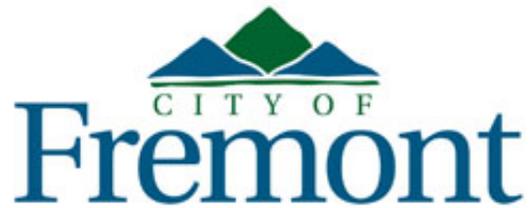


Long-Term Trash Reduction Plan and Progress Assessment Strategy

January 31, 2014

Submitted by:
City of Fremont



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

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**City of Fremont
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:

A handwritten signature in blue ink that reads "Kathy Cote". The signature is written in a cursive style.

January 31, 2014

Kathy Cote
Environmental Services Manager

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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
City	City of Fremont
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
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
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 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 Fremont'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 Fremont (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 Fremont (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 City’s municipal separate storm sewer system (MS4) that are regulated by NPDES Permit requirements. The Long-Term Plan includes:

1. Descriptions of 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. full) 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 to 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 City of Fremont’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 representatives 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 1-1).

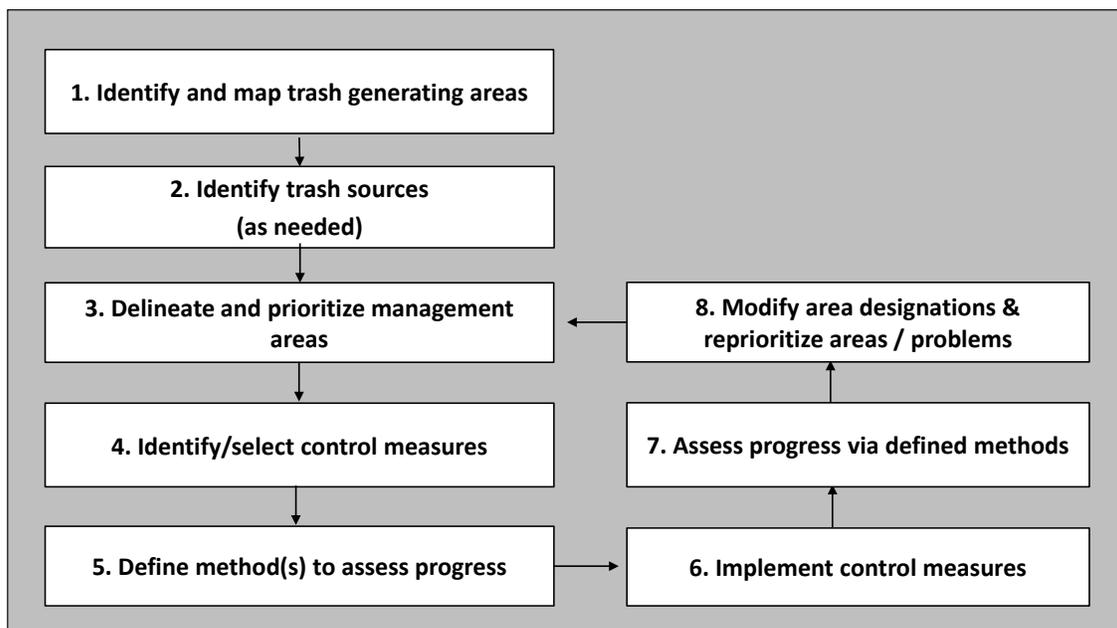


Figure 1-1. Eight-step framework for developing, implementing and refining Long-Term Trash Reduction Plans.

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 1-2 illustrates the difference between trash generation and loading.

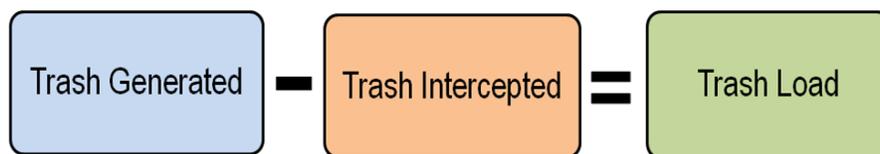


Figure 1-2. Conceptual model of trash generation, interception and load.

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 1-1. Methods used to develop trash generation rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Table 1-1. 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.

1.3 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
- 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 Fremont. 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 1956, the City of Fremont covers 50,374 acres in Alameda County, and has a jurisdictional area of 37, 372 acres. 2010 Census data for Fremont shows:

- a population of 214,089
- a population density of 2,443.6 people per square mile
- an average household size of 2.99 persons/household
- a population distribution by age group of
 - 25.8% age 17 or younger
 - 65.9% between age 18 and 64
 - 8.3% age 65 or older¹

As the fourth largest city in the San Francisco Bay Area, Fremont has 71,699 residential units, 9.1 million square feet of commercial development and 40.3 million square feet of industrial/office space. Fremont has a daytime population of over 241,504 with strong employment in the areas of high technology, biotechnology, manufacturing, software, and health sciences. The top five Fremont employers (number of employees) include:²

- Fremont Unified School District (3,000)
- Washington Hospital (1,800)
- Lam Research (1,500)
- Tesla (1,500)
- Western Digital (1,300)

49% of Fremont residents have an Bachelor Degree or higher; in 2011, median household income was \$114,169.³

Fremont's land use pattern is defined by the city's topography, its agricultural past, its early settlement patterns, its transportation network, and its central location within the nation's fourth largest major metropolitan area. In addition to the local street network, two interstate highways—Interstate 880 and Interstate 680—and three state highways—SR 84, 238, and 262—connect Fremont to the Greater Bay Area and beyond. Additionally, Fremont is major railway terminus for shipping goods from west coast ports and local manufacturing sites to destinations throughout the United States.

Industrial uses are generally concentrated in the south and southwestern portions of the city. Commercial uses are clustered in the five original districts—Centerville, Irvington, Niles, Mission San Jose, and Warm Springs—in shopping centers along arterial streets,

¹ Bay Area Census.ca.gov

² City of Fremont 2012 Consolidated Annual Financial Report

³ City of Fremont Office of Economic Development "Fremont Community Profile 2013

around freeway interchanges, and in the city center. Residential uses occur throughout the city, with low-density single family neighborhoods and garden apartment complexes predominating. Public facilities such as fire stations and parks are located in all parts of the city, serving surrounding neighborhoods and, in some cases, the city as a whole.⁴

The table below shows the seven primary land uses and area coverage per for each category within the City of Fremont as depicted in ABAG (2005).

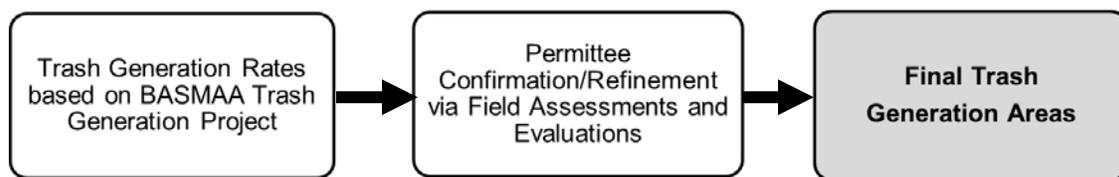
Table 2-1. Percentages of the *City of Fremont's* jurisdictional area⁵ within land use classes identified by ABAG (2005)

Land Use Category	Jurisdictional Area (Acres)	% of Jurisdictional Area
Commercial and Services	1,031.5	2.8%
Industrial	3,540.2	9.5%
Residential	12,154.8	32.5%
Retail	841.1	2.3%
K-12 Schools	802.4	2.1%
Urban Parks	912.1	2.4%
Other	18,089.9	48.4%
Total	37,372.0	100.0%

2.2 Trash Generating Areas

2.2.1 Generation Categories and Designation of Areas

The process and methods used to identify the level of trash generation within the City are described in this section and illustrated in Figure 2-1.



⁴ City of Fremont Climate Action Plan

⁵ 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).

Figure 2-1. Development of Trash Generation Areas

As a first step, trash generation rates developed through the *BASMAA Trash Generation Rates Project* were applied to parcels within the 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 2-2.

Table 2-2. 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 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 our 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/County 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 2-3. Using the Draft Protocol the City assessed a total of 123 areas to assist in conducting and refining trash generating area designations.

Table 2-3. 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	Trash is continuously seen throughout the assessment area, with large piles and a strong impression of lack of concern for litter in the area.

2.2.2 On-Land Visual Assessment Process

City staff followed guidance from EOA, BASMAA’s environmental compliance consultant, to develop, refine, categorize, and verify the location of trash generation areas within the City’s geographic boundaries.

The bulk of the work associated formulating trash management areas involved verification of the first draft of the trash generation map, which included: a thorough review of the ABAG/County Assessor draft land-use map, verifying and updating the draft land-use map on a parcel-level through field inspections identifying parcel-level errors and submitting revisions to EOA.

After EOA revised the land-use map and published the draft trash-generation map for Fremont, City staff performed a detailed analysis to verify parcel level trash-generation ratings. The text below describes the process City staff used for this analysis. After reviewing the draft Trash Generation Map developed by EOA in May 2013, City staff identified 123 areas to field-verify trash-generation ratings. City staff followed up with on-land visual inspections at each of these parcels over two five-day periods in June and July 2013.

The outcome was a recommendation to change the trash generation status of 46 of the 123 areas. Twenty-nine changes (25 in housing tracts; 4 in easements, parcels, or paths) are in residential areas where City staff recommended upgrading the trash generation rating from “moderate” (yellow) to “low” (green); a similar recommendation was made for 11 parks, two schools (one private and one state-owned), and one daylighted stretch of a fenced-in section of a flood control channel. City staff also recommended changing the designation of a high-density residential

complex from low to moderate, two retail areas from moderate to high, and one commercial area from low to medium.

2.2.3 Personnel

A two-person team evaluated the 123 areas on four of the five inspection days; due to schedule conflicts, only one staff member was available to evaluate parcels on one inspection day. Staff was fully equipped on all inspection days and, as applicable, took representative photos of subject areas to justify a change in trash generation status. All photo documentation is available for viewing. Staff used the *EOA Tracking Sheet for Confirmation of Trash Generation Sites* spreadsheet (copy available) to document field observations.

2.2.4 Methodology

Residential Areas

To the extent possible, City staff visited each residential/commercial area midway through the City's 20-day street sweeping schedule and before parks were serviced. This approach allowed staff to evaluate the subject parcels when the volume of trash was at a level that did not represent a best-case scenario.

For the 23 housing tract residential areas where City staff requested a change in status, inspections occurred 11 days (on average) after a particular area received street sweeping service. City staff visited each site and used EOA protocol to evaluate the trash generation status. Although a few of the residential sites visited are accurately represented as moderate on the draft map, 23 of the moderate-rated residential areas met EOA criteria for a low trash generation status. In all cases, the 23 residential areas did have some *naturally occurring* vegetation at the curb line due to nearby trees and shrubs, but did not have any appreciable level of trash present. One residential area however was downgraded from low to moderate due to the amount of trash observed. In addition, City staff recommended changing the status of four residential easements, parcels, or paths that are part of green-rated residential areas from moderate to low.

Parks

Staff also inspected a number of City, State, and private parks that were rated as moderate trash generation sites. To the extent possible, these inspections took place as soon as practical after heavy weekend usage. While most parks retain a moderate trash rating, City staff requested that the status of 11 parks change from moderate to low. Similar to the residential areas described above, these parks did not have an appreciable level of trash present.

City parks staff cleans up neighborhood parks at least once per week and community parks at least twice per week for most of the year; during the peak May - September period, a four-person crew of temporary workers performs roving park service to supplement the cleanup effort. Trash receptacle coverage and placement in City parks is adequate and well situated; the City's receptacle inventory includes approximately 30 solar-powered trash compactors that provide extra trash capacity. The State-owned open space/parkland adjacent to the California School for the Deaf and a private tennis club were exceptionally clean and well maintained.

Schools

Two schools, one private and one state-owned, with low (no visual impact) trash observed on two separate inspections, were upgraded from moderate to low. Staff from both schools regularly service school grounds and each school has adequate trash bin/receptacle coverage.

Retail and Commercial Areas

Due to the level of trash observed during field inspections, City staff requested changing the designation of two small retail areas from moderate to high, and one commercial area from low to moderate.

Daylighted Stretch of Line C

Staff requested that the trash generation rating for one stretch of a daylighted flood control channel (Line C) change from moderate to low. Line C is regularly maintained and cleaned by the Alameda County Flood Control District and is fenced-off from the public and only accessible through a locked gate. City staff found that the flood control channel had a negligible amount of trash present.

Result: Fremont City staff proposed nine primary trash management areas

EOA distributed a second draft Trash Generation map from which City staff proposed nine primary trash management areas (TMA). Our highest priority, the Downtown TMA, is the only geographically contiguous TMA; the remaining eight TMAs (in descending priority order) are based on land-use characteristics and proposed trash management strategies:

- Retail and restaurants
- travel corridors
- freeways and interchanges
- commercial
- industrial
- high-litter residential
- K-5 and 6-College schools
- City parks

Please note that low trash-generating (green) areas on the TMA map are coded with a “10” designation.

Table 2-3. 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 or Members of the Public

City of Fremont Environmental Services staff and Public Works maintenance staff have a continuing dialogue about reducing trash in Fremont and are partnering in program implementation. During a series of meetings in spring 2013, staff from both departments had a discussion about distribution of trash on Fremont streets. Most of the issues raised centered on barriers to street sweeping, e.g., parked cars, poorly maintained landscaping, and displaced curbs that prevent street sweeping vehicles from cleaning portions of the curb line. Public Works staff offered a number of suggestions to improve this situation. These suggestions will be discussed further in Section 3 of this report.

In a separate litter abatement action related to these discussions, Public Works management recently launched a pilot trash abatement program in November 2013 to supplement existing illegal dumping cleanup activity and to collect trash on streets and adjacent properties. Although the pilot program has just begun, initial results show an increase in the amount of trash retrieved citywide.

c. Reviewing Municipal Operations Data

City of Fremont Environmental Services staff reviews monthly Public Works operations data that provide the total amount of trash retrieved from City streets and adjacent properties by a variety of Public Works operations. This information provides a means to determine trash retrieval trends. Environmental Services staff also used drain inlet inspection findings to evaluate trash accumulation rates at drain inlets.

d. Viewing Areas via Goggle Maps – Street View

While all trash management area designations were a product of on-land visual assessments, staff used Google Maps and City of Fremont GIS programs to locate and identify parcels during and after field observations.

3. The final trash generation map, which depicts the most current understanding of trash generation within the City of Fremont, is based on extensive field reconnaissance and follow up inspections by City staff. All refinements to the Draft Trash Generation Map released by EOA in May 2013 were documented by City staff and saved in City files. The City of Fremont’s Final Trash Generation Map is included as Figure 2-2.

2.2.5 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 2-4.

Table 2-4. Percentage of jurisdictional area within the City of Fremont 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	740.3	0.1%	0.0%	0.0%	99.9%	0.0%	0.0%	0.0%
Medium	6,465.5	15.3%	54.6%	6.2%	0.8%	10.8%	12.3%	0.0%
Low	30,166.1	0.1%	0.0%	39.0%	0.2%	0.3%	0.4%	60.0%

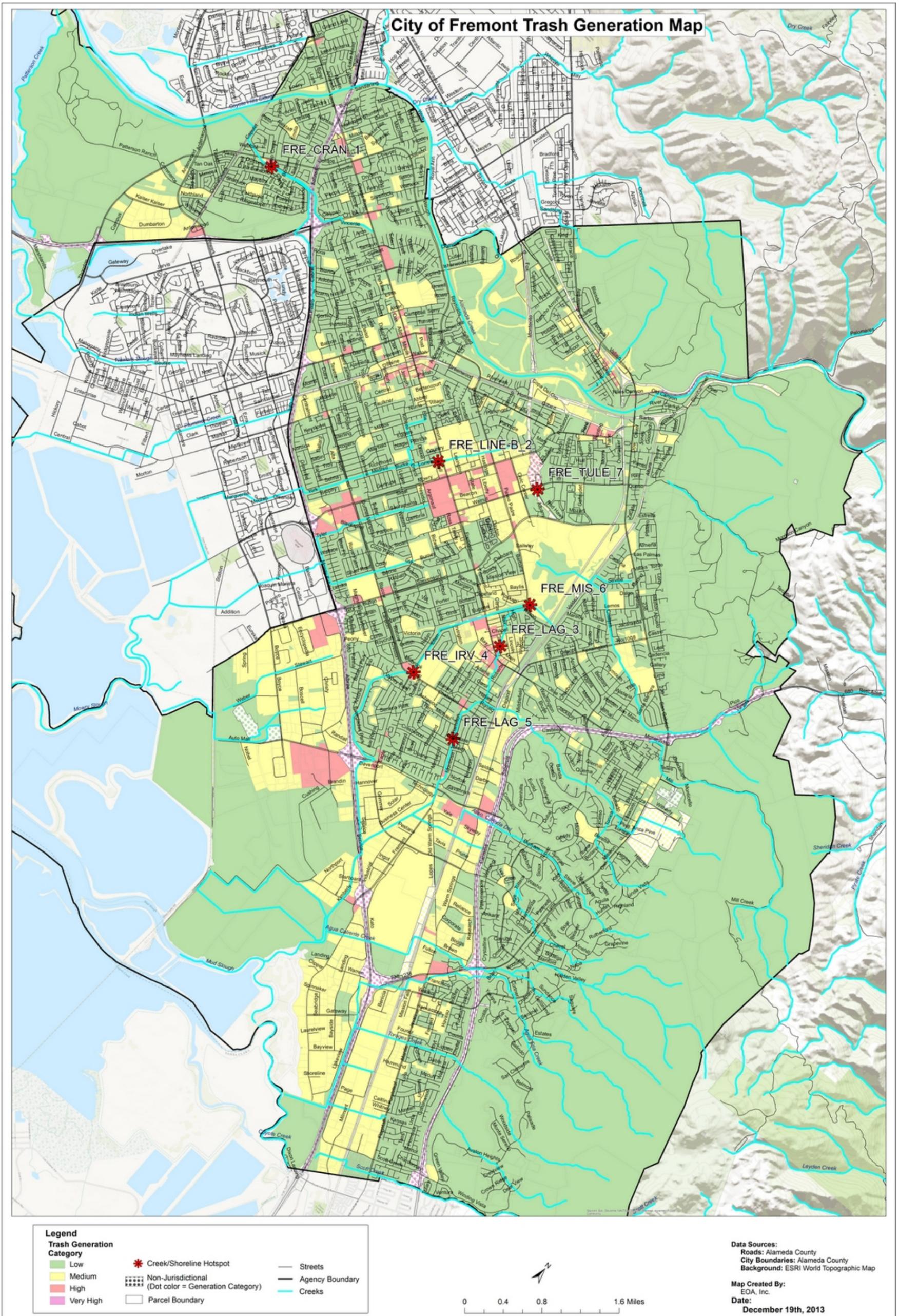


Figure 2-2. Final Trash Generation Map for the City of Fremont

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3.0 Trash management areas and control measures

This section describes the control measures that the City of Fremont 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 its 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 of Fremont’s annual reporting process.

3.1 Management Area Delineation and Prioritization

Consistent with the long-term plan framework, the 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 the City’s jurisdiction. City staff used the following procedure to designate TMAs:

Priority assignments for the nine primary trash management areas (TMA) identified on the Fremont Trash Generation Map are shown below in priority order. The highest priority TMA, Downtown, is the only geographically contiguous area; the basis for the remaining eight TMAs is land use.

Map ID	Description	Comment
1	Downtown— only geographically contiguous TMA	High current and planned retail presence, heavy pedestrian and vehicle traffic, high trash generator
2	Retail.Restaurants (outside of TMA-1)	Retail businesses, especially fast food and convenience stores distributed throughout city; high trash generator
3	Corridors	High traffic city arterials, especially roadways leading to freeways, moderate to high trash generator

4A and 4B	Freeways (non-jurisdictional)	This TMA has two categories: 4A Interchange and 4B Roadways, both of which are high trash generators. Although freeway interchanges are non-jurisdictional areas (CalTrans property), the City collaborates with CalTrans and CHP to coordinate local and regional interchange and freeway cleanup activity.
5	Commercial	Commercial land use is spread throughout the City of Fremont. Commercial areas are generally adjacent to travel corridors, and include a diverse mix of religious institutions, offices, government buildings, service-related businesses, and other medium-trash generating uses.
6	Industrial	Industrial land use is generally clustered in southwest and northwest portions of Fremont with additional interspersed coverage throughout the City. Industrial areas are generally served by travel corridors, and include a diverse mix of light and heavy industrial facilities that generate a medium-level of trash.
7	High-Litter Residential	Clusters of single- and multi-family residences throughout Fremont generate moderate to high levels of trash
8	Schools	This TMA has two categories: 8A K-5 schools and 8B 6-College schools distributed throughout the City. There are approximately 80 schools located in the City of Fremont. ⁶ Field observations show that K-5 schools generate less trash than 6-College schools which are low to moderate trash generators.
9	Parks	A network of neighborhood and community parks are distributed throughout Fremont; low to moderate trash generators
10	Low Trash-Generation Areas	Low-trash generating areas include low density residential, open space, and other low trash generating areas.

A map depicting the City of Fremont TMAs is included below. All jurisdictional areas within the City are included within a TMA. Non-jurisdictional freeway interchanges included in this plan reflect an ongoing City effort to routinely inspect and organize interchange trash clean up activity. The amount of jurisdictional land area and associated trash condition categories for all TMAs are included in Table 3-1

⁶ The Fremont Unified School District lists 29 “K-5” schools, 11 junior and senior high schools, and 8 vocational/specialty schools; a Yellow Page search shows an assortment of 28 private schools; other schools within the City limits include a regional vocational school, a state-run school, a community college, and a private college.

Table 3-1. 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	406.6	0.0%	36.0%	61.9%	2.1%
2	718.8	0.0%	68.8%	25.6%	5.6%
3	880.5	0.0%	9.4%	28.0%	62.6%
4A & B	0.0	0.0%	0.0%	0.0%	0.0%
5	536.4	0.0%	2.6%	97.3%	0.1%
6	3,866.6	0.0%	0.1%	90.9%	9.0%
7	365.8	0.0%	0.0%	99.1%	0.9%
8A	309.7	0.0%	0.0%	100.0%	0.0%
8B	380.1	0.0%	0.0%	100.0%	0.0%
9	1,264.3	0.0%	0.0%	54.9%	45.1%
10	28,643.0	0.0%	0.0%	0.0%	100.0%

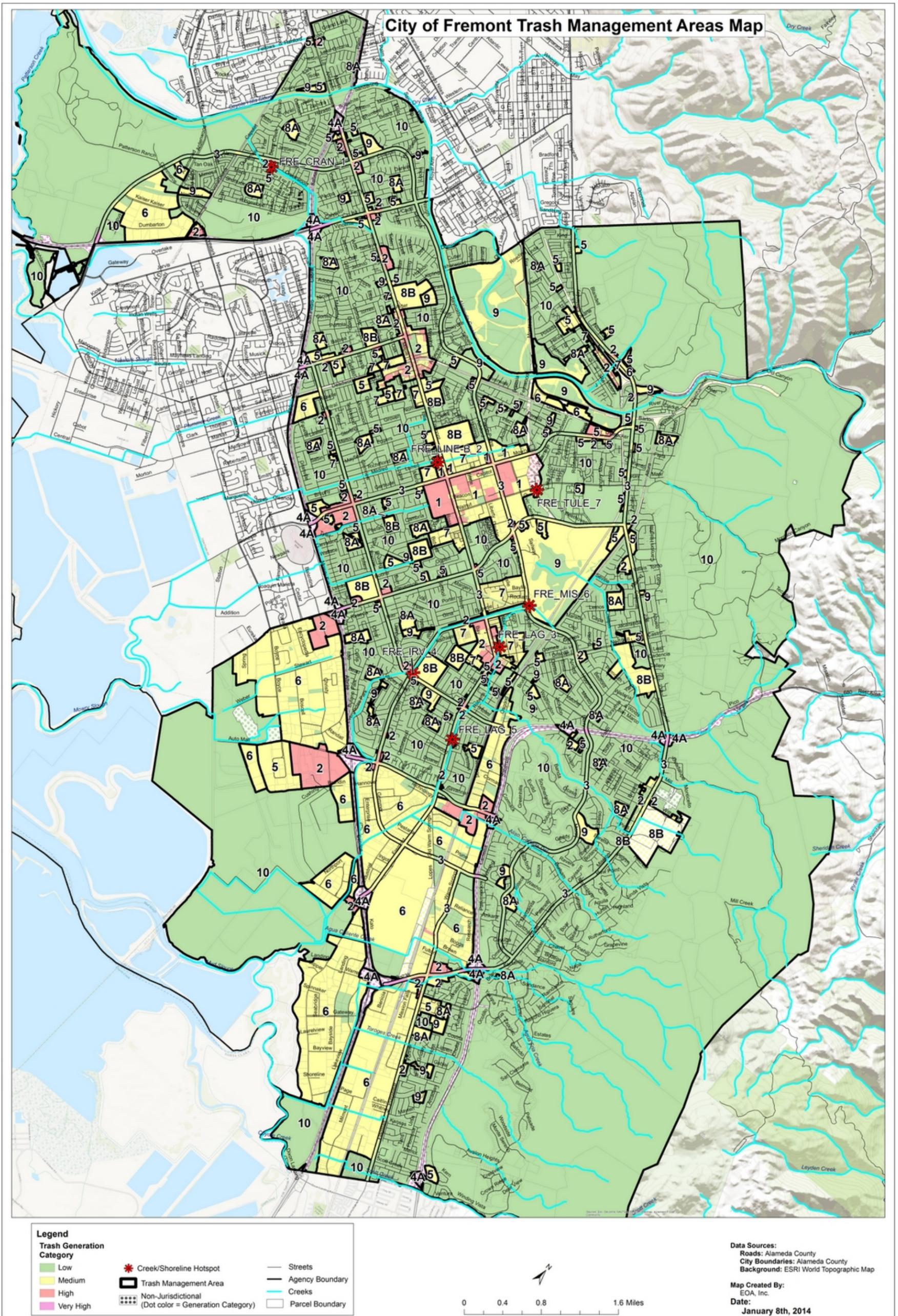


Figure 3-1. Trash Management Area Map for the City of Fremont.

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3.2 Current and Planned Trash Control Measures

Overview

The City of Fremont is currently using or plans to use trash control measures described below. We will refer to these control measure descriptions for reporting our trash reduction efforts for all trash management areas.

Full-Capture Treatment Devices – The City began a storm drain inventory and inspection program in August 2010 to provide site suitability data for trash capture devices to comply with Minimum Full Trash Capture Device requirements. due on July 1, 2014. Input data for each storm drain inlet inspection include:

- physical dimensions and characteristics of each storm drain inlet
- verification of City GIS storm drain inlet locations
- presence of trash and/or vegetation
- identification of plugged or partially plugged storm drains
- presence and condition of “No Dumping - Flows to the Bay” stencils

To date, City staff has surveyed 2,828 (about 40 percent) of all city-owned storm drain inlets. Areas of interest include retail/restaurant, commercial, industrial, school, and park land uses. Staff used inspection data for a GIS site suitability analysis, to prioritize inspection efforts, and to rank potential locations for installing trash-capture devices. The storm drain inventory data will be reviewed and expanded for future trash-capture device installations.

A total of 346 full trash-capture catch basin devices (USW-1) are currently installed in the City of Fremont. These devices are located in six clusters throughout the City that are either in moderate to high trash-generating areas or in adjacent downstream areas near busy roadways. These devices currently provide a total treatment area of 1,027 acres. Although the trash-capture devices handle all sources of municipal trash, dominant forms of trash include food wrappers, paper, plastic products, cigarette butts, and fast food containers. Most (342) of the devices were placed into service in October 2013; four devices, that were part of a regional pilot project, were installed in 2012.

While all 346 devices are currently performing as designed, two newly installed devices required attention in December 2012: one device experienced a temporary failure (that was immediately corrected), and a second device was relocated due to high water flow. The City has closely monitored all of the installed devices since installation and has established a maintenance schedule consisting of

- visual inspection and trash assessment of all catch basin trash-capture devices prior to first storm (2012)
- catch basins with more than 10% of vault obstructed referred to maintenance staff for priority cleaning (2012)

- routine annual inspection/cleaning of each catch basin with a trash-capture device (2012)

To date, there have been no sightings of stolen or vandalized catch basin trash-capture devices.

The City plans to install an additional 200 USW-1 devices by December 31, 2014 that are expected to provide an estimated additional 593 acres of treatment. These devices will be installed in moderate trash-generating industrial areas (TMA 6) located in the southwest portion of the city.

Street Sweeping – The City’s street sweeping effort includes 80 sweeping routes that service all city streets at least once per month. This arrangement has been in place for the past few decades. This citywide arrangement handles all trash management areas.

A street sweeping assessment is underway that will aid in establishing enhanced street sweeping corridors along major arterials, with special emphasis on roads leading to freeways, e.g., Decoto Road and Durham Road/Auto Mall Parkway. The concept behind the proposed corridors would include a recommendation for increased “no parking” zones, and more aggressive tree and landscape trimming to allow a clear path for street sweeping machines. The focus of the planned enhanced street sweeping will primarily affect the Downtown, Retail, and Corridors (TMA 1 – 3) high trash-generating areas.

On-land Trash Cleanups – Pre-MRP and continued actions include an established citywide illegal dumping cleanup and litter abatement program by City forces and City-led volunteer trash cleanup events at parks, trails, and designated hot spots. On-land cleanups address all sources of municipal trash (predominantly food wrappers, single-use beverage containers, paper, plastic products, and cigarette butts) and illegal dumping (mostly household goods and landscape/construction materials).

New/enhanced post-MRP actions include:

- regular (8 times per year) inspection, and trash-level ranking of the 13 freeway interchanges (TMA 4A) in Fremont (2012)
- cleaning up interchanges as necessary(2012)
- participating in the Livermore Regional Trash/Litter Committee to share data and coordinate interchange cleanup efforts with the CHP and CalTrans (2012)
- a citywide litter-abatement pilot program initiated by Public Works to use a dedicated staff member to retrieve overflow illegal dumping materials, windblown debris, and miscellaneous litter/trash that accumulates between street sweeping days (2013)

Partial-Capture Treatment Devices – Over the past three years, 14 partial-capture tree well filters and 2 partial-capture bio-retention treatment measures have been installed in Commercial and Industrial trash management areas (TMA 5 and 6). Six additional partial-capture devices in commercial and industrial TMAs are scheduled for

completion in FY 13-14. The City expects that a large number of partial-capture devices will be installed over the next few years in Downtown and Retail TMAs.

Enhanced Storm Drain Inlet Maintenance – The City has an established citywide storm drain inlet maintenance program that inspects, cleans, and repairs storm drain catch basins. This same program also inspects and replaces damaged storm drain stencils.

Enhanced maintenance for the 346 trash-capture devices installed in 2011 and 2012 includes:

- visual inspection and trash assessment of all catch basin trash-capture devices prior to the rainy season (2012)
- catch basins with more than 10% of vault obstructed referred to maintenance staff for priority cleaning (2012)
- routine annual inspection/cleaning of each catch basin with a trash-capture device (2012)

The City plans to continue enhanced storm drain inlet maintenance for the 346 existing and 200 planned (by July 2014) trash-capture devices that are or will be installed citywide.

Activities to Reduce Trash from Uncovered Loads – The City of Fremont has established control measures in place to reduce trash from vehicles with uncovered loads. Chapter 8.40, § 8.4.230 of the Fremont Municipal Code prohibits spills, leaks, or other escape [of materials] during transport (adopted February 28, 1995). The full text of the ordinance is available at the City of Fremont Municipal Code website under Chapter 8.40, § 8.4.350 <http://www.codepublishing.com/ca/fremont/>

The City of Fremont contract with Republic Services, the City’s trash and debris hauler franchisee, includes a specific requirement for covered loads when transporting trash and debris (C.10.3) and requirements related to cleaning up spillage from trucks (C.10.1 and 10.2), reporting unauthorized dumping (C.15), and reporting overflowing containers (C.16). The contract with BLT Enterprises, the company that operates the Fremont Recycling and Transfer Station, requires that all self-haul loads are contained and/or tarped to prevent trash from escaping from trucks and trailers. BLT staff enforces this requirement.

New/enhanced post-MRP actions Initiated/planned include:

- continuing to collaborate with Cal Trans, CHP, and other local agencies to coordinate freeway and interchange trash reduction and cleanup efforts that begun in 2012
- in 2014, evaluate joining CHP “Enforcement Day” activity that targets litter from vehicles and uncovered loads.

Anti-littering and Illegal Dumping Enforcement Activities – The Fremont Municipal Code establishes the citywide requirements for solid waste containers, maintenance, and their removal. Chapter 8.40: Solid Waste, Recyclables, and Yard Waste Management,

of the Fremont Municipal Code adopted in February 1995 addresses trash bin/container management. Chapter 8.40 § 8.4.050 of the Fremont Municipal Code requires appropriate trash service for private properties. The full text of this ordinance may be found at <http://www.codepublishing.com/ca/fremont/>

Chapter 8.45 § 8.45.180-200 of the Fremont Municipal Code identifies that “The violation of any of the provisions of this chapter shall also be deemed a nuisance, and civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken by the City Attorney. The full text of this ordinance may be found at <http://www.codepublishing.com/ca/fremont/>

Environmental Services staff will continue to enforce the municipal code to ensure that businesses and households have sufficient trash collection frequencies and that trash bins/containers are of an adequate size to hold the quantity of trash generated to prevent unintended releases of trash.

New/enhanced post-MRP actions Initiated/planned: Members of the public have access to the City of Fremont “Report a Concern” webpage to report illegal dumping and illicit discharge through an email and phone messaging system at <http://www.fremont.gov/forms.aspx?FID=44>

Improved Trash Bins/Container Management – The City has a long-standing practice of servicing of 92 street trash receptacles citywide (86 by contract and 6 by City staff) and working with AC transit to report overflowing trash receptacles at bus stops/shelters.

New/enhanced citywide post-MRP actions initiated/planned include:

- Environmental Services staff has become increasingly integrated into site design and plan review activities for building projects and participation in daily site design review meetings (2009 – 2014). A large part of this effort is directed toward adequate trash bin and container placement and management.
- The City issued new waste handling guidelines January 2013 that provide a comprehensive overview of waste-handling practices for building projects, garbage and recycling services, appropriate garbage and recycling container sizes, and the design, dimensions, placement and construction of trash enclosures. The link below will direct you to the waste handling guidelines <http://www.fremont.gov/DocumentCenter/Home/View/1528>
- The City has implemented stepped-up trash enclosure enforcement actions. For example, during FY 2012-2013, Environmental Services staff conducted escalating enforcement actions at 32 sites for trash enclosure and trash-related issues during FY 2012-2013. Six of the enforcement actions required construction of new trash enclosures.

The City plans to add ten additional (by contract) waste bins near selected bus stops/shelters along arterials, especially on roads adjacent to retail/restaurant operations, e.g., Fremont Boulevard and Walnut Avenue, by July 1, 2014.

Trash Management Area Descriptions and Control Measures—please note:

- Trash Management Areas (TMA) and Control Measures are listed in priority order
- A detailed description for each trash control measure is described above in Section 3.2

3.2.1 Trash Management Area #1 — Downtown

The downtown area contains a diverse mix of retail, commercial, transportation, and high density land uses. The area is generally bounded by two travel corridors (Walnut and Mowry) and has significant trash-capture device coverage. Further development is taking place and is planned for the downtown area. The Downtown trash management area is the highest priority TMA in Fremont. The Downtown TMA is the only geographically contiguous trash management area in Fremont. Trash generation in this area is generally attributed to pedestrians, vehicles, trash containers, and illegal dumping.

Trash control measures include:

- Full-Capture Treatment Devices—62 USW-1 trash-capture devices, installed in October 2012, treat 227 acres in TMA-1, Downtown.
- Street Sweeping
- Improved Trash Container/Bin Management
- Anti-Littering and Illegal Dumping Enforcement Activities
- Enhanced Storm Drain Inlet Maintenance
- Partial-Capture Treatment Devices

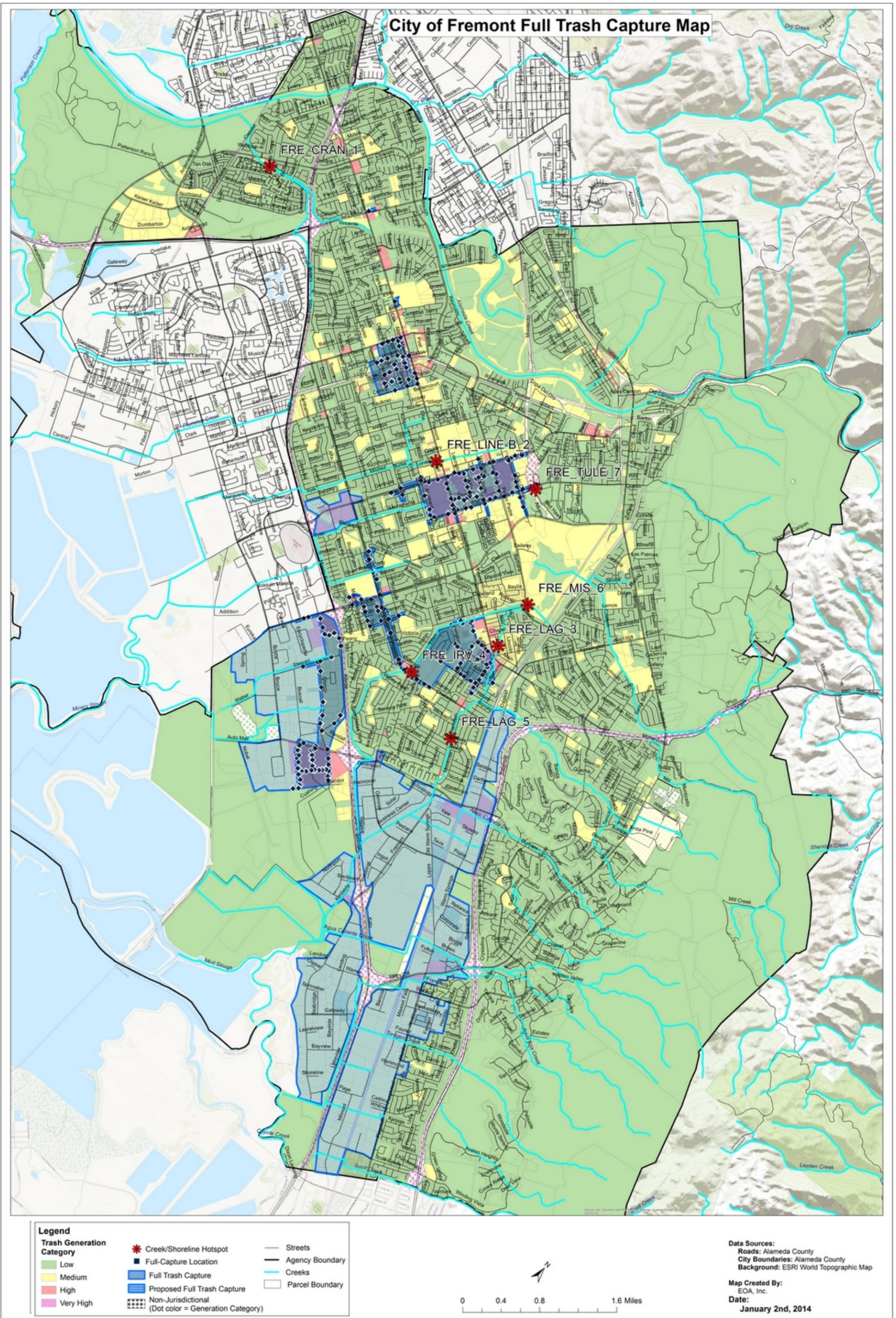


Figure 3-2. Trash Full Capture Device Map for the City of Fremont

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3.2.2 **Trash Management Area #2 — Retail (outside of TMA-1)**

Retail land use outside of the Downtown area (TMA-1), is spread throughout the City of Fremont. Retail areas are generally adjacent to travel corridors, and include a diverse mix of fast food, convenience stores, retail outlets, and other high-trash generating uses. Trash generation in this area is generally attributed to pedestrians, vehicles, trash containers, and illegal dumping.

- Full Capture Treatment Devices: 88 USW-1 trash-capture devices, installed in October 2012, treat 189 acres in TMA-2, Retail (outside of TMA-1).
- Improved Trash Container/Bin Management
- Anti-Littering and Illegal Dumping Enforcement Activities
- Enhanced Storm Drain Inlet Maintenance
- Street Sweeping
- Partial-Capture Treatment Devices

3.2.3 **Trash Management Area #3—Traffic Corridors**

Fremont has several major traffic corridors, all of which provide access to commercial and retail land uses; most of the north-south corridors provide access to SR 84, I680, and I880. Trash generation in this area is generally attributed to pedestrians, vehicles, trash containers, and illegal dumping.

- Street Sweeping
- Full Capture Treatment Devices: 74 USW-1 trash-capture devices, installed in October 2012, treat 84 acres in TMA-3, Traffic Corridors.
- Enhanced Storm Drain Maintenance
- On-Land Trash Cleanups
- Activities to Reduce Trash from Uncovered Loads

3.2.4 **Trash Management Area #4A—Freeway Interchanges**

Although the 13 freeway interchanges (TMA-4A) that lie within the City of Fremont are non-jurisdictional CalTrans property, the City collaborates with CalTrans and CHP to coordinate local and regional interchange and freeway cleanup activity. The City performs regular inspections and periodic cleanups at the 13 Fremont freeway interchanges. Trash generation in this area is generally attributed vehicles and uncovered loads.

- Full-Capture Treatment Devices: The City plans to install 25 – 35 USW-1 trash-capture devices on City right-of-ways near freeway interchanges (TMA-4A) by December 31, 2014 that will treat an estimated 75 – 100 acres.
- Enhanced Storm Drain Maintenance
- On-Land Trash Cleanups
- Activities to Reduce Trash from Uncovered Loads

3.2.5 **Trash Management Area #4B—Freeways (Adjacent Roadways)**

Although freeways (TMA-4B) that lie within the City of Fremont are non-jurisdictional CalTrans property, the City collaborates with CalTrans and CHP to coordinate local regional interchange and freeway cleanup activity. In addition to collaborating with Cal Trans/CHP, the City plans to install trash-capture devices at storm drain inlets on City-owned right-of-ways adjacent to the freeways that are points of entry from freeways to the Fremont MS4. Trash generation in this area is generally attributed to vehicles and uncovered loads.

- Full-Capture Treatment Devices: The City plans to install 50 – 75 USW-1 trash-capture devices on City right-of-ways near freeway interchanges (TMA-4B) by December 31, 2014 that will treat an estimated 150 – 210 acres.
- Enhanced Storm Drain Maintenance
- Activities to Reduce Trash from Uncovered Loads

3.2.6 **Trash Management Area #5—Commercial**

Commercial (TMA-5) land use is spread throughout the City of Fremont. Commercial areas are generally adjacent to travel corridors, and include a diverse mix of religious institutions, offices, government buildings, service-related businesses, and other medium-trash generating uses. Trash generation in this area is generally attributed to vehicles, trash containers, and illegal dumping.

- Improved Trash Container/Bin Management
- Anti-Littering and Illegal Dumping Enforcement Activities
- Partial-Capture Treatment Devices

3.2.7 **Trash Management Area #6—Industrial**

Industrial (TMA-6) land use is generally clustered in southwest and northwest portions of Fremont with additional interspersed coverage throughout the City. Industrial areas are generally served by travel corridors, and include a diverse mix of light and heavy industrial facilities that generate a medium-level of trash. Trash generation in this area is generally attributed to vehicles, trash containers, and illegal dumping.

- Full-Capture Treatment Devices: The City plans to install 100 – 125 USW-1 trash-capture devices in Industrial areas, TMA-6, by July 1, 2014 that will treat an estimated 275 - 375 acres.
- On-Land Trash Cleanups
- Anti-Littering and Illegal Dumping Enforcement Activities
- Enhanced Storm Drain Inlet Maintenance
- Partial-Capture Treatment Devices

3.2.8 **Trash Management Area #7—High Litter Residential**

Pockets of high-litter single- and multi-family residential land use is spread throughout the City of Fremont. Trash generation in this area is generally attributed to pedestrians, vehicles, trash containers, and illegal dumping.

- Improved Trash Container/Bin Management
- Anti-Littering and Illegal Dumping Enforcement Activities
- On-Land Trash Cleanups

3.2.9 **Trash Management Area #8A—K-5 Schools**

K-5 schools are spread throughout Fremont. K-5 schools generally generate less trash than 6-College schools. City staff has established a practice of working with school officials to ascertain trash bin/container adequacy and improve trash bins/container coverage and other improvements such as solar-compacters. City staff also assists in coordinating on-land and creek cleanup activities with teachers and students. Trash generation in this area is generally attributed to pedestrians, vehicles, and trash containers.

- Improved Trash Container/Bin Management
- On-Land Trash Cleanups

3.2.10 **Trash Management Area #8B—6-College Schools**

Junior High-College (6 – College) schools and institutions are spread throughout Fremont. These schools generally generate more trash than K-5 schools. City staff has established a practice of working with school officials to ascertain trash bin/container adequacy and improve trash bins/container coverage and other improvements such as solar-compacters. City staff also assists in coordinating on-land and creek cleanup activities with teachers and students. Trash generation in this area is generally attributed to pedestrians, vehicles, and trash containers.

- Improved Trash Container/Bin Management
- On-Land Trash Cleanups

3.2.11 **Trash Management Area #9—Parks**

Fremont is served by a network of neighborhood and community parks located throughout the City. On an ongoing basis, City staff ascertains trash bin/container adequacy and improves trash bins/container/solar compacter coverage, and coordinates on-land and creek cleanup activities with volunteers and City maintenance staff. Trash generation in this area is generally attributed to pedestrians, trash containers, and illegal dumping.

- Improved Trash Container/Bin Management
- Anti-Littering and Illegal Dumping Enforcement Activities
- On-Land Trash Cleanups

3.2.12 Jurisdiction-wide Control Measures

In addition to the trash reduction control measures described above in Section 3.2, the City of Fremont is involved in regional programs or initiatives that provide jurisdiction-wide trash reduction control measures, including:

Polystyrene Foam Food Service Ware Policies

New/enhanced post-MRP actions initiated/planned include: On January 1, 2011, the City adopted an ordinance banning polystyrene foam food service ware at the point-of-sale of any establishment, located within the City of Fremont that provides prepared food or beverages including supermarkets, delicatessens, restaurants, retail food vendors, caterers, sales outlets, shops, cafeterias, catering trucks, outdoor vendors, and city facility users. Banned items include expanded polystyrene (#6) food service ware (commonly known as Styrofoam™) such as plates, cups, bowls, and lids. The City adopted the following enhanced control measures associated with the polystyrene foam food service ware ordinance:

Tier 1 – Prohibit the distribution of polystyrene foam single-use food and beverage ware at Permittee-sponsored events or on Permittee-owned property

Tier 2 – Prohibit the distribution of polystyrene foam single-use food and beverage ware at all food service vendors

The City will continue to include parallel public education and outreach activities related to the polystyrene foam single use food and beverage ware ordinance in regional and local advertising campaigns, media relations projects, community outreach events, and outreach to school-age children or youth. Enforcement measures include adding a compliance evaluation into restaurant inspections, responding to reports and referrals of noncompliant restaurants, and staff follow up as necessary to achieve compliance

Residents and/or customers can report businesses that do not comply with the polystyrene foam food service ware to City staff through a City of Fremont website. The address of the website is <http://www.fremont.gov/forms.aspx?FID=195>

Public Education and Outreach

Continued pre-MRP actions include participation and funding of the BASMAA Regional Media Relations Project; the City of Fremont plans to continue to implement a media relations project partially designed to reduce littering from target audiences in the Bay Area. City of Fremont staff continues to prepare newsletter articles and public service announcements on television to educate the public about environmental awareness and anti-littering behavior. Topics will include promotion of

- anti-littering behavior
- the countywide single-use bag ordinance/policy
- the City ban on Styrofoam food/beverage service ware

- diversion of household waste
- awareness about illegal dumping/illicit discharge

The City of Fremont will also continue its community outreach that will stress anti-litter behavior. Examples of long-established local community outreach events include (with attendance estimates):

- Concerts in the Park (six-date series), (6,000)
- The Fremont Festival of the Arts (350,000)
- The City of Fremont Compost Giveaway (2,500)
- Earth Day Celebration (1,000)

Alameda County Waste Management Authority Single-Use Bag Ban Ordinance

Single-Use plastic bags were a significant component of the litter found in storm drains and water bodies throughout Alameda County. To address this issue, the Alameda County Waste Management Authority has adopted a single-use bag ban. As of January 1, 2013, all grocery stores, supermarkets, mini-marts, convenience stores, liquor stores, pharmacies, drug stores or other entities that sell milk, bread, soda and snack foods (all four items) and/or alcohol (Type 20 or 21 license) in Alameda County must comply with the Single-Use Bag Ban Ordinance.

Single-Use Bag Requirement: Affected stores may no longer provide customers with single-use bags at check-out.

Bag Sales Requirements:

- Affected stores that distribute recycled paper or reusable bags must charge 10 cents or more per bag. These bags must meet the specifications in the Ordinance.
- All proceeds from the sale of recycled paper bags and reusable bags are retained by the retailer without any restrictions on their use

A copy of the Ordinance is available on the Alameda County Waste Management Authority's website: <http://reusablebagsac.org/ordinancetext.html>

The City of Fremont is a member of ACCWP. The jurisdiction-wide control measures described below will be conducted through participation in ACCWP.

Litter Outreach to K-12 Schools

K-12 schools are often high litter generation areas. ACCWP has developed a request for proposal for a four-year litter reduction education/outreach grant directed at K-12 schools throughout Alameda County. ACCWP intends to award a total of up to \$125,000 per year to up to 4 successful applicants. The goals of the project are to clearly reduce the amount of litter at the participating schools and incorporate institutional changes at the schools so that litter will continue to be reduced in the future. Implementation is scheduled to begin in the 2014/15 school year. The request for proposal will include a requirement to evaluate the level of litter reduction achieved. A description of the successful proposals will be included in the ACCWP Fiscal Year 2013/14 Annual Report.

“Be the Street” Youth Anti-Litter Advertising Campaign

Intentional litter by youth has been found to be a significant contributor to litter problems. To address this issue, ACCWP has participated in the development and implementation of the Be the Street campaign. Be the Street is a Bay Area wide outreach effort that takes a Community Based Social Marketing approach to encourage youth to keep their community clean (<http://www.bethestreet.org/>). The intent of the campaign is to make “no-littering” the norm among the target audience (youth between the ages of 14 and 24). The campaign is a three-year effort that began in fiscal year 2011-12 and will run through 2013-14. ACCWP has been participating in and providing financial support to the Be the Street campaign since its inception. The campaign will be evaluated in the spring of 2014. Depending upon the results of the evaluation, ACCWP may continue to participate in this or similar efforts in future years.

Multi-Family Dwelling Litter Outreach

Multi-family dwellings (i.e., apartment buildings and condominium complexes) are often areas of high trash generation. ACCWP is working with the City of Livermore to develop a litter reduction pilot targeting multi-family complexes known to be sites with significant litter issues. The pilot includes the following apartment building and condominium complexes: Livermore Garden Apartments (5720 East Avenue), La Castilleja (975 Murrieta Boulevard), and Castilleja Del Arroyo (1001 and 1009 Murrieta Boulevard).

- December 2013: Pre-campaign Measurement – ACCWP and the City will take baseline measurements of all three sites. Methods of measurement will include taking photos of on-site litter, as well as collecting, characterizing and counting the litter using the Ocean Conservancy’s Volunteer Trash Data Form. (Adopt A Creek Spot volunteers use this Data Form to characterize and count the trash collected from the Trash Hot Spot located behind the condominium complexes on Coastal Clean-up Day.) Areas to be measured include landscaped and other common areas, the sidewalk, gutter and streets located in front of the sites. All three property managers/volunteers will collect one week’s worth of on-site litter.
- November – December 2013: Research – All three property managers will be interviewed by City staff using twenty-five questions developed by the ACCWP. The interview results will help define the target audience(s) (i.e., age groups, income level, ethnic groups, etc.) and determine outreach tactics (i.e., face-to-face, signage, printed materials, etc.) This information will also assist the City and ACCWP in developing appropriate messaging.
- November 2013 – January 2014: Plan – One of the three sites will be chosen as the “Control” site. In addition, outreach strategies and tactics will be selected for the “Active” sites.
- February 2014: Concept/Design/Content Production – Selected outreach tactics will be designed and produced for the Active sites.

- February 2014: Multi-cultural Advising, Translation – Consultant will advise on outreach tactics and messaging, and will provide translation as needed.
- March 2014 – May 16, 2014: Outreach – Outreach tactics will be rolled out at Active sites.
- May 17, 2014 – May 31, 2014: Post-campaign Measurement — City staff and ACCWP will duplicate the pre-campaign measurement methodologies at all three sites, including the Control. All three property managers/volunteers will collect one week’s worth of on-site litter. On-site and off-site litter will be characterized and counted by City staff using the Ocean Conservancy’s Volunteer Trash Data Form. All three property managers will be interviewed by City staff to help determine residents’ attitudes/change in behavior, etc.
- June 1, 2014 – June 30, 2014: Reporting – Final Pilot Report will be presented to ACCWP member agencies.

Depending on the success of the pilot, it may be replicated at other multi-family complexes throughout the County.

The Public Information and Participation Subcommittee of ACCWP also is in the process of identifying other litter-related areas and activities that affect jurisdictions throughout the County, and will implement pilot projects to address the high priority issues over the next several years. One issue being considered is cigarette butt litter.

Community Stewardship Grants

Through its Community Stewardship Grants program ACCWP provides up to \$20,000 per year to individuals and community groups to implement stormwater and watershed enhancement and education projects. The grants range from \$1,000 to \$5,000. Starting in fiscal year 2014/15 ACCWP will specifically encourage and support litter reduction grant applications. The projects of the Fiscal Year 2014/15 grant recipients will be described in the ACCWP Fiscal Year 2013/14 Annual Report.

Anti-Litter Outreach to Residents

Through its Public Information and Participation program ACCWP encourages residents to adopt less polluting behaviors. One targeted behavior is littering, both intentional and unintentional. ACCWP uses a variety of mechanisms to influence residents including public service announcements, online and movie theater advertising, and participating in outreach events. The ACCWP Public Information and Participation Subcommittee is in the process of developing a three-year budget/strategic plan for fiscal years 2014/15 through 2016/17. One of the strategic objectives of the plan will be to reduce litter. This plan will be described in the ACCWP Fiscal Year 2013/14 Annual Report.

3.2.13 Creek and Shoreline Hot Spot Cleanups

Continued pre-MRP actions includes City-led creek and hotspot creek cleanups. City staff organized and supervised two volunteer creek cleanup events during FY 12-13. The two events involved 430 volunteers cleaning up trash/litter from seven creeks and channels in Fremont. These activities were in addition to seven MRP-required hot spot cleanups. New/enhanced post-MRP actions initiated/planned: The City plans to expand creek, channel, and trail cleanup activity by volunteers and contractors to at least seven events per year starting in FY 13-14. City staff will use social media, city and community newsletters, and its website to reach out to volunteers.

Please refer to the chart on **Attachment 1** that identifies the number and location of hot spot creek and shoreline cleanups performed over the past three years. The chart also describes the frequency of cleanups; locations of the hotspot cleanup sites correspond with the three trash-generating maps included in this report.

The City has other non-hotspot creek activity as reported in the Annual Report.

3.2.14 Summary of Trash Control Measures

Trash Management Area Descriptions and Control Measures—please note:

- Trash Management Areas (TMA) and Control Measures are listed in priority order
- A detailed description for each trash control measure is described above in Section 3.2

Trash Management Area 1—Downtown

- Full-Capture Treatment Devices
- Street Sweeping
- Improved Trash Bins/Container Management
- Anti-Littering And Illegal Dumping Enforcement Activities
- Enhanced Storm Drain Inlet Maintenance

Trash Management Area 2—Retail

- Full-Capture Treatment Devices
- Improved Trash Bins/Container Management
- Anti-Littering And Illegal Dumping Enforcement Activities
- Enhanced Storm Drain Inlet Maintenance
- Street Sweeping

Trash Management Area 3—Traffic Corridors

- Street Sweeping
- Full-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance

- On-land Trash Cleanups
- Activities to Reduce Trash from Uncovered Loads

Trash Management Area 4A—Freeway Interchanges

- Full-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- On-land Trash Cleanups
- Activities to Reduce Trash from Uncovered Loads

Trash Management Area 4B—Roadways Adjacent to Freeways

- Full-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads

Trash Management Area 5—Commercial

- Improved Trash Bins/Container Management
- Anti-Littering And Illegal Dumping Enforcement Activities
- Partial-Capture Treatment Devices

Trash Management Area 6—Industrial

- Full-Capture Treatment Devices
- On-land Trash Cleanups
- Anti-Littering And Illegal Dumping Enforcement Activities
- Enhanced Storm Drain Inlet Maintenance
- Partial-Capture Treatment Devices

Trash Management Area 7—High Litter Residential

- Improved Trash Bins/Container Management
- Anti-Littering And Illegal Dumping Enforcement Activities
- On-land Trash Cleanups

Trash Management Area 8A—K-5 Schools

- Improved Trash Bins/Container Management
- On-land Trash Cleanups

Trash Management Area 8B —6-College

- Improved Trash Bins/Container Management
- On-land Trash Cleanups

Trash Management Area 9 —Parks

- Improved Trash Bins/Container Management
- Anti-Littering And Illegal Dumping Enforcement Activities
- On-land Trash Cleanups

3.3 Control Measure Implementation Schedule

Table 3-2. The City of Fremont completed and planned 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	FY 2020-2021	FY 2021-2022 ^c
TMA #1—Downtown														
Full-Capture Treatment Devices					X	X	X							
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Improved Trash Bins/Container Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Anti-Littering And Illegal Dumping Enforcement Activities			X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance					X	X	X	X	X	X	X	X	X	X
Partial-Capture Treatment Devices								X	X					
TMA #2—Retail														
Full-Capture Treatment Devices					X	X	X							
Improved Trash Bins/Container Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Anti-Littering And Illegal Dumping Enforcement Activities			X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance					X	X	X	X	X	X	X	X	X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Partial-Capture Treatment Devices								X	X					
TMA #3—Traffic Corridors														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full-Capture Treatment Devices					X	X	X							
Enhanced Storm Drain Inlet Maintenance					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	FY 2020-2021	FY 2021-2022 ^c
On-land Trash Cleanups		X	X	X	X	X	X	X	X	X	X	X	X	X
Activities to Reduce Trash from Uncovered Loads	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #4A—Freeway Interchanges														
Full-Capture Treatment Devices					X	X	X	X						
Enhanced Storm Drain Inlet Maintenance					X	X	X	X	X	X	X	X	X	X
On-land Trash Cleanups			X	X	X	X	X	X	X	X	X	X	X	X
Activities to Reduce Trash from Uncovered Loads	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #4B—Roadways Adjacent to Freeways														
Full-Capture Treatment Devices					X	X	X	X						
Enhanced Storm Drain Inlet Maintenance					X	X	X	X	X	X	X	X	X	X
Activities to Reduce Trash from Uncovered Loads	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #5—Commercial														
Improved Trash Bins/Container Management			X	X	X	X	X	X	X	X	X	X	X	X
Anti-Littering And Illegal Dumping Enforcement Activities			X	X	X	X	X	X	X	X	X	X	X	X
Partial-Capture Treatment Devices			X	X	X	X								
TMA #6—Industrial														
Full-Capture Treatment Devices					X	X	X							
On-land Trash Cleanups					X	X	X	X	X	X	X	X	X	X
Anti-Littering And Illegal Dumping Enforcement Activities	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Partial-Capture Treatment Devices			X	X	X	X								
Enhanced Storm Drain Inlet Maintenance					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	FY 2020-2021	FY 2021-2022 ^c
TMA #7—High Litter Residential														
Full-Capture Treatment Devices					X	X	X							
On-land Trash Cleanups			X	X	X	X	X	X	X	X	X	X	X	X
Anti-Littering And Illegal Dumping Enforcement Activities	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance					X	X	X	X	X	X	X	X	X	X
TMA #8A—K-5 Schools														
Improved Trash Bins/Container Management					X	X	X	X	X	X	X	X	X	X
On-land Trash Cleanups					X	X	X	X	X	X	X	X	X	X
TMA #8B—6-College Schools														
Improved Trash Bins/Container Management					X	X	X	X	X	X	X	X	X	X
On-land Trash Cleanups					X	X	X	X	X	X	X	X	X	X
TMA #9—Parks														
Improved Trash Bins/Container Management				X	X	X	X	X	X	X	X	X	X	X
Anti-Littering And Illegal Dumping Enforcement Activities	X	X	X	X	X	X	X	X	X	X	X	X	X	X
On-land Trash Cleanups	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	FY 2020-2021	FY 2021-2022 ^c
Jurisdiction-wide Control Measures — In addition the control measures listed above, the City of Fremont has adopted the following jurisdiction-wide measure to reduce trash.														
Single-Use Bag Ban					X	X	X	X	X	X	X	X	X	X
K-12 School Outreach	X	X	X	X	X	X	X	X	X	Activities to be determined				
Be the Street Campaign				X	X	X	Activities to be determined							
Multi-Family Dwelling Outreach						X	Activities to be determined							
Community Stewardship Grants (litter)							X	Activities to be determined						
Litter Related Outreach to Residents	X	X	X	X	X	X	X	X	Activities to be determined					
Creek and Shoreline Hot Spot Cleanups														
City-led Volunteer and/or Contractor Creek Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Designated Hot spot Cleanups	X	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

4.0 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 Alameda Countywide Clean Water Program (ACCWP), including the City of Fremont. 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 ACCWP. 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. In the interim, the City intends to conduct an annual assessment of control measures in place.

4.1 The Strategy selected by the City is described in the following sections. ACCWP Pilot Assessment Strategy

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

4.1.1 Management Questions

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

- Are specific control measures effective?
- Is the amount of trash in and along local waterways declining?
- Are control measures being implemented appropriately?

The ACCWP Pilot Strategy, including indicators and methods, is summarized in this section. These indicators are intended to detect progress towards trash load reduction targets and solving trash problems.

4.1.2 Indicators of Progress and Success

To track progress, both outcome and output indicators will be assessed. Outcome-based indicators are those that measure the result of litter reduction efforts. This type of indicator could include measurements of litter in and around the storm drain system or local water bodies. Output-based indicators are those that assess the implementation of control measures. This type of indicator could include assessing the maintenance of trash capture devices or compliance with product bans. Indicators that ACCWP Permittees will use to answer the management questions include:

Outcome-Based Indicators:

- 1-A Amount of single-use plastic bags entering storm drains
- 1-B Amount of polystyrene food ware entering storm drains
- 1-C Amount of litter removed from Trash Hot Spots and other creek/shoreline cleanup events
- 1-D Amount of litter at schools participating in the litter outreach program
- 1-E Amount of litter at multi-family dwellings participating in the targeted outreach program
- 1-F Self-reported litter related attitude and behavior of residents

Output-Based Indicators:

- 2-A Full capture device operation and maintenance
- 2-B Compliance with the Single-Use Bag Ban
- 2-C Implementation of an effective street sweeping program
- 2-D Commercial Trash Container Management
- 2-E Residential Trash Container Management

In selecting the indicators above, the City of Fremont in collaboration with ACCWP and other ACCWP 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.

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. 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.

4.1.3 Pilot Assessment Methods

This section briefly summarizes the preliminary assessment methods that the City of Fremont will implement through the ACCWP Pilot Strategy to generate indicator information described in the previous section. Additional information on each method

can be found in the ACCWP Pilot Trash Assessment Strategy submitted to the Water Board by ACCWP on behalf of the City.

OUTCOME-BASED INDICATORS

1-A Amount of Single-Use Plastic Bags Entering Storm Drains

ACCWP participated in the development of the BASMAA baseline trash generation rate study. A total of 47 drop inlet full trash capture devices located throughout Alameda County were included in the study. The study included an assessment of the volume and number of single-use plastic bags found in these 47 inlets as well as over 100 other inlets from throughout the Bay Area. Since the conclusion of the study, the Alameda County Waste Management Authority has adopted a single-use bag ban. As of January 1, 2013, all grocery stores, supermarkets, mini-marts, convenience stores, liquor stores, pharmacies, drug stores or other entities that sell milk, bread, soda and snack foods (all four items) and/or alcohol (Type 20 or 21 license) in Alameda County must comply with the Single-Use Bag Ban Ordinance.

ACCWP will conduct a follow-up study to assess the number and volume of single-use plastic bags in storm drain inlets throughout the County following the implementation of the bag ban. The study will consist of re-sampling most or all devices sampled during the previous study and comparing the number of single-use bags found before versus after the implementation of the bag ban. ACCWP will also sample up to 50 additional full trash capture inlet devices from high and medium trash generating areas throughout the County and compare the number of single-use bags found in all of the sampled inlets in Alameda County after the adoption of the bag ban versus the number of bags found in inlets throughout the Bay Area during the baseline trash generation rate study. ACCWP is planning to assess the level of single-use and other trash in all of the approximately 100 inlets again after several years to assess the overall decline in trash over time. A detailed study design is included in the ACCWP Pilot Assessment Strategy to be submitted separately.

1-B Amount of Polystyrene Food Ware Entering the Storm Drain System

As noted above, ACCWP participated in the development of the BASMAA baseline trash generation rate study. A total of 47 drop inlet full trash capture devices located throughout Alameda County were included in the study. The study included an assessment of the volume and number of expanded polystyrene (EPS) food ware items found in these 47 inlets as well as over 100 other inlets from throughout the Bay Area. A majority of the fourteen cities within Alameda County have adopted expanded polystyrene food ware bans. San Leandro and Pleasanton adopted their expanded polystyrene bans after the completion of the BASMAA baseline trash generation rate study.

ACCWP will conduct a follow-up study to assess the effectiveness of the EPS food ware bans at reducing the amount of EPS entering the storm drain system. As San Leandro and Pleasanton have adopted their ban since the completion of the baseline study, the follow-up study will compare the volume and number of EPS food ware items in the full trash capture devices in those two cities before and after the implementation of the bans. ACCWP will also sample a total of up to 100 full trash capture inlet devices from throughout the County and compare the number and volume of EPS food ware items in areas with versus without EPS bans. A detailed study design is included in the ACCWP Pilot Assessment Strategy to be submitted separately.

1-C Amount of Litter Removed from Trash Hot Spots and Other Creek/Shoreline Cleanup Events

ACCWP member agencies collect trash annual from a total of 47 Hot Spots as well as numerous additional creek and shoreline cleanup events. Each member agency will gather data from these events that will allow for long term tracking of trends. The data to be collected include the volume and or weight of trash removed, the number of people and or the total number of person hours for each event, the length of creek or shoreline cleaned, and the dominant types of trash at each location. ACCWP will compile the data from these events and track the long term trends in trash along these water bodies throughout the County. Member agencies will also track trends at their specific cleanup locations.

1-D Amount of Litter at Schools Participating in the Litter Outreach Program

ACCWP has developed a request for proposal for a four-year litter reduction education/outreach grant directed at K-12 schools throughout Alameda County. ACCWP intends to award a total of up to \$125,000 per year to the successful applicant(s). The goals of the project are to clearly reduce the amount of litter at the participating schools and incorporate institutional changes at the schools so that litter will continue to be reduced in the future. Implementation is scheduled to begin in the 2014/15 school year. The request for proposal will include a requirement to evaluate the level of litter reduction achieved. A copy of the request for proposals is included in the ACCWP Pilot Assessment Strategy. A description of the assessment mechanism(s) of the successful proposal(s) will be included in the ACCWP Fiscal Year 2013/14 Annual Report.

1-E Amount of Litter at Multi-Family Dwellings Participating in the Targeted Outreach Program

Multi-family dwellings (i.e., apartment buildings and condominium complexes) are often areas of high trash generation. ACCWP is working with the City of Livermore to develop a litter reduction pilot targeting multi-family complexes known to be sites with significant litter issues. The pilot includes the following apartment building and condominium complexes: Livermore Garden Apartments (5720 East Avenue), La Castilleja (975 Murrieta Boulevard), and Castilleja Del Arroyo (1001 and 1009 Murrieta Boulevard). The planned assessment mechanisms include:

- December 2013: Pre-campaign Measurement – ACCWP and the City will take baseline measurements of all three sites. Methods of measurement will include taking photos of on-site litter, as well as collecting, characterizing and counting the litter using the Ocean Conservancy’s Volunteer Trash Data Form. (Adopt A Creek Spot volunteers use this Data Form to characterize and count the trash collected from the Trash Hot Spot located behind the condominium complexes on Coastal Clean-up Day.) Areas to be measured include landscaped and other common areas, the sidewalk, gutter and streets located in front of the sites. All three property managers/volunteers will collect one week’s worth of on-site litter.
- November – December 2013: Research – All three property managers will be interviewed by City staff using twenty-five questions developed by the ACCWP. The interview results will help define the target audience(s) (i.e., age groups, income level, ethnic groups, etc.) and determine outreach tactics (i.e., face-to-face, signage, printed materials, etc.) This information will also assist the City and ACCWP in developing appropriate messaging.
- November 2013 – January 2014: Plan – One of the three sites will be chosen as the “Control” site. In addition, outreach strategies and tactics will be selected for the “Active” sites.
- May 17, 2014 – May 31, 2014: Post-campaign Measurement — City staff and ACCWP will duplicate the pre-campaign measurement methodologies at all three sites, including the Control. All three property managers/volunteers will collect one week’s worth of on-site litter. On-site and off-site litter will be characterized and counted by City staff using the Ocean Conservancy’s Volunteer Trash Data Form. All three property managers will be interviewed by City staff to help determine residents’ attitudes/change in behavior, etc.
- June 1, 2014 – June 30, 2014: Reporting – Final Pilot Report will be presented to ACCWP member agencies.

1-F Self-Reported Litter Related Attitude and Behavior of Residents

Through its Public Information and Participation program ACCWP encourages residents to adopt less polluting behaviors. One targeted behavior is littering. ACCWP uses a variety of mechanisms to influence residents including public service announcements, online and movie theater advertising, outreach to K-12 schools, and participating in outreach events. ACCWP conducts telephone surveys of residents every several years to gauge Alameda County residents’ awareness and attitude regarding stormwater related issues. These surveys include questions regarding respondents’ reported behavior and attitudes regarding litter and littering. Future surveys will continue to track the long term trends in residents’ awareness and attitudes regarding litter and littering.

OUTPUT-BASED INDICATORS

2-A Full capture device operation and maintenance

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 Fremont is currently developing an operation and maintenance verification program (Trash O&M Verification Program), via ACCWP, to ensure that devices are inspected and maintained at a level that maintains this designation. The ACCWP 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.

2-B Compliance with the Single-Use Bag Ban

The Alameda County Waste Management Authority is taking the lead on inspection and enforcement of the Single-Use Bag Ban. ACCWP will coordinate with the Waste Management Authority and report on the results of their inspection and enforcement program.

2-C Implementation of an effective street sweeping program

Street sweeping can be very effective in reducing the amount of trash entering the storm drain system. However, its effectiveness is dependent upon the frequency of sweeping and the ability of the sweeper to sweep along the edge of the curb. Parked cars can significantly reduce the effectiveness of a street sweeping program. The City of Fremont will coordinate with ACCWP to develop and implement an assessment of its street sweeping program.

2-D Commercial Trash Container Management

Improper trash container management at commercial facilities can be a significant source of trash to the storm drain system. The City will coordinate with ACCWP to develop and implement an assessment of its commercial trash container management program.

2-E Residential Trash Container Management

Fugitive trash from residential trash collection can be a significant source of trash to the storm drain system. The City will coordinate with ACCWP to develop and implement an assessment of its residential trash collection program.

4.2 BASMAA “Tracking California’s Trash” Project

The ACCWP 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. In an effort to address these information gaps associated with trash assessment methods, the Bay Area Stormwater Management Agencies Association (BASMAA), in collaboration with ACCWP, 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.

4.2.1 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 ACCWP 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.

4.2.2 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.

4.3 Long-Term Assessment Strategy

The City of Fremont is committed to implementing standardized assessment methods post-FY 2016-2017 based on the lessons learned from pilot assessments. 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 assessment methods that will be used to demonstrate progress during the remaining term of trash reduction requirements.

4.4 Implementation Schedule

The implementation schedule for the ACCWP Pilot Implementation Strategy, BASMAA's *Tracking California's Trash* project, and the Long-Term Assessment Strategy are included in Table 4-1. 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.

Table 4-1. City of Fremont planned 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 (ACCWP)										
Single-Use Plastic Bag Assessment	X	X				X				
Expanded Polystyrene Assessment	X	X								
Trash Hot Spot Cleanup Assessment	X	X	X	X	X					
K-12 School Litter Reduction Outreach Program						X				
Multi-Family Dwelling Litter Outreach Program	X									
Residents' Self-Reported Litter-Related Behavior	X					X				
Full Capture Operation and Maintenance Verification			X	X	X					
Single-Use Bag Ban Compliance		X	X	X	X					
Street Sweeping Effectiveness Evaluation			X	X	X					
Commercial Trash Container Management Assessment			X	X	X					
Residential Trash Container Management Assessment			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 (ACCWP)						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

5.0 REFERENCES

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6.0 ATTACHMENTS

6.1 Hot Spot Cleanups

Please Note—The City removed 11.4 cubic yards of trash during seven hotspot cleanup events in FY 12-13. Quantity of trash removed in FY 12-13 is less than previous years due to the absence of heavy items, e.g., furniture, appliances, etc., illegally dumped at various sites. The majority of trash collected in FY 12-13 consisted of non-bulky items such as paper, food wrappers, fast food containers, and cigarette butts. Volunteers/crews cleaned all hotspot sites to a “no visual impact” level; city staff has before and after photo documentation on file for each hot spot cleanup event. Volunteers also cleaned four Hot Spot sites (two Laguna Creek sites, Mission Creek, and Crandall Creek) during Coastal Cleanup Day on September 15, 2013 when an estimated 10 cubic yards of trash was removed from these four sites.

Trash Hot Spot	Cleanup Date	FY 2012-13 Volume of Trash Removed (cubic yards)	FY 2011-12 Volume of Trash Removed (cubic yards)	FY 2010-11 Volume of Trash Removed (cubic yards)	Dominant Type(s) of Trash	Trash Sources (where possible)
Tule Ponds South – South side of Walnut Ave. across from the Fremont BART Station	May 25, 2013	1.6	3.0	3.3	<ul style="list-style-type: none"> • Food wrappers • Paper/cardboard • Plastic bags • Cigarette butts • Other plastic products 	Windblown litter from the Fremont BART Station; litter from passing vehicles; minimal deposition to ponds.
Laguna Creek (Line E) – 50’ south from culvert and 250 north from culvert at Delaware Dr.	June 28, 2013	0.6	5.8	1.3	<ul style="list-style-type: none"> • Paper and cardboard • Fast food items • Cigarette butts • Styrofoam (pieces or pellets) • Fabric and cloth 	Illegal dumping; litter from residents/nearby convenience stores; minimal deposition from upstream sources
Laguna Creek (Line E) – Northwest of Almond Ave. and Lee St. from culvert north to 300’	June 28, 2013	4.2	6.9	5.6	<ul style="list-style-type: none"> • Paper and cardboard • Cigarette butts • Fabric and cloth • Fast food containers • Other plastic products 	Illegal dumping from multi-family residences; some litter deposition from upstream sources

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Mission Creek (Line L) – East of Paseo Padre Pkwy. Opposite of Grimmer Blvd. from culvert to 300' in Central Park (also covered some ground beyond 300' mark)	June 9, 2013	1.0	1.0	2.9	<ul style="list-style-type: none"> • Food wrappers • Paper/cardboard • Cigarette butts • Plastic and glass bottles • Aluminum cans 	Litter from trail users/picnic groups; minimal deposition from upstream sources, residential area and two school sites
Irvington Creek (Line G) – North of Blacow Rd. along Grimmer Blvd. from culvert to 300'	June 28, 2013	1.5	7.6	3.3	<ul style="list-style-type: none"> • Paper/cardboard • Fast food items • Cigarette butts • Other plastic products • Styrofoam (pieces or pellets) 	Deposition and accumulation from adjacent retail outlet, gas station, and high school; litter from passing vehicles on Grimmer Blvd.
Line B – West of Fremont Blvd. from culvert to 300'	June 28, 2013	1.7	2.9	2.7	<ul style="list-style-type: none"> • Bottles (plastic and glass) • Plastic bags • Paper and cardboard • Cigarette butts • Other plastic products • Shopping cart 	Litter from pedestrians and vehicles; some deposition from upstream sources; illegal dumping (shopping cart).
Crandall Creek (Line K) – 50' east of Deep Creek Rd. and 250' west of Deep Creek Rd. from Culvert	June 28, 2013	0.9	4.4	11.6	<ul style="list-style-type: none"> • Plastic bags and pieces • Fast food containers • Spray paint cans • Styrofoam (pieces or pellets) • Paper/cardboard 	Possible upstream deposition from littering; some illegal dumping by residential and commercial sources.