

Long-Term Trash Load Reduction Plan and Progress Assessment Strategy

February 1, 2014



Submitted by:

City of Hayward, 777 B Street, Hayward, CA 94541



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

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**CITY OF HAYWARD
LONG-TERM TRASH LOAD REDUCTION PLAN AND PROGRESS
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:



Alex Ameri
Director of Public Works
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February 1, 2014

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ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
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 the permitted jurisdictions and entities 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 Hayward'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 Hayward 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 the permitted jurisdictions and entities 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% reduction (i.e., "No Visual Impact") by July 1, 2022.

This Long-Term Plan is submitted by the City of Hayward 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 Hayward'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 Hayward'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, which included activities to achieve a 40% reduction in trash from February 1, 2012 to July 1, 2014.

1.2 Background

1.2.1 Long-Term Trash Load Reduction Plan Framework

A workgroup of MRP Permittee representatives and Water Board staff met regularly 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).

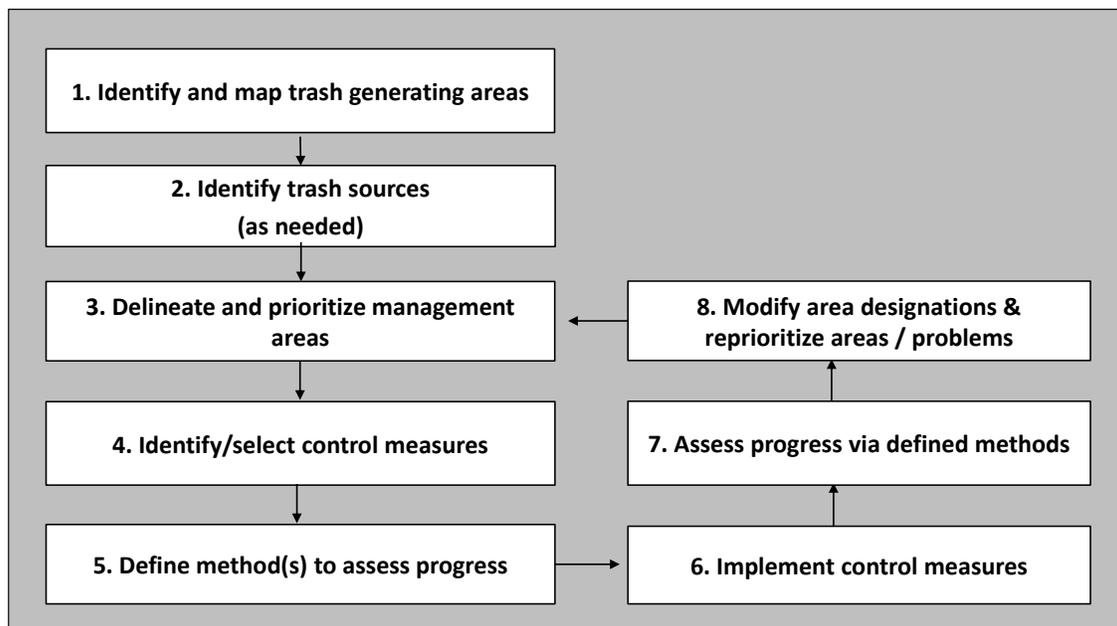


Figure 1-1. Eight-step framework for developing, implementing and refining Long-Term Trash Reduction Plans.

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 is 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 and are shown on Attachment I.

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.

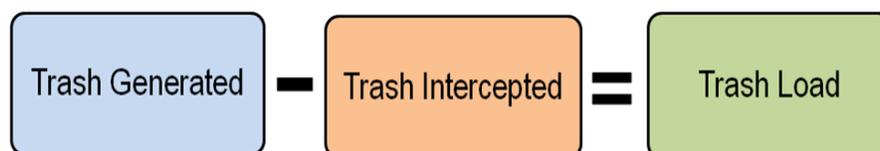


Figure 1-2. Conceptual model of trash generation, interception and load.

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).

In addition to the estimates described above, trash generation rates were also 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). In general, areas with a higher median income have a lower trash generation rate. Conversely, areas with a lower median income have a higher trash generation rate. Combined with land use trash generation rates (shown below in Table 1-1), each parcel in Hayward was assigned a final trash generation rate of either "low," "medium," "high," or "very high."

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; and
- 5.0 References

Section 2.0 is intended to provide a description of the extent and magnitude of the trash problem in the City of Hayward. 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 1876, the City of Hayward is located in Alameda County, and has a jurisdictional area of 12,648 acres. "Jurisdictional area" does not include areas that are subject to their own regional permit (such as California State University, East Bay), as discussed later in this Plan. According to the 2010 Census, the City has a population of 144,186, with a population density of 2,261.8 people per square mile and average household size of 3.12. The median household income in 2010 was \$62,115.

Hayward is the sixth largest City in the Bay Area and according to 2010 Census data, Hayward was considered the second most diverse city in California. Hayward is also home to two institutions of higher learning, one a major state university, California State University – East Bay and a community college, Chabot Community College. Hayward has two Bay Area Rapid Transit (BART) stations located in the north and south areas of the City and two major freeways, interstate (IS) 880 that bisects the City in half, running northeast, and State Route 92, which connects the central area of the City with the San Mateo/Hayward bridge. In addition to its freeways, AMTRAK's Capital Corridor (passenger rail, Union Pacific freight rail lines) as well as BART rail lines traverse the City.

Hayward is a major location for employment with top employers including the Hayward Unified School District, California State University – East Bay, Kaiser Permanente, City of Hayward, and St. Rose Hospital. Hayward also has a large industrial base with a number of manufacturing businesses and corporate headquarters including Shasta Soda, Berkeley Farms, Pepsi Cola, Gillig, and Russell City Energy Center, a combined cycle steam electric generating power plant. Residential areas of Hayward are interspersed between commercial and retail areas with the vast majority of the industrial area located predominantly on the western half of the City.

The City is primarily comprised of six (6) land uses and a category of 'other', which includes Hayward's vast open space in the hills to the east and wetlands to the west. Land uses within the City of Hayward identified by ABAG (2005) are provided in Table 2-1.

Hayward is the "Heart of the Bay," and its central location and transit options accommodate an influx of people traveling to, from, and through the City each and every day. This unique characteristic was carefully considered when evaluating proposed trash reduction strategies and management actions.

Table 2-1. Percentages of the City of Hayward's jurisdictional area¹ within land use classes identified by ABAG (2005)

Land Use Category	Jurisdictional Area (acres)	% of Jurisdictional Area
Commercial and Services	899.3	4.7%
Industrial	2,950.4	15.3%
Residential	6,544.7	33.9%
Retail	633.0	3.3%
K-12 Schools	594.6	3.1%
Urban Parks	264.4	1.4%
Other	7,425.5	38.5%

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 of Hayward are described in this section and illustrated in Figure 2-1.

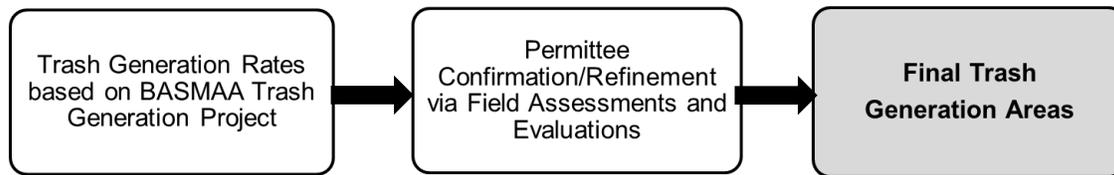


Figure 2-1. Development of Trash Generation Areas

As a first step, trash generation rates developed through the BASMAA Trash Generation Rates Project were applied to parcels within the City of Hayward 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 trash generation map (included as Attachment 1) using four trash generation rate categories (gallons/acre/year) that are symbolized by four different colors illustrated in Table 2-2.

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

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

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

1. Based upon knowledge of trash generation and problem areas within the City, staff identified areas on the draft map that potentially had incorrect trash generation category designations.
2. Trash generation category designations initially assigned to areas identified in step #1 were then assessed and confirmed/refined by staff 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 14 locations or areas to assist in conducting/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 (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

Upon receiving the draft trash generation map, City staff formed a “Trash Reduction Work Group,” comprised of key municipal staff from Environmental Services, Planning, Maintenance Services, Solid Waste, and Engineering disciplines. The group was provided electronic copies of the map prior to meeting in person to review the draft maps and collectively discuss the generation rates. This multidisciplinary approach allowed for the most comprehensive review of the trash generation rates, as each individual represented a different perspective and had unique knowledge about the City’s neighborhoods, land uses, socioeconomics, infrastructure, and trash management practices. The roundtable discussion was critical in determining accurate trash generation rates.

c. Reviewing Municipal Operations Data

Street Maintenance Division staff played an important role in providing municipal operations data related to existing street sweeping practices, inlet cleaning schedules, and on-land cleanup efforts. This information allowed staff to analyze potential trash management areas based on current operations data. Engineering staff assisted in providing data related to existing full trash capture devices, as well as maintenance schedules. This allowed the generation rate analysis in the drainage area covered by the devices to be more carefully reviewed to ensure accuracy. Solid Waste staff also provided information related to the waste hauler contract in place, which specifies city-wide trash pickup services for all sectors (residential, commercial, etc.). Creating a baseline for existing operations was a key element in ensuring all staff understands how trash is currently being managed City-wide.

d. Viewing Areas via Goggle Maps – Street View

Staff utilized Google Maps –Street View to confirm actual land use conditions and business types in more general commercial designations. This allowed for further refinement of generation rates because the type of business could be identified (fast food or convenience store, for example), as well as the location of the nearest trash receptacle, parking areas, and general visual condition. This method of confirmation was an efficient complement to the on-land visual assessments.

3. Based on assessments conducted to confirm/refine trash generation category designations, the City created a final trash generation map that depicts the most current understanding of trash generation within the City of Hayward. The City documented this process by tracking the information collected through the assessments and subsequent refinements to the Draft Trash Generation Map. The City of Hayward’s Final Trash Generation Map is included as Attachment 1.

2.2.2 Summary of Trash Generating Areas and Sources

Summary statistics for land use and trash generation categories generated through the mapping and assessment process are presented in Table 2-4. Please refer to Attachment 1 for Hayward's final trash generation map.

Table 2-4. Percentage of jurisdictional area within the City of Hayward 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	165.1	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
High	1,394.6	2.1%	2.2%	65.4%	30.0%	0.2%	0.0%	0.0%
Medium	7,007.7	12.4%	41.7%	33.0%	0.7%	8.5%	3.8%	0.0%
Low	10,744.6	0.0%	0.0%	30.9%	0.0%	0.0%	0.0%	69.1%

3.0 TRASH MANAGEMENT AREAS AND CONTROL MEASURES

This section describes the control measures that the City of Hayward 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, staff's experience in implementing trash controls and knowledge of trash problems, and costs of implementation. As knowledge is gained through the implementation of these control measures, the City may choose to refine their trash control strategy described in this section. If significant revisions or amendments are made, a revised Long-Term Plan will be submitted to the Water Board through the City's annual reporting process.

3.1 Management Area Delineation and Prioritization

Consistent with the long-term plan framework, the City of Hayward 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, the location of specific existing or planned management actions, as well as geographic attributes within City's jurisdiction.

City staff used the following procedure to designate TMAs:

(a). Identifying and mapping trash generating areas

The City first formed a trash workgroup consisting of staff that had knowledge and direct experience working in trash reduction. Street Maintenance Services staff, Public Works engineers, Water Pollution Source Control staff, and Environmental Services staff all participated in the process described below.

The process of identifying and mapping trash generation areas began with a base land use map, where staff familiar with the City's land uses reviewed the base land use map with the goal of ensuring the accuracy of land uses within the City, acknowledging that land uses directly affect the depiction of trash generation areas. Once land uses were shown accurately, a map was created that depicted trash generation rates. City staff reviewed and refined this draft map by using local knowledge and field assessments of trash levels and sources at fourteen separate locations, which were tracked using a spreadsheet. A visual on-land trash assessment protocol was used to document each field assessment. Once assessments were completed, the map was adjusted appropriately to reflect the findings of the field assessments. Using the now vetted trash generation rate map, which included trash hotspots, the locations of full trash-capture devices and delineation of the drainage area the devices covered, City staff created twelve preliminary trash management areas based on geographic layout and knowledge of current and planned control measures in each area.

(b). Identifying trash sources (as necessary or feasible) to assist in selecting trash management actions

Preliminary findings from the fourteen field assessments indicated that the potential trash sources can range from vehicular sources, such as moving or parked cars to pedestrian litter from local businesses or transit stations. It is anticipated that the focus on source identification for the purposes of selecting trash management actions will likely occur in areas that do not contain full trash capture devices.

(c). Prioritizing trash generating areas and associated types of trash problems

Prioritization has been given to the proposed trash management areas based on numerical value, with number one being the top priority. Priorities were determined based on the amount area categorized with high or very high trash generation rates within each management area. Considerations were also made to prioritize high traffic areas (both vehicular and pedestrian), as well as areas that had high trash generation, but did not contain any full trash capture devices. Finally, City staff utilized institutional knowledge of neighborhoods to assess which areas may be more difficult to coordinate management actions with, and prioritized those areas over others where communication and coordination have already been established.

- (1) The City's downtown area is currently considered the highest priority area and recently had multiple full trash capture devices installed in the areas that were determined to have "very high" trash generation rates. There is significant

pedestrian and vehicular traffic in the downtown, accounting for a major trash source, and the management area boundaries are synonymous with the Downtown street sweeping boundaries (which occur at an enhanced frequency of three times per week).

- (2) Mission Boulevard is the second highest priority management area, in acknowledgement that it is a major arterial and commercial core of the City, and that it contains established residential neighborhoods that have a medium or high trash generation rate. Limited full trash capture devices currently exist in this management area.
- (3) The Jackson Triangle is currently considered the third highest priority management area. This area ranged from medium to high trash generation rates, and is a mix of residential and commercial. There are existing full trash capture devices in this management area.
- (4) The "Upper B Street" area is considered the fourth highest priority management area. Upper B Street contains a limited amount of commercial land uses and is primarily medium density residential. The area contains several existing full trash capture devices. The management area's trash generation rates range from moderate to high.
- (5) The fifth priority trash management area is South of Harder Road to Industrial Parkway (between IS 880 and Union Pacific Railroad Tracks). This is a large geographical area that contains predominantly residential land uses with low or moderate trash generation rates. There is a large hydrodynamic separator which provides significant coverage to the central portion of the management area.
- (6) North Mission Boulevard (North of E Street) is the sixth priority trash management area. This is a relatively small area, directly north of the Downtown along the City's northern boundary. The land use is predominantly residential, with trash generation ranging from moderate to very high. Some full trash capture devices have been installed within this management area.
- (7) Hesperian Boulevard (between IS 880 and Southland Mall) is the seventh priority trash management area. A large portion of this management area is the Southland Mall properties, which have a high trash generation rate. The remaining area is generally commercial along Hesperian Boulevard and residential otherwise (ranging from low to high trash generation rates). There are some full trash capture devices in this area as well.
- (8) North of Jackson Street (between IS 880 and the Union Pacific Railroad Tracks) is the eighth priority trash management area. This area contains a mix of government buildings (Alameda County Offices and the City's Utilities and Maintenance Corp yards). The area also has residential and commercial land uses. There are several full trash capture devices that cover the high trash generation areas, and the remaining areas are predominantly low and moderate generation areas.
- (9) South of Highway 92 and West of IS 880 (bounded by the shoreline) is the ninth priority trash management area. The majority of the land use in this area is industrial and commercial uses and residential. There are minimal high trash generation areas and no full trash capture devices.
- (10) South of Industrial Parkway (to City Boundary) is the tenth priority trash management area. With the exception of a few large parcels, the area has a

moderate trash generation rate, and consists of mostly industrial land uses. There are no full trash capture devices in this management area.

- (11) The Shoreline to Hesperian Boulevard (North of Highway 92) is the eleventh priority trash management area. This area has predominantly industrial land uses, with minimal residential uses, and contains no full trash capture devices. This area also contains four trash "hotspots," along the shoreline and has a low or moderate trash generation range.
- (12) Hayward Hills (east of Mission Boulevard to City boundary) is the twelfth priority trash management area. This area is almost exclusively residential with a low trash generation rate. No trash capture devices are installed in this area. California State University-East Bay is also included within this area.

(d). Identifying and selecting trash management actions for specific management areas

Staff defined management areas in a way that would respect existing management practices, as well as allow for enhanced or new actions. For example, the Downtown management area (TMA #1) was specifically bounded to acknowledge the enhanced street sweeping that occurs there (three times per week). Some management actions, such as street sweeping, which occurs at a minimum of twice a month on every City street, and enhanced parking signage and enforcement on street sweeping days, can be applicable management actions in all management areas. Anti-littering or dumping enforcement is a management action that can be accomplished in any TMA utilizing the City's existing mobile camera system. On-land, creek, channel and shoreline clean-ups will be focused in high trash generation areas, as well as in TMAs that contain creeks and shoreline areas. Additional full trash capture devices will also be evaluated for specific management areas with high or very high trash generation rates. The City will also evaluate enhanced inlet maintenance in areas that also have a high trash generation rate and are not being served by a full trash capture device. In TMAs that contain non-jurisdictional land (California State University, East Bay, the Bay Area Rapid Transit Agency, Union Pacific Railroad, Chabot College, school districts etc.), the City intends to reach out to those entities to see if there is a way to collaborate on trash management actions. Given that schools are located in almost all TMAs, a management action that includes efforts made to increase the collaboration with local schools related to trash reduction will also be undertaken.

(e) Defining the type of assessment(s) that will be used to demonstrate progress towards goals

Either independently or in collaboration with, or through providing financial support to, the Alameda Countywide Clean Water Program or BASMAA, the City of Hayward is planning to conduct the following activities to assess the effectiveness of its trash reduction activities:

- i. Creek/Shoreline Hot-Spot and On-land Cleanup Efforts: Track long-term trends in the volume and dominant types of trash removed through Creek/Shoreline Hot-Spot and On-land Cleanup efforts.

- ii. Single-Use Bag Ban and Polystyrene Ban: The Program in coordination with Stopwaste.org is planning a study to measure the volume of single-use plastic bags, polystyrene containers, and predominant items of trash such as cigarette butts, in selected full trash capture devices during the winter of 2013/14 and compare it to the volume found during the pre-ban assessment.
- iii. Using modeled trash generation rates, to assess the reduction in trash achieved through the installation of full trash capture devices.
- iv. Through a BASMAA Proposition 84 grant, determine if some combinations of trash management actions and partial capture devices should be considered equivalent to the installation of full trash capture devices.
- v. Through a BASMAA Proposition 84 grant, assess the feasibility of using trash flux monitoring (measuring trash accumulated in flowing waterways during wet weather events) to assess long-term trends in the volume of trash discharged to receiving waters.
- vi. In coordination with the Program or among City staff, evaluate the feasibility of various on-land assessment methodologies.
- vii. Through the Program and BASMAA, assess the effectiveness of litter reduction outreach efforts such as the "Be the Street" campaign and the Program's K-12 environmental education program.
- viii. Conduct monthly field assessments (using field assessment data forms and photo documentation) of trash generation in each TMA at the same assigned location(s) that is representative of each TMA.
- ix. Evaluate each trash capture device installed within the City for trash collection performance, maintenance, cost and sustainability using visual observations and data from regular inspection and cleanings.
- x. Evaluate street sweeping frequency and parking signage for trash collection performance, cost and sustainability using data collection and visual inspections through field assessments
- xi. Evaluate trash receptacles for trash collection performance and maintenance

A map depicting the City's TMAs is included as Attachment 2. All jurisdictional areas within the City are included within a TMA. The amount of jurisdictional land area and associated trash condition categories for each TMA are depicted in Table 3-1.

Table 3-1. Jurisdictional area and percentage of each Trash Management Area (TMA) comprised of trash generation categories

TMA	Jurisdictional Area (Acres)	Trash Generation Rate			
		Very High	High	Medium	Low
1	220.8	38.4%	14.2%	44.2%	3.3%
2	1,372.9	0.9%	11.0%	47.6%	40.6%
3	470.3	0.6%	40.1%	56.6%	2.7%
4	458.8	1.5%	31.1%	40.6%	26.8%
5	1,966.4	0.0%	12.4%	50.9%	36.7%
6	218.4	8.0%	37.6%	53.7%	0.8%
7	945.4	0.0%	40.6%	39.4%	20.0%
8	827.4	4.9%	6.4%	71.2%	17.5%
9	2,097.4	0.0%	3.0%	55.3%	41.8%
10	779.1	0.0%	3.0%	94.2%	2.8%
11	2,201.0	0.0%	0.2%	74.1%	25.8%
12	7,754.1	0.0%	0.4%	2.6%	97.0%

3.2 Current and Planned Trash Control Measures

The City of Hayward historically has addressed trash, with the exception of countywide efforts in outreach/education, through maintenance operations and manual cleanup activities. Over the course of implementing efforts to reduce trash, a correlation between general maintenance and appearance of properties throughout the City and the prevalence of trash have been observed. The more "kept" a property appears, the less trash it will accumulate. Conversely, if the property appears to be poorly maintained, it has been observed that there is a higher prevalence of trash accumulation. The predominant maintenance operation to remove trash is through the City's aggressive street sweeping program. The City's street sweeping schedule has been in effect for many years prior to the MRP adoption and continues to be implemented as our main, year-round trash removal effort. The City sweeping schedule consists of sweeping all Downtown areas three times per week and all other areas of the City two times per month. Other maintenance operations that remove trash are on-land cleanup activities organized by City staff and the Keep Hayward Clean and Green Taskforce, weekend cleanup programs for local inmates, removal of illegally dumped material (based on City staff observations and local businesses and residents reporting the dumping incident), annual cleaning over 3,000 stormdrain inlets, and local enforcement by the City Police Department for littering.



Since the adoption of the MRP, the City purchased and installed eighty (80) trash capture devices (one large hydrodynamic separator and seventy nine (79) connector pipe screen devices in our catch basins) using monies from the Federal American Recovery and Reinvestment Act of 2009 as part of the Bay Area-Wide Trash Capture Demonstration Project. These trash capture devices satisfy the City's requirement to treat 30% of Hayward's commercial land area, as specified by the MRP provision C.10.a.iii. The trash capture devices treat a total area of 471 acres of land, which is approximately 31% of Hayward's very high and high trash generating areas. Please refer to Attachment 3 for the location and area treated by all the City's trash capture devices as of December 2013.

Since the adoption of the MRP, the City has also enhanced its street sweeping program by posting more parking signs and conducting enforcement actions to remove cars from the curbside so the street sweeper can clean the streets without obstructions. In the last three years, 54 streets have had signs posted for parking regulations regarding sweeping days. Another 28 streets are scheduled to have signage added during fiscal year 2013/2014. The City hired a private ticket processing company in 2013 to process all tickets distributed to illegally parked cars during sweeping days. This change to the enforcement program improved the speed at which tickets are processed and subsequently, fines associated with the tickets are collected. The City has seen an increase in the number of tickets issued and a reduction in cars parked on the street during sweeping days during 2013 as compared to previous years. Table 3-2 shows the trend of parking tickets issued and additional streets posted with parking signs over the last three fiscal years.



Table 3-2. Parking Ticket and Street Parking Signage Trend

Year	Number of Parking Tickets	Number of Streets Posted with Parking Signs
FY 2010/2011	10,234	19 streets added
FY 2011/2012	10,795	7 streets added
FY 2012/2013	15,075	28 streets added

As of January 1, 2014, the City has 170 streets posted with restrictions that are enforced on sweeping days by the Streets Division staff.

Since adoption of the MRP, the City has instituted an annual cleanup of its seven required trash hot spots along creeks pursuant to the MRP provision C.10.b.i. City staff cleans six of the seven hot spots each calendar year and volunteers clean up the hay_sfb_7 (San Francisco Bay-Shoreline) hot spot every calendar year (see Attachment 3 for locations of Hayward's hot spots). The City's current trash hot spots will be



evaluated and moved if the trash problem is significantly reduced or if another trash hot spot within the City is found to require additional cleanup. Hot spot evaluations and location changes will be included in this LTP and in future annual stormwater reports. Trash items collected during these cleanups are analyzed each year as an attempt to link the trash item to its source. The City will continue this effort each year during the trash hot spot evaluation process. For more information on Hayward's hot spot cleanups please refer to Section 3.2.14.

Over the past several years, Hayward has conducted a beautification campaign to discourage graffiti and encourage community pride by having students and resident artists paint murals throughout the City, including electrical boxes, walls, and other prominent places for the public to view. This effort has been widely successful and has discouraged not only graffiti but trash near these areas as well. The City will continue to explore more beautification efforts to instill a sense of pride in a community devoid of trash.

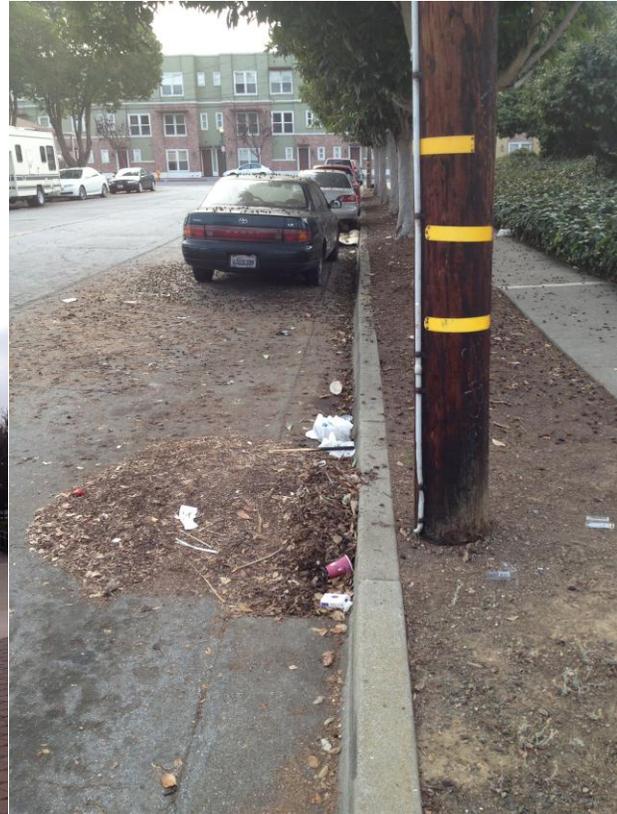
The City is supportive of true source control (eliminating the distribution of items that are thrown away as trash) and adopted a polystyrene ban in 2011 and a single-use plastic bag ban in 2013. Both are progressive efforts to reduce trash and promote the City's

adopted priorities of “green” and “clean.” The plastic bag ban is enforced by StopWaste (the Alameda County Waste Management Authority) while the polystyrene ban is enforced by City staff. In addition to the County’s assessment of the bans mentioned in Section 3.1, the City will continue to use its own resources to inspect businesses and take appropriate enforcement action against the illegal distribution of banned items. In conjunction with the Alameda County Clean Water Program’s project to assess the effectiveness of trash capture devices described in Section 4, local assessment from hot spot cleaning, cleaning trash devices, street assessments, and an analysis of enforcement actions, the City will show a trend of trash reduction from these bans. For more information about the product bans please refer to Section 3.2.13.

The above mentioned trash reduction activities will continue to serve as the City’s main trash reduction efforts and will be enhanced as these actions are evaluated (please refer to Section 3.2.13 for a description of enhancements to come). In addition, the City will add new trash reduction activities that are TMA-specific and jurisdiction-wide as described in the following sections.

3.2.1 Trash Management Area #1

TMA #1 is the highest priority management area and sources of trash in this TMA correlate with the amount of foot and car traffic the area receives. TMA #1 is higher density, with a mix of residential and commercial buildings and major arterial roadways. TMA #1 contains Hayward’s City Hall, Public Library, the northern BART station, and a high density retail/commercial area. Currently the Downtown streets are swept three times a week and 34 connector pipe screen trash devices are installed in the locations depicted on Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleanings once a year. The predominant method to reduce the trash by the year 2022 will be using the current and future trash capture devices, enhancement of the number and efficiency of trash receptacle and container management, and on-land cleanups in conjunction with the current efforts of street sweeping, and existing on-land cleanup activities including inlet cleaning.



Street Sweeping

The Downtown area of Hayward is swept three times per week during night hours to allow for local parking during business hours. Due to the unique time of day for the street sweeping program, the Downtown area does not require signage for parking restrictions, therefore no signage is planned to be installed in the Downtown area. No other enhancement of the streets sweeping schedule is planned at this time in TMA #1.

Storm Drain Inlet Maintenance

Inlets in TMA #1 are cleaned once a year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement to this program is planned at this time in TMA #1.

Full Trash Capture Treatment Devices

Because of the dense nature of TMA #1 and the high trash generation rate of the majority of its area, trash capture devices will be the fastest way to control the trash problem until the long-term goal of source control/enforcement of local laws can fully take effect. Currently, TMA #1 has 34 connector pipe screen trash capture devices installed along A Street, B Street, Foothill Boulevard, and Jackson Street with a few clusters of devices located within residential areas. The trash devices were installed during 2012 and 2013 and have not been tested through a significant rainy season. It is unclear at this time if the small connector pipe screen devices are collecting trash at a rate at which staff can service in the long term. The City will evaluate each small connector pipe screen device using a Trash Capture Maintenance Report form

(Attachment 4) as each device is cleaned. The devices are being inspected and cleaned as needed, and/or as rain event occur. Data collected from the forms will be assessed annually and observations of how these devices perform will be a factor in whether the City removes or relocates devices, or installs additional small connector pipe screen devices or larger trash capture devices. The cost of maintaining the devices will be measured during these observations and assessments. If the devices are collecting the trash (performing well), then the maintenance effort will be evaluated in the next 2 years (two full rainy seasons) to assess if the cleaning program is cost prohibitive. If it is, then the long term plan for collecting trash will be to install a larger device to capture more trash and allow for less maintenance. If the devices are reducing the trash and the cost is not prohibitive then the devices will remain where they are installed or be moved to locations most advantageous to capturing the trash as shown in our annual evaluation.

Partial-Capture Treatment Devices

The City will research and consider another option for trash capture in TMA#1 using a combination of partial trash capture using inlet screens and the street sweeping program to pick up the trash on the curb. In the next year, the City will survey other municipalities who have inlet screens, assess their performance, and determine if this type of trash capture strategy would work for high trash generating streets like A Street and Foothill Boulevard. If inlet screens are chosen as part of TMA#1's trash reduction plan then purchasing and installing inlet screens would commence in 2015. Locations to install inlet screens would be determined using the evaluation strategy listed above under full trash capture treatment devices.

Improved Trash Receptacles/Container Management

The City has a very active and successful solid waste and recycling program to manage trash using containers, collection and recycling programs. Even with current efforts, trash receptacle management continues to be a challenge due to each location's specific issues whether on a public street or at a business. The City will evaluate sources of trash at each location on a case-by-case basis using observations through trash capture device cleaning, on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's solid waste and recycling program, each business, street, or public open space associated with sources of trash will receive a focused outreach to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #1 will be evaluated block by block to assess all high trash generation areas within the TMA by 2015, with the goal of managing the trash receptacles and containers and improving the trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of

volunteers found and their available time. Areas of focus will first be high trash generation areas up and down A Street, B Street and Foothill Boulevard and will expand where resources are available. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2014.

3.2.2 Trash Management Area #2

TMA #2 is the second highest priority area in the City and sources of trash correlate with Mission Boulevard, the main roadway that traverses the TMA (Attachment 2). Mission Boulevard, a major commercial corridor, is comprised of mixed residential and commercial businesses. The roadway receives a high traffic volume as one of the City's primary north/south thoroughfares. The Mission Boulevard corridor contains multiple bus stations and fast food establishments, both proven to be a source of trash on the streets. Currently, Mission Boulevard is swept twice per month and 5 connector pipe screen trash devices are installed in the locations depicted on Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022



will be to use the current and future trash capture devices, enhancing the street sweeping frequency, trash bin/container management, and on-land cleanups in conjunction with the current efforts on-land cleanup activities including inlet cleaning.

Street Sweeping

Currently, TMA #2 is sweep twice a month in the evening. Most of Mission Boulevard is red curbed and has no parking signage nearby the businesses. No additional parking signage is planned at this time as the sweeping activities take place at night. Enhancements planned for TMA #2 include possibly increasing the sweeping frequency once the newly installed trash devices are assessed for effectiveness. Mission Boulevard may also be a good candidate for installation of inlet screens to block the trash from entering the storm drains. The

combination of screens and street sweeping could remove the trash.

Storm Drain Inlet Maintenance

Inlets in TMA #2 are cleaned once a year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement to this program is planned at this time in TMA #2.

Full Trash Capture Treatment Devices

The City will evaluate each small connector pipe screen device using a data collection form (Attachment 4) as each device is cleaned. The devices are being inspected and cleaned as needed, and/or as rain events occur. Data collected from the forms will be assessed annually and observations of how these devices perform will determine if more small trash capture devices will be installed. As mentioned above, inlet screens may be most appropriate to block the trash as the elongated geography of Mission Boulevard does not exhibit a drainage area that is convenient to install a large trash capture device. Cost associated with maintenance of the trash devices will also be assessed. The trash capture devices will be evaluated in the next two years (two full rainy seasons) to assess cleaning program costs.

Partial-Capture Treatment Devices

The City will research and consider partial trash capture using inlet screens with street sweeping to pick up trash at the curb. In the next year the City will survey other municipalities who have inlet screens, assess their performance, and determine if this type of trash capture strategy would work for high trash generating parcels along Mission Boulevard. If inlet screens are chosen as part of TMA#2's trash management actions, then purchasing and installing inlet screens would commence in 2015. Locations to install inlet screens would be determined using the evaluation strategy listed above under full trash capture treatment devices.

Improved Trash Receptacles/Container Management

TMA #2's specific sources of trash along Mission Boulevard correlate with bus stations and fast food establishments. The City will evaluate sources of trash at each block along Mission Boulevard using observations through trash capture device cleaning, on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's solid waste program, each business, street, bus station, and/or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #2 will be evaluated block by block to assess the entire high trash generating areas within the TMA by 2015, with the goal of managing the trash receptacles and containers and improving trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. Areas of focus will first be high trash generation areas up and down Mission Boulevard and will expand where resources are available. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green

Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2014.

3.2.3 Trash Management Area #3

TMA #3 is the third highest priority area in the City, commonly called the 'Jackson Triangle,' and is predominantly comprised of residential land uses with some concentrations of commercial/retail establishments along Jackson Street (State Route 92). The sources of trash in TMA #3 correlate with the amount of food establishments and traffic it receives along its bordering roads. The Jackson Triangle area contains



many low economic areas with open lots that attract trash and illegal dumping. The TMA also contains a homeless population that can be a source of trash as they pick through trash receptacles and scatter trash on the streets. Currently TMA #3 is swept twice a month and nine connector pipe screen trash devices are installed in the locations depicted in Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022 will be using the current and future trash capture devices, trash bin/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.

Street Sweeping

TMA #3 is swept two times per month.

Enhancements planned for this area include the installation of new parking signage and increasing street sweeping in the high trash generating areas not treated with trash capture devices. Nearly half of the high trash generation acreage is treated by devices so, the focus for enhanced street sweeping would be in the central area of TMA #3 (south of Orchard Avenue).

Storm Drain Inlet Maintenance

Inlets in TMA #3 are cleaned once a year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement to this program is planned at this time in TMA #3.

Full Trash Capture Treatment Devices

TMA #3 has well suited locations for trash capture devices. The drainage in the Jackson Triangle is straight



forward and direct, presenting many possible sites where future devices could be installed. Currently, TMA #3 has nine connector pipe screen trash capture devices installed along the border of the triangle. After the City evaluates the devices' performance and the cost of maintaining the devices, staff will ascertain if a large device would perform better as most of the high trash generation acreage is concentrated in the north portion of the TMA. If it is determined that a large device should replace a series of small devices, then the long-term plan for capturing the trash will be to install a larger device. If the smaller devices are reducing the trash and the cost is not prohibitive, then the devices will be remain where they are installed or will be moved to locations most advantageous to capturing the trash as shown in our annual evaluation.

Partial-Capture Treatment Devices

A combination of partial trash capture using inlet screens and street sweeping will be considered and researched to explore this trash capture alternative will occur during 2014. If inlet screens are chosen as part of TMA#3's trash reduction plan, purchasing and installation would commence in 2015. Locations to install inlet screens would be determined using the evaluation strategy listed above under full trash capture treatment devices.

Improved Trash Receptacles /Container Management

The City will evaluate sources of trash at high trash generation blocks using observations through trash capture device cleaning, on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's solid waste department, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #3 will be evaluated block by block to assess the entire high trash generating areas within the TMA by 2015, with the goal of managing the trash receptacles and containers and improving trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick the trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. TMA #3 will be an excellent candidate for the 'adopt of block' program for the predominant residential areas within the Jackson Triangle. The campaign will be a project to get the community involved and take pride in their neighborhoods to keep their streets trash free. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2015.

3.2.4 Trash Management Area #4

TMA #4 is the fourth highest priority area in the City containing the 'upper B Street' area is predominantly comprised of residential areas, offices, and limited retail establishments. The sources of trash in TMA #4 correlate with the amount of traffic (buses and cars) and lower income areas. This management area has a high occurrence of illegal dumping, which City staff is working to combat. Currently TMA #4 is swept twice per month and three connector pipe screen trash devices are installed in the locations depicted in Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022 will be using the current and future trash capture devices, trash bin/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.



TMA #4 will be closely assessed in more detail over in the next year. Many of the residential areas in TMA #4 contain higher density housing and generally have a lower median household income. However, the trash problems throughout the area may vary and management actions will need to be localized within the TMA in order to be effective.

Street Sweeping

TMA #4 is swept two times per month. Enhancements planned for this area include parking signage and increasing street sweeping in the high trash generating areas not treated with trash capture devices. At the time this plan was written, many of the streets in TMA #4 did not exhibit trash on the streets, however, there were 'hot spots' of trash around some of the older housing units. Each block will be assessed for parking signage enhancement and an

increase in street sweeping during 2014.

Storm Drain Inlet Maintenance

Inlets in TMA #4 are cleaned once a year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement of this program is planned at this time in TMA #4.

Full Trash Capture Treatment Devices

Currently, TMA #4 has three connector pipe screen trash capture devices installed along the border of the TMA. These devices will be observed and assessed in the next year for performance and cost of maintenance. If the devices are reducing the trash

and the cost is not prohibitive, the devices will remain where they are installed or will be moved to locations most advantageous to capturing the trash as shown in our annual evaluation. More devices will be installed if it is found that trash is accumulated in the inlets and is observed on the streets.

Partial-Capture Treatment Devices

A combination of partial trash capture using inlet screens and street sweeping to pick up the trash on the curb will be considered and researched to explore this trash capture alternative will occur during 2014. If inlet screens are chosen as part of TMA#4's trash reduction plan, purchasing and installation of inlet screens would commence in 2015. Locations to install inlet screens would be determined using the evaluation strategy listed above under full trash capture treatment devices.

Improved Trash Receptacles /Container Management

The City will evaluate sources of trash at high trash generation blocks using observations through trash capture device cleaning, on-land cleanups, and during the commercial/industrial stormwater inspections. Working with the City's solid waste program, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #4 will be evaluated block by block to assess the entire high trash generating areas within the TMA by 2015, with the goal of managing the trash receptacles and containers and improving trash/recyclables collection.

On-Land Trash Cleanups

Locations were found in TMA #4 to be illegal dumping hot spots. These locations exhibited trash items small enough to enter the storm drains and were not predominantly large items such as mattresses or television sets that do not enter the storm drain. To address illegal dumping, the final trash reduction effort will be to reactively pick the trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. For the dumping sites, the City will utilize its mobile camera system, placing surveillance units in areas that have had repeated incidents of trash and dumping. Proper enforcement will be a result of the camera's findings with the intention of deterring illegal dumping. In addition, the City will expand its 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. TMA #4 will be an excellent candidate for the 'adopt of block' program for the predominant residential areas within the TMA. The campaign will be a project to get the community involved and take pride in their housing areas to keep their streets trash free. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2015.

3.2.5 Trash Management Area #5



TMA #5 is the fifth highest priority area in the City and contains a large geographic area between Harder Road and Industrial Boulevard to the north and south and Interstate 880 and the Union Pacific Railroad to the West and East. TMA #5 contains predominantly residential areas and limited commercial land uses. The sources of trash in TMA #5 correlate with the amount of transient traffic and the economic makeup of the residents. Currently TMA #5 is swept twice a month and two connector pipe screen trash devices as well as one large hydrodynamic waste separator are installed in the locations depicted on Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022 will be using the current and future trash capture

devices, trash bin/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.

TMA #5's success for reducing trash will be driven by the large trash capture device located in the center of the TMA and treating nearly a 150 acre high trash generating area. TMA #5's prime drainage hydrology for trash capture devices will be the fastest method for reducing trash by 2022 with the addition of the following trash reduction methods listed below.

Street Sweeping

TMA #5 is swept two times a month. Enhancements planned for this area include parking signage and increasing street sweeping in the high trash generating areas not treated with trash capture devices. Each block will be assessed for parking signage enhancement and an increase in street sweeping frequency during 2014.

Storm Drain Inlet Maintenance

Inlets in TMA #5 are cleaned once a year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement to this program is planned at this time in TMA #5.

Full Trash Capture Treatment Devices

Currently, TMA #5 contains two connector pipe screen trash capture devices and one



large hydrodynamic separator. These devices will be observed and assessed in the next year for performance and cost of maintenance. Staff is confident that the hydrodynamic separator will filter the majority of the trash in this high generating area. More devices will be installed if it is found that trash is being collected in these devices.

Partial-Capture Treatment Devices

A combination of partial trash capture using inlet screens and street sweeping to pick up the trash on the curb will be considered and researched to explore this trash capture alternative will occur during 2014. If inlet screens are chosen as part of TMA#5's trash reduction plan, purchasing and installation of inlet screens would commence in 2015. Locations to install inlet screens would be determined using the evaluation strategy listed above under full trash capture treatment devices.

Improved Trash Receptacles /Container Management

The City will evaluate sources of trash at high trash generation blocks using observations through trash capture device cleaning, on-land cleanups, and during the commercial/industrial stormwater inspections. Working with the City's solid waste program, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #5 will be evaluated block by block to assess the entire high trash generating areas within the TMA by 2015, with the goal of managing the trash receptacles and containers and improving trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick the trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. TMA #5 will be a good candidate for the 'adopt of block' program for the predominant residential areas within the TMA. The campaign will be a project to get the community involved and take pride in their housing areas to keep their streets free of trash. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2016.

3.2.6 Trash Management Area #6

TMA #6 is the sixth highest priority area in the City and contains a small geographic area at the end of Mission Boulevard. TMA #6 contains predominantly residential areas and limited commercial areas. The sources of trash in TMA #6 correlate with the amount of transient traffic and retail along Mission Boulevard as well as the economic makeup

of the residents. Currently TMA #6 is swept twice a month and five connector pipe screen trash devices are installed in the locations depicted on Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022 will be using the current and future trash capture devices, trash receptacle/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.

TMA #6 will be evaluated block by block, assessing the entire high trash generating areas within the TMA by 2016, with the goal of managing the trash receptacles and containers improving the trash/recyclables collection frequency.

Street Sweeping

TMA #6 is swept two times per month. Enhancements planned for this area are parking signage and increasing street sweeping in the high trash generating areas not treated with trash capture devices. Each block will be assessed for parking signage enhancement and an increase in street sweeping frequency during 2015.

Storm Drain Inlet Maintenance

Inlets in TMA #6 are cleaned once a year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancements to this program are planned at this time in TMA #6.



Full Trash Capture Treatment Devices

Currently, TMA #6 has 5 connector pipe screen trash capture devices installed along the border of the TMA. These devices will be observed and assessed in the next year for performance and cost of maintenance. More devices will be installed if it is found that trash is accumulated in the inlets and is observed on the streets.

Partial-Capture Treatment Devices

A combination of partial trash capture using inlet screens with street sweeping to pick up the trash on the curb will be considered and research to explore this trash capture alternative will occur during 2014. If inlet screens are chosen as part of TMA#6's trash reduction plan then purchasing and installing inlet screens would commence in 2016. Locations to install inlet screens would

be determined using the evaluation strategy listed above under full trash capture treatment devices.

Improved Trash Receptacles /Container Management

The City will evaluate sources of trash at high trash generation blocks using observations through trash capture device cleaning, on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's solid waste department, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #6 will be evaluated block by block with the goal of assessing the entire high trash generating areas within the TMA by 2016, with the goal of managing the trash receptacles and containers and improving trash/recyclables collection.

On-Land Trash Cleanups

Particularly with the event of wind-blown trash, the final trash reduction effort will be to reactively pick the trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. TMA #6 will be a good candidate for the 'adopt of block' program for the predominant residential areas within the TMA. The campaign will be a project to get the community involved and take pride in their housing areas to keep their streets trash free. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2016.

3.2.7 Trash Management Area #7

TMA #7 is the seventh highest priority area in the City and contains the geographic area bordered between Interstate 880, and Hesperian Boulevard and includes Southland Mall and a large residential area west of Southland Mall. The sources of trash in TMA #7 are predominantly from transient traffic and retail establishments. Currently TMA #7 is sweep twice per month and eight connector pipe screen trash devices are installed in the locations depicted on Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once per year. The predominant method to reduce the trash by the year 2022 will be using the current and future trash capture devices, trash receptacle/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.

TMA #7 will be evaluated block by block to assess high trash generating areas by 2016, with the goal of managing the trash receptacles and containers and improving the trash/recyclables collection. Areas of trash in this TMAS are heavily associated with bus stations and retail land uses, including gasoline stations. TMA #7 has a high trash area at the Interstate 880 off ramp at A Street. The City is committed to working with CalTrans to combat trash along this area. At the time this Plan was written, the immediate area

surrounding the Southland mall property did not exhibit trash but the neighboring bus spots and retail did. Further observations will be done to determine the exact pattern of trash in the streets and inlets.

Street Sweeping

TMA #7 is swept two times per month. Enhancements planned for this area include parking signage and increasing street sweeping in the high trash generating areas not treated with trash capture devices. Each block will be assessed for parking signage enhancement and an increased street sweeping during 2016.



Storm Drain Inlet Maintenance

Inlets in TMA #7 are cleaned once per year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. For inlets exhibiting a high level of trash (the off-ramp area from Interstate 880 on A Street, for example) the frequency of cleaning will be increased to abate the trash. These particular inlets will be noted by the Maintenance Division and indicated on a map to direct an effective cleaning schedule.

Full Trash Capture Treatment Devices

Currently, TMA #7 has eight connector pipe screen trash capture devices installed



residential areas across from Southland Mall and in retail areas along the south side of the mall. These devices will be observed and assessed in the next year for performance and cost of maintenance. More devices will be installed if it is found that trash is accumulated in the inlets and is observed on the streets.

Partial-Capture Treatment Devices

A combination of partial trash capture using inlet screens and the street sweeping program to pick up the trash on the curb will be considered and research to explore this trash capture alternative will occur during 2014. If inlet screens are chosen as part of TMA#7's trash reduction plan, purchase and installation of inlet screens would commence in 2017. Locations to install inlet screens would be determined using the evaluation strategy listed above under full trash capture

treatment devices.

Improved Trash Receptacles /Container Management

The City will evaluate sources of trash at high trash generation blocks using observations through trash capture device cleaning, on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's solid waste program, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash receptacle and containment program to control trash.

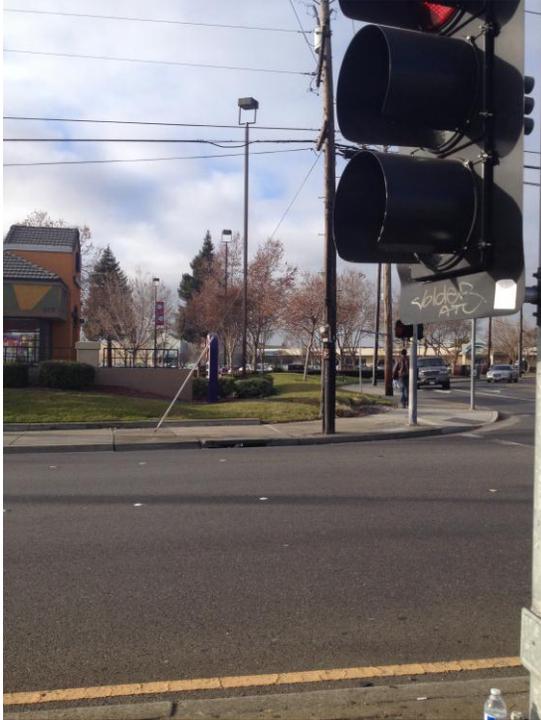
TMA #7's high trash generation areas will be evaluated block by block, particularly in its residential areas, by 2016 with the goal of managing the trash receptacles and containers and improving the trash/recyclables collection

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick the trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. TMA #7 will be a good candidate for the 'adopt of block' program for the predominant residential areas within the TMA. The campaign will be a project to get the community involved and take pride in their neighborhood to keep their streets trash free. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2017.

3.2.8 Trash Management Area #8

TMA #8 is the eighth highest priority area in the City and contains the area north of Jackson Street between Interstate 880 and the Union Pacific Railroad Tracks. TMA #8 contains a mix of government buildings, offices, and maintenance corporation yards, as well as residential and commercial land uses. The sources of trash in TMA #8 can be correlated with the amount of traffic and retail/commercial establishments along Jackson Street. Currently TMA #8 is swept twice per month and 14 connector pipe screen trash devices are installed in the locations depicted on Attachment 3. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022 will be using the current and future trash capture devices, trash bin/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.



TMA #8 will be evaluated street by street to ascertain true sources of trash with the goal of assessing the entire high trash generating areas within the TMA by 2016 and assessing the entire medium trash generation areas within the TMA by 2018. The focus for all trash reduction activities will be localized along Jackson Street and trash hot spots for the next four years. The remaining four years (until 2022) will allow for time to commence trash reduction activities in the medium trash generation areas.

Street Sweeping

TMA #8 is swept two times per month. Enhancements planned for this area include parking signage and increasing street sweeping in the high trash generating areas not treated with trash capture devices. Each block will be assessed for parking signage enhancement and an increase in street sweeping during 2015.

Storm Drain Inlet Maintenance

Inlets in TMA #8 are cleaned once per year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement of this program is planned at this time in TMA #8.

Full Trash Capture Treatment Devices

Currently, TMA #8 has 14 connector pipe screen trash capture devices installed along the border of the TMA. These devices will be observed and assessed in the next year for performance and cost of maintenance. More devices will be installed if it is found that trash is accumulated in the inlets and is observed on the streets.

Partial-Capture Treatment Devices

A combination of partial trash capture using inlet screens and enhanced street sweeping frequency to pick up the trash on the curb will be considered. Research to explore this trash capture alternative will occur during 2014. If inlet screens are chosen as part of TMA#8's trash reduction plan, then the purchase and installation of inlet screens would commence in 2016. Locations to install inlet screens would be determined using the evaluation strategy listed above under full trash capture treatment devices.

Improved Trash Receptacles/Container Management

The City will evaluate sources of trash at high trash generation block using observations through trash capture device cleaning, on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's Solid Waste Program, each business, street, or public open space associated with sources of trash

will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

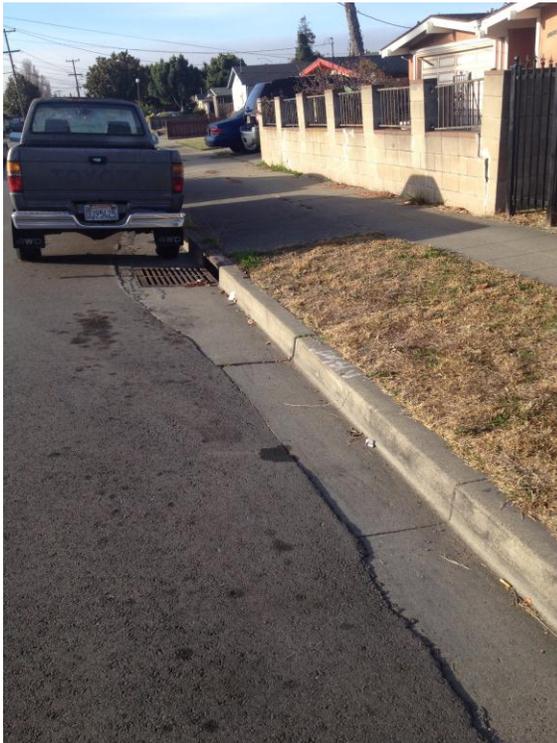
TMA #8's high trash generation areas will be evaluated block by block by 2016, with the goal of managing the trash receptacles and containers and improving the trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick the trash items off the streets if trash capture devices, street sweeping, and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. TMA #8 will be a good candidate for the 'adopt of block' program for the predominant residential areas within the TMA. The campaign will be a project to get the community involved and take pride in their neighborhoods to keep their streets trash free. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2016.

3.2.9 Trash Management Area #9

TMA #9 is the ninth highest priority area in the City and contains the area south of Highway 92 and West of Interstate 880 area.



TMA #9 is a large area geographically and primarily consists of industrial and commercial land use with limited residential area. There are only a few small pockets of high trash generating areas in the northern part of the TMA (predominantly commercial and retail land use) with the majority of areas designated with medium and low trash generation rates. Currently TMA #9 is swept twice per month and there are no trash capture devices installed within the TMA. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once per year. The predominant method to reduce the trash by the year 2022 will be localized current and future trash receptacle/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities, including inlet cleaning.

Due to the small area of high trash generation, TMA #9 will be evaluated street by street to determine trash sources sometime after 2018, unless the control implementation schedule (Section 3.3) is accelerated to allow time for TMA #9 trash reduction activities. The focuses for TMA #9 will be to mitigate the high trash generation areas first, then address the medium trash generation areas after 2018 with the following trash reduction strategy.

Street Sweeping

TMA #9 is swept two times per month. Enhancements planned for this area include parking signage and increasing street sweeping in the high trash generating areas. Each street will be assessed for parking signage enhancement and an increase in street sweeping after 2018.

Storm Drain Inlet Maintenance

Inlets in TMA #9 are cleaned once per year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement of this program is planned at this time in TMA #9.

Partial/Full Trash Capture Treatment Devices

Currently no trash capture devices are installed in TMA #9 and none are planned.

Improved Trash Receptacles/Container Management

The City will evaluate sources of trash at high trash generations areas using observations during on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's solid waste program, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #9 will be evaluated street by street after 2018 for high trash generation areas with the goal of assessing the entire high trash generating areas within the TMA by 2019, with the goal of managing the trash receptacles and containers to their best proficiency and improving the trash/recyclables collection to its best frequency.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick the trash items off the streets if street sweeping and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, school groups, businesses, residents, and city staff will implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. TMA #9 will be a good candidate for the 'adopt of block' program for the predominant residential areas within the TMA. The campaign will be a project to get the community involve and take pride in their neighborhood to keep their streets trash free. School children who have community service requirements will be encouraged through an active solicitation from the City to 'adopt a block' and pick up trash, and efforts already being made by the Keep Hayward Clean and Green

Taskforce can be directed to accomplish this action as well. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2018.

3.2.10 Trash Management Area #10



TMA #10 is the tenth highest priority area in the City and contains the area between Industrial Parkway, the Union Pacific Railroad, and the City's southern border with Union City. TMA #10 primarily contains industrial land use on large parcels. There is a small cluster of retail establishments at the southwest corner of the TMA with a possible high trash generation but the majority of the TMA is characterized as having medium trash generation. Currently TMA #10 is swept twice per month and there are no trash capture devices installed within the TMA. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022 will be localized current and future trash bin/container management, on-land cleanups, enhancing its street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.

Due to the limited areas with high trash generation, TMA #10 will be evaluated street by street to evaluate trash sources after 2018, unless the control implementation schedule (Section 3.3) is accelerated to allow time for TMA #10 trash reduction activities. The focuses for TMA #10 will be to mitigate the high trash generation areas first, then address to the medium trash generation areas after 2018 with the following trash reduction strategy.

Street Sweeping

TMA #10 is swept two times per month. Enhancements planned for this area include parking signage and increasing street sweeping in the high trash generating areas. Each street will be assessed for parking signage enhancement and an increase in street sweeping after 2018.

Storm Drain Inlet Maintenance

Inlets in TMA #10 are cleaned once per year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement of this program is planned at this time in TMA #10.

Partial/Full Trash Capture Treatment Devices

Currently no trash capture devices are installed in TMA #10 and none are planned.

Improved Trash Receptacles/Container Management

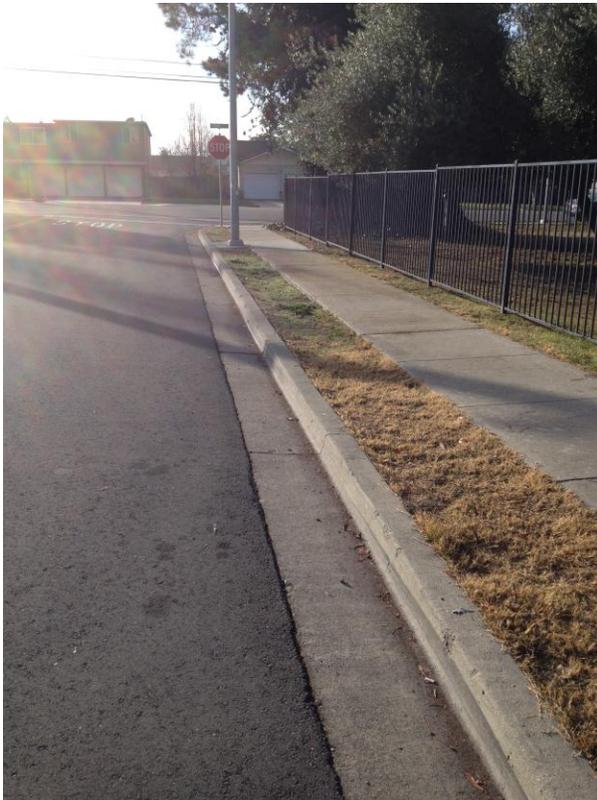
The City will evaluate sources of trash at high trash generations areas using observations during on-land cleaning, and during the commercial/industrial stormwater inspections. Working with the City's solid waste program, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #10's high trash generation areas will be evaluated by 2019 with the goal of managing the trash receptacles and improving the trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick trash items off the streets if street sweeping and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, primarily the neighboring businesses as there are no residents will be approached to implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2018.

3.2.11 Trash Management Area #11



TMA #11 is the eleventh highest priority area in the City and contains the shoreline north of Highway 92 and west of Hesperian Boulevard with the exception of the high generation areas west of Southland Mall). TMA #11 primarily consists of industrial land use on large parcels with a small amount of residential areas. The majority of the City's industrial businesses, predominantly food processors, are located within TMA #11. There are no high trash generation areas within the TMA, with the majority of the TMA characterized as having a medium or low trash generation. Currently TMA #11 is swept twice per month and there are no trash capture devices installed within the TMA. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once per year. The predominant method to reduce trash by the year 2022 will be localized current and future trash receptacle/container management, on-

land cleanups, enhancing the street sweeping program in conjunction with the current efforts of existing on-land cleanup activities including inlet cleaning.

Given that there are no high trash generation areas, TMA #11 will be evaluated street by street to assess sources of trash after 2018, unless the control implementation schedule (Section 3.3) is accelerated to allow time for TMA #11 trash reduction activities.

Street Sweeping

TMA #11 is swept two times per month. Enhancements planned for this area include parking signage and increasing street sweeping in the high trash generating areas. Each street will be assessed for parking signage enhancement and an increase in street sweeping after 2018.

Storm Drain Inlet Maintenance

Inlets in TMA #11 are cleaned once per year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement of this program is planned at this time in TMA #11.

Partial/Full Trash Capture Treatment Devices

Currently no trash capture devices are installed in TMA #11 and none are planned.

Improved Trash Receptacles/Container Management

The City will evaluate sources of trash within high trash generation areas using observations during on-land cleaning and commercial/industrial stormwater inspections. Working with the City's solid waste program, each business, street, or public open space associated with sources of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #11's medium trash generation areas will be evaluated by 2019, with the goal of managing the trash receptacles and containers and improving trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick trash items off the streets if street sweeping and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, primarily the neighboring businesses as there are no residents will be approached to implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2018.

3.2.12 Trash Management Area #12

TMA #12 is the twelfth highest priority area in the City and contains the Hayward Hills east of Mission Boulevard (not including Mission Boulevard and its neighboring blocks), higher income residential areas and California State University – East Bay. TMA #12 has a very low trash generation rate with only one retail/commercial development which exists east of the University. Currently TMA #12 is swept twice per month and there are no trash capture devices installed within the TMA. Other trash removal activities include manual cleanups along the streets as well as inlet cleaning once a year. The predominant method to reduce the trash by the year 2022 will be localized current and



future trash receptacle/container management, on-land cleanups with the current efforts of existing on-land cleanup activities including inlet cleaning.

TMA #12 will be evaluated to assess trash sources after 2018 unless the control implementation schedule (Section 3.3) is accelerated to allow time for TMA #12

trash reduction activities. City staff does not anticipate any trash sources at this time but will conduct a thorough search after 2018.

Street Sweeping

TMA #12 is swept two times per month. No enhancements are planned at this time.

Storm Drain Inlet Maintenance

Inlets in TMA #12 are cleaned once per year and inspected for trash and debris regularly, particularly during dry weather prior to the rainy season. No other enhancement of this program is planned at this time.

Partial/Full Trash Capture Treatment Devices

Currently no trash capture devices are installed in TMA #12 and none are planned.

Improved Trash Receptacles/Container Management

The City will evaluate sources of trash using observations during on-land cleaning and inlet cleaning. Working with the City's solid waste department, each source of trash will receive a focused campaign to enforce removal of trash and implement a proper trash bin and containment program to control trash.

TMA #12's high and medium trash generation areas within the TMA will be evaluated by 2019, with the goal of managing trash receptacles and containers and improving trash/recyclables collection.

On-Land Trash Cleanups

Particularly with wind-blown trash, the final trash reduction effort will be to reactively pick trash items off the streets if street sweeping and trash receptacles do not stop the trash from entering the storm drains. An assigned team of volunteers, primarily the residents will be approached to implement/expand the City's already established 'adopt a block' program to monitor trash levels and pick up trash when found at a frequency and area manageable based on the number of volunteers found and their available time. This reorganization of where trash is picked up through the 'adopt a block' program will commence in 2018.

3.2.13 Jurisdiction-Wide Control Measures

In addition to the above-mentioned specific control measures for each TMA, the City of Hayward plans to conduct jurisdiction-wide control measures for trash that are uniform for all TMA areas where trash is assessed as very high, high and medium generation. The City will rely heavily on its trash generation map (Attachment 1) to focus its control measures for trash. However, as indicated in more detail in Section 4 below, the City's assessments of its trash generation areas, and its assessment of its implemented control measures will dictate revising its trash generation map as well as which control measures will be continually implemented. Each TMA is unique in its sources of trash, its geography, drainage, and population. These variables will always be taken in consideration when conducting jurisdiction-wide control measures.

The following control measures are planned to be implemented throughout the City in the next five years to meet our trash reduction goals for 2022:

Cigarette Butts

It has been widely recognized that cigarette butts are one of the most predominant items of trash found on streets today. Many cleanup and outreach efforts have been conducted in the San Francisco Bay Area to address cigarette butts including specific trash receptacles and outreach to collect the butts. The City has an ordinance prohibiting smoking on all City streets, sidewalks, and other publically owned places. During 2014 City staff will analyze the current and historic effort to enforce this ordinance and determine if enhanced enforcement could influence the amount of cigarette butts that are littered. In addition to enforcement of the City's ordinance, outreach materials will be designed and distributed to remind citizens of the ordinance and discourage littering. The City will also design local trash pickup campaigns in conjunction with school groups, volunteers, creek groups, and residents to increase awareness of the high volume of cigarette butts that are picked up as an enhancement to on-land cleanup efforts.

On-Land Cleanup for Fast Food Restaurants

Some fast food restaurants in the City have, as part of their use permit, a requirement to pick up trash generated from the sale of their food items (i.e., wrappers, straws, cups, napkins, etc.) around the perimeter and along the immediate streets bordering their establishment. The City integrates all trash-related use permit requirements with its commercial/industrial inspection program and conducts enforcement when

appropriate. As each TMA is assessed, trash generated from fast food restaurants will be noted and enforcement actions will be taken to ensure that these restaurants pick up their trash for those who have trash conditions in their use permits. Those restaurants that do not have conditions in their use permits (such as restaurants in business prior to the City zoning program) will be assessed if they exhibit a source of trash and City staff will work with those restaurants to implement a trash abatement program to actively pick up trash resulting in the sale of their food. Results of this effort will be integrated into each TMA field assessments.

Trash Receptacle Management

The City is currently reevaluating the types of public trash receptacles used throughout the City. The enclosed top receptacles are more difficult for people to pick through so, less trash is ending up on the streets. The City will be evaluating trash bin locations and replacing those receptacles that are found to be sources of trash on the streets.

Overflowing trash in receptacles that are heavily used, particularly those receptacles adjacent to bus stations will be emptied more often or replaced with larger receptacles to accommodate trash volume. City staff will work closely with its solid waste staff as well as the local transit agency to determine the best solution for each trash receptacle on a case by case basis.

Public Education and Outreach Programs

Public education and outreach programs in the City currently distribute anti-littering materials. Specifically, the City participates in California State University – East Bay's Earth Day Celebration, Earth Week Display at Hayward City Hall, Hayward's Downtown Street Parties, Hayward Volunteer Litter Pick-Up Events, Hayward's Zucchini Festival and other similar events. The City will continue to participate in local events to distribute anti-littering literature to its businesses and residents, educating them on the trash problems within the City and how they can help by controlling their own trash and reporting trash/dumping sites they witness.

The City also produces a quarterly newsletter that is distributed to businesses and residents. Articles will be written about success stories for trash removal, highlighting problem areas for trash to educate the public. The newsletter can also encourage the public to report trash areas of concern and organize to 'adopt a block' in their neighborhood.

Litter Education Outreach to K-12 Schools

Hayward has thirty four (34) elementary schools (1 charter school, 12 private schools, 21 public schools), five (5) middle schools (all public schools), and 19 high schools (10 public and continuation schools, 6 private schools, and 3 charter schools). City staff plans to prepare a letter to the local School District to establish communication about trash problems and provide insight on how to educate the student body about litter prevention. City staff will assess each school for evidence of trash from students, particularly those that have off campus lunch options, and determine which campuses are priority locations for trash reduction activities. City staff will then work with each school individually to implement trash pickup days, organize 'adopt a block' programs, manage any public trash receptacles in the nearby area, and work with school staff to enforce anti-littering policies around the school.

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 proposals 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.

Video/Camera Surveillance Program

The City owns ten (10) surveillance cameras (10 real cameras and 5 dummy cameras) to place around the City to discourage littering and illegal dumping. These cameras are very successful and the City will evaluate their locations and move them where trash dumping sites are found. Enforcement will be implemented as appropriate when individuals are identified, however, most of the time the littering activity stops and is discouraged in the future.



Polystyrene Foam Food Service Ware Policies

The City adopted a ban on polystyrene foam food service ware on July 1, 2011. This ban prohibits the use of polystyrene foam food service ware for food establishments within the City's jurisdiction. The City's Solid Waste Program enforces the polystyrene ban staff with the assistance of the City's commercial/industrial inspection program, which reports use of polystyrene within food establishments during the City's routine business inspections.

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.

Affected stores may no longer provide customers with free single-use bags at check-out. Those 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>

On February 2, 2013, Hayward staff gave away 200 reusable bags at the Hayward Farmer's Market to help promote the single-use plastic bag ban. The City also reports all misuse of plastic bags within the City to the County-wide effort to enforce the ban and records those establishments that are not abiding by the County's ordinance. City staff also distributed reusable bags at three Summer Street Fairs in support of the ban.

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

“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.

As part of efforts to support the *Be The Street* anti-litter youth campaign, Clean Water Program member agencies purchased additional mass media distribution of a video contest entry, entitled “Pick Up Trash.” CWP edited the spot to include a *Be The Street* Watermarked logo, and to add the website url at the end of the spot.

The video was distributed at movie theaters and through an online ad campaign as follows:

- *Regional Movie Theater Ad Buy: \$19,028*
 - 637,000 projected impressions
 - 9 Theaters in Alameda County, 132 screens
 - 4-week run: 07/05/13-08/01/13

- *Individual Theater Ad Buy: \$4,208*
 - Approximately 150,000 projected impressions
 - 3 Theaters in Livermore and Castro Valley (areas not covered in the Regional Buy)
 - Ad runs run from 4 weeks to 28 weeks

- *Online Video Ad Campaign: \$4,000*
 - Google Display Network and YouTube Pre-Roll
 - Estimated impressions: 300,000
 - Estimated views: 24,000

- Estimated Click-throughs 1,500 to the Be The Street webpage

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). The following is a timeline to implement the multi-family dwelling litter outreach campaign.

- December 2013: Pre-campaign Measurement – ACCWP and the City of Livermore 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 (PIP) 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.

Anti-Litter Outreach Using Trash Receptacles

The City of Hayward will work with the ACCWP PIP and Trash subcommittees to develop outreach material to post on trash receptacles strategic throughout the City to encourage pedestrians to deposit their trash in the receptacles and improve water quality. This localized outreach campaign will be designed as part of the City's trash container management program. Future design, implementation and assessment of this outreach campaign will be described in the ACCWP and the City's Fiscal Year 2013/14 Annual Report.

3.2.14 Creek and Shoreline Hot Spot Cleanups

Since the MRP adoption, the City has instituted an annual cleanup of its seven required trash hot spots along creeks pursuant to the MRP provision C.10.b.i. The seven hot spots are listed below (please refer to Attachment 3 for locations of hot spots).

- (1) ACFC-Industrial Pkwy/Whipple Rd.
- (2) ACFC-Whitesell@R/R tracks
- (3) ACFC-Dead-end of Depot Road
- (4) ACFC-Dead-end of West Winton Ave.
- (5) Stormwater Conveyance Channel-Western Blvd.
- (6) Stormwater Conveyance Channel-Rochelle Ave.
- (7) San Francisco Bay Shoreline

City staff cleans six of the seven hot spots each calendar year and volunteers clean up the hay_sfb_7 (San Francisco Bay-Shoreline) hot spot every calendar year. Trash items collected during these cleanups are analyzed each year as an attempt to link the trash item to its source. The predominant source of trash during these cleanups has been household trash and buoyant material. The City will continue this effort each year during the trash hot spot evaluation process.

These hot spot cleanup efforts have yielded an average trash collection of 26 cubic yards from fiscal 2010/2011 to fiscal year 2011/2012. Trends in trash collection at the seven hot spots are shown in Table 3-3.

Table 3-3. Trash Collection Trend at Hot Spots

Trash Hot Spot	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)
1. ACFC- Industrial Pkwy/ Whipple Rd.	2 cubic yards	4 cubic yards	8 cubic yards
2. ACFC- Whitesell @ R/R tracks	2 cubic yards	2 cubic yards	1 cubic yard
3. ACFC- Dead-end of Depot Rd.	4 cubic yards	7 cubic yards	3 cubic yards
4. ACFC- Dead-end of West Winton Ave.	2 cubic yards	1 cubic yard	2 cubic yards
5. Stormwater Conveyance Channel- Western Blvd.	1 cubic yard	1 cubic yard	1 cubic yard
6. Stormwater Conveyance Channel- Rochelle Ave	7 cubic yards	2 cubic yards	2 cubic yards
7. San Francisco Bay-Shoreline	5 cubic yards	7 cubic yards	14 cubic yards
Total	23 cubic yards	24 cubic yards	31 cubic yards

3.2.15 Summary of Trash Control Measures

Trash Management Area 1

- Street Sweeping - Existing schedule is 3X/week
- Inlet Cleaning – Existing schedule is 1X/year
- Full Trash Capture - Existing 34 connector pipe screen trash devices, install more as needed or switch from small devices to a large device
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, in combination with street sweeping
- Trash Bin/Container Management – Future assessment and enhancement includes increasing the size of container/add container/change type of container with closed top
- On-Land Cleanups – Future enhancements will be the reorganization of the 'Adopt a Block' program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance

Trash Management Area 2

- Street Sweeping - Existing schedule is 2X/month, future enhancement is to increase sweeping frequency
- Inlet Cleaning – Existing schedule is 1X/year
- Full Trash Capture - Existing 5 connector pipe screen trash devices, Future enhancements will be to install more as needed or switch to partial trash capture inlet screens
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, combined with street sweeping
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure's primary focus will be with bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the 'Adopt a Block' program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance

Trash Management Area 3

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Full Trash Capture - Existing 9 connector pipe screen trash devices, Future enhancements will be to install more as needed or switch to partial trash capture inlet screens and/or a large capture device
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, combined with street sweeping
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure's primary focus will be bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the 'Adopt a Block' program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance

Trash Management Area 4

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Full Trash Capture - Existing 3 connector pipe screen trash devices, Future enhancements will be to install more as needed or switch to partial trash capture inlet screens
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, combined with street sweeping
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure's primary focus will be with bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the 'Adopt a Block' program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance
- Surveillance Cameras – Use existing cameras to deter dumping sites

Trash Management Area 5

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Full Trash Capture - Existing 2 connector pipe screen trash devices and 1 large hydrodynamic separator, Future enhancements will be to install more as needed or switch to partial trash capture inlet screens and/or install another large capture device
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, combined with street sweeping
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure's primary focus will be bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the 'Adopt a Block' program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance
- Surveillance Cameras – Use existing cameras to deter dumping sites

Trash Management Area 6

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Full Trash Capture - Existing 5 connector pipe screen trash devices, future enhancements will be to install more as needed or switch to partial trash capture inlet screens
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, combined with street sweeping
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure's primary focus will be bus stations)

- On-Land Cleanups – Future enhancements will be the reorganization of the ‘Adopt a Block’ program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance
- Surveillance Cameras – Use existing cameras to deter dumping sites

Trash Management Area 7

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year, future enhancement will be to identify inlets for more frequent cleaning
- Full Trash Capture - Existing 8 connector pipe screen trash devices, Future enhancements will be to install more as needed or switch to partial trash capture inlet screens
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, combined with street sweeping
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure’s primary focus will be bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the ‘Adopt a Block’ program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance
- Surveillance Cameras – Use existing cameras to deter dumping sites

Trash Management Area 8

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Full Trash Capture - Existing 14 connector pipe screen trash devices, Future enhancements will be to install more as needed or switch to partial trash capture inlet screens
- Partial Trash Capture – Future enhancements include installation of inlet screens as needed, combined with street sweeping
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure’s primary focus will be bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the ‘Adopt a Block’ program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance
- Surveillance Cameras – Use existing cameras to deter dumping sites

Trash Management Area 9

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure’s primary focus will be bus stations)

- On-Land Cleanups – Future enhancements will be the reorganization of the ‘Adopt a Block’ program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance

Trash Management Area 10

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure’s primary focus will be bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the ‘Adopt a Block’ program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance

Trash Management Area 11

- Street Sweeping - Existing schedule is 2X/month, future enhancements are to increase sweeping frequency and install parking signs
- Inlet Cleaning – Existing schedule is 1X/year
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure’s primary focus will be bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the ‘Adopt a Block’ program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance

Trash Management Area 12

- Street Sweeping - Existing schedule is 2X/month
- Inlet Cleaning – Existing schedule is 1X/year
- Trash Bin/Container Management – Future assessment and enhancements include increase the size of container/add container/change type of container with closed top (measure’s primary focus will be bus stations)
- On-Land Cleanups – Future enhancements will be the reorganization of the ‘Adopt a Block’ program, City staff maintenance efforts, and enforcement of fast food use permits to pick up trash and no-smoking ordinance

The control measures listed above are designed to achieve full trash reduction (100% trash reduction) by 2022.

3.3 Control Measure Implementation Schedule

The City of Hayward's detailed time schedule to implement all control measures for trash reduction is in Table 3-4.

Table 3-4. City of Hayward 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														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups							X	X	X	X	X	X	X	X
TMA #2														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups							X	X	X	X	X	X	X	X
TMA #3														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups							X	X	X	X	X	X	X	X
TMA #4														

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
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups							X	X	X	X	X	X	X	X
Surveillance Cameras		X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #5														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups								X	X	X	X	X	X	X
Surveillance Cameras		X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #6														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups								X	X	X	X	X	X	X
Surveillance Cameras														
TMA #7														

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
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups									X	X	X	X	X	X
Surveillance Cameras		X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #8														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full Trash Capture					X	X	X	X	X	X	X	X	X	X
Partial Trash Capture							X	X	X	X	X	X	X	X
Trash Bin/Container Management		X	X	X	X	X	X	X	X	X	X	X	X	X
On-Land Cleanups									X	X	X	X	X	X
Surveillance Cameras		X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #9														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trash Bin/Container Management										X	X	X	X	X
On-Land Cleanups										X	X	X	X	X
TMA #10														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trash Bin/Container Management										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 Cleanups										X	X	X	X	X
TMA #11														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trash Bin/Container Management										X	X	X	X	X
On-Land Cleanups										X	X	X	X	X
TMA #12														
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inlet Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trash Bin/Container Management										X	X	X	X	X
On-Land Cleanups										X	X	X	X	X
Jurisdiction-wide Control Measures														
Single-Use Bag Ban					X	X	X	X	X	X	X	X	X	X
K-12 School Outreach						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					
Enforcing City Smoking Ordinance							X	X	X	X	X	X	X	X
Creek and Shoreline Hot Spot Cleanups														
Annual Cleanups		X	X	X	X	X	X	X	X	X	X	X	X	X
Assessment of Cleanups		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 Hayward. 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. The Strategy selected by the City is described in the following sections.

4.1 ACCWP Pilot Assessment Strategy

The following ACCWP Pilot Trash Assessment Strategy (ACCWP Pilot Strategy) was developed by ACCWP on behalf of the City of Hayward 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 Hayward.

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 **Hayward** 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.

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 Hayward 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 annually 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 of Livermore 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 **Hayward** 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. In addition, the City of Hayward will work with the Alameda County Waste Management Authority to report illegal use of plastic bags within its jurisdiction and assist the County to concentrate inspection and enforcement efforts where these violations occur. The City will keep its own database of violations and enforcement follow-up measures regarding plastic bags through its commercial/Industrial business inspection 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 Hayward will coordinate with ACCWP to develop and implement an assessment of its street sweeping program. The City will also continue to increase signage for parking enforcement throughout the City to deter parked cars during sweeping hours and track the success of that program in conjunction with its street assessment program for trash generation listed below in Section 4.3. As part of this effort, the City will also create a new GIS street sweeping route map that includes parking enforcement signage, street sweeping frequency, and schedule for use by all City staff. This map will be a fluid resource that can be revised as parking enforcement signs are added or routes/schedules are modified.

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 of Hayward 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 of Hayward 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 to 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 Additional Progress Assessments

The City of Hayward fully intends to actively assess its trash control measures as well as track the success of trash reduction. Effectiveness of trash control measures and the amount of trash on the streets will be tracked to show accountability with trash reduction. As explained in Section 3, City staff will survey each TMA by priority (beginning with TMA#1 and ending with TMA#12) and assess each block in the very high and high trash generating areas and each street in the medium and low trash generation areas for trash generation rates, sources of trash, and progress towards 100% trash reduction in relation to the control measure being implemented. An assigned number of locations (the number of locations will be determined depending on the size of the trash generating area) exhibiting trash and indicative of the trash sources identified in the TMA will be assessed using the same street trash assessment protocol used to develop the City's trash generation map. The City's goal is to conduct street assessments of trash in these same assigned locations once a month and report trash loads in these areas using a database and photo-documentation. The City intends to report a trend in the amount of trash found on the streets from these assessments. In addition, the City will continue to track trash in the capture devices and during street sweeping activities to determine the success of these measures. City staff will assess each trash capture device for performance and cost using Attachment 4 to observe every device during its maintenance event.

4.4 Long-Term Assessment Strategy

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

4.5 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. The City of Hayward intends to evaluate this Plan every two years to assess future best management practices and to ensure that the implementation schedule is being met.

Table 4-1. The City of Hayward 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)										
On-land Visual Assessments										
Single-Use Plastic Bag Assessment Initial (Baseline) Assessments	X	X				X				
Expanded Polystyrene Assessment	X	X								
Trash Hot Spot Cleanup Assessment Pilot Progress Assessments	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 Control Measure Effectiveness Evaluation Evaluations	X	X	X	X	X					
Commercial Trash Container Management Assessment Receiving Water Condition Assessments	X	X	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					
Additional Assessments (City of Hayward)										
Street Trash Assessments			X	X	X	X	X	X	X	X
Capture Device Assessments			X	X	X	X	X	X	X	X
Long-Term Trash Assessment Strategy (ACCWP)										
						X	X	X	X	X

^aJuly 1, 2014 - 40% trash reduction target

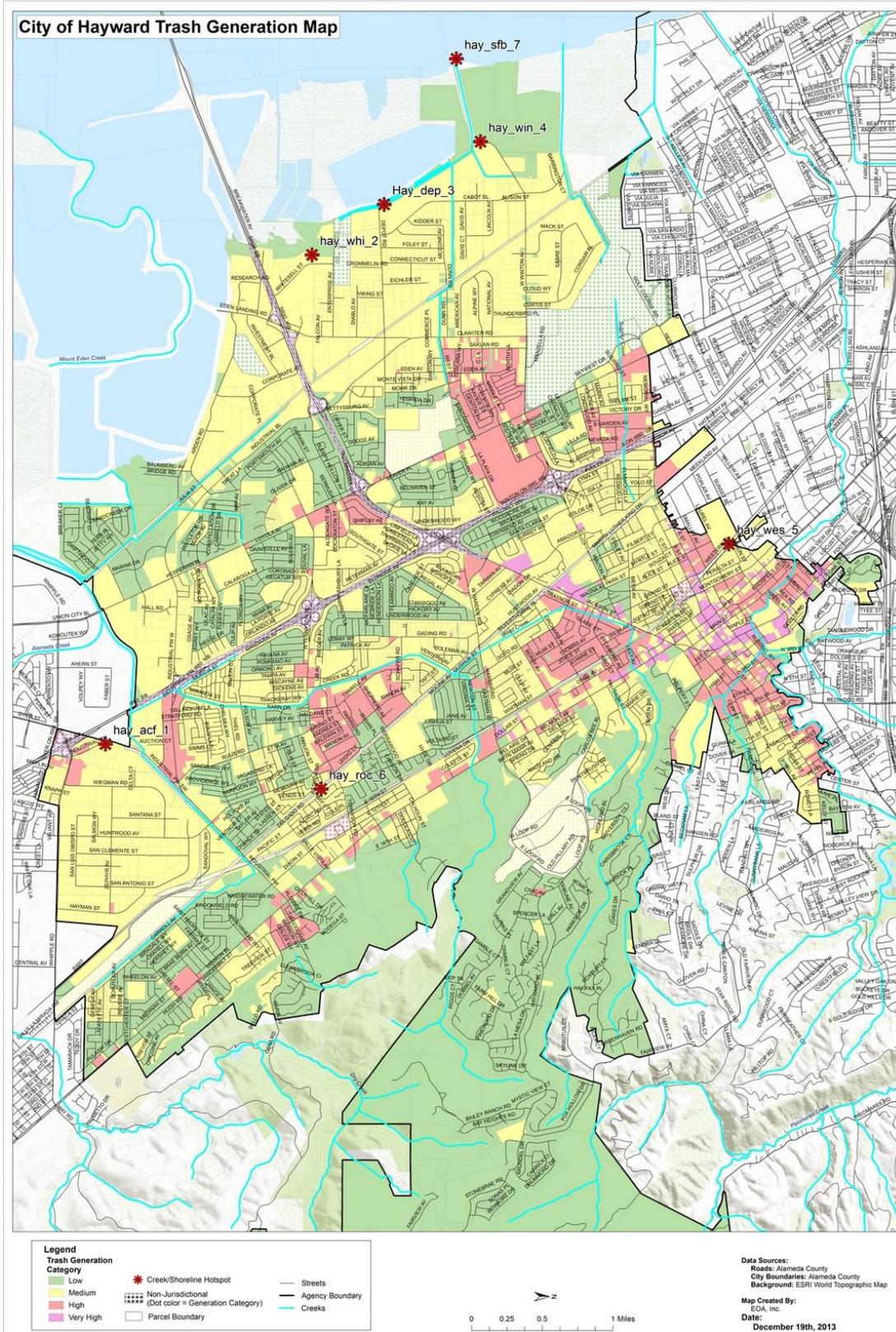
^bJuly 1, 2017 - 70% trash reduction target

^cJuly 1, 2022 - 100% trash reduction target

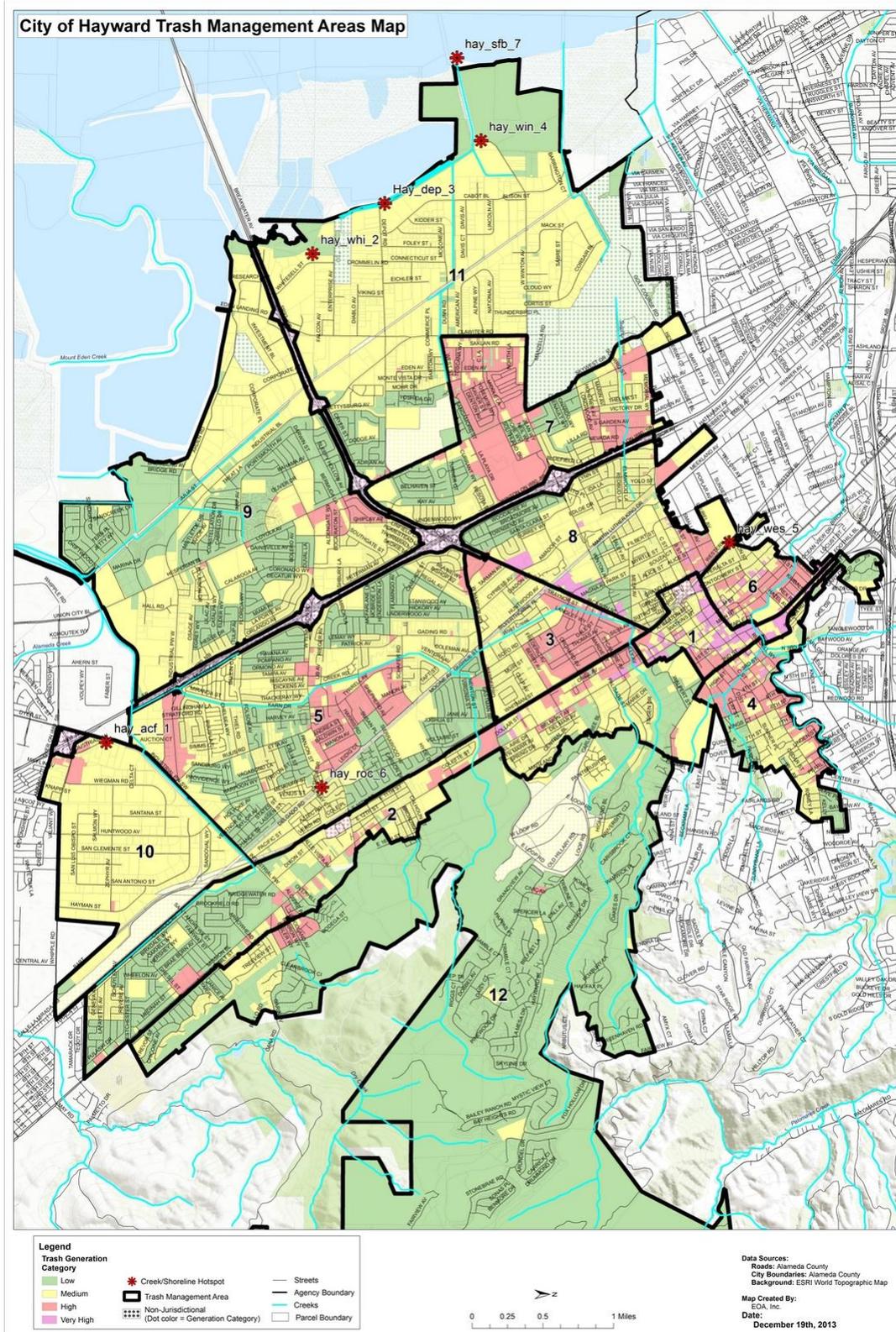
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Attachment #1: Final Trash Generation Map For The City of Hayward



Attachment #2: Trash Management Area Map For The City of Hayward



Attachment #4: Trash Capture Maintenance Report Form

Trash Capture Device Maintenance Report

Date: _____

Location/Trash Device ID: _____

Time Maintenance Began: _____

Time Maintenance Completed: _____

Reason for inspection/maintenance: (check all that apply)

Regular scheduled

Repair (describe):

Response to complaint
(describe): _____

Is device functioning properly?

Yes No (explain):

Clogged

Condition of device

Intact, not damaged

Damaged or broken part
(describe): _____

Needs repair/adjustment (explain):

Estimate the volume of trash recovered at maintenance event. Use a tape measure or graduated probe to measure trash above the screen and in the sump basin. Volume will be calculated based on the dimensions of the device.

Volume of trash estimate: _____ cubic yards or _____ gallons

Volume of leaves/vegetation estimate: _____ cubic yards or _____ gallons

Maintenance effort:

How many staff participated in this maintenance event? _____

Equipment used for trash removal:

Manual/shovels/clamshell Vactor truck Other
(describe): _____

Maintenance time spent at site (excluding travel and disposal of trash): _____ hrs. / _____ mins.

Photos taken from this maintenance event: Yes No

Dominant types of trash found (check applicable items below):

- beverage cans biodegradable/paper items bottle caps/lids Cigarette butts
- floatable foam glass bottles hard plastic plastic bags
- plastic bottles plastic wrappers straws/stirrers Styrofoam
- other:

Identifiable items of trash found:

Comments:

Date Submitted: _____

Report Completed By: _____
(Print Name)

Signature: _____

(Submit Copy of Completed Report to: WPSC Administrator)