will continue as needed on public areas adjacent to the privately owned TMA #2 parcels. The City has no additional on-land cleanups planned since existing on-land cleanup efforts provide an adequate level of effort to achieve “no adverse impact”.
- The City plans to evaluate the following on-land cleanup effort for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - The City will conduct visual on-land trash assessments of the individual privately owned TMA 2A – 2F parcels to monitor the rates of trash generation and the effectiveness of individual property owner’s trash management activities. The City will determine if there are other feasible measures to be conducted, or existing measures to be enhanced (e.g., more frequent or more intensive on-land trash pick-up) by the property owners. Implementation will begin by **July 1, 2019** if a decision is made to require owners to implement new measures (towards the goal of achieving “no adverse impacts”) via enforcement of trash management requirements in their conditional use business permits.

3.2.4 Trash Management Area #3

Trash Management Area #3 (TMA #3) consists of four discrete privately owned commercial parcels covering approximately 25.7 acres of land located within the primarily residential area of the City south and east of E. Hillsdale Boulevard. Visual on-land assessments conducted by City staff and consultants within the four TMA #3 parcels indicate that essentially 100% of the jurisdictional area is considered as a medium trash generating area. The parcels are each surrounded by low trash generating areas including residences, parks, schools, and churches. TMAs 3A, 3B, 3C, and 3D are all supermarkets with small retail and associated parking lot areas. To date, street sweeping and on-land clean-ups have been implemented within these parcels by the property owners, and on adjacent City streets by City staff and the street sweeping contractor.

► FULL-CAPTURE TREATMENT DEVICES

Implemented Prior to and Continued After MRP Effective Date:

- The City did not require installation of any full-capture devices addressing the individual TMA #3 parcels prior to the effective date of the MRP.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City does not plan to require installation of any full-capture devices addressing the individual TMA #3 parcels prior to July 1, 2014.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to require installation of any full-capture devices addressing the individual TMA #3 parcels prior to July 2022.
- Parcels 3A, 3B, and 3D may be redeveloped. If so, the City will pursue requiring addition of full capture device(s) or equivalent, as a condition of redevelopment approval.

► PARTIAL-CAPTURE TREATMENT DEVICES

Implemented Prior to and Continued After MRP Effective Date:

- The City did not install any partial-capture devices prior to the effective date of the MRP.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City does not plan to install any partial-capture devices addressing the individual TMA #3 parcels prior to July 1, 2014.

Planned for Future Implementation between July 2014 and July 2022:

- The City will work with private property owners to determine the need for, and if justified options for enhanced street sweeping and on-land trash pick-up on parcels 3A – 3D. If these measures prove inadequate, the City will work with the private property owners to identify locations where partial-capture (or potentially full-capture) devices will be required to be installed via enforcement of trash management requirements of their conditional use business permits.
- Parcels 3A, 3B, and 3D may be redeveloped. If so, the City will pursue requiring at a minimum addition of partial-capture device(s) with enhanced parking lot sweeping and clean-up as a condition of redevelopment approval.

► **STREET SWEEPING**

Implemented Prior to and Continued After MRP Effective Date:

- The City implemented and continues to maintain a very comprehensive street sweeping program operated by a contractor on public streets adjacent to TMAs 3A – 3D (see more detailed discussion in Section 1.2.3 Short-term Plan above). The City’s program includes sweeping streets in residential areas once every other week, and weekly sweeping of large arterial roads (e.g., Edgewater Boulevard, Shell Boulevard, Foster City Boulevard, and E. Hillsdale Boulevard). In apartment complexes temporary signs are put up 48 hours in advance of sweeping to provide maximum access to the curb area.
- Street sweeping funding is included in the garbage collection rates so there is a stable and reliable source of funding.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- No additional street sweeping was implemented on public streets adjacent to TMAs 3A – 3D during this time period. The street sweeping program has been designed to maximize effectiveness.
- The contractor by July 1, 2014 will be installing GPS units in the street sweepers to record route logs, parked cars/trees and such blocking access to the curb, increased trash generation areas, etc. This information will be used to determine the need for and potential benefits from further enhancements to the street sweeping program.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to increase street sweeping frequency adjacent to the four TMA #3 parcels during this time period. However, the City plans to evaluate the following for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - Depending on the effectiveness of the GPS data collected by the street sweepers, consider the use of cameras mounted on sweepers to monitor sweeper effectiveness and to photograph license plates of cars parked in violation of posted signage or equivalent red curbs. Implementation will begin by **July 1, 2019** if a decision is made to use cameras on street sweepers.
 - The City will conduct visual on-land trash assessment of individual parcels within TMA #3 to monitor the rates of trash generation and the effectiveness of individual property owner’s trash management activities. The City will determine if there are other feasible measures to be conducted, or existing measures to be enhanced (e.g., more frequent or more intensive parking lot sweeping) by the property owners. Implementation will begin by **July 1, 2019** if a decision is made to require owners to implement new measures (towards the goal of achieving “no adverse impacts”) via enforcement of trash management requirements in their conditional use business permits.

► **ON-LAND CLEAN-UPS**

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, two employees had been patrolling and removing trash as needed during part of their rounds five days/week on public areas adjacent to the four privately owned TMA #3 parcels.

- City staff are not authorized to conduct on-land cleanups within the privately owned TMA #3 parcels.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- On-land cleanup activities continued as needed on public areas adjacent to the privately owned TMA #3 parcels. The City did not implement additional on-land cleanups during this time period since existing on-land cleanup efforts are already conducted five days/week (Monday/Friday).

Planned for Future Implementation between July 2014 and July 2022:

- Existing on-land cleanup activities will continue on public areas adjacent to the privately owned TMA #3 parcels. The City has no additional on-land cleanups planned since existing on-land cleanup efforts provide an adequate level of effort to achieve “no adverse impact”.
- The City plans to evaluate the following on-land cleanup effort for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - The City will conduct visual on-land trash assessments of the individual privately owned TMA#3 parcels to monitor the rates of trash generation and the effectiveness of individual property owner’s trash management activities. The City will determine if there are other feasible measures to be conducted, or existing measures to be enhanced (e.g., more frequent or more intensive on-land trash pick-up) by the property owners. Implementation will begin by **July 1, 2019** if a decision is made to require owners to implement new measures (towards the goal of achieving “no adverse impacts”) via enforcement of trash management requirements in their conditional use business permits.

3.2.5 Trash Management Area #4

Trash Management Area #4 (TMA #4) consists of the portion of Metro Center Boulevard extending from Foster City Boulevard to Edgewater Boulevard covering approximately 7.3 acres of land located south of and running parallel to Highway 92. Visual on-land assessments conducted by City staff and consultants within TMA #4 indicate that essentially 100% of the jurisdictional area is considered a medium trash generating area. The street is bordered by a medium trash generating wholesale retailer (TMA 2B) and Caltrans on/off ramps to the north, and to the south by low trash generating moderate and high-rise office buildings, parking garages, and residential developments. To date, street sweeping and on-land clean-ups have been implemented along Metro Center Boulevard at least weekly by City staff and the street sweeping contractor to address trash.

The City believes, based on trash patrols during routine rounds by staff, that the majority of trash observed in TMA #4 is likely generated within TMA #2B and to a lesser extent the southerly portion of TMA #1. The City believes that the measures proposed above to address TMAs #1 and #2A, when implemented, should reduce the occurrence of trash in TMA #4 to a low generation level. In essence, TMA #4 is a “receptor” of trash rather than an independent generator of trash. As such, it is believed that the existing management measures for TMA #4 (i.e. weekly street sweeping and as needed on-land clean-up five days per week), following implementation of the additional measures planned for TMAs #2B and #1, should bring TMA #4 to the “no visual impact” level. The City reports to Caltrans observations of trash accumulation within the on/off ramps and rights-of-way, but the City has no access to Caltrans property and limited control over the timing of Caltrans response to requests for trash clean-up.

► **FULL-CAPTURE TREATMENT DEVICES**

Implemented Prior to and Continued After MRP Effective Date:

- The City did not install any full-capture devices addressing TMA #4 prior to the effective date of the MRP.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City does not plan to install any full-capture devices addressing TMA #4 prior to July 1, 2014.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to install any full-capture devices addressing TMA #4 prior to July 2022.

► **PARTIAL-CAPTURE TREATMENT DEVICES**

Implemented Prior to and Continued After MRP Effective Date:

- The City did not install any partial-capture devices prior to the effective date of the MRP.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The City does not plan to install any partial-capture devices addressing TMA #4 prior to July 1, 2014.

Planned for Future Implementation between July 2014 and July 2022:

- The City will work with private property owners to determine the need for, and if justified options for enhanced street sweeping and on-land trash pick-up within TMA parcels 2B and the southerly portion of TMA #1 abutting Metro Center Boulevard. If these measures prove inadequate, the City will work with the private property owners to identify locations where partial-capture devices will be required to be installed via enforcement of trash management requirements of their conditional use business permits.
- After installation of partial-capture devices in TMA #2B and/or contributing portions of TMA #1, if visual trash assessments confirm a continued generation/accumulation of medium or greater amounts of trash in TMA #4, the City will pursue installation of partial-capture devices at appropriate locations along Metro Centro Boulevard.

► **STREET SWEEPING**

Implemented Prior to and Continued After MRP Effective Date:

- The City implemented and continues to maintain a very comprehensive street sweeping program operated by a contractor on public streets, including weekly sweeping of large arterial roads such as Metro Center Boulevard (see more detailed discussion in Section 1.2.3 Short-term Plan above).
- Street sweeping funding is included in the garbage collection rates so there is a stable and reliable source of funding.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- No additional street sweeping was implemented within TMA #4 during this time period. The street sweeping program has been designed to maximize effectiveness.
- The contractor by July 1, 2014 will be installing GPS units in the street sweepers to record route logs, parked cars/trees and such blocking access to the curb, increased trash generation areas, etc. This information will be used to determine the need for and potential benefits from further enhancements to the street sweeping program.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to increase street sweeping frequency within TMA #4 during this time period unless visual assessments document a continued moderate or greater level of trash generation/accumulation.
- However, the City plans to evaluate the following for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - Depending on the effectiveness of the GPS data collected by the street sweepers, consider the use of cameras mounted on sweepers to monitor sweeper effectiveness and to photograph license plates of cars parked in violation of posted signage or equivalent red curbs. Implementation will begin by **July 1, 2019** if a decision is made to use cameras on street sweepers.

► ON-LAND CLEAN-UPS

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, two employees had been patrolling and removing trash as needed during part of their rounds five days/week along TMA #4.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- On-land cleanup activities continued as needed along TMA #4. The City did not implement additional on-land cleanups during this time period since existing on-land cleanup efforts are already conducted five days/week (Monday/Friday).

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to increase on-land clean-up frequency within TMA #4 during this time period unless visual assessments document a continued moderate or greater level of trash generation/accumulation.
- It is assumed that existing on-land cleanup efforts will be an adequate level of effort to achieve “no adverse impact” once the measures planned for TMAs 2B and #1 are implemented.

3.2.4 Trash Management Area #5

Trash Management Area #5 (TMA #5) includes the low trash generation areas within the City that are not included in any other trash management area. The area covers approximately 2,187 acres (over 95 % of the City’s jurisdictional area) and is mostly comprised of residential areas, office buildings, corporate campuses, high rises, city buildings, and parking garages and lots. TMA #5 also includes parks, churches and schools located at multiple locations within the City, generally south and east of E. Hillsdale Boulevard.

The entire area benefits from jurisdictional-wide efforts which include single-use carryout bag and polystyrene foam food service ware policies, and public outreach and education programs. This area is the City’s lowest priority due to having a low trash generation rate. As such, the City believes that there would be no discernible water quality benefit to installing full or partial-capture devices at locations within TMA #5, and has no plans to do so.

The City is considering implementing a pilot project to add enhanced (5 mm) screening across a portion of the bar racks in front of the stormwater pump station at the northerly end of Foster City Lagoon. This trash rack enhanced screening would perform equivalently to a full-capture device for removing any trash generated throughout the City that reached the Lagoon. Based on past experience, only a small amount of trash has been conveyed to and captured at the stormwater pump station. The intent of the pilot project would be to track the amount of trash collected by the enhanced screening to see if it would be significant enough to justify the expenditure of adding enhanced screening across the entire width of the pump station bar rack.

The City realizes that this stormwater pump station enhanced screening would be a somewhat unique full-capture device and is interested in pursuing further discussions with RWB staff about how it could potentially serve to fulfill some of the City’s MRP Provision C.10 requirements.

The City proposes to continue its existing street sweeping, on-land cleanup, and trash bin/container management practices that have been effective in maintaining low trash generation rates in TMA #5. There are no significant trash hot spots or illegal dumping areas throughout the City. There are only incidental amounts of trash picked up by Public Works staff. Trash removal is a high priority for City Parks Department staff and trash observed within the parks is promptly removed. Park trash containers are generally serviced daily and immediately after the conclusion of public events with more than 10 people. The Parks Department maintains approximately 326 trash cans and 101 recycling cans within the parks and associated levees. School Department staff are responsible for trash management at the four City schools and school yards.

The City’s contract trash hauler responds to calls about trash spilled during pick-up days and sends out a separate truck to pick-up that spilled trash. The several private corporate campuses in the City are very meticulous about maintaining their properties and have their own staff or contractors to maintain the campuses, including trash pickup and removal. There are approximately 48 Home Owners Associations in the City that are also meticulous about maintaining their properties and typically contract out their property maintenance (generally done weekly).

A brief summary of current and proposed continued trash management practices for TMA #5 is provided below.

► STREET SWEEPING

Implemented Prior to and Continued After MRP Effective Date:

- The City implemented and continues to maintain a very comprehensive street sweeping program operated by a contractor on public streets, including weekly sweeping of large arterial roads such as Metro Center Boulevard (see more detailed discussion in Section 1.2.3 Short-term Plan above).
- Street sweeping funding is included in the garbage collection rates so there is a stable and reliable source of funding.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- No additional street sweeping was implemented within TMA #5 during this time period. The street sweeping program has been designed to maximize effectiveness.
- The contractor by July 1, 2014 will be installing GPS units in the street sweepers to record route logs, parked cars/trees and such blocking access to the curb, increased trash generation areas, etc. This information will be used to determine the need for and potential benefits from further enhancements to the street sweeping program.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to increase street sweeping frequency within TMA #5 during this time period unless visual assessments document a consistent increased level of trash generation/accumulation.
- However, the City plans to evaluate the following for potential implementation. A decision regarding implementation will be made by **July 1, 2017**.
 - Depending on the effectiveness of the GPS data collected by the street sweepers, consider the use of cameras mounted on sweepers to monitor sweeper effectiveness and to photograph license plates of cars parked in violation of posted signage or equivalent red curbs. Implementation will begin by **July 1, 2019** if a decision is made to use cameras on street sweepers.

► ON-LAND CLEAN-UPS AND TRASH BIN/CONTAINER MANAGEMENT

Implemented Prior to and Continued After MRP Effective Date:

- Prior to the effective date of the MRP, two Public Works Department employees had been patrolling and removing trash as needed during part of their rounds five days/week whenever they had occasion to be within areas of TMA #5. Parks Department staff had been responsible for on-land cleanups and trash bin/container emptying generally on a daily basis at City Parks and at City owned buildings (e.g., City Hall). Foster City/San Mateo County School Department staff had conducted on-land cleanups of school property daily during the school week (Monday-Friday) at the three City elementary schools and one middle school. On occasion, school personnel removed litter within the roadway. On-land cleanups have been an effective control measure for reducing trash at schools.

Implemented after MRP Effective Date and Prior to July 1, 2014:

- The above on-land clean-up and trash bin/container management activities continued as needed within TMA #5. The City did not implement additional on-land cleanups during this time period since existing on-land cleanup efforts are already conducted a minimum five days/week (Monday/Friday), generally daily at parks, and on school days at schools.

Planned for Future Implementation between July 2014 and July 2022:

- The City does not plan to increase on-land clean-up and trash bin/container management activities frequencies within TMA #5 during this time period unless visual assessments document a sustained increase in level of trash generation/accumulation.

- It is assumed that the existing levels of public and private efforts are adequate to maintain a “no adverse impact” level of trash generation in TMA #5. The trash condition of public and private areas will be confirmed via assessments described in Section 4.0.

3.2.5 Creek and Shoreline Hot Spot Cleanups

The City has one creek hot spot (i.e. FCY01) located on Foster City Lagoon at the edge of Sea Cloud Drive and adjacent to Sea Cloud Park, as indicated on the Trash Generation, Trash Management Area, and Full Capture Device maps included within this Plan. The trash found in this location can be attributed to miscellaneous litter that accumulates in this “corner” of the Lagoon carried by the prevailing winds from the west and southwest. The lagoon hot spot is cleaned once/year in compliance with Permit Provision C.10.b. iii of the MRP. Approximately 100 gallons of uncompacted trash is removed from this site annually and consists mainly of water bottles, tennis balls, and plastic materials. Cleanups have been occurring bimonthly since the adoption of the MRP.

Weekly the City also inspects and removes any observed trash from eight additional shoreline along the southeasterly (downwind) side of the Lagoon. The amounts of trash collected are typically negligible. The City also conducts weekly inspections by boat of the Lagoon for trash and related debris (e.g., tree limbs) from March 15th through October 15th and biweekly and/or prior to major storms the remainder of the year.

3.2.6 Summary of Trash Control Measures

Jurisdiction-wide Control Measures

- On-land cleanups (currently implemented)
- Improved trash bin/container management (currently implemented)
- Single-use carryout bag policy (currently implemented)
- Polystyrene foam food service ware policy (currently implemented)
- Public education and outreach programs (currently implemented)

The implementation of jurisdiction-wide trash control measures are expected to achieve the trash reduction goal of “No Visual Impact” by July 1, 2022.

Trash Management Area #1 (Mainly Privately Owned Parcels)

- Medium full-capture treatment device (considered for future implementation)
- Street sweeping with equivalent parking enforcement (currently implemented)
- Use of cameras on sweepers (considered for future implementation)
- On-land cleanups (currently implemented)
- Improved trash bin/container management (currently implemented)

The implementation of current and planned trash control measures are expected to achieve the trash reduction goal of “No Visual Impact” within Trash Management Area #1 by July 1, 2022.

Trash Management Area #2A-2F (Privately Owned Parcels)

- Medium full-capture treatment device (considered for future implementation)
- Street sweeping with equivalent parking enforcement (currently implemented)
- Use of cameras on sweepers (considered for future implementation)

- On-land cleanups (currently implemented)
- Enhanced on-land cleanups and parking lot sweeping at privately owned TMAs #2A-2F (considered for future implementation)
- Partial-capture treatment devices at privately owned TMAs #2A-2F (considered for future implementation)

The implementation of current and planned trash control measures are expected to achieve the trash reduction goal of “No Visual Impact” within Trash Management Area #2 by July 1, 2022.

Trash Management Area #3A-3D (Privately Owned Parcels)

- Street sweeping with parking enforcement equivalent (currently implemented)
- Use of cameras on sweepers (considered for future implementation)
- Enhanced on-land cleanups and parking lot sweeping at privately owned TMAs #3A-3D (considered for future implementation)
- Partial-capture treatment devices at privately owned TMAs #3A-3D (considered for future implementation)

The implementation of current and planned trash control measures are expected to achieve the trash reduction goal of “No Visual Impact” within Trash Management Area #3 by July 1, 2022.

Trash Management Area #4 (Metro Center Boulevard Segment)

- Street sweeping (currently implemented)
- Use of cameras on sweepers (considered for future implementation)
- On-land cleanups (currently implemented)
- Partial-capture devices (considered for future implementation if TMA #2B and #1 enhanced sweeping and on-land pick-up ineffective at reducing trash conveyed to TMA #4)

The implementation of current and planned trash control measures are expected to achieve the trash reduction goal of “No Visual Impact” within Trash Management Area #4 by July 1, 2022.

Trash Management Area #5 (Low Trash Generation Remainder of City)

- Street sweeping (currently implemented)
- Use of cameras on sweepers (considered for future implementation)
- On-land cleanups and trash bin/container management (currently implemented)

The implementation of current and planned trash control measures are expected to achieve the trash reduction goal of “No Visual Impact” within Trash Management Area #5 by July 1, 2022.

Creek Hot Spot Cleanups

- Annual MRP-required creek hot spot cleanups (currently implemented)

The implementation of creek hot spot cleanups are expected to achieve the trash reduction goal of “No Visual Impact” by July 1, 2022.

3.3 Control Measure Implementation Schedule

Based on current knowledge of trash control measure effectiveness and characteristics of the City's TMAs, the following schedule for control measure implementation has been proposed. The City considers this Plan and schedule as a working guide. As such, the City may, at its discretion, modify or reprioritize trash control measure implementation during the term of this Plan. Any changes to the trash control measures proposed or to the implementation timeframe will be reported through the annual report process.

Table 7. City of Foster City trash control measure implementation schedule.

Trash Management Area and Control Measures	Pre-MRP	Short-Term					Long-Term							
		FY 2009-2010	FY 2010-2011	FY 2011-2012	FY 2012-2013	FY 2013-2014 ^a	FY 2014-2015	FY 2015-2016	FY 2016-2017 ^b	FY 2017-2018	FY 2018-2019	FY 2019-2020 ^d	FY 2020-2021 ^e	FY 2021-2022 ^c
Jurisdiction-wide Control Measures														
On-land Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Improved Trash Bin/Container Management												X	X	X
Single-use Carryout Bag Policies					X	X	X	X	X	X	X	X	X	X
Polystyrene Foam Food Service Ware Policies				X	X	X	X	X	X	X	X	X	X	X
Public Education and Outreach Programs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #1 (Mainly Privately Owned Parcels)														
Full-Capture Devices							X	X	X	X	X	X	X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
On-land Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Improved Trash Bin/Container Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #2A-2F (Privately Owned Parcels)														
Full-Capture Devices							X	X	X	X	X	X	X	X
Partial-Capture Devices													X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
On-land Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #3A-3D (Privately Owned Parcels)														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Partial-Capture Devices													X	X
On-land Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #4 (Metro Center Boulevard Segment)														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Trash Management Area and Control Measures	Pre-MRP	Short-Term					Long-Term							
		FY 2009-2010	FY 2010-2011	FY 2011-2012	FY 2012-2013	FY 2013-2014 ^a	FY 2014-2015	FY 2015-2016	FY 2016-2017 ^b	FY 2017-2018	FY 2018-2019	FY 2019-2020 ^d	FY 2020-2021 ^e	FY 2021-2022 ^c
On-land Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Partial-Capture Devices													X	X
TMA #5 (Low Trash Generation Remainder of City)														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
On-land Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lagoon Hot Spot Cleanups														
On-land Cleanup		X	X	X	X	X	X	X	X	X	X	X	X	X

^aJuly 1, 2014 - 40% trash reduction target

^bJuly 1, 2017 - 70% trash reduction target

^cJuly 1, 2022 - 100% trash reduction target

^dCigarette butt ordinance adopted if required

^ePartial capture devices installed if enhanced street sweeping and on-land pick-up insufficient to reach low trash generation rate

4. PROGRESS ASSESSMENT STRATEGY

Provision C.10.a.ii of the MRP requires Permittees to develop and implement a trash load reduction tracking method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction targets. Early into the MRP, Permittees decided to work collaboratively to develop a trash load reduction tracking method through the Bay Area Stormwater Management Agencies Association (BASMAA). Permittees, Water Board staff and other stakeholders assisted in developing Version 1.0 of the tracking method. On behalf of all MRP Permittees, the Bay Area Stormwater Management Agencies Association (BASMAA) submitted Version 1.0 to the Water Board on February 1, 2012.

The Trash Assessment Strategy (Strategy) described in this section is intended to serve as Version 2.0 of the trash tracking method and replace version 1.0 previously submitted to the Water Board. The Strategy is specific to Permittees participating in the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), including the City of Foster City. The City intends to implement the Strategy in phases and at multiple geographical scales (i.e., jurisdiction-wide and trash management area) in collaboration with SMCWPPP. Pilot implementation is scheduled for the near-term and as assessment methods are tested and refined, the Strategy will be adapted into a longer-term approach. The Strategy selected by the City is described in the following sections.

4.2 SMCWPPP Pilot Assessment Strategy

The following SMCWPPP Pilot Trash Assessment Strategy (SMCWPPP Pilot Strategy) was developed by SMCWPPP on behalf of the City and other San Mateo County Permittees. The SMCWPPP Pilot Strategy will be implemented at a pilot scale on a countywide basis and includes measurements and observations in the City of Foster City.

4.2.4 Management Questions

The SMCWPPP Pilot Strategy is intended to answer the following core management questions over time as trash control measures outlined in section 3.0 are implemented and refined:

- Are the MS4 trash load reduction targets (i.e., 40%, 70%, and No Adverse Impacts) being achieved?
- Are there trash problems in receiving waters (e.g., creeks and rivers)?
- If trash problems in receiving waters exist, what are the important sources and transport pathways?

The SMCWPPP Pilot Strategy, including indicators and methods, is summarized in this section and fully described in the SMCWPPP Pilot Trash Assessment Strategy, a compendium document submitted to the Water Board on February 1, 2014 on behalf of all SMCWPPP Permittees (SMCWPPP 2014).

4.2.5 Indicators of Progress and Success

The management questions listed in the previous section will be addressed by tracking information and collecting data needed to report on a set of key environmental indicators. Environmental indicators are simple measures that communicate what is happening in the environment. Since trash in the environment is very complex, indicators provide a more practical and economical way to track the state of the environment than if we attempted to record every possible variable.

With regard to municipal stormwater trash management, indicators are intended to detect progress towards trash load reduction targets and solving trash problems. Ideally, indicators should be robust and able to detect progress that is attributable to multiple types of trash control measure implementation scenarios. Assessment results should also provide Permittees with an adequate level of confidence that trash load reductions from MS4s have occurred, while also assessing whether trash problems in receiving waters have been resolved. Indicators must also be cost effective, relatively easy to generate, and understandable to stakeholders.

Primary and secondary indicators that SMCWPPP Permittees will use to answer core management questions include:

Primary Indicators:

- 1-A Reduction in the level of trash present on-land and available to MS4s
- 1-B Effective full capture device operation and maintenance

Secondary Indicators:

- 2-A Successful levels of trash control measures implementation
- 2-B Reductions in the amount of trash in receiving waters

In selecting the indicators above, the City of Foster City in collaboration with SMCWPPP and other SMCWPPP Permittees recognize that no one environmental indicator will provide the information necessary to effectively determine progress made in reducing trash discharged from MS4s and improvements in the level of trash in receiving waters. Multiple indicators were therefore selected.

The ultimate goal of municipal stormwater trash reduction strategies is to reduce the impacts of trash associated with MS4s on receiving waters. Indicators selected to assess progress towards this goal should ideally measure outcomes (e.g., reductions in trash discharged). The primary indicators selected by SMCWPPP are outcome-based and include those that are directly related to MS4 discharges. Secondary indicators are outcome or output-based and are intended to provide additional perspective on and evidence of, successful trash control measure implementation and improvements in receiving water condition with regard to trash.

As described in Section 2.2, trash is transported to receiving waters from pathways other than MS4s, which may confound our ability to observe MS4-associated reductions in creeks and shorelines. Due to this challenge of linking MS4 control measure implementation to receiving water conditions, the receiving water based indicator is currently considered a secondary indicator. Evaluations of data on the amount of trash in receiving waters that are conducted over time through the Pilot Assessment Strategy will assist the City in further determinations of the important sources and pathways causing problems in local creeks, rivers and shorelines.

4.2.6 Pilot Assessment Methods

This section briefly summarizes the preliminary assessment methods that the City of Foster City will implement through the SMCWPPP Pilot Strategy to generate indicator information described in the previous section. Additional information on each method can be found in the SMCWPPP Pilot Trash Assessment Strategy submitted to the Water Board by SMCWPPP on behalf of the City.

1-A. On-land Visual Assessments

As part of the Trash Generation Map assessment and refinement process (see Section 2.3.1), a draft on-land visual assessment method was developed to assist Permittees in confirming and refining trash generating area designations (i.e., very high, high, moderate and low trash generating categories). The draft on-land visual assessment method is intended to be a cost-effective tool and provide Permittees with a viable alternative to quantifying the level of trash discharged from MS4s. As part of BASMAA’s *Tracking California’s Trash* grant received from the State Water Resources Control Board (see Section 4.2), quantitative relationships between trash loading from MS4s and on-land visual assessment condition categories will be established. Condition categories defined in the draft on-land assessment protocol are listed in Table 8

Table 8. Trash condition categories used in the draft on-land visual assessment protocol.

Trash Condition Category	Summary Definition
A (Low)	Effectively no trash is observed in the assessment area.
B (Moderate)	Predominantly free of trash except for a few pieces that are easily observed.
C (High)	Trash is widely/evenly distributed and/or small accumulations are visible on the street, sidewalks, or inlets.
D (Very High)	Trash is continuously seen throughout the assessment area, with large piles and a strong impression of lack of concern for litter in the area.

On-land visual assessments will be conducted in trash management areas within the City of Foster City as part of the SMCWPPP Pilot Trash Assessment Strategy. On-land assessments are intended to establish initial conditions and detect improvements in the level of trash available to MS4s over time. More specifically, on-land visual assessment methods will be conducted in areas not treated by trash full capture devices in an attempt to evaluate reductions associated with other types of control measures. Assessment methods for areas treated by full capture devices are described in this next section.

Given that the on-land assessment method and associated protocol have not been fully tested and refined, initial assessments will occur at a pilot scale in the City and in parallel to the *Tracking California’s Trash* project. The frequency of assessments and number of sites where assessments will occur during the pilot stage are more fully described in the SMCWPPP Pilot Trash Assessment Strategy (SMCWPPP 2014).

1-B. Full Capture Operation and Maintenance Verification

Consistent with the MRP, adequate inspection and maintenance of trash full capture devices is required to maintain full capture designation by the Water Board. The City of Foster City is currently developing an operation and maintenance verification program (Trash O&M

Verification Program), via SMCWPPP, to ensure that devices are inspected and maintained at a level that maintains this designation.

The SMCWPPP Trash O&M Verification Program will be modeled on the current O&M verification program for stormwater treatment controls implemented consistent with the Permit new and redevelopment requirements. Additional details regarding the Trash O&M Verification Program can be found in the SMCWPPP Pilot Trash Assessment Strategy (SMCWPPP 2014).

2-A. Control Measure Effectiveness Evaluations

In addition to on-land trash assessments and full capture operation and maintenance verification, the City will also conduct assessments of trash control measures implemented within their jurisdictional area. Assessment methods will be selected based on trash sources and the type of control measure being implemented. Control measure effectiveness evaluations are more fully described in the SMCWPPP Pilot Trash Assessment Strategy. The following are example assessment methods that may be used to demonstrate successful control measure implementation and progress towards trash reduction targets:

- Product-related Ordinances – Descriptions of outreach efforts, tracking and reporting business compliance rates, or other metrics of control measure performance.
- Street Sweeping- Identification sweeping frequency and the ability to sweep to the curb by primary TMA, including any enhancements that have been implemented; and any other metrics demonstrating the enhanced performance of street sweeping.
- Public/Private Trash Container Management - Descriptions of control measures implemented to prevent overflowing trash containers or promoting the more effective use of public/private bins, including any new or enhancements to existing actions; and any other metrics demonstrating the performance of the control measure.
- Public Outreach and Education – Descriptions of outreach and education actions specific to trash deduction, including the number of events conducted within the municipality; descriptions of effectiveness measurements, including the results of pre- and post-implementation surveys or other metrics.
- On-land Cleanups and Enforcement – Descriptions of on-land cleanup actions, including any enhancements that have been implemented; identification of whether on-land cleanup are Permittee or volunteer-led; or other metrics of control measure performance.
- Storm Drain Inlet Maintenance – Descriptions of the level of maintenance, including any enhancement to maintenance frequency; the numbers of inlets where enhanced maintenance is being implemented; and any other metrics demonstrating the performance of inlet maintenance.
- Anti-littering and Illegal Dumping Prevention/Enforcement - Descriptions of control measures implemented to prevent littering and illegal dumping, including any new or enhancements to existing actions; descriptions and results of enhanced enforcement actions; and any other metrics demonstrating the performance of the control measure.
- Prevention of Uncovered Loads - Descriptions of control measures implemented to prevent trash dispersion from uncovered loads, including any new or enhancements to

existing actions; descriptions and results of enhanced enforcement actions; and any other metrics demonstrating the performance of the control measure.

- Partial Capture Devices – Descriptions, numbers and types of devices implemented; maintenance frequencies by device or groups of devices; and any other metrics demonstrating the partial capture device performance.
- Other Control Measures - Descriptions of control measures implemented to prevent or intercept trash before discharge to receiving waters, and any other metrics demonstrating the performance of the control measure.

2-C. Receiving Water Condition Assessments

The ultimate goal of stormwater trash management in the Bay Area is to significantly reduce the amount of trash found in receiving waters. In the last decade, San Mateo County Permittees and volunteers have collected data on the amounts of trash removed during cleanup events. More recently, Permittees have conducted trash assessments in creek and shoreline hotspots using standardized assessment methods. In an effort to answer the core management question *Have trash problems in receiving waters been resolved?*, the City of Foster City plans to continue conducting receiving water condition assessments at trash hot spots a minimum of one time per year. Assessment will be conducted consistent with Permit hot spot cleanup and assessment requirements. Additional information on receiving water assessment methods can be found in the SMCWPPP Pilot Trash Assessment Strategy (SMCWPPP 2014).

4.3 BASMAA “Tracking California’s Trash” Project

The SMCWPPP Pilot Assessment Strategy described in the previous section recognizes that outcome-based trash assessment methods needed to assess progress toward trash reduction targets are not well established by the scientific community. In an effort to address these information gaps associated with trash assessment methods, the Bay Area Stormwater Management Agencies Association (BASMAA), in collaboration with SMCWPPP, the 5 Gyres Institute, San Francisco Estuary Partnership, the City of Los Angeles, and other stormwater programs in the Bay Area, developed the *Tracking California’s Trash* Project. The Project is funded through a Proposition 84 grant awarded to BASMAA by the State Water Resources Control Board (SWRCB) who recognized the need for standardized trash assessment methods that are robust and cost-effective.

The Project is intended to assist BASMAA member agencies in testing trash assessment and monitoring methods needed to evaluate trash levels in receiving waters, establish control measures that have an equivalent performance to trash full capture devices, and assess progress in trash reduction over time. The following sections provide brief descriptions of tasks that BASMAA will conduct via the three-year Project. Full descriptions of project scopes, deliverables, and outcomes will be developed as part of the task-specific Sampling and Analysis Plans required by the SWRCB during the beginning of the Project. The Project is currently underway and will continue through 2016.

4.3.4 Testing of Trash Monitoring Methods

BASMAA and the 5 Gyres Institute will evaluate the following two types of assessment methods as part of the Project:

- **Trash Flux Monitoring** – Trash flux monitoring is intended quantify the amount of trash flowing in receiving waters under varying hydrological conditions. Flux monitoring will be tested in up to four receiving water bodies in San Francisco Bay and/or the Los Angeles areas. Methods selected for evaluation and monitoring will be based on a literature review conducted during this task and through input from technical advisors and stakeholders. Monitoring is scheduled to begin in 2014 and will be completed in 2016.
- **On-land Visual Assessments** – As part of the Project, BASMAA will also conduct an evaluation of on-land visual assessment methods that are included in the SMCWPPP Pilot Assessment Strategy. The methods are designed to determine the level of trash on streets and public right-of-ways that may be transported to receiving waters via MS4s. BASMAA plans to conduct field work associated with the evaluation of on-land visual assessment at a number of sites throughout the region. To the extent practical, sites where the on-land methods evaluations take place will be coordinated with trash flux monitoring in receiving waters. On-land assessments will occur in areas that drain to trash full capture devices, and all sites will be assessed during wet and dry weather seasons in order to evaluate on-land methods during varying hydrologic conditions. Monitoring is scheduled to begin in 2014 and will be completed in 2016.

4.3.5 Full Capture Equivalent Studies

Through the implementation of BASMAA's *Tracking California's Trash* grant-funded project, a small set of "Full Capture Equivalent" projects will also be conducted in an attempt to demonstrate that specific combinations of control measures will reduce trash to a level equivalent to full capture devices. Initial BMP combinations include high-frequency street sweeping, and enhanced street sweeping with auto-retractable curb inlet screens. Other combinations will also be considered. Studies are scheduled to begin in 2014 and will be completed in 2016.

4.4 Long-Term Assessment Strategy

The City of Foster City is committed to implementing standardized assessment methods post-2016 based on the lessons learned from pilot assessments and studies that will occur between 2014 and 2016. Assessment activities described in the previous sections will evaluate the utility of different assessment methods to demonstrate progress towards trash reduction targets and provide recommended approaches for long-term implementation. Lessons learned will be submitted to the Water Board with the FY 2015-2016 Annual Report and a revised Strategy will be developed and submitted, if necessary. The revised Strategy will include agreed upon assessment methods that will be used to demonstrate progress during the remaining term of trash reduction requirements. Reporting using the new/revised methods will begin with the FY 2016-20 17 Annual Report.

4.5 Implementation Schedule

The implementation schedule for the SMCWPPP Pilot Implementation Strategy, BASMAA's *Tracking California's Trash* project, and the Long-Term Assessment Strategy are included in Table 9. Load reduction reporting milestones are also denoted in the table. The schedule is consistent with the need for near-term pilot assessment results to demonstrate progress toward short-term targets, while acknowledging the need for testing and evaluation of assessment methods and protocols

prior to long-term implementation. For more detailed information on implementation timelines, refer to the SMCWPPP Pilot Trash Assessment Strategy (SMCWPPP 2014) and monitoring plans developed as part of BASMAA’s Tracking California’s Trash project.

Table 9. City of Foster City trash progress assessment implementation schedule.

Trash Assessment Programs and Methods	Prior to FY 2013-14	Fiscal Year								
		2013-14 ^a	2014-15	2015-16	2016-17 ^b	2017-18	2018-19	2019-20	2020-21	2021-22 ^c
Pilot Trash Assessment Strategy (SMCWPPP)										
On-land Visual Assessments										
Initial (Baseline) Assessments	X									
Pilot Progress Assessments		X	X	X	X					
Full Capture Operation and Maintenance Verification			X	X	X					
Control Measure Effectiveness Evaluations	X	X	X	X	X					
Receiving Water Condition Assessments	X	X	X	X	X					
Tracking California’s Trash Project (BASMAA)										
Testing of Trash Monitoring Methods										
Trash Flux Monitoring Protocol Testing			X	X	X					
On-land Visual Assessment Evaluations			X	X	X					
Full Capture Equivalent Studies			X	X	X					
Long-Term Trash Assessment Strategy (SMCWPPP)						X	X	X	X	X

^aJuly 1, 2014 - 40% trash reduction target

^bJuly 1, 2017 - 70% trash reduction target

^cJuly 1, 2022 - 100% trash reduction target

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