

# Trash Long-Term Reduction Plan and Progress Assessment Strategy

**January 31, 2014**

**Submitted by:**

**City of Union City**

**34009 Alvarado – Niles Road**

**Union City, CA**



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

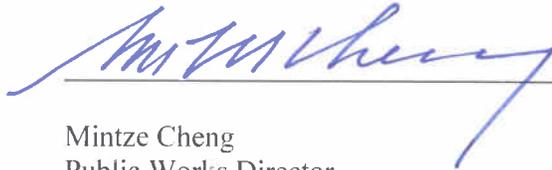
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**City Of Union City**  
**LONG-TERM TRASH LOAD REDUCTION PLAN AND**  
**ASSESSMENT STRATEGY**

**CERTIFICATION STATEMENT**

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

**Signature by Duly Authorized Representative:**

  
\_\_\_\_\_

Mintze Cheng  
Public Works Director

January 31, 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 BoardSan Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements

## **PREFACE**

This Long-Term Trash Load Reduction Plan and Assessment Strategy (Long-Term Plan) is submitted in compliance with provision C.10.c of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order R2-2009-0074). The Long-Term Plan was developed using a regionally consistent outline and guidance developed by the Bay Area Stormwater Management Agencies Association (BASMAA) and reviewed by San Francisco Bay Regional Water Quality Control Board staff. The Long-Term Plan is consistent with the Long-Term Trash Load Reduction Framework developed in collaboration with Water Board staff. Its content is based on the City of Union City's current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with Municipal Separate Storm Sewer (MS4) discharges. This Long-Term Plan is intended to be iterative and may be modified in the future based on information gained through the implementation of trash control measures. The City of Union City therefore reserves the right to revise or amend this Long-Term Plan at its discretion. If significant revisions or amendments are made by the City, a revised Long-Term Plan will be submitted to the Water Board through the City's annual reporting process.

## 1.0 INTRODUCTION

### 1.1 Purpose of Long-Term Trash Reduction Plan

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

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

1. Descriptions the current level of implementation of trash control measures, and the type and extent to which new or enhanced control measures will be implemented to achieve a target of 100% (i.e. 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 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.

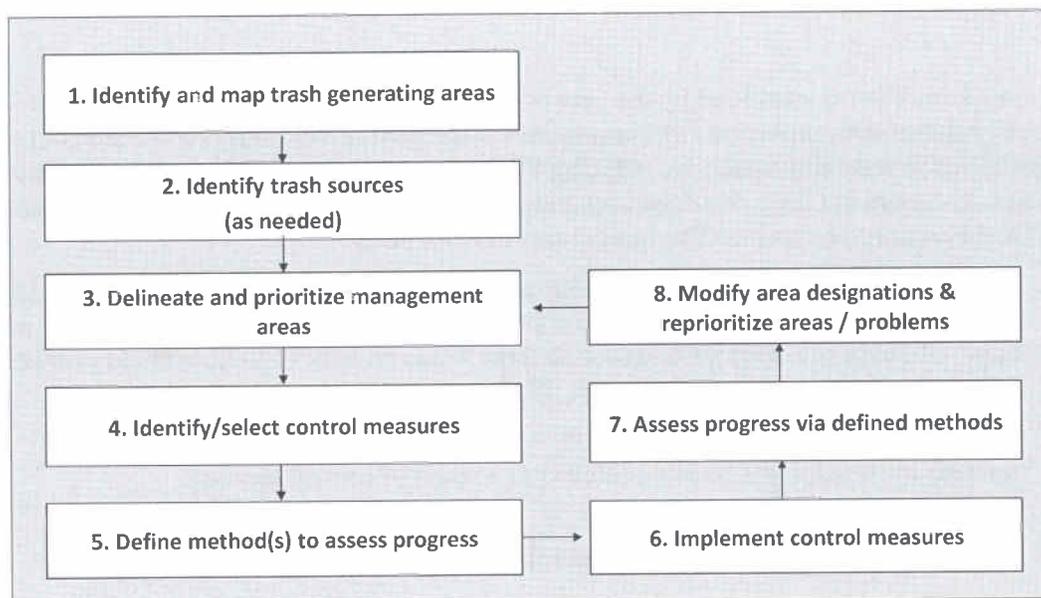
The Long-Term Plan was developed using a regionally consistent outline and guidance developed by the Bay Area Stormwater Management Agencies Association (BASMAA) and reviewed by the San Francisco Bay Regional Water Quality Control Board (Water Board) staff. The Long-Term Plan is consistent with the Long-Term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

The Long-Term Plan was reviewed and approved for submittal by the City of Union City's City Council on January 14, 2014. The City of Union City's Staff Report is attached as Appendix A.

## 1.2 Background

### 1.2.1 Long-Term Trash Load Reduction Plan Framework

A workgroup of MRP Permittee representatives and Water Board staff met between October 2012 and March 2013 to better define the process for developing and implementing Long-Term Plans, methods for assessing progress toward reduction goals, and tracking and reporting requirements associated with provision C.10. Through these discussions, an eight-step framework for developing and implementing Long-Term Plans was created by the workgroup (Figure 1-1).



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

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

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

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

### 1.2.2 BASMAA Generation Rates Project

Through approval of a BASMAA regional project in 2010, Permittees agreed to work collaboratively to develop a regionally consistent method to establish trash generation rates within their jurisdictions. The project, also known as the *BASMAA Trash Generation Rates Project* (Generation Rates Project) assisted Permittees in establishing the rates of trash generation and identifying very high, high, moderate and low trash generating areas.

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

In contrast to trash generation, the term “trash loading” refers to the rate at which trash from MS4s enters receiving waters. Trash loading rates are also expressed as trash volume/acre/year and are equal to or less than trash generation rates because they account for the effects of control measures that intercept trash generated in an area before it is discharged to a receiving water. Trash loading rates are specific to particular areas because they are dependent upon the effectiveness of control measures implemented within an area. Figure 1-2 illustrates the difference between trash generation and loading

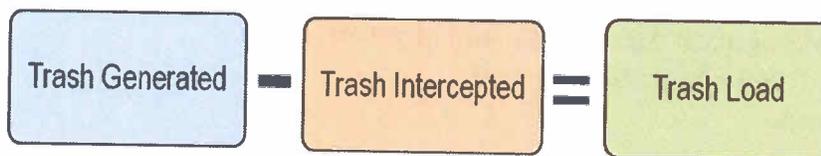


Figure 1-2. Conceptual model of trash generation, interception and load.

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

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

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

Land Use	Low <sup>b</sup>	Best <sup>b</sup>	High <sup>b</sup>
Commercial & Services	0.7	6.2	17.3
Industrial	2.8	8.4	17.8
Residential <sup>a</sup>	0.3 - 30.2	0.5 - 87.1	1.0 - 257.0
Retail <sup>a</sup>	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

<sup>a</sup> 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.

<sup>b</sup> 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 = 90<sup>th</sup> percentile; Best = mean generation rate; and, Low = 10<sup>th</sup> 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 Union City. Control measures that will be implemented by City of Union 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 1959, the City of Union City is located in Alameda County, and has a jurisdictional area of 12,121.9 acres. According to the 2010 Census, it has a population of 69,516, with a population density of 3,903.6 people per square mile and average household size of 3.38 persons per household. Of the 69,516 residents who call the City of Union City home, 24.2% are under the age of 18, 9.3% are between 18 and 24, 29.3% are between 25 and 44, 26.1% are between 45 and 64, and 11.1% are 65 or older. The median household income was \$87,205 in 2009. Top employers in the *City of Union City* are New Haven Unified School District, Southern Wine and Spirits, Wal-Mart, and the City of Union City. It is also home to the Union Landing Shopping Center, a 105-acre shopping center with shops, restaurants and a movie theater.

Land uses within City of Union City depicted in ABAG (2005) are provided in Table -1. The City of Union City is primary comprised of 7 land uses. These include Commercial and Services; Industrial; Residential; Retail; K-12 Schools, Urban Parks and Open Space.

**Table 2-1.** Percentages of the *City of Union City's* jurisdictional area<sup>1</sup> within land use classes identified by ABAG (2005)

Land Use Category	Jurisdictional Area (Acres)	% of Jurisdictional Area
Commercial and Services	146.7	1.2%
Industrial	1069.2	8.8%
Residential	3,226.4	26.6%
Retail	206.8	1.7%
K-12 Schools	215.3	1.8%
Urban Parks	169.4	1.4%
Open Space	7088.0	58.4%

<sup>1</sup> 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).

## 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 Union City are described in this section and illustrated in Figure 2-1.

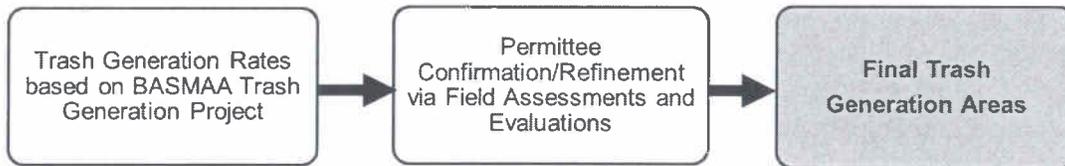


Figure 2-1 Trash sources categories and transport pathways to urban creeks.

As a first step, trash generation rates developed through *the BASMAA Trash Generation Rates Project* were applied to parcels within the City of Union City based on current land uses and 2010 household median incomes. A Draft Trash Generation Map was created as a result of this application. The draft map served as a starting point for the City of Union City to identify trash generating levels. Levels of trash generation are depicted on the map using four trash generation rate (gallons/acre/year) categories that are shown in Table 2-2.

Table 2-2. Trash generation categories and associated generation rates (gallons/acre/year).

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

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

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

#### a. On-Land Visual Assessments

To assist Permittees with developing their trash generation maps, BASMAA

- b. 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 over 75 % of the areas to assist in conducting/refining trash generating area designations.

City staff has driven over 75 % of the area of the City to confirm the trash generation designation assign to each area. Staff walked each site and documented their site visit with photos and recorded their observations. The site visits were conducted the day prior to the street sweeping of the area so that staff would observe the worst case scenario for the trash. Staff was able to document that for the majority of the areas the draft maps were accurate. The larger lot single family homes were low in trash generation. The parks, schools, smaller residential lots, higher density residential and industrial areas were medium to low/medium generators of trash. Our high trash generating areas are commercial and retail areas. One major difference from the draft maps to the actual condition found in the field was our mobile home parks. These areas although having small lots had little to no trash present. Our industrial areas were found to have less trash than was originally anticipated.

**Table 2-3.** Definitions of on-land trash assessment condition categories.

<b>On-land Assessment Condition Category</b>	<b>Summary Definition</b>
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.

**c. Querying Municipal Staff or Members of the Public**

The City’s engineering staff which performed the filed observations confirmed their finding with the city’s maintenance staff which cleans the catch basins. The field observations agreed with the opinions of the maintenance staff concerning where the highest amount of trash is usually found.

**d. Viewing Areas via Goggle Maps – Street View**

City staff also viewed the google maps of the areas for confirmation of the trash generation but relied more on actual field observation information rather than the google maps.

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 Union City. The City documented this process by tracking the information collected through the assessments and subsequent refinements to the Draft Trash Generation Map. The City of Union City’s Final Trash Generation Map is included as Figure 2-2.

**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.

**Table 2-4.** Percentage of jurisdictional area within the City of Union City assigned to each trash generation category.

Trash Generation Category	Jurisdictional Area (Acres)	Commercial and Services	Industrial	Residential	Retail	K-12 Schools	Urban Parks	Open Space
Very High	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	198.8	0.0%	0.0%	4.4%	95.6%	0.0%	0.0%	0.0%
Medium / High	28.9	0.0%	0.0%	0.0%	52.3%	47.7%	0.0%	0.0%
Medium	1,481.7	9.2%	46.4%	21.0%	0.1%	13.6%	9.7%	0.0%
Low / Medium	178.6	0.1%	93.4%	0.0%	0.1%	0.0%	2.9%	3.5%
Low	10,233.8	0.1%	2.1%	28.4%	0.0%	0.0%	0.2%	69.2%

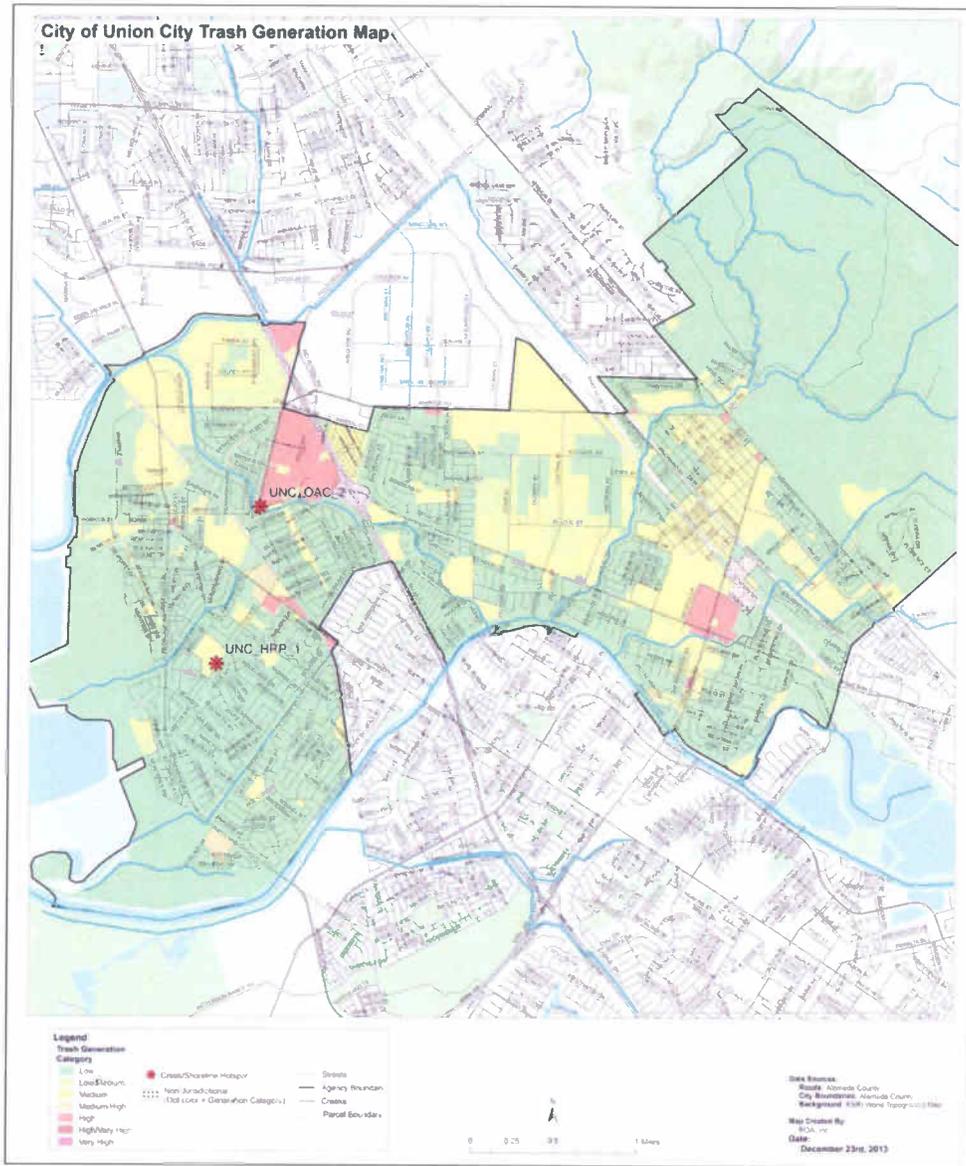


Figure 2-2. Final Trash Generation Map for the City of Union City

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### 3.0 Trash Management Areas and Control Measures

This section describes the control measures that the City of Union City has or plans to implement to solve trash problems and achieve a target of 100% (i.e. full) trash reduction from their MS4 by July 1, 2022. The selection of control measures described in this section is based on the City of Union City's current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with MS4 discharges.

Information on the effectiveness of some trash control measures is currently lacking and therefore in the absence of this information, the City based its selection of control measures on existing effectiveness information, their experience in implementing trash controls and knowledge of trash problems, and costs of implementation. As knowledge is gained through the implementation of these control measures, the City may choose to refine their trash control strategy described in this section. If significant revisions or amendments are made, a revised Long-Term Plan will be submitted to the Water Board through the City of Union City's annual reporting process.

#### 3.1 Management Area Delineation and Prioritization

Consistent with the long-term plan framework, the City of Union City delineated and prioritized trash management areas (TMAs) based on the geographical distribution of trash generating areas, types of trash sources, and current or planned control measure locations. TMAs are intended to form the management units by which trash control measure implementation can be tracked and assessed for progress towards trash reduction targets. Once delineated, TMAs were also prioritized for control measure implementation. The City of Union City's primary management areas were selected based on the spatial distribution of trash generating areas and the location of specific existing or planned management actions within City's jurisdiction. City staff used the following procedure to designate TMAs:

The City prioritized the trash management areas by their trash generating rates, the higher the rate of trash generating the lower the number assigned and thus the greater the need to address this area sooner rather than later. Areas 1 through 4 are high generating trash areas consisting of our retail and commercial areas. Areas 5 through 14 are medium to low medium trash generating areas consisting of our industrial, high density residential, small lot residential, schools and parks area. Area 15 is our low density single family homes and rural areas which generate low to no trash. As you can see from the map, the largest area in the City is the low generating areas; followed by the medium. Our high generating trash areas are fairly localized and are relatively small in comparison.

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

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

TMA	Jurisdictional Area (Acres)	Very High	High	Trash Generation Category			
				High/Med	Med	Med/Low	Low
1	120.2	0.0%	88.4%	0.0%	11.1%	0.0%	0.5%
2	19.8	0.0%	86.9%	0.0%	13.1%	0.0%	0.0%
3	85.0	0.0%	56.7%	0.0%	8.8%	0.0%	34.5%
4	38.7	0.0%	33.9%	39.1%	27.1%	0.0%	0.0%
5	245.4	0.0%	0.3%	0.0%	46.9%	0.0%	52.8%
6	49.4	0.0%	3.4%	0.0%	96.3%	0.0%	0.3%
7	301.7	0.0%	1.3%	0.0%	77.7%	0.0%	21.1%
8	651.1	0.0%	0.7%	0.0%	59.6%	15.3%	24.3%
9	327.0	0.0%	0.0%	0.0%	75.2%	20.5%	4.3%
10	70.1	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
11	142.1	0.0%	0.0%	0.0%	92.8%	4.4%	2.8%
12	188.8	0.0%	0.0%	7.3%	92.7%	0.0%	0.0%
13	21.4	0.0%	0.0%	0.0%	93.6%	0.0%	6.4%
14	15.3	0.0%	10.8%	0.0%	51.6%	36.5%	1.1%
15	9,845.8	0.0%	0.0%	0.0%	0.1%	0.0%	99.9%

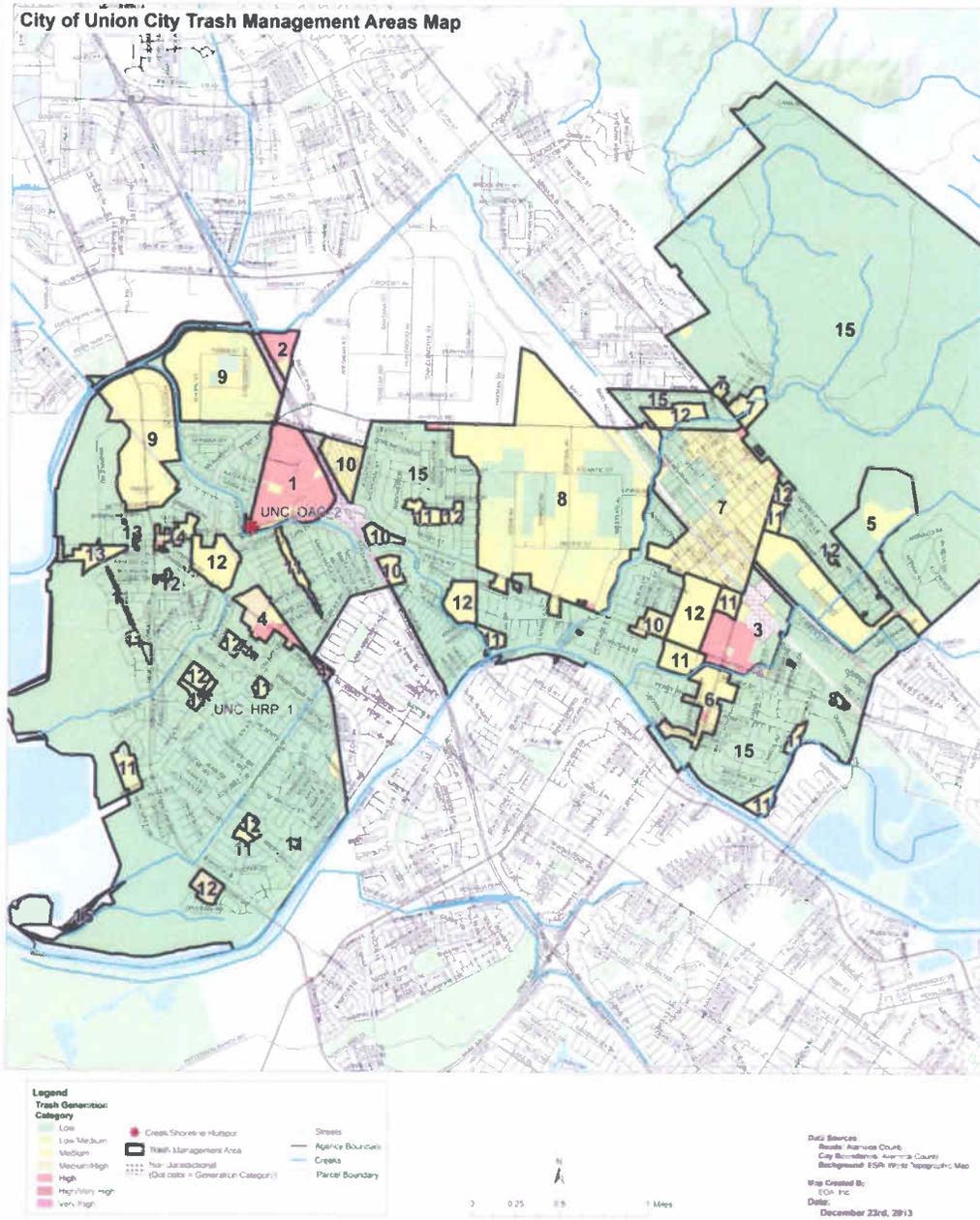


Figure 3-1. Trash Management Area Map for the City of Union City.

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## 3.2 Current and Planned Trash Control Measures

### Descriptions of Actions/Tasks (Conducted):

The City of Union City has begun to implement its trash reduction plan. Control measures implemented to date via the trash reduction plan are:

- Installed full trash capture devices in our High Trash generating areas
- Increased cleaning of CDS Units and Catch basins pre and post storm event season
- Increased Public Awareness by installing Clean Water Advertisement in all of Union City Transit Buses
- Increased Public Outreach with at least 8 different yearly events
- Distributed over 500 reusable bags
- Passed a Plastic Bag Ban
- Conducted a least two creek clean up events per year
- Utilized Work furlough crews to assist in weekly trash pick- up along major arterials and collector streets.

The City has currently installed over 150 trash capture devices (TCD) in our city-owned catch basins which surround our retail and commercial properties as well as a portion of our high density residential properties. We have also installed them in our corporation yard. In addition, the City has a total of 12 CDS units installed on both private and public properties. It is estimated that these measures serve a combined area of 293.28 acres. Please see figure 3-2 showing the approximate location of all of our full treatment capture devices and the area which they serve. We have installed these devices in the catch basins located in the public rights of way along the perimeters of all our high trash generating properties. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development sites. We plan to contact the property owners of these high trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. In addition, as new development or redevelopment occurs on private property, they will be required to install full trash capture devices.

### Descriptions of planned action/tasks:

Union City Clean Water Program will be informing private development owners that full capture devices will be required for compliance with the RWQCB requirements. These letters will inform owners that these TCDs will also need to be cleaned a minimum of twice per year. This applies mostly to catch basins and inlets that reside on private developments that are medium-level generating trash loads or higher, such as Union City Landing, various shopping centers, industrial areas, etc. We aim to obtain a trash

load reduction of 70% with the cooperation of businesses in Union City. Implementation will begin with the highest-level trash generating locations, such as Union Landing and high-density shopping centers. Upon successful completion, the same efforts will be targeted to smaller commercial developments, then industrial areas, schools, etc. A reasonable timeframe to expect compliance with the MRP for trash load reduction is three years for the commercial areas and within seven years for the remainder of the property owners.

In addition the City is committed to installing additional full trash capture devices within the City's storm drain system. The City plans to install additional 400 TCD's within the City's rights of way over the next four years. This will bring the total TCD's installed to over 550 units. These units will be installed to supplement the ones already installed in our high trash generation areas as well as installing them in our medium trash generating areas.

The City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

#### **Descriptions of Maintenance Activities:**

The City uses a vactor truck to clean each of the full capture clean screen devices a minimum of twice a year. If there is any ponding occurring during a rain event, the City may need to clean the screen more often at these locations. To date we have not had this occur. The technician performing the cleaning fills out the report regarding the cleaning with notations about the approximate amount of debris removed and the predominant type of trash removed. These reports are then scanned and provided to the person who prepares the annual report for safe keeping. The CDS units are inspected once per year prior to the start of the rainy season and cleaned in accordance with the manufacturers requirements. To date we have had no vandalism of our CDS units or clean screen devices. However, one of our TCD units was crushed when the inlet grate fell on it. It was promptly replaced.

### **3.2.1 Trash Management Area #1 - Union Landing Shopping Center**

Union Landing Shopping Center is a 120.2 acre retail and commercial center. It is home to many of our restaurant, fast food, and retail stores. This area is a high generator of trash. The City has installed trash capture devices (TCD) in our city-owned catch basins which surround this retail and commercial center. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and into our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of these high trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will take a few years to accomplish.

In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.2 Trash Management Area #2 – Industrial Parkway Commercial Retail Area**

The Industrial Parkway Commercial and Retail Area is a 19.8 acre retail and commercial center. It is home to Food Max, fast food, and retail stores. This area is a high generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City has installed and will be requiring additional full trash capture devices for all 19.8 acres. The City has installed over trash capture devices (TCD) in our city-owned catch basins which surround this retail and commercial center. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of these high trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will take a few years to accomplish.

In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.3 Trash Management Area #3 – Alvarado Niles Road/Decoto Road Commercial Retail Area**

The Alvarado- Niles Road/Decoto Road Commercial and Retail Area is an 85 acre retail and commercial center. It is home to El-Mercado and the Market Place Shopping Center as well as many fast food, and retail stores. This area is a high generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City has installed and will be requiring additional full trash capture devices for all 85 acres.

The City has installed trash capture devices (TCD) in our city-owned catch basins which surround this retail and commercial center. The owners of a private residential development have installed CDS units. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of these high trash generating areas and work with them to install additional trash capture devices in the private systems before the

storm water passed to the public system so that we can capture 100% of the private site as well. This will take a few years to accomplish.

In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.4 Trash Management Area #4 – Alvarado Boulevard/Dyer Road Commercial Retail Area (Four Corners)**

The Four Corners Area is a 38.7 acre retail and commercial center. It is home to many fast food, and retail stores. This area is a high generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City has installed and will be requiring additional full trash capture devices for all 38.7 acres.

The City has installed over trash capture devices (TCD) in our city-owned catch basins which surround this retail and commercial center. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of these high trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will take a few years to accomplish.

In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.5 Trash Management Area #5 – Masonic Homes and 7th Street Industrial Area**

The Masonic Homes and 7<sup>th</sup> Street Industrial Area is a 245.4 acre high density residential retirement community and Industrial Area. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, Masonic Homes has installed a large detention facility and CDS unit. The City has also installed a few full trash capture devices near the small retail area and high density residential area.

Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of the medium trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the

public system so that we can capture 100% of the private site as well. This will occur after working with the high trash generating areas and is estimated to take three years to accomplish. In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.6 Trash Management Area #6 – Decoto Road Commercial and High Density Residential Area**

The Decoto Road Commercial and High Density Residential Area is a 49.4 acre high density residential community and a commercial strip mall Area. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City has installed a few full trash capture devices near the small retail area and high density residential area. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of the medium trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will occur after working with the high trash generating areas and is estimated to take three years to accomplish. In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.7 Trash Management Area #7 – Decoto Residential District**

The Decoto Residential District is 301.7 acres of single family small lot residential Area. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, The City has been successful in obtain two proposition 84 grants to provide Green Street improvements to the Decoto district. Both projects will install permeable pavers and rain gardens to capture treat and infiltrate storm water runoff from the street and residential property. The first project covers 5 blocks of one street. (Street C from 5<sup>th</sup> to 9<sup>th</sup> Street. The Second project is much larger and it covers 8 full complete blocks. It is from F Street to I street and from 12<sup>th</sup> Street to 15<sup>th</sup> Street. The City has applied for a third grant for a similar project for ten blocks on H Street within the Decoto District (from Decoto To 12th Street). The City is currently waiting to hear if we have been selected. These projects will serve as model projects for future developments to follow and the principles of these projects will form the basis for a

new City Standard for new developments and redevelopment of City residential streets throughout the City. The City will continue to add Trash capture devices to our catch basins in this are between now and 2022 in order to achieve a 100% reduction.

### **3.2.8 Trash Management Area #8 – Central Avenue Industrial Park**

The Central Avenue Industrial Park Area is 651.1 acres of Industrial Area. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City will installed a full trash capture devices in the public rights of way between now and 2022. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of the medium trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will occur after working with the high trash generating areas and is estimated to take five years to accomplish. In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.9 Trash Management Area #9 – Union City Boulevard Industrial Park**

The Union City Boulevard Industrial Park Area is a 327 acre Industrial Area. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City will installed full trash capture devices within the public rights of way between now and 2022. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of the medium trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will occur after working with the high trash generating areas and is estimated to take six years to accomplish. In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.10 Trash Management Area #10 – Miscellaneous Commercial and Mobile Home Areas**

The Miscellaneous Commercial and Mobile Home Park area consists of four sites throughout the City. It totals 70.1 acres and consist of Mobile Home Park, a hotel and commercial shop area and the residential area near James Logan High School. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City will installed full trash capture devices within the public rights of way between now and 2022. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of the medium trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will occur after working with the high trash generating areas and is estimated to take three years to accomplish. In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.11 Trash Management Area #11 – City Parks**

Area 11 consists of all the City parks throughout the City which totals 142.1 acres. This area is a medium generator of trash. The City will install trash capture devices in our parks and within the public rights of way which front our parks, so that we can capture 100% of the park sites This will occur after working with the high trash generating areas and is estimated to take seven years to accomplish.

### **3.2.12 Trash Management Area 12 – Public Schools**

Area 12 consists of all public schools within the City which totals 188.8 acres. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, which includes a yearly visit to one of the schools specifically to address clean water issues; the City will install full trash capture devices within the public rights of way that front the schools. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire school site. We plan to contact the School District and work with them to install additional trash capture devices in the school district's systems before the storm water passed to the public system so that we can capture 100% of the private site as well. However, since the school district is governed by the state, we may need additional information from the water board to get them to cooperate.

This will occur after working with the high trash generating areas and is estimated to take the full eight years to accomplish.

### **3.2.13 Trash Management Area 13 – Horner- Veasy Industrial Area**

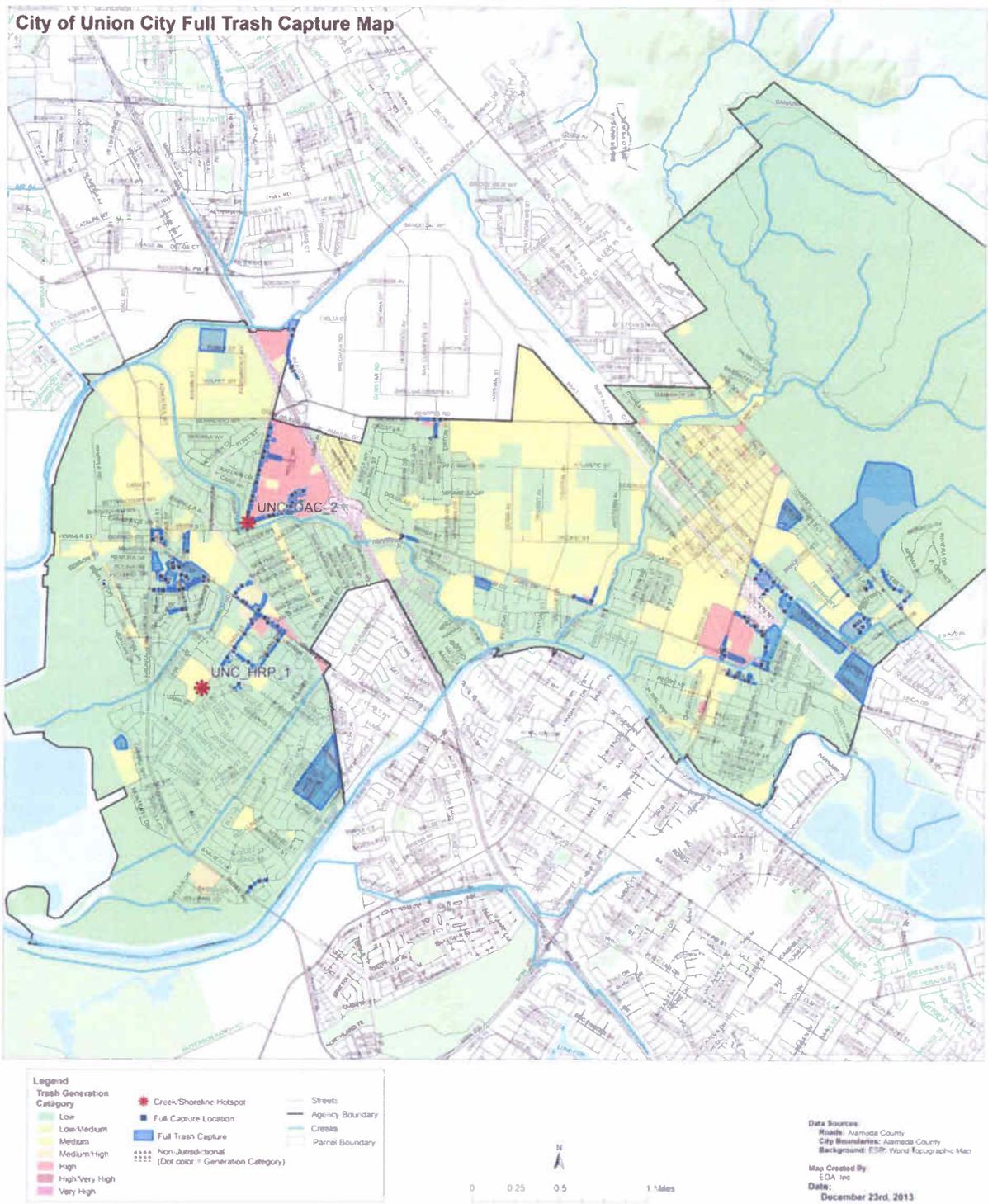
The Horner Veasy Industrial Area is a 21.4 acre of marginal industrial sites. This area does not have a dedicated storm drain system and thus all trash that is generated cannot reach the streams by way of a storm drainage system. The City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.14 Trash Management Area 14 – Old Alvarado Area**

The Old Alvarado Area is 15.3 acres of historic businesses and small shops. This area is a medium generator of trash. Besides our overall jurisdiction approach to educate through community outreach, the City has also installed few full trash capture devices near the small retail areas. Unfortunately some of the onsite storm drain systems connect directly to our storm drain mains and not our catch basin; thus we are not capturing the entire private development site. We plan to contact the property owners of the medium trash generating areas and work with them to install additional trash capture devices in the private systems before the storm water passed to the public system so that we can capture 100% of the private site as well. This will occur after working with the high trash generating areas and is estimated to take three years to accomplish. In addition the City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

### **3.2.15 Trash Management Area #15 – Rural And Low Density Residential Areas**

Area 15 consists of all the remainder of the City which is either residential or rural residential property. It totals 9845.8 acres. A few residential developments have installed CDs units. This area is a low generator of trash. We believe that our current jurisdictional programs which are explained in the next section are sufficient to keep these areas relatively litter free.



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

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### 3.2.16 Jurisdiction-wide Control Measures

The following are the current City- wide Control Measures for the City of Union City:

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

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

Bag Sales Requirements:

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

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

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

- **Street Sweeping** - Pre-MRP Actions – the City performs street sweeping twice a month on all City Streets. Post MRP- the City will continue to perform street sweeping twice a month.
- **ON-LAND TRASH CLEANUPS** - Pre-MRP Actions:-Work Furlough Crews pick up trash at hot spots on a weekly basis. Post MRP- the City Supplement as needed with Volunteer groups such as Boy Scouts Eagle projects.
- **Enhanced Storm Drain Inlet Maintenance**- Pre-MRP Actions -Inlets were cleaned once a year. Post MRP - Inlets are now cleaned twice a year.
- **Activities to Reduce Trash from Uncovered Loads**- Pre-MRP Actions: Required by ordinance to have loads covered. Post MRP – the City will continue with existing policy.

- **Anti-littering and Illegal Dumping Enforcement-** Pre-MRP Actions: It is Illegal to dump by ordinance. Post MRP – the City will continue with existing policy.
- **Improved Trash Bins/Container Management** – Post MRP – the City will work with property owners of the retail centers , industrial parks , and high density residential areas as they redevelop to upgrade their trash enclosures and commercial garbage pick ups procedures.
- **Creek, Channel, Shoreline Cleanups** – The City will continue the Pre-MRP Actions of yearly volunteer groups clean ups.
- **Public Education and Outreach Programs** – In association with ACCWP, the City of Union City *has implemented* the following public education and outreach control measures:

#### **Litter Outreach to K-12 Schools**

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

#### **“Be the Street” Youth Anti-Litter Advertising Campaign**

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

## Multi-Family Dwelling Litter Outreach

- Multi-family dwellings (i.e., apartment buildings and condominium complexes) are often areas of high trash generation. ACCWP is working with the City of Livermore to develop a litter reduction pilot targeting multi-family complexes known to be sites with significant litter issues. The pilot includes the following apartment building and condominium complexes: Livermore Garden Apartments (5720 East Avenue), La Castilleja (975 Murrieta Boulevard), and Castilleja Del Arroyo (1001 and 1009 Murrieta Boulevard).
- The pilot will be implemented between November 2013 and June 2014, and includes the following implementation schedule:
  - December 2013: Pre-campaign Measurement  
ACCWP and the City will take baseline measurements of all three sites. Methods of measurement will include taking photos of on-site litter, as well as collecting, characterizing and counting the litter using the Ocean Conservancy's Volunteer Trash Data Form. (Adopt A Creek Spot volunteers use this Data Form to characterize and count the trash collected from the Trash Hot Spot located behind the condominium complexes on Coastal Clean-up Day.) Areas to be measured include landscaped and other common areas, the sidewalk, gutter and streets located in front of the sites. All three property managers/volunteers will collect one week's worth of on-site litter. City staff will collect off-site litter located on the sidewalk, pedestrian trail and creek bank closest to the building and complex, and in the gutter.
  - November – December 2013: Research – All three property managers will be interviewed by City staff using twenty-five questions developed by the ACCWP. The interview results will help define the target audience(s) (i.e., age groups, income level, ethnic groups, etc.) and determine outreach tactics (i.e., face-to-face, signage, printed materials, etc.) This information will also assist the City and ACCWP in developing appropriate messaging.
  - November 2013 – January 2014: Plan – One of the three sites will be chosen as the "Control" site. In addition, outreach strategies and tactics will be selected for the "Active" sites.

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

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

### **Community Stewardship Grants**

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

The projects of the Fiscal Year 2014/15 grant recipients will be described in the ACCWP Fiscal Year 2013/14 Annual Report.

#### **Anti-Litter Outreach to Residents**

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

- **In addition to the public outreach the City preforms as part of ACCWP, each year the City contribute to the public outreach program where we attend at least 4 night time activities a year** such as National Night Out, Arbor Day, Make a Difference Day, Science Fair, and Public Works Day.
- **We have also installed clean water advertisements in all 18 of the City-owned Transit Buses** which serve a large percentage of students.
- In addition the City is considering **implementing a product ban on polystyrene and styro-foam containers.**

#### **3.2.17 Creek and Shoreline Hot Spot Cleanups**

Each year in September, the City of Union City participates in Coastal Clean u-p day. The City uses local volunteers to help clean up Alameda Creek. This past year, the volunteers cleaned both sides of the channel from the William Mann Civic Center Park upstream to Decoto and downstream to Alameda Creek. They collected 6 to 7 of those large black trash bags .Some of the bags were trash (total 80 lbs) and some were recyclables (total 67 lbs). We had at least 50 volunteers. Quite a number of families and kids, some students from the Interact Club at Logan, a teacher and her students from OLR- middle school in Union City, members of the Alameda Creek Alliance and other community volunteers who found out about the event from the various media sources that publicized it.

This year we joined forces with the Alameda Creek Alliance, because they could talk to the interested volunteers about the fisheries enhancement work they do in Alameda Creek, and they used a watershed map to show how the channel at the park flows down from the hills, past the BART station, through the park, and then to the Alameda Creek channel. It was estimated that between the channels and the park that they cleaned up  $\frac{3}{4}$  of a mile.

### 3.2.18 Summary of Trash Control Measures

#### Trash Management Area #1 - Union Landing Shopping Center

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

#### Trash Management Area #2 – Industrial Parkway Commercial Retail Area

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

#### Trash Management Area #3 – Alvarado Niles Road/Decoto Road Commercial Retail Area

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

#### Trash Management Area #4 – Alvarado Boulevard/Dyer Road Commercial Retail Area (Four Corners)

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

#### Trash Management Area #5 – Masonic Homes and & 7th Street Industrial Area

- Large Detention and CDS unit
- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

#### Trash Management Area #6 – Decoto Road Commercial and High Density Residential Area

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

Trash Management Area #7 – Decoto Residential District

- Construction of Green Streets
- TCD's in Public Rights of way
- Jurisdictional Measures

Trash Management Area #8 – Central Avenue Industrial Park

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

Trash Management Area #9 – Union City Boulevard Industrial Park

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

Trash Management Area #10 – Miscellaneous Commercial and Mobile Home Areas

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

Trash Management Area #11 – City Parks

- TCD's units in Public Rights of way
- Trash Enclosure upgrades
- Jurisdictional Measures

Trash Management Area 12 – Public Schools

- TCD's units in Public Rights of way
- TCD's in Schools' on site catch basins
- Jurisdictional Measures

Trash Management Area 13 – Horner- Veasy Industrial Area

- No public storm drain system
- When installed TCD's will be required
- Trash Enclosure upgrades as properties redevelop
- Jurisdictional Measures

Trash Management Area 14 – Old Alvarado Area

- TCD's units in Public Rights of way
- TCD's in private on site catch basins
- Trash Enclosure upgrades as properties redevelop Jurisdictional Measures

Trash Management Area #15 – Rural and Low Density Residential Areas

- Jurisdictional Measures

### **3.3 Control Measure Implementation Schedule**

Table 3-3 below presents the timing for the implementations of the City of Union City's trash reduction measures.

**Table 3-3 City of Union City's 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 <sup>a</sup>	FY 2014-2015	FY 2015-2016	FY 2016-2017 <sup>b</sup>	FY 2017-2018	FY 2018-2019	FY 2019-2020	FY 2020-2021	FY 2021-2022 <sup>c</sup>	
<b>TMA #1</b> Union Landing Shopping Center															
TCD's units in Public Rights of way		x	x	x											
TCD's in private on site catch basins							x	x	x						
Trash Enclosure upgrades									x	x					
Jurisdictional Measures	x	x	x	x											
<b>TMA #2</b> Industrial Parkway Commercial Retail Area															
TCD's units in Public Rights of way			x	x											
TCD's in private on site catch basins							x	x	x						
Trash Enclosure upgrades									x	x					
Jurisdictional Measures	x	x	x	x											
<b>TMA #3</b> Alvarado Niles Road/Decoto Road Commercial Retail Area															
CDS Units	x														
TCD's units in Public Rights of way		x	x	x											
TCD's in private on site catch basins							x	x	x						
Trash Enclosure upgrades									x	x					
Jurisdictional Measures	x	x	x	x											







## 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 Union City. The City intends to implement the Strategy in phases and at multiple geographical scales (i.e., jurisdiction-wide and trash management area) in collaboration with 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 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 Union City.

#### 4.1.1 Management Questions

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

- Are 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 Union City 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 of Union 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 Union City 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.

**1-A On-land Visual Assessments**

As part of the Trash Generation Map assessment and refinement process (see Section 2.2.1), a draft on-land visual assessment method was developed to assist Permittees in confirming and refining trash generating area designations (i.e., very high, high, moderate and low trash generating categories). The draft on-land visual assessment method is intended to be a cost-effective tool and provide Permittees with a viable alternative to quantifying the level of trash discharged from MS4s. As part of BASMAA’s *Tracking California’s Trash* grant received from the State Water Resources Control Board (see Section 4.2), quantitative relationships between trash loading from MS4s and on-land visual assessment condition categories will be established. Condition categories defined in the draft on-land assessment protocol are listed in Table 4-1

**Table 4-1.** Trash condition categories used in the draft on-land visual assessment protocol.

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

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

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

### **1-B 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-C 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. Nine 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 numbers 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. The City of Union City is currently considering implementing an expanded polystyrene food ware ban.

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

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

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

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

- December 2013: Pre-campaign Measurement – ACCWP and the City will take baseline measurements of all three sites. Methods of measurement will include taking photos of on-site litter, as well as collecting, characterizing and counting the litter using the Ocean Conservancy’s Volunteer Trash Data Form. (Adopt A Creek Spot volunteers use this Data Form to characterize and count the trash collected from the Trash Hot Spot located behind the condominium complexes on Coastal Clean-up Day.) Areas to be measured include landscaped and other common areas, the sidewalk, gutter and streets located in

front of the sites. All three property managers/volunteers will collect one week’s worth of on-site litter. City staff will collect off-site litter located on the sidewalk, pedestrian trail and creek bank closest to the building and complex, and in the gutter.

- 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-G 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 Operation and Maintenance Verification**

Consistent with the MRP, adequate inspection and maintenance of trash full capture devices is required to maintain full capture designation by the Water

Board. The City of Union City is currently developing an operation and maintenance verification program (Trash O&M Verification Program), via ACCWP, to ensure that devices are inspected and maintained at a level that maintains this designation. The ACCWP Trash O&M Verification Program will be modeled on the current O&M verification program for stormwater treatment controls implemented consistent with the Permit new and redevelopment requirements.

#### **2-B Compliance with the Single-Use Bag Ban**

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

#### **2-C Implementation of an effective street sweeping program**

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

#### **2-D Commercial Trash Container Management**

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

#### **2-E Residential Trash Container Management**

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

## **4.2 BASMAA “Tracking California’s Trash” Project**

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

by the State Water Resources Control Board (SWRCB) who recognized the need for standardized trash assessment methods that are robust and cost-effective.

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

#### 4.2.1 Testing of Trash Monitoring Methods

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

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

#### 4.2.2 Full Capture Equivalent Studies

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

### **4.3 Long-Term Assessment Strategy**

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

### **4.4 Implementation Schedule**

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

Table 4-2. Load reduction reporting milestones are also denoted in the table. The schedule is consistent with the need for near-term pilot assessment results to demonstrate progress toward short-term targets, while acknowledging the need for testing and evaluation of assessment methods and protocols prior to long-term implementation.

**Table 4-2.** City of Union City’s trash progress assessment implementation schedule.

Trash Assessment Programs and Methods	Prior to FY 2013-14	Fiscal Year								
		2013-14 <sup>a</sup>	2014-15	2015-16	2016-17 <sup>b</sup>	2017-18	2018-19	2019-20	2020-21	2021-22 <sup>c</sup>
<b>Pilot Trash Assessment Strategy (ACCWP)</b>										
On-land Visual Assessments		x	x	x	x	x	x	x	x	x
Single-Use Plastic Bag Assessment	X	X							X	X
Expanded Polystyrene Assessment	X	X							X	X
Trash Hot Spot Cleanup Assessment	X	X	X	X	X				X	X
K-12 School Litter Reduction Outreach Program						X				
Multi-Family Dwelling Litter Outreach Program	X								X	
Residents' Self-Reported Litter-Related Behavior	X					X			X	
Full Capture Operation and Maintenance Verification			X	X	X					
Single-Use Bag Ban Compliance		X	X	X	X					X
Street Sweeping Effectiveness Evaluation			X	X	X					
Commercial Trash Container Management Assessment			X	X	X					
Residential Trash Container Management Assessment			X	X	X					
<b>Tracking California's Trash Project (BASMAA)</b>										
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					
<b>Long-Term Trash Assessment Strategy (ACCWP)</b>										
						X	X	X	X	X

<sup>a</sup>July 1, 2014 - 40% trash reduction target

<sup>b</sup>July 1, 2017 - 70% trash reduction target

<sup>c</sup>July 1, 2022 - 100% trash reduction target

## 5.0 REFERENCES

- Allison R.A. and F.H.S. Chiew 1995. Monitoring stormwater pollution from various land uses in an urban catchment. Proceedings from the 2<sup>nd</sup> International Symposium on Urban Stormwater Management, Melbourne, 551-516.
- Allison, R.A., T.A. Walker, F.H.S. Chiew, I.C. O'Neill and T.A. McMahon 1998. From Roads to rivers: Gross pollutant removal from urban waterways. Report 98/6. Cooperative Research Centre for Catchment Hydrology. Victoria, Australia. May 1998.
- Armitage, N. 2003. The removal of urban solid waste from stormwater drains. Prepared for the International Workshop on Global Developments in Urban Drainage Management, Indian Institute of Technology, Bombay, Mumbai India. 5-7 February 2003.
- Armitage, N. 2007. The reduction of urban litter in the stormwater drains of South Africa. *Urban Water Journal* Vol. 4, No. 3: 151-172. September 2007.
- Armitage N., A. Rooseboom, C. Nel, and P. Townshend 1998. "The removal of Urban Litter from Stormwater Conduits and Streams. *Water Research Commission* (South Africa) Report No. TT 95/98. Pretoria.
- Armitage, N. and A. Rooseboom 2000. The removal of urban litter from stormwater conduits and streams: Paper 1 – The quantities involved and catchment litter management options. *Water S.A.* Vol. 26. No. 2: 181-187.
- ABAG (Association of Bay Area Governments). 2005. Bay Area Land Use Geographical Information Systems Datalayer.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011a. Progress Report on Methods to Estimate Baseline Trash Loads from Bay Area Municipal Stormwater Systems and Track Loads Reduced. February 2011.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011b. Method to Estimate Baseline Trash Loads from Bay Area Municipal Stormwater Systems: Technical Memorandum #1. Prepared by EOA, Inc. April 2011.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011c. Sampling and Analysis Plan. Prepared by EOA, Inc. April 2011.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2012. Trash Baseline Generation Rates: Technical Report. Prepared by EOA, Inc. February 1, 2012.
- County of Los Angeles. 2002. Los Angeles County Litter Monitoring Plan for the Los Angeles River and Ballona Creek Trash Total Maximum Daily Load. May 30, 2002.
- County of Los Angeles. 2004a. Trash Baseline Monitoring Results Los Angeles River and Ballona Creek Watershed. Los Angeles County Department of Public Works. February 17, 2004.
- County of Los Angeles 2004b. Trash Baseline Monitoring for Los Angeles River and Ballona Creek Watersheds. Los Angeles County Department of Public Works. May 6, 2004.
- Kim, L.H, M. Kayhanian, M.K. Stenstrom 2004. Event mean concentration and loading of litter from highways during storms. *Science of the Total Environment* Vol 330: 101-113.
- Lippner, G., R. Churchwell, R. Allison, G. Moeller, and J. Johnston 2001. A Scientific Approach to Evaluating Storm Water Best Management Practices for Litter. *Transportation Research Record*. TTR 1743, 10-15.

# APPENDIX A

Staff Report to the City of Union City's  
City Council

Adopting Long – Term Plan



## Agenda Item

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**DATE:** January 14, 2014

**TO:** CITY COUNCIL

**FROM:** MINTZE CHENG, PUBLIC WORKS DIRECTOR

**SUBJECT:** APPROVE UNION CITY TRASH LONG TERM REDUCTION PLAN AND PROGRAM ASSESSMENT STRATEGY

**BACKGROUND:**

As part of the Municipal Regional Stormwater NPDES Permit (MRP), the City of Union City is required to submit to the Regional Water Quality Control Board (Water Board) by February 1, 2014, a Long-Term Trash Load Reduction Plan and its Program Assessment Strategy (Long-Term Plan). This Long-Term Plan is consistent with the framework developed in collaboration with Water Board staff. Its content is based on our current understanding of trash problems within our City and the effectiveness of control measures designed to reduce trash in our storm drain system. The Long-Term Plan is intended to be iterative and may need to be modified in the future based on information gained through the implementation of trash control measures.

**DISCUSSION:**

The City's Long-Term Plan includes:

1. Descriptions of the current levels 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 municipal separate storm sewer systems by July 1, 2022, and 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;
3. Time schedules for implementing control measures and the assessment strategy.

**Following are the current City-wide Trash Control Measures:**

- Alameda County Waste Management Authority Single-Use Bag Ban Ordinance
- Street Sweeping
- On-land Trash Cleanups
- Enhanced Storm Drain Inlet Maintenance-
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management

- Creek, Channel, Shoreline Cleanups
- Public Education and Outreach Programs –
  - Litter Outreach to K-12 Schools
  - “Be the Street” Youth Anti-Litter Advertising Campaign
  - Multi-Family Dwelling Litter Outreach
  - Community Stewardship Grants
  - Anti-Litter Outreach to Residents
  - Installed clean water advertisements in all 18 of the City-owned Transit Buses which serve a large percentage of students.
- The City Staff is considering recommending to the City Council a product ban on polystyrene and styro-foam containers.

Public Works staff delineated and prioritized 15 citywide trash management areas (TMAs) based on the location of trash generating areas, types of trash sources, and current or planned control measure to be utilized. TMAs are intended to form the management units by which trash control measure can be tracked and assessed for progress towards trash reduction targets. Once delineated, TMAs were prioritized for control measure implementation. City staff used the following procedure to designate TMAs:

- A map depicting the City’s TMAs is included as **Error! Reference source not found.** in the attached report.
- Staff prioritizes the trash management areas by how fast the trash is generated.
- Please see the attached map, Areas 1 through 4 are high generating trash areas (consisting of our retail and commercial areas.)
- Areas 5 through 14 are medium to low medium trash generating areas (consisting of our industrial, high residential, smaller residential lots, schools and parks area).
- Area 15 is our low-density single-family homes and rural areas which generate low to no trash.
- In general, the largest area in the City is in the low generating areas; followed by the medium areas. Our high generating trash areas are fairly localized and are relatively small in comparison.

The proposed Long Term Trash Reduction Plan lists three Levels of Actions: Conducted Proposed, and on-going maintenance.

#### **Descriptions of Actions/Tasks (Conducted):**

The City has already begun to implement its trash reduction plan. Control measures implemented to date via the trash reduction plan are:

- Installed full trash capture devices in our high trash generating areas
- Increased cleaning of Continuous Deflection Separators (CDS) Units and Catch basins pre and post storm event season.
- Increased Public Awareness by installing Clean Water Advertisement in all of Union City Transit Buses

- Increased Public Outreach with at least 8 different yearly events
- Distributed over 500 reusable bags
- Passed a Plastic Bag Ban
- Conducted a least two creek clean up events per year
- Utilized Work furlough crews to assist in weekly trash pick- up along major arterials and collector streets.
- Installed over 150 trash capture devices (TCD) in our city-owned catch basins which surround our retail and commercial properties as well as a portion of our high density residential properties.
- Installed TCD units in our corporation yard.
- In addition, the City has a total of 12 CDS units installed on both private and public properties.
- It is estimated that these measures serve a combined area of 293.28 acres.

The City has installed full trash capture devices in the catch basins located in the public rights-of-way along the perimeters of all our high trash generating properties. Unfortunately some of the onsite storm drain connects directly to the public storm drainage pipes and not into our catch basin; thus on-site trash are not captured before it enters the public storm drain system. We plan to contact the property owners of these high trash generating areas and work with them to install additional trash capture devices in the private systems so that we can capture 100% of the private site as well. In addition, as new development or redevelopment occurs on private property, they will be required to install full trash capture devices after City Councils approves the Long-Term Plan.

**Descriptions of planned action/tasks (Proposed):**

Union City Clean Water Program will be informing private development owners that full capture devices will be required for compliance with the Water Board requirements. These letters will inform owners that these TCDs will also need to be cleaned a minimum of twice per year. This applies mostly to catch basins and inlets that reside on private developments that are medium-level generating trash loads or higher, such as Union City Landing, various shopping centers, industrial areas, etc. We aim to obtain a trash load reduction of 70% with the cooperation of businesses in Union City. Implementation will begin with the highest-level trash generating locations, such as Union Landing and high-density shopping centers. Upon successful completion, the same efforts will be targeted to smaller commercial developments, then industrial areas, schools, etc. A timeframe to expect compliance with the MRP for trash load reduction is three years for the commercial areas and within seven years for the remainder of the property owners.

In addition, the City is committed to installing additional full trash capture devices within the City's storm drain system. Staff recommends the installation of an additional 400 TCDs within the City's right-of-way over the next four years. This will bring the total TCDs installed to over 550 units. These units will be installed to supplement the ones already installed in our high trash generation areas as well as installing them in our medium trash generating areas.

The City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste. Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste. These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.

**Descriptions of Maintenance Activities:**

We are committed to clean each of the full capture clean screen devices a minimum of twice a year. We will also need to record the amount of debris removed and the predominant type of trash removed. The CDS units are inspected once per year prior to the start of the rainy season and cleaned in accordance with the manufacturers requirements. To date we have had no vandalism of our CDS units or clean screen devices. However, one of our TCD units was crushed when the inlet grate fell on it. It was promptly replaced.

**FISCAL IMPACT:**

As part of the Long Term Plan, staff is recommending the installation of 100 TCD units per year for four years starting next fiscal year. The units cost approximately \$500 per unit installed. This is a cost of \$50,000 per year. The City is further committing to maintain and clean these units twice a year. It is estimated that it will cost approximately \$120,000 per year to maintain and clean the units (when all 550 units are installed). Staff plans to request City Council approval for the said additional maintenance and operation efforts as part of our bi-annual budget planning process once our proposed long-term plan has been accepted by the Water Board. These funds may be made available from the Clean Water fund.

**RECOMMENDATION:**

It is recommended that the City Council adopt the attached resolution approving the Trash Long Term Reduction Plan and Program Assessment Strategy.

**Prepared by:**

Thomas E. Ruark, City Engineer

**Submitted by:**

Mintze Cheng, Public Works Director

**Approved by:**

Larry Cheeves, City Manager

Attachment: Proposed Long Term Trash Reduction Plan

RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UNION CITY  
APPROVING THE TRASH LONG-TERM REDUCTION PLAN  
AND PROGRAM ASSESSMENT STRATEGY

**WHEREAS**, the City of Union City is required to submit to the Regional Water Quality Control Board by February 1, 2014, a Long-Term Trash Load Reduction Plan and its Program Assessment Strategy (Long-Term Plan), and

**WHEREAS**, the Long-Term Plan is consistent with the framework developed in collaboration with Water Board staff; and

**WHEREAS**, its contents is based on our current understanding of trash problems within our City and the effectiveness of control measures designed to reduce trash associated with Storm Sewer discharges; and

**WHEREAS**, the Long-Term Plan is intended to be iterative and may need to be modified in the future based on information gained through the implementation of trash control measures;

**NOW, THEREFORE, BE IT RESOLVED** by the City Council of the City of Union City hereby approves and the Long-Term Reduction Plan and Program Assessment Strategy.

**PASSED, APPROVED AND ADOPTED** this \_ day of \_\_\_\_\_, 2014, by the following called vote:

**AYES**, Council members:

**NAYS**, Council members:

**ABSENT**, Council members:

**ABSTAINING**, Council members:

ATTEST

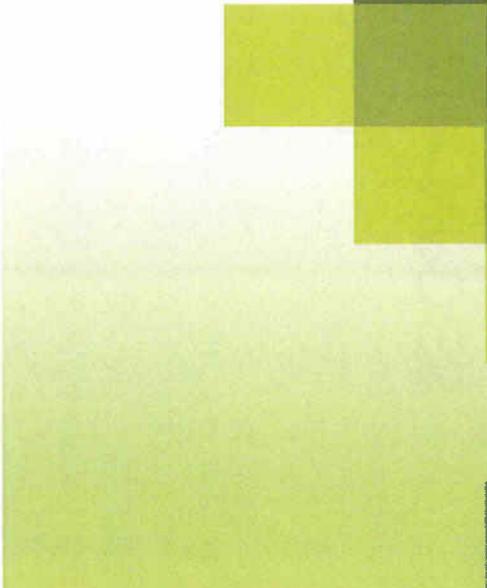
APPROVED

\_\_\_\_\_  
Renee Elliott, City Clerk

\_\_\_\_\_  
Carol Dutra –Vernaci, Mayor

APPROVED AS TO FORM:

\_\_\_\_\_  
Benjamin T. Reyes II, City Attorney



**UNION CITY  
TRASH LONG TERM REDUCTION PLAN AND  
PROGRAM ASSESSMENT STRATEGY**

Item 7a

January 14, 2014



## **BACKGROUND:**

- As part of the Municipal Regional Stormwater NPDES Permit (MRP), the City is required to submit to the Regional Water Quality Control Board (Water Board) by February 1, 2014, a Long-Term Trash Load Reduction Plan and its Program Assessment Strategy (Long-Term Plan).
- The Long-Term Plan is consistent with the framework developed in collaboration with Water Board staff.



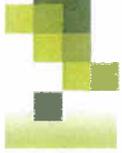
## BACKGROUND: cont.

- Its content is based on our current understanding of trash problems within our City and the effectiveness of control measures designed to reduce trash in our storm drain system.
- The Long-Term Plan is intended to be iterative and may need to be modified in the future based on information gained through the implementation of trash control measures



## **DISCUSSION:**

- The City's Long-Term Plan includes:
  - Descriptions of the current levels of implementation of trash control measures
  - 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 municipal separate storm sewer systems by July 1, 2022, and with an interim milestone of 70% reduction by July 1, 2017



## DISCUSSION: cont.

- A description of the Trash Assessment Strategy
- Time schedules for implementing control measures and the assessment strategy



## Current City- wide Trash Control

### Measures:

- Alameda County Waste Management Authority Single-Use Bag Ban Ordinance
- Street Sweeping
- On-land Trash Cleanups
- Enhanced Storm Drain Inlet Maintenance



# Current City- wide Trash Control

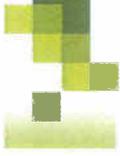
## Measures: cont.

- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Creek, Channel, Shoreline Cleanups



# Current City- wide Trash Control Measures: cont.

- Public Education and Outreach Programs –
  - Litter Outreach to K-12 Schools
  - “Be the Street” Youth Anti-Litter Advertising Campaign
  - Multi-Family Dwelling Litter Outreach
  - Community Stewardship Grants
  - Anti-Litter Outreach to Residents
  - Installed clean water advertisements in all 18 of the City-owned Transit Buses which serve a large percentage of students.
  
- The City Staff is considering recommending to the City Council a product ban on polystyrene and styro-foam containers.



## Trash Management Areas (TMAs)

- Public Works staff delineated and prioritized 15 citywide trash management areas (TMAs) based on the location of trash generating areas, types of trash sources, and current or planned control measure to be utilized.
- A map depicting the City's TMAs is included as Figure 3-1 in the attached report.
- Staff prioritizes the trash management areas by how fast the trash is generated.



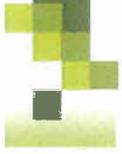
## TMA's cont.

- Areas 1 through 4 are high generating trash areas (consisting of our retail and commercial areas.)
- Areas 5 through 14 are medium to low medium trash generating areas (consisting of our industrial, high residential, smaller residential lots, schools and parks area).
- Area 15 is our low density single family homes and rural areas which generate low to no trash.
- In general, the largest area in the City is in the low generating areas; followed by the medium areas. Our high generating trash areas are fairly localized and are relatively small in comparison.



# Trash Generation Categories

Trash Generation Category	Union City Area (Acres) (%)	Commercial and Services Acres (%)	Industrial Acres (%)	Residential Acres (%)	Retail Acres (%)	K-12 Schools Acres (%)	Urban Parks Acres (%)	Open Space Acres (%)
Very High	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
High	198.8 (1.7%)	0.0 (0.0%)	0.0 (0.0%)	8.8 (4.4%)	190.0 (95.6%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)
Medium / High	28.9 (0.2%)	0.0 (0.0%)	0.0 (0.0%)	0.0 (0.0%)	15.1 (52.3%)	13.8 (47.7%)	0.0 (0.0%)	0.0 (0.0%)
Medium	1,481.7 (12.2%)	136.3 (9.2%)	687.5 (46.4%)	311.2 (21.0%)	1.5 (0.1%)	201.5 (13.6%)	143.7 (9.7%)	0.0 (0.0%)
Low / Medium	178.6 (1.5%)	0.2 (0.1%)	166.8 (93.4%)	0.0 (0.0%)	0.2 (0.1%)	0.0 (0.0%)	5.2 (2.9%)	6.2 (3.5%)
Low	10,233.8 (84.4%)	10.2 (0.1%)	214.9 (2.1%)	2906.4 (28.4%)	0.0 (0.0%)	0.0 (0.0%)	20.5 (0.2%)	7081.8 (69.2%)
Total	12,121.8 (100.0%)	146.7 (1.2%)	1069.2 (8.8%)	3226.4 (26.6%)	206.8 (1.7%)	215.3 (1.8%)	169.4 (1.4%)	7088.0 (58.4%)



## Descriptions of Actions/Tasks (Conducted)

- The City has already begun to implement its trash reduction plan. Control measures implemented to date via the trash reduction plan are:
  - Installed full trash capture devices in our high trash generating areas
  - Increased cleaning of CDS Units and Catch basins pre and post storm event season
  - Increased Public Awareness by installing Clean Water Advertisement in all of Union City Transit Buses



## **Descriptions of Actions/Tasks (Conducted) cont..**

- Increased Public Outreach with at least 8 different yearly events
- Distributed over 500 reusable bags
- Passed a Plastic Bag Ban
- Conducted a least two creek clean up events per year
- Utilized Work furlough crews to assist in weekly trash pick-up along major arterials and collector streets.



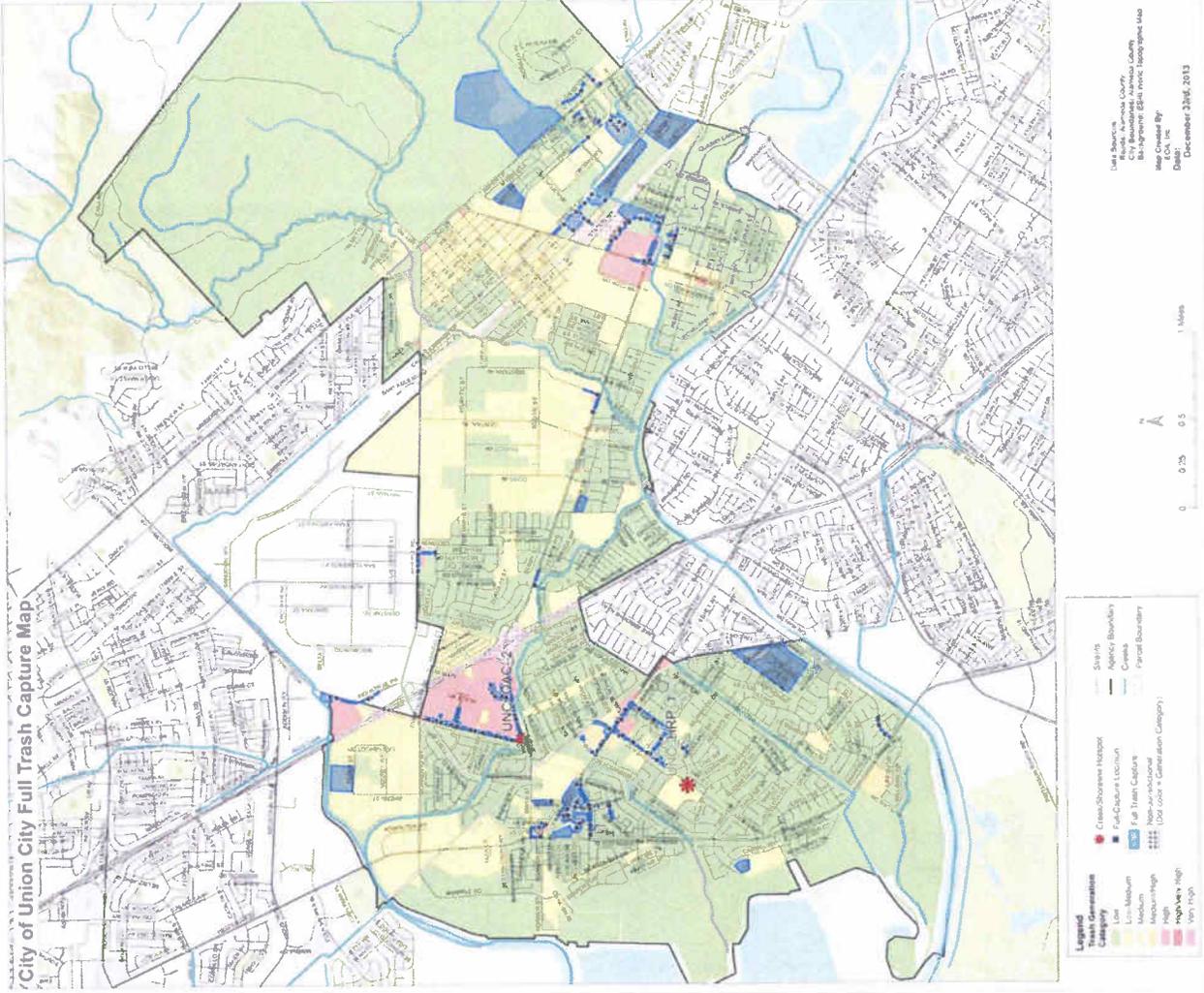
# Descriptions of Actions/Tasks (Conducted) cont..

- Installed over 150 trash capture devices (TCD) in our city-owned catch basins which surround our retail and commercial properties as well as a portion of our high density residential properties.
- Installed TCD units in our corporation yard.
- In addition, the City has a total of 12 CDS units installed on both private and public properties.
- It is estimated that these measures serve a combined area of 293.28 acres.





# Areas Covered by TCD's and CDS units





## **Descriptions of planned action/tasks (Proposed):**

- The City has installed full trash capture devices in the catch basins located in the public rights-of-way along the perimeters of all our high trash generating properties.
- Unfortunately some of the onsite storm drain connects directly to the public storm drainage pipes and not into our catch basin; thus on-site trash are not captured before it enters the public storm drain system.
- We plan to contact the property owners of these high trash generating areas and work with them to install additional trash capture devices in the private systems so that we can capture 100% of the private site as well.
- In addition, as new development or redevelopment occurs on private property, they will be required to install full trash capture devices after City Councils approves the said Long-Term Plan.



## **Descriptions of planned action/tasks (Proposed):cont.**

- Inform private development owners that full capture devices will be required for compliance with the Water Board requirements.
- Inform owners that these TCDs will also need to be cleaned a minimum of twice per year.
- We aim to obtain a trash load reduction of 70% with the cooperation of businesses in Union City.
- Implementation will begin with the highest-level trash generating locations, such as Union Landing and high-density shopping centers.
- Upon successful completion, the same efforts will be targeted to smaller commercial developments, then industrial areas, schools, etc.



## **Descriptions of planned action/tasks (Proposed):cont.**

- A timeframe to expect compliance with the MRP for trash load reduction is three years for the commercial areas and within seven years for the remainder of the property owners.
- Installing additional full trash capture devices within the City's storm drain system.
- Install an additional 400 TCDs within the City's right-of-way over the next four years
- This will bring the total TCDs installed to over 550 units.
- These units will be installed to supplement the ones already installed in our high trash generation areas as well as installing them in our medium trash generating areas.



# Trash Enclosures

- The City has recently upgraded the requirements for trash enclosures to be able to accommodate the need to recycle organic waste.
- Private property owners of commercial and industrial uses that redevelop their property will need to provide adequate trash enclosures which can accommodate the bins for all recyclables and waste.
- These trash enclosures must be covered and built so that no discharge is allowed to flow to a storm drainage system.



# Descriptions of Maintenance Activities:

- We are committed to clean each of the full capture clean screen devices a minimum of twice a year.
- We will also need to record the amount of debris removed and the predominant type of trash removed.
- The CDS units are inspected once per year prior to the start of the rainy season and cleaned in accordance with the manufacturers requirements.
- To date we have had no vandalism of our CDS units or clean screen devices.
- However, one of our TCD units was crushed when the inlet grate fell on it. It was promptly replaced.



## **FISCAL IMPACT:**

- As part of the Long Term Plan, staff is recommending to install 100 TCD units per year for four years starting next fiscal year.
- The units cost approximately \$500 per unit installed.
- This is a cost of \$50,000 per year
- The City is further committing to maintain and clean these units twice a year.



## **FISCAL IMPACT: cont.**

- It is estimated that it will cost approximately \$120,000 per year to maintain and clean the units (when all 550 units are installed).
- Staff plans to request the City Council approval for the said additional maintenance and operation efforts as part of our bi-annual budget planning process once our proposed long term plan being accepted by the Water Board.
- These funds may be made available from the Clean Water fund



## **RECOMMENDATION:**

- It is recommended that the City Council adopt the attached resolution approving the Trash Long Term Reduction Plan and Program Assessment Strategy.



# Questions

- Any Questions?