

Baseline Trash Load and Short-Term Trash Load Reduction Plan

Submitted by:

City of Dublin

100 Civic Plaza, Dublin, CA 94568

In compliance with Provisions C.10.a(i) and C.10.a(ii) of Order R2-2009-0074

February 1, 2012

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City of Dublin
SHORT-TERM TRASH LOAD REDUCTION PLAN

CERTIFICATION STATEMENT

"I certify, under penalty of law, that this document and all attachments were prepared either under my direction or supervision, or were prepared by our consultants or consultants of the Alameda Countywide Clean Water Program 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:



Roger Bradley
Assistant to the City Manager

Feb. 1, 2012

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ABBREVIATIONS

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

PREFACE

This Baseline Trash Load and Short-Term Trash Load Reduction Plan (Plan) is submitted in compliance with provision C.10.a(i) and C.10.a(ii) of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay Area (Order R2-2009-0074). This Plan was developed using a regionally consistent format developed by the Bay Area Stormwater Management Agencies Association (BASMAA). Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas, etc.) or if circumstances arise during implementation that were not anticipated at the time of this submission, the City of Dublin may choose to amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of Dublin's annual reporting process.

1.0 INTRODUCTION

The Municipal Regional Stormwater 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 of the MRP (Trash Load Reduction) requires Permittees to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by 40 percent before July 1, 2014.

Required submittals to the San Francisco Bay Regional Water Quality Control Board (Water Board) by February 1, 2012 under MRP provision C.10.a (Short-Term Trash Loading Reduction Plan) include:

1. (a) Baseline trash load estimate, and (b) description of the methodology used to determine the load level.
2. A description of the Trash Load Reduction Tracking Method that will be used to account for trash load reduction actions in addition to demonstrating progress and attainment of trash load reduction levels.
3. A **Short-Term Trash Loading Reduction Plan** that describes control measures and best management practices that will be implemented to attain a 40 percent trash load reduction from its MS4 by July 1, 2014.

This Short-Term Trash Load Reduction Plan (Short-Term Plan) is submitted by the City of Dublin in compliance with the portions of MRP provision C.10.a.i listed as items 1a and 3 above. In compliance with item 1b above, BASMAA submitted a progress report on behalf of Permittees that briefly describes the methodologies used to develop trash baseline loads (BASMAA 2011a). These methods are more fully described in BASMAA (2011b, 2011c). Lastly, the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011d) was submitted by BASMAA on behalf of Permittees in compliance with submittal 2 described above. The Baseline Loading Rates and Tracking Method projects are briefly described below.

Baseline Trash Generation Rates Project

Through approval of a BASMAA regional project, Permittees agreed to work collaboratively to develop a regionally consistent method to establish baseline trash loads from their MS4s. The project, also known as the *BASMAA Baseline Trash Generation Rates Project*, assists Permittees in establishing a baseline to demonstrate progress towards MRP trash load reduction goals (i.e., 40 percent). The intent of the project was to provide a scientifically-sound method for developing (default) baseline trash generation rates that can be adjusted, based on Permittee/site specific conditions; and used to develop baseline loading rates and loads. Baseline loads form the reference point for comparing trash load reductions achieved through control measure implementation.

Baseline trash loading rates are quantified on a volume per unit area basis and based on factors that significantly affect trash generation (e.g., land use, population density, and economic profile). The method used to establish baseline trash loads 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 off a conceptual model developed as an outgrowth of these studies (BASMAA 2011b). Baseline trash loading 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. Methods used to develop trash baseline loading rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Trash Load Reduction Tracking Method Summary

The trash load reduction tracking method, described in the *Trash Load Reduction Tracking Method Technical Report*, assists Permittees in demonstrating progress towards reaching trash load reduction goals defined in the MRP (e.g., 40 percent). The tracking method is based on information gained through an extensive literature review and Permittee experiences in implementing stormwater control measures in the San Francisco Bay Area. The literature review was conducted to evaluate quantification methods used by other agencies to assess control measure effectiveness or progress towards quantitative goals. Results are documented in the *Trash Load Reduction Tracking Method: Technical Memorandum # 1 – Literature Review* (BASMAA 2011d).

Methods attributable to specific trash control measures fall into two categories: 1) trash load reduction quantification formulas; and 2) load reduction credits (BASMAA 2012b). Quantification formulas were developed for those trash control measures that were deemed feasible and practical to quantify load reductions at this time. Load reduction credits were developed for all other control measures included in the methodology development. Both categories of methods assume that as new or enhanced trash control measures are implemented by Permittees, a commensurate trash load reduction will occur. Progress towards load reduction goals will be demonstrated through comparisons to established trash baseline load estimates developed through the BASMAA *Baseline Generation Rates Project*.

Short-Term Trash Load Reduction Plan

The purpose of this Short-Term Plan is to describe the current level of implementation of control measures and best management practices, and identify the type and extent to which new or enhanced control measures and best management practices will be implemented to attain a 40 percent trash load reduction from their MS4 by July 1, 2014. The Short-Term Plan was developed using a template created by BASMAA through a regional project. New and enhanced trash control measures (i.e., Best Management Practices) that Permittees may implement to demonstrate trash load reduction goals are included in Table 1.1. This list was developed collaboratively through the BASMAA Trash Committee, which included participation from Permittee, stormwater program, Water Board and non-governmental organization (NGO) staff. The list of control measures is based on: 1) the potential for Permittees to implement; 2) the availability of information required to populate formulas and develop credits; and 3) the expected benefit of implementation. Load reductions associated with each control measure are demonstrated either through a quantification formula (QF) or credits (CR) described in the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2012b).

In efforts to reduce trash discharged from MS4s, Permittees may choose to implement control measures that are not included in Table 1.1 or described more fully in BASMAA (2012b). If a Permittee chooses to do so, methods specific to calculating trash load reductions for that control measure would need to be developed. Additionally, at that point, consideration should be given to updating this Short-Term Plan.

Additionally, based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas, etc.), or if circumstances arise during implementation of the Plan that were not anticipated at

the time of submission, the City of Dublin may amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of Dublin’s annual reporting process.

Table 1.1. Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.

Load Reduction Credits
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management Activities
Single-Use Food and Beverage Ware Ordinances
Quantification Formulas
On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Partial-Capture Treatment Devices
Enhanced Storm Drain Inlet Maintenance
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

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

- Introduction;
- Baseline Trash Loading Estimate;
- Load Reduction Calculation Process;
- Enhanced Trash Control Measures;
- Summary of Trash Control Measure Enhancements;
- Implementation Schedule; and
- References.

2.0 BASELINE TRASH LOADING ESTIMATE

Note: Tables and information presented in this section are subject to change based on the results of a third monitoring event of the BASMAA Baseline Trash Loading Rates Project. Therefore, this section of the Short-Term Plan may be updated with revised trash generation rates, baseline loading rates, and baseline loads.

This section provides the estimated annual trash baseline load from the City of Dublin's Municipal Separate Storm Sewer System (MS4). In compliance with Provision C.10.a.ii of the MRP, the City of Dublin worked collaboratively with other MRP Permittees through BASMAA to develop data and the process necessary to establish baseline trash loading estimate from our MS4. The collaborative project was managed through the BASMAA Trash Committee and included a series of steps described in BASMAA (2012) and listed below. The approach was intended to be cost-effective and consistent, but still provide an adequate level of confidence in trash loads from MS4s, while acknowledging that uncertainty in trash loads still exists. The approach entailed the following steps:

1. Conduct literature review;
2. Develop conceptual model;
3. Develop and implement sampling and analysis plan;
4. Test conceptual model;
5. Develop and apply default trash **generation rates** to Permittee effective loading areas;
6. Adjust default trash generation rates based on baseline levels of control measure implementation by the Permittee to develop trash **baseline loading rates**; and,
7. Calculate Permittee-specific annual trash **baseline load**.

Through the collaborative BASMAA project, default baseline trash generation rates (volume per area) were developed for a finite set of categories, based on factors that significantly affect trash loads (e.g., land use). These trash generation rates were then applied to effective loading areas in applicable jurisdictional areas within the City of Dublin. Trash generation rates were then adjusted based on baseline street sweeping, storm drain inlet maintenance, and stormwater pump station maintenance conducted in each applicable area. The sum of the trash loads (i.e., rate multiplied by area) from each effective loading area represents the City of Dublin's baseline trash load from its MS4. A full description of the methods by which trash baseline loads were developed is included in BASMAA (2012a) and is summarized below.

Permittee Characteristics

Incorporated in 1982, the City of Dublin covers 9,337 acres in Alameda County, and has a jurisdictional area of 4,004 acres. According to the 2010 Census, it has a population of 46,036, with a population density of 3,088.0 people per square mile, and average household size of 2.70. Of the 46,036 who call the City of Dublin home, 22.4% are under the age of 18, 8.0% are between 18 and 24, 38.2% are between 25 and 44, 24.1% are between 45 and 65, and 7.3% are 65 or older.

Top employers in the City of Dublin include a Federal Correctional Institution, City of Dublin, Carl Zeiss Meditec, Sybase, Dublin Unified School District and Micro Dental. The median household income was \$77,283 in 2000¹.

Default Trash Generation Rates (Regional Approach)

A set of default trash generation rates was developed via the BASMAA regional collaborative project (BASMAA 2012a). Default generation rates were developed based on a comparison between trash characterization monitoring results, land uses, economic profiles, and other factors that were believed to possibly affect trash generation. Three trash characterization monitoring events were scheduled via the *Trash Loading Rates Project*. Due to the compliance timeline in the MRP, only two of three trash characterization monitoring events were used to develop trash generation rates described in BASMAA (2012a) and presented in this section. Following the completion of the third characterization event (Winter 2011/12), this section of the Short-Term Plan may be updated to reflect the most up-to-date trash generation and loading rates available. Trash generation rates based on the results of two of the three characterization events are shown in Table 2-1 for each trash loading category.

Table 2-1: Regional Default Annual Trash Generation Rates by Land Use Category.

Land Use Category	Generation Rates (Gallons/Acre)
Retail and Wholesale	29.99
High Density Residential	17.04
K-12 Schools	13.14
Commercial and Services/ Heavy, Light and Other Industrial	7.08
Urban Parks	2.14
Low Density Residential	1.25
Rural Residential	0.17

Jurisdictional and Effective Loading Areas

Default trash baseline generation rates presented in Table 2-1 were applied to effective loading areas with **jurisdictional areas** within the City of Dublin. The City of Dublin’s jurisdictional areas includes all urban land areas within the City of Dublin boundaries that are subject to the requirements in the MRP. Land use areas identified by a combination of the ABAG 2005 land use dataset and Permittee knowledge that were not included within the City’s jurisdictional areas include:

- Federal and State of California Facilities and Roads (e.g., Interstates, State Highways, Military Bases, Prisons);
- Roads Owned and Maintained by Alameda County;

¹ From the 2000 Census. The median household income for the City of Dublin from the 2010 Census is not currently available.

- Colleges and Universities (Private or Public);
- Non-urban Land Uses (e.g., agriculture, forest, rangeland, open space, wetlands, water);
- Communication or Power Facilities (e.g., PG & E Substations);
- Water and Wastewater Treatment Facilities; and
- Other Transportation Facilities (e.g., airports, railroads, and maritime shipping ports).

Once the City of Dublin’s jurisdictional area was delineated, an effective trash loading area was developed by creating a 200-foot buffer around all streets within the City’s jurisdictional area. The purpose of the effective loading area is to eliminate land areas not directly contributing trash to the City’s MS4 (e.g., large backyards and rooftops). Both the jurisdictional and the effective loading areas for the City of Dublin are presented in Table 2-2.

Table 2-2: Jurisdictional areas and effective loading areas in the City of Dublin by land use classes identified by ABAG (2005).

Land Use Category	Jurisdictional Area (Acres)	Effective Loading Area (Acres)	% of Effective Loading Area
High Density Residential	584	562	18
Low Density Residential	1,913	1,794	57
Rural Residential	67	41	1
Commercial and Services/ Heavy, Light and Other Industrial	532	299	10
Retail and Wholesale	342	205	6
K-12 Schools	237	107	3
Urban Parks	329	141	4
TOTAL	4,004	3,149	100%

Permittee-Specific Baseline Trash Loading Rates

Regional default trash generation rates developed through the BASMAA regional collaborative project were applied to effective loading areas within the City of Dublin based on identified land uses. These generation rates were then adjusted based on the calculated effectiveness of baseline street sweeping, storm drain inlet maintenance and pump station maintenance implemented by the City. These adjustments were conducted in GIS due to the site specificity of baseline generation rates and baseline control measure implementation. The following sections describe the baseline level of implementation for these three control measures. A summary of trash baseline generation and loading rates for the City of Dublin are provided in Table 2-3 and areas associated with these rates are illustrated in Figure 2-1.

Baseline Street Sweeping

A "baseline" street sweeping program is defined as the sweeping frequency and parking enforcement implemented by the City of Dublin prior to effective date of the MRP. Baseline street sweeping differs from "enhanced" street sweeping, which includes increased parking enforcement and/or sweeping conducted at a frequency greater than baseline ceiling (i.e., once per week for retail land uses and twice per month for all other land uses). The baseline ceiling was created to not penalize implementers of

enhanced street sweeping programs prior to the effective date of the MRP. For those Permittees that sweep less frequent than the baseline ceiling, their current sweeping frequency serves as their baseline.

The City of Dublin's baseline and current street sweeping program includes sweeping most streets in the city twice per month. There is additional sweeping during leaf season on many arterial roads.

Posting of parking enforcement signs for street sweeping occurs on most arterial streets, but not on residential streets. Parking enforcement equivalent also occurs on a limited amount of streets. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

Baseline Storm Drain Inlet Maintenance

Within the City, storm drain inlets were cleaned at a baseline level of one time per year prior to the effective date of the MRP. Based on this baseline frequency and the effectiveness rating developed in BASMAA (2012b), the baseline storm drain maintenance program in the City of Dublin has an annual effectiveness rating of 5%. The estimated trash load reduced via baseline storm drain inlet maintenance is presented in Table 2-3.

Baseline Stormwater Pump Station Maintenance

The City of Dublin does not own stormwater pump stations with trash racks.

Baseline Trash Loading Estimate

The estimated baseline trash load from the City of Dublin was calculated as the sum of the loads from the City’s effective loading area, adjusted for baseline implementation of street sweeping, storm drain inlet maintenance, and pump station maintenance. The preliminary annual trash baseline load for the City of Dublin is presented in Table 2-3. Preliminary baseline trash loading rates are presented in Figure 2-1 to provide a geographical illustration of areas with estimated low, moderate, high and very high trash loading rates.

Table 2-3: Preliminary annual trash baseline load for the City of Dublin.

Category	Annual Load (gallons)
Preliminary Generation Trash Load	21,785
Load Removed via Baseline Street Sweeping	8,298
Load Removed via Baseline Storm Drain Inlet Maintenance	674
Load Removed via Baseline Stormwater Pump Station Maintenance	0
Preliminary Trash Baseline Load	12,813

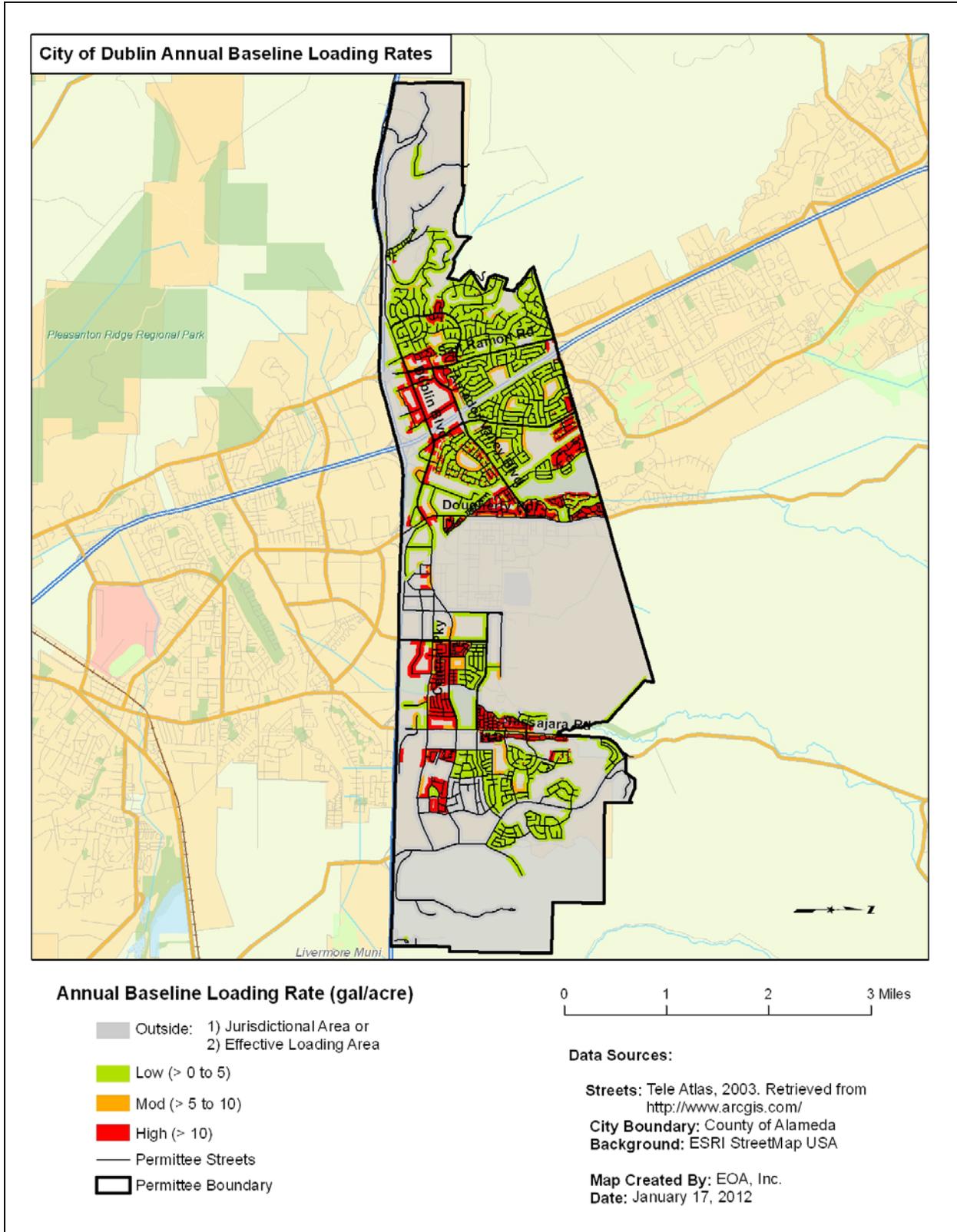


Figure 2-1: Estimated trash baseline loading rates for geographical areas in the City of Dublin

3.0 LOAD REDUCTION CALCULATION PROCESS

Using the guiding principles and assumptions described in BASMAA (2012b), a stepwise process for calculating trash load reductions was developed collaboratively through BASMAA. This process is fully described in Trash Load Reduction Tracking Method Technical Report (BASMAA 2012b) and is briefly summarized in this section. The process takes into account at what point in the trash generation and transport process a trash control measure: 1) prevents trash generation, 2) intercepts trash in the environment prior to reaching a water body, or 3) removes trash that has reached a water body. In doing so, it avoids double-counting of trash load reductions associated with specific control measures.

To demonstrate trash load reductions, baseline trash loading rates will be adjusted using the following process:

- Step #1:** Existing Enhanced Street Sweeping
- Step#2:** Trash Generation Reduction
- Step #3:** On-land Interception
- Step #4:** Trash Interception in the Stormwater Conveyance System
- Step #5:** Trash Interception in Waterways
- Step #6:** Comparison to Baseline Trash Load

Reductions calculated in Steps 2 and 5 are assumed to be implemented at a constant rate on an “area-wide” basis. For example, if a new region-wide public education strategy is implemented within the San Francisco Bay area, all Permittees can apply load reduction credits associated with this control measure. In contrast, Steps 1, 3 and 4 are “area-specific” reductions that only apply to specific areas within a Permittee’s jurisdiction. Area-specific control measures include full-capture treatment devices and enhanced street sweeping. Area-specific reductions may require the use of a Geographic Information System (GIS) to calculate.

Reductions are generally applied in the sequence as presented in Figure 2-1 and described below, although some reductions may be applied “in-parallel” and calculated during the same sub-step in the process.

Step #1: Existing Enhanced Street Sweeping

Trash load reductions due to existing enhanced street sweeping implemented prior to the effective date of the MRP, and conducted at levels above baseline levels, are not incorporated into each Permittee’s trash baseline load. Therefore, load reductions associated with existing enhanced street sweeping are accounted for first in the trash load reduction calculation process. Existing enhanced street sweeping includes street sweeping conducted at a frequency greater than **1x/week** for streets within retail land use areas or greater than **2x/month** for streets in all other land use areas. The result of adjustments made to trash baseline loads due to the implementation of existing enhanced street sweeping is a set of **current baseline loading rates** and a **current baseline load**.

Step #2: Trash Generation Reduction Control Measures

Trash generation reduction control measures prevent or greatly reduce the likelihood of trash from being deposited onto the urban landscape. They include the following area-wide control measures:

- CR-1: Single-Use Carryout Plastic Bag Ordinances
- CR-2: Polystyrene Foam Food Service Ware Ordinances
- CR-3: Public Education and Outreach Programs
- CR-4: Reduction of Trash from Uncovered Loads
- CR-5: Anti-Littering and Illegal Dumping Enforcement
- CR-6: Improved Trash Bin/Container Management
- CR-7: Single-Use Food and Beverage Ware Ordinances

Load reductions associated with trash generation reduction control measures are applied on an area-wide basis.² Therefore, reductions in current baseline loading rates are adjusted uniformly based on the implementation of the control measure and the associated credit claimed.

Baseline loading rate adjustments for all generation reduction control measures implemented may be applied in-parallel, but should be applied prior to calculating on-land interception measures discussed in Step #3. The result of adjustments to trash baseline loading rates due to the implementation of these enhanced control measures will be a set of **street loading rates**. The **street load** is the volume of trash estimated to enter the environment and available for transport to the MS4 if not intercepted via on-land control measures described in Step #2.

Step #3: On-land Interception Control Measures

Once trash enters the environment, it may be intercepted and removed through the following control measures prior to reaching the stormwater conveyance system:

- QF-1: On-land Trash Cleanups (Volunteer and/or Municipal) (Area-wide)
- QF-2: Enhanced Street Sweeping (Area-specific)

Since on-land trash cleanups can affect the amount of trash available to street sweepers, load reductions associated with their implementation will be quantified first, followed by street sweeping enhancements. On-land trash cleanups will be applied as an area-wide reduction and all effective loading rates will be adjusted equally. Enhanced street sweeping, however, is an area-specific control measure and only those effective loading rates associated with areas receiving enhancements will be adjusted. Due to the spatial nature of enhanced street sweeping, GIS may be needed to conduct this step.

The result of adjustments to effective loading rates due to the implementation of these enhanced control measures will be a set of **conveyance system loading rates**. The **conveyance load** is the volume of trash estimated to enter the stormwater conveyance system (e.g., storm drains).

² The only exception to this statement are load reductions associated with the establishment of Business Improvement Districts (BIDs) or equivalent, which are specific to geographic areas and considered "area-specific".

Step #4: Control Measures that Intercept Trash in the MS4

Control measures that intercept trash in the stormwater conveyance system are area-specific. Therefore, they only apply to land areas and associated trash loads reduced. Conveyance system loading rates developed as a result of Step #3 should be adjusted in-parallel for the following control measures:

- QF-3a: Partial-capture Treatment Device: Curb Inlet Screens (Area-specific)
- QF-3b: Partial-capture Treatment Device: Stormwater Pump Station Trash Racks Enhancements (Area-specific)
- QF-4: Enhanced Storm Drain Inlet Maintenance (Area-specific)
- QF-5: Full-Capture Treatment Devices (Area-specific)

Load reductions for these control measures are calculated in-parallel because they are applied to independent geographical areas. Reductions from all control measures described in this step are area-specific and may require the use of GIS to calculate a set of **waterway loading rates**. Once waterway loading rates have been determined, a **waterway load** will be developed and used as a starting point for calculating load reductions associated with trash interception in waterways discussed in Step #5.

Step #5: Control Measures that Intercept Trash in Waterways

The load of trash that passes through the stormwater conveyance system without being intercepted may still be removed through interception in waterways. There are two control measures associated with interception in waterways:

- QF-3c: Partial-capture Treatment Device: Litter Booms/Curtains (Area-wide)
- QF-7: Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (Area-wide)

As these control measures are implemented, load reduction estimates can be calculated in-parallel for these two measures.

Step #6: Comparison to Baseline Trash Load

Applying the four steps described in the processes above will provide an estimated trash load (volume) remaining after trash control measures are implemented. As depicted in the following equation, the relative percent difference between the baseline load and the load remaining after control measures are implemented is the percent reduction that will be used to assess progress towards MRP trash load reduction goals.

$$\frac{\text{Baseline Load} - \text{Remaining Load}}{\text{Baseline Load}} = \% \text{ Reduction}$$

4.0 ENHANCED TRASH CONTROL MEASURES

This section describes the new or enhanced trash control measures planned for implementation by the City of Dublin. The enhanced control measures described are designed to reach a 40% reduction by July 1, 2014. New and enhanced control measures that will be implemented by the City of Dublin include those listed in Table 4.1.

Table 4.1. Trash control measures that will be implemented by the City of Dublin to reach the 40% trash load reduction.

Control Measure
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Improved Trash Bin/Container Management (Municipally or Privately-Controlled)
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

CR-1: Single-use Carryout Plastic Bag Policy

Single-use plastic carryout bags have been found to contribute substantially to the litter stream and to have adverse effects on marine wildlife (United Nations 2009, CIWMB 2007, County of Los Angeles 2007). The prevalence of litter from plastic bags in the urban environment also compromises the efficiency of systems designed to channel storm water runoff. Furthermore, plastic bag litter leads to increased clean-up costs for the Permittees and other public agencies.

Based on recent experiences of municipalities throughout the State, the process Permittees must go through to enact a single-use carryout plastic bag policy/ordinance is difficult due to intense scrutiny and opposition from not only public interest groups and lobbyists, but also merchants and community members. In most cases, most opposition groups are pressing for the development of Environmental Impact Reports (EIRs) in accordance with the California Environmental Quality Act (CEQA).

Baseline Level of Implementation

Prior to adoption of the MRP, Permittees within the Bay area have enacted policies or ordinances on Single-use Carryout Plastic Bags. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

Enhanced Level of Implementation

On January 25, 2012, the Alameda County Waste Management Authority (StopWaste.org) adopted a countywide ordinance for all the jurisdictions within Alameda County prohibiting the distribution of single-use carryout plastic bags at the cash register at retail stores covered by the ordinance and establishing mandatory fees for other carryout bags. Jurisdictions may decide to opt out of the ordinance. It is anticipated that the City of Dublin will decide to opt in to the countywide ban. The decision will ultimately be up to the Dublin City Council.

The ordinance will take effect on January 1, 2013 affecting all retail stores that sell packaged food in the City. The ordinance will ban single-use plastic carryout bags. In addition, a minimum fee of 10 cents will be charged for every paper carryout bag or reusable plastic carryout bag provided to the customer at the cash register. The City will report on the status of the implementation of the Single-Use plastic carryout bag ban in our Annual Report submitted to the Water Board each September.

The Single-use Carryout Plastic Bag Ordinance that the City of Dublin plans to enact is a Tier 2 ordinance:

- **Tier 2 – Prohibit Distribution at Retail Establishments that Sell Packaged Foods** – Adoption of a local policy or ordinance or implementation of a statewide or countywide action that prohibits retail establishments that sell packaged foods from distributing single-use carryout plastic bags within their jurisdictional boundaries.

In addition, Permittees may implement a public education and outreach campaign that is designed to significantly reduce the overall usage of all types of single-use carryout bags (plastic et al.). Actions may include banning the distribution of or charging a fee for, single use paper bags. The countywide ordinance adopted by StopWaste.org includes a minimum 10 cent fee on paper bags.

The City of Dublin will conduct outreach to the business community to inform them of the Single-use Carryout Plastic Bag Ordinance prior to it going into effect on January 1, 2013. Once the ban has gone into effect, as part of our Business Inspections, City Staff will verify that businesses are in compliance with the ban. The City will take enforcement action, as necessary, against those businesses that are not in compliance with the ban.

In recent years, the City of Dublin has purchased more than 10,000 reusable bags. The reusable bags are distributed to community members in attendance at City sponsored events, such as the St. Patrick's Day festival.

Reduction from Implementing Control Measure

The City of Dublin will receive a 10 percent reduction credit for implementing specific enhanced control measures described in Enhanced Level of Implementation section above. The 10 percent reduction credit will be applied to the City of Dublin's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2012b). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.0.

CR-2: Polystyrene Foam Food Service Ware Policy

Polystyrene foam is used as food ware in the food service industry. According to the USEPA, floatable debris in waterways, such as products made of polystyrene, is persistent in the environment and has physical properties that can have serious impacts on human health, wildlife, the aquatic environment and the economy (USEPA 2002). Due to its properties, polystyrene foam used as food ware is typically not recycled. Since 1990, over 100 government agencies within the United States, including over twenty within the Bay Area have enacted full or partial bans on polystyrene foam food service ware.

Baseline Level of Implementation

Prior to adoption of the MRP, over twenty agencies within the Bay Area enacted full or partial bans on polystyrene foam food service ware. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

Enhanced Level of Implementation

The City of Dublin has adopted a policy banning polystyrene foam food service at Permittee-sponsored events and on Permittee-owned property. The polystyrene foam food service ware policy that the City of Dublin has enacted falls into Tier 1 category:

- **Tier 1 – Prohibit the distribution of polystyrene foam single-use food and beverage ware at Permittee-sponsored events or on Permittee-owned property** – Adoption of a local ordinance or implementation of a statewide, countywide, or regional action that prohibits food vendors from distributing polystyrene foam food and beverage ware at Permittee-sponsored events or on Permittee-owned property.

On December 15, 2009, the Dublin City Council adopted a Resolution (191-09) requiring the use of environmentally acceptable food utensils and packaging at large City events. Subsequently on September 21, 2010, the Dublin City Council adopted a Resolution (142-10) establishing a policy that bans the City's purchase and use of single-use plastic bottles and polystyrene products at City sponsored activities.

The City will report on the status of the implementation of the Polystyrene Foam Food Service Ware Policy in our Annual Report submitted to the Water Board each September.

The City of Dublin has discussed enacting a Tier 2 ban in the future, which would prohibit all food vendors in the City from distributing polystyrene foam food and beverage ware. In all likelihood, such a ban would occur prior to 2017 and would be a part of the City's plan to reduce our short term trash load by 70%. Prior to enacting such an ordinance, the City plans to do outreach to the business community to indicate that such a policy is on the horizon and to encourage restaurants that use polystyrene foam food and beverage ware to switch to more environmentally preferred alternatives. As part of our outreach, the City will educate the restaurants in the City about the negative impacts associated with throw-away polystyrene foam food and beverage ware and offer suggestions on alternative products.

Percent Reduction from Enhancements

The City of Dublin will receive a 2 percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. The 2 percent reduction credit will be applied to the City of Dublin's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2012b). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.0.

CR-3: Public Education and Outreach Programs

Permittees in the San Francisco Bay Area have implemented public education and outreach programs to inform residents about stormwater issues relating to pollutants of concern, watershed awareness and pollution prevention. Public education and outreach efforts include developing and distributing brochures and other print media; posting messages on websites and social networking media (Facebook, Twitter etc.), attending community outreach events, and conducting media advertising. In recent years, some municipal agencies have implemented anti-litter campaigns to increase public awareness about the impacts of litter on their communities and water quality; and to encourage the public to stop littering.

Baseline Level of Implementation

Enhanced Level of Implementation

The City of Dublin will implement the following public education and outreach control measures prior to July 1, 2014.

Litter Reduction Advertising Campaign(s)

BASMAA Youth Outreach Campaign (Regional)

Through participation and funding of the regional **BASMAA Youth Outreach Campaign**, the City of Dublin will implement an outreach campaign designed to reduce littering among the target audience in the Bay Area. The Youth Outreach Campaign was launched in September 2011 (post-MRP effective date) and aims to increase Bay Area Youth (age 16-24) awareness of litter and stormwater pollution issues, and eventually change their littering behaviors. Combining the ideas of Community Based Social Marketing with traditional advertising, the Youth Campaign aims to engage youth to enable the peer-to-peer distribution of Campaign messages. The Campaign will at least run from FY 11-12 through FY 13-14. A brief description of the Campaign activities is provided below:

- Raising Awareness: The Campaign will begin by raising awareness among the target audience of litter and stormwater pollution issues. Partnerships with youth commissions, high schools, and other youth focused organizations will be developed to reach the target audience. Messages targeted to youth will be created and distributed via paid advertising, email marketing, campaign website and social networking sites (e.g., Facebook and twitter).
- Engage the Youth - The advertisements will encourage the audience to participate in the Youth Campaign by joining a Facebook page, entering a contest, taking an online quiz, etc., and providing their contact information. At the beginning of FY 12-13, a video contest will be launched to get Bay Area youth further involved in the Campaign. An online voting system will be used to select the winning entry. Media advertising will be conducted to promote the winning entry.
- Change Behaviors: To move the audience along the behavior change continuum, the Campaign will use electronic platforms such as email marketing and social networking sites to encourage participants to engage in increasingly more difficult behavior changes, such as participating in a community clean-up event or organizing a clean-up event, etc.

- Maintain Engagement: The Campaign will continue to interact with the target audience through email marketing and social media websites.

The Youth Campaign will include a pre-and post-campaign survey to evaluate the effectiveness of outreach efforts. The pre-campaign survey will be conducted in FY 11-12 and the post campaign survey in FY 13-14. Other evaluation mechanisms, such as website hits, number of youth engaged in the Campaign's social networking website, etc. will also be used to evaluate its effectiveness in increasing awareness and changing behavior.

Advertising campaign(s) (Countywide Program)

Outreach to Alameda County youth may be limited by scope and budget of the BASMAA Regional Youth Campaign. Therefore, the Clean Water Program will supplement the Regional Youth Outreach campaign in order to increase the number of participants in Alameda County.

Outreach to School-age Children or Youth

The Countywide Program is currently conducting stormwater pollution prevention and anti-littering outreach to school-age children through contracts with five environmental education organizations. The current contracts expire in 2014. The Program intends to initiate new contracts for outreach to school-age children in 2014. The outreach programs will have an increased focus on anti-littering messages and will be revised to fulfill the required number of events as described in BASMAA (2012b). The City of Dublin plans to implement this control measure through participation in the Countywide Program.

Media Relations

BASMAA Regional Media Relations Project (Regional)

Through participation and funding of the **BASMAA Regional Media Relations Project**, the City of Dublin plans to continue to implement a media relations project partially designed to reduce littering from target audiences in the Bay Area. The goal of the BASMAA Media Relations Project is to generate media coverage that encourages individuals to adopt behavior changes to prevent water pollution, including littering. At least two press releases or PSAs will focus on litter issues each year (e.g., creek clean-up activities, preventing litter by using reusable containers, etc.).

Media Relations (Countywide Program)

The Clean Water Program has already developed a media and community relations plan and contact list. The Program will regularly release articles and information to the appropriate publications, blogs and community publications on litter issues. Articles will be timed with regular events, such as Coastal Cleanup in September and the beginning of the rainy season, as well as other current events, if applicable. The media and community outreach list contains many smaller publications and online sites as well as larger newspapers, which will increase the chances the articles are published and read. This effort goes beyond the scope of the Regional Media Relations plan by going deeper into the community through highly localized media channels.

Community Outreach Events

The Countywide Program will develop a “Litter Outreach” kit for community events. Going beyond the usual table with literature, the kit will include such interactive activities as pledge posters to foster commitment to behavior change, and directly relevant promotional items such as reusable bags. This kit will be provided to all Program member agencies for use at their local events. The City of Dublin plans to use the Litter Outreach kit at minimum of two events per year.

As required by the MRP, the City of Dublin participates in a minimum of four community outreach events a year, which includes the Alameda County Fair, St. Patrick’s Day event and multiple Farmer’s Markets. Additionally, the City of Dublin coordinates two creek clean-up events per year, one which is associated with Dublin Pride Week in the spring and the second as part of Coastal Clean-up in the fall. The City of Dublin is committed to conducting two events per year which focus on educating members of the community on the negative impacts of litter and the steps that can be taken to reduce the amount of litter in the community.

Percent Reduction from Enhancements

The City of Dublin will receive a total of 7 percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. This percent reduction is comprised of the following credits, consistent with the *Load Reduction Tracking Method*:

- Litter Reduction Advertising Campaigns – 3%
- Outreach to School-age Children or Youth – 2%
- Media Relations – 1%
- Community Outreach Events - 1%

These 7 percent reduction credits will be applied against the City of Dublin’s baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2012b). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.0.

CR-4: Reduction of Trash from Uncovered Loads

Although it is currently illegal to operate a vehicle that is improperly covered which may result in the vehicle's contents escaping³, vehicles remain an important trash source to MS4s and local waterways. Specifically, vehicles that do not secure or cover their loads when transporting trash and debris have a high risk of contributing trash to MS4s. Land areas that generate trash from vehicles include roads, highways (on/off ramps, shoulders or median strips) and parking lots. To help address the dispersion of trash from unsecured or uncovered vehicles destined for landfills and transfer stations, Permittees may require municipally-contracted trash haulers to cover or secure loads or work with municipal or private landfill and transfer station operators to educate waste haulers on securing loads and/or to enhance enforcement of existing regulations.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that prior to adoption of the MRP the City of Dublin has not adopted control measures to reduce trash from vehicles with uncovered loads. Therefore, implementation of any of the control measures described in this section is considered to be enhanced implementation.

Enhanced Level of Implementation

The City of Dublin has implemented the following enhanced control measures to reduce trash from vehicles with uncovered loads:

- **Require Municipal Trash Haulers to Cover Loads** – Development and inclusion of language in a Permittee's hauling service contract(s) that requires contracted trash and construction debris haulers to cover loads when transporting trash and debris to municipally or privately-owned landfills and transfer stations.

The City of Dublin contracts with Amador Valley Industries (AVI) for solid waste services. The City's contract with AVI began in 2005. The current contract with AVI includes the requirement for AVI to cover their loads.

Percent Reduction from Enhancements

The City of Dublin will receive a 0 percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The City of Dublin has opted not to claim a reduction credit for requiring the Municipal Trash Hauler to cover loads at this time.

³ In accordance with the California Vehicle Code Sections 23114 and 23115, it is against the law to operate a vehicle on the highway which is improperly covered, constructed, or loaded so that any part of its contents or loads spills, drops, leaks, blows, or otherwise escapes from the vehicle. Exempted materials include hay and straw, clear water and feathers from live birds. Additionally, any vehicle transporting garbage, trash, or rubbish, used cans or bottles, waste papers, waste cardboard, etc. must have the load covered to prevent any part of the load from spilling on the highway (CVC 2011). Significant fines are possible for non-compliance.

CR-6: Improved Trash Bin/Container Management

Receptacles used to place/store trash or recyclables prior to collection by a public agency or private waste hauler reduce the potential for littering and trash loading to stormwater conveyance systems and receiving waters (City of Los Angeles 2004). For the purposes of assigning trash load reduction credits, receptacles fall into the following two categories:

- **Private Trash/Recycling Bins:** A receptacle for placing trash or recyclables generated from a household, business, or other location that is serviced by a trash hauler. Bins are specifically-designed, heavy-duty plastic wheeled containers with hinged lids; or large multi-yard metal or plastic containers rectangular in shape.
- **Public Area Trash Containers:** A receptacle for placing incidental trash generated in public spaces that provides people with a convenient and appropriate place to dispose of trash. The design and size of public area trash containers vary widely, depending on their setting and use.

The effectiveness of bins/containers and bins in reducing trash in the environment is likely dependent upon: the location and density of the receptacles, size of the bin/container in relationship to the size needed to service users, frequency of maintenance, and the ability of the bin/container to capture and contain the trash deposited.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of Dublin has not implemented enhanced trash bin/container management practices prior to effective date of the MRP.

Enhanced Level of Implementation

The City of Dublin has implemented the following improved trash bin/container management practices prior to July 1, 2014:

- **Ensuring Adequate Private Trash Service.** In June, 2011, the Dublin City Council adopted an Ordinance (09-11) relating to Solid Waste and Recycling Enclosure Standards. The Solid Waste and Recycling Enclosure Standards establish design criteria and size requirements for new enclosures within the City. The ordinance ensures that private development within the City have enclosures that are properly sized to handle the anticipated trash generation. The intent of the standards is to ensure that there is adequate space for solid waste and recycling, including organics if applicable. The Solid Waste and Recycling Enclosure Standards apply to: new development projects; remodeled commercial development projects that trigger a planning entitlement and consist of grocery stores, restaurants, markets, daycare centers and auto repair/use; and tenant improvements, where no planning entitlement is required, if the use has the potential to pollute stormwater. The Ordinance requires that the enclosure have a roof and is plumbed to the sanitary sewer. It is noted that the City's ordinance exceeds the trash enclosure requirements for private property included in Provision C.3 of the MRP.

Percent Reduction from Enhancements

The City of Dublin will receive a 1 percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The 1 percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Dublin. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2012b) and is presented in the Trash Load Reduction Summary Table included in Section 5.0.

QF-5: Full-Capture Treatment Devices

As defined by the Municipal Regional Stormwater Permit (MRP), a full-capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a 1-year, 1-hour, storm in the sub-drainage area. A list of the full-capture systems and devices recognized by the San Francisco Bay Regional Water Quality Control Board (Water Board) is included in *Trash Load Reduction Tracking Method Report* (BASMAA 2012b). Trash loads reduced via publically or privately owned and operated devices within a Permittee's jurisdictional area that have been recognized by the Water Board as full-capture may be used to demonstrate attainment of trash load reduction goals.

Baseline Level of Implementation

Prior to adoption of the MRP, some Permittees installed and maintained full capture devices. To avoid penalizing these early implementers, an applicable control measure implemented within a Permittee's jurisdictional area prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is no trash full-capture devices have been installed.

Enhanced Level of Implementation

A total of 442 full-capture trash treatment devices (27 large units & 415 filters) have been or will be installed in the City of Dublin prior to July 1, 2014. A list of these full-capture devices is included in Table QF-6-1. All devices listed within this table are enhanced trash control measures. Table QF-6-1 also includes the area treated and the calculated trash load reduced from each full-capture treatment device. These calculations are consistent with the approach described in the *Trash Load Reduction Tracking Method Report* (BASMAA 2012b).

Some of the trash full-capture treatment devices are maintained privately. For the devices that are maintained privately, the City claimed 25% of the estimated load reduction for filters and 50% of the estimated load reduction for CDS units. For the full-capture trash treatment devices that are owned and maintained by the City, the full 100% of the estimated load reduction was claimed. Prior to submitting our Trash Load Reduction Plan in 2017, the City will evaluate and analyze whether the 25% credit for the privately maintained filters and the 50% credit taken for the privately maintained CDS units is appropriate. It is possible that upon further analysis and evaluation, the City will determine that a larger percentage is appropriate.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing full capture devices is 2,445 gallons/year. This volume is equal to approximately a 19.1 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Dublin. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.0.

Table QF-5-1. Trash full-capture treatment devices within the jurisdictional boundaries of the City of Dublin that are installed and/or planned for installation by July 1, 2014.

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Total Area Treated (acres)	Trash Load Reduced
Storm Drain Inlet Full Capture Devices – Existing Devices						
1	Public	Dublin Blvd. e/o Clark (1 filters)	Dublin Blvd. e/o Clark	2010	0.8 acres	11 gallons/year
2	Public	Dublin Sports Grounds (2 filters)	Dublin Blvd. e/o Civic Plaza	2009	1.6 acres	2 gallons/year
3	Public	Fire Station 16 (2 filters)	7494 Donohue Drive	2011	1.6 acres	5 gallons/year
4	Public	Golden Gate Drive (2 filters)	Golden Gate Drive s/o Dublin Blvd.	2011	1.6 acres	9 gallons/year
5	Public	Scarlett Court (2 filters)	Scarlett Court cul-de-sac s/o Dublin Blvd.	2011	1.6 acres	5 gallons/year
6	Public	Iron Horse Parkway (4 filters)	Iron Horse Parkway, s/o Dublin Blvd.	2009	3.1 acres	25 gallons/year
7	Public	Villager Parkway (31 filters)	Village Parkway	2009-2011	24.4 acres	65 gallons/year
8	Public	1-680 on-ramp (1 filter)	I-680 on-ramp, Village s/o Dublin Blvd.	2011	0.8 acres	11 gallons/year
9	Public	Las Palmas Court (3 filters)	Las Palmas Court	2012	2.4 acres	1 gallon/year
10	Private	Dublin Retail Place (39 filters)	7050 Amador Plaza Road	2008	30.7 acres	108 gallons/year
11	Private	Sports Authority (6 filters)	7885 Dublin Blvd.	2011	4.7 acres	17 gallons/year
12	Private	Safeway (12 filters)	7499 Dublin Blvd.	2002	9.4 acres	33 gallons/year
13	Private	Sprouts (8 filters)	7153 Amador Plaza Road	2011	6.3 acres	22 gallons/year
14	Private	Hacienda Crossings (78 filters)	4820-4980 Dublin Blvd.	2000	61.4 acres	216 gallons/year
15	Private	Sleepy Hollow (16 filters)	6375, 6377 & 6379 Clark Ave.	2011	12.6 acres	10 gallons/year
16	Private	Dublin Toyota (44 filters)	4321 Toyota Drive	2010	34.6 acres	29 gallons/year
17	Private	Dublin Corporate Center (25 filters)	Dublin Blvd/Tassajara Road	2001	19.7 acres	16 gallons/year
18	Private	Jeferson @ Emerald Park Apts. (44 filters)	5050 Hacienda Drive	2001	34.6 acres	69 gallons/year
19	Private	Archstone Apts. (26 filters)	5095 Haven Place	2001	20.5 acres	41 gallons/year
20	Private	Sybase (20 filters)	1 Sybase Drive	2001	15.7 acres	13 gallons/year
21	Private	Creekside Business Park (16)	5875 Hacienda Drive	1999	12.6 acres	10 gallons/year

		filters)				
22	Private	Extended Stay (8 filters)	4500 Dublin Blvd.	2000	6.3 acres	5 gallons/year
Storm Drain Inlet Full Capture Devices – Planned Devices						
23	Public	Village Parkway (5 filters)	Village Parkway, n/o Dublin Blvd. to City limit	2012	4.0 acres	15 gallons/year
24	Public	Amador Plaza Road (11 filters)	Amador Plaza Road, Dublin Blvd. to Amador Valley Blvd.	2012	8.7 acres	133 gallons/year
25	Public	Dublin Blvd. (9 filters)	Dublin Blvd., Village Parkway to Regional St.	2012	7.1 acres	100 gallons/year
SUBTOTAL Storm Drain Inlet Full Capture Devices				415 Filters	326.8 acres	972 gallons/year
Large Full Capture Devices – Existing Devices						
26	Public	Amador Valley Blvd. (1 unit)	Amador Valley Blvd, east of Village Pkwy	2011	7.86 acres	111 gallons/year
27	Public	Dublin Blvd. (1 unit)	Dublin Blvd, east of Clark Ave.	2003	1.57 acres	22 gallons/year
28	Public	Dublin Blvd. (1 unit)	Dublin Blvd., west of Dougherty Rd	2008	2.36 acres	33 gallons/year
29	Public	Dougherty Road (1 unit)	Dougherty Road, south of Dublin Blvd.	2008	7.08 acres	99 gallons/year
30	Public	Dublin Library (1 unit)	200 Civic Plaza	2003	7.86 acres	8 gallons/year
31	Public	Emerald Vista (1 unit)	Dougherty Road, north of Dublin Blvd.	2011	2.75 acres	2 gallons/year
32	Public	Emerald Vista (1 unit)	Dougherty Road, north of Dublin Blvd.	2011	2.75 acres	2 gallons/year
33	Public	Emerald Vista (1 unit)	Dougherty Road, north of Dublin Blvd.	2011	2.75 acres	2 gallons/year
34	Public	Emerald Vista (1 unit)	Dougherty Road, north of Dublin Blvd.	2011	2.75 acres	2 gallons/year
35	Public	Essex (1 unit)	Golden Gate Drive, south of Dublin Blvd.	2011	23.59 acres	307 gallons/year
36	Public	Maple Drive	Maple Drive, west of York	2011	18.88 acres	265 gallons/year
37	Public	Park Sierra Apts. (1 unit)	6450 Dougherty Road	1999	2.36 acres	19 gallons/year
38	Public	Tassajara Creek Phase I & II (1 unit)	Creekview & Maymont	2002	22.81 acres	13 gallons/year
39	Public	Tassajara Creek Phase III (1 unit)	Maymont & Hillbrook	2005	7.08 acres	4 gallons/year
40	Public	Tract 7893 – Transit Center (1 unit)	Eastern Dublin Transit Center (Demarcus Street)	2009	4.72 acres	38 gallons/year
41	Public	Tract 7893 – Transit Center (1 unit)	Eastern Dublin Transit Center (Demarcus Street)	2009	4.72 acres	38 gallons/year
42	Public	Tract 7893 – Transit Center (1 unit)	Eastern Dublin Transit Center (Demarcus Street)	2009	3.93 acres	31 gallons/year
43	Public	Tract 8275 – Transit Center (1 unit)	Eastern Dublin Transit Center (Demarcus Street)	2010	1.57 acres	0 gallons/year

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44	Public	Tract 8275 – Transit Center (1 unit)	Eastern Dublin Transit Center (Demarcus Street)	2010	1.57 acres	13 gallons/year
45	Private	Tract 7525 (1 unit)	Eastern Dublin Transit Center (Demarcus Street)	2006	3.93 acres	16 gallons/year
46	Private	Tract 7525 (1 unit)	Eastern Dublin Transit Center (Demarcus Street)	2006	0.79 acres	3 gallons/year
47	Private	Venture Corp	Dublin Blvd. & Clark Ave.	2008	3.15 acres	5 gallons/year
48	Private	REI	7099 Amador Plaza Road	2011	1.57 acres	11 gallons/year
Large Full Capture Devices – Planned Devices						
49	Public	Amador Valley Blvd. @ 680 (1 unit)	Amador Valley Blvd. @ I-680 on ramp	2013	14.70 acres	225 gallons/year
50	Public	York/Penn (1 unit)	York Drive @ Penn Drive	2013	13.22 acres	89 gallons/year
51	Public	St. Patrick/Golden Gate Drive (1 unit)	St. Patrick Street @ Golden Gate Drive	2013	7.35 acres	88 gallons/year
52	Public	San Ramon Road	San Ramon Road, Shannon to Silvergate	2013	7.35 acres	28 gallons/year
SUBTOTAL Large Full Capture Devices				27 units	181 acres	1,473 gallons/year
TOTALS: SMALL & LARGE DEVICES				442 units	507.8 aces	2,445 gallons/year

QF-6: Creek/Channel/Shoreline Cleanups

Creek/channel/shoreline cleanups have been successful in removing large amounts of trash from San Francisco Bay Area creeks and waterways; and increasing citizen's awareness of trash issues within their communities. Creek/channel/shoreline cleanups are conducted as single-day events or throughout the year by volunteers and municipal agencies. Since volunteers and municipal agencies have the common goal of clean creeks and waterways, their efforts sometimes overlap. This is apparent with some municipal agencies using volunteers to help assess and clean designated trash hot spots during single-day volunteer events.

Baseline Level of Implementation

Trash reduced via creek/channel/shoreline cleanups was not accounted for in the City of Dublin's baseline trash load described in Section 2.0. Therefore, implementation of any of the control measures described in this section is considered to be an enhancement and can be used to demonstrate progress towards load reduction goals.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of Dublin will conduct MRP-required⁴ and the following non MRP-required creek/channel/shoreline cleanups⁵ listed below. Both types of cleanups will be conducted each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

The City of Dublin coordinates two creek clean-up events a year, one during Dublin Pride Week (spring) and a second during Coastal Clean-up Day (third Saturday in September). As part of these events, the City with the assistance of volunteers removes trash from the City's three identified hot spots. The clean-up effort includes more than 10,000 feet of creek shore within the City of Dublin (of which 2,600 feet consists of the City's identified Hot Spots).

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing creek/channel/shoreline cleanups is 630 gallons/year. This volume is equal to approximately a 4.9 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Dublin. Both values provided within this section are included in Trash Load Reduction Summary Table Included in Section 5.0.

⁴ Creek/channel/shoreline cleanups conducted in accordance with Permit Provision C.10.b.

⁵All "other" creek/channel/shoreline cleanups conducted by a municipality that are not required by Provision C.10.b.

5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS

The City of Dublin is committed to reducing the potential for trash impacts in local water bodies in the San Francisco Bay Area. The planned enhanced trash control measures described in Section 4.0 are also listed in Table 4-1. The enhancements are intended to comply with the 40% trash load reduction goal in MRP provision C.10.

Please refer to Table 5-1 for information on the enhanced trash control measure enhancements that have been implemented and/or will be implemented by July 1, 2014.

Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of Dublin and associated trash loads reduced.

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced	Cumulative % Reduction (Compared to Baseline)
Existing Enhanced Street Sweeping	Within the City of Dublin, parking enforcement signs are posted for street sweeping that occurs on most arterial streets, but not on residential streets.	0.4%	51 gallons	0.4%
Single-use Carryout Plastic Bag Ordinance (CR-1)	The Alameda County Waste Management Authority has adopted a countywide ordinance prohibiting the distribution of single-use carryout plastic bags. The ordinance also establishes a fee for other carryout bags.	10%	1,276 gallons	10.4%
Polystyrene Foam Food Service Ware Ban (CR-2)	The City of Dublin has adopted a policy banning polystyrene foam food service ware at Permittee-sponsored events and on Permittee-owned property.	2%	255 gallons	12.4%
Public Education and Outreach Programs (CR-3)	The City of Dublin plans to implement the following public education & outreach control measures: Litter Reduction Advertising Campaign, outreach to school aged children, media relations and a minimum of 2 outreach events that focus on litter.	7%	893 gallons	19.3%
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	The City of Dublin adopted Solid Waste and Recycling Enclosure Standards. The intent of the ordinance is to ensure that private development have adequately sized enclosures to meet their trash and recycling needs.	1%	128 gallons	20.3%

Full-capture Treatment Devices (QF-5)	A total of 442 full trash capture devices (27 large units and 415 filters) have been or will be installed in the City prior to July 1, 2014.	N/A	2,445 gallons	39.4%
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	The City of Dublin conducts two creek clean-up events per year. One in the spring as part of Dublin Pride Week and a second in the fall as part of Coastal Clean-up.	N/A	630 gallons	44.3%

5.1 Annual Reporting and Progress Towards Trash Load Reduction Goal(s)

Consistent with MRP Provision C.10.d (i), the City of Dublin intends to report on progress towards MRP trash load reduction goals on an annual basis beginning with the Fiscal Year 2011-2012 Annual Report. Annual reports will include:

1. A brief summary of all enhanced trash load reduction control measures implemented to-date;
2. The dominant types of trash likely removed via these control measures;
3. Total trash loads removed (credits and quantifications) via each control measure implementation; and
4. A summary of progress towards trash load reduction goals.

Similar to other MRP provisions, annual reporting formats will be consistent region-wide. Annual Reports are intended to provide a summary of control measure implementation and assess progress toward MRP trash reduction goals. For more detailed information on specific control measures, the City of Dublin will retain supporting documentation on trash load reduction control measure implementation. These records should have a level of specificity consistent with the trash load reduction tracking methods described in the *BASMAA Trash Load Reduction Tracking Method Technical Report* (BASMAA 2012b).

The City of Dublin has prepared a preliminary review of actions needed to achieve the 70% reduction required by 2017. Installation of full trash capture devices in inlets with a total watershed of 600 acres (200 acres each of commercial, retail and high density residential) would achieve an additional load reduction of approximately 4,000 gallons. The cost of the additional units is estimated at \$1.8 million. Implementation of a Citywide Polystyrene Foam Food Service Ware Policy ban by 2017 would generate an additional reduction of approximately 1,000 gallons per year, allowing a reduction of approximately 25% of the full-trash capture devices.

5.2 Considerations of Uncertainties

Baseline trash loading and load reduction estimates are based on the best available information at the time this Short-Term Plan was developed. As with any stormwater loading and reduction estimate, a number of assumptions were used during calculations and therefore uncertainty is inherent in the baseline trash load estimate presented in Section 2.0 and the load reduction estimate presented in this section. For these reasons, the baseline loading estimates presented in this plan should be considered first-order estimates. During the implementation of this Short-Term Plan and subsequent plans, additional information may become available to allow the calculation of a more robust baseline load.

6.0 IMPLEMENTATION SCHEDULE

Implementation of enhanced trash control measures by the City of Dublin is currently planned to occur in a timeframe consistent with MRP requirements. A preliminary implementation schedule for all planned enhancements is described in Table 5-1. This schedule provides a timeframe for reducing trash discharged from the City of Dublin's MS4 by 40%.

Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas, etc.), or if circumstances arise during implementation of the Plan that were not anticipated at the time of submission, the City of Dublin may choose to amend or revise this Plan and/or the associated implementation schedule. If revisions or amendments occur, a revised Short-Term Plan and implementation schedule will be submitted to the Water Board via the City of Dublin's annual reporting process.

Table 6-1. Preliminary implementation schedule for enhanced trash control measures in the City of Dublin

Trash Control Measure	Beginning Date of Implementation
Single-use Carryout Plastic Bag Ordinance (CR-1)	January 1, 2013
Polystyrene Foam Food Service Ware Ban (CR-2)	December 15, 2009
Public Education and Outreach Programs (CR-3)	On-going
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	July 2011
Full-capture Treatment Devices (QF-5)	December 1, 2009 through July 1, 2014
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	April 2012 (first clean-up event of City's hot spots)

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