



February 1, 2012

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Dear Mr. Wolfe and Ms. Creedon:

Enclosed is the City of Orinda's Short-Term Trash Reduction Plan submitted in accordance with Provision C.10.a. in NPDES Permit No. CAS612008 issued by the San Francisco Bay Regional Water Quality Control Board, and/or NPDES Permit No. CA0083313 issued by the Central Valley Regional Water Quality Control Board.

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluated the information submitted. Based on my inquiry of the person or persons who managed 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.

Sincerely,

Charles G. Swanson
Director
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Baseline Trash Load and Short-Term Trash Load Reduction Plan

Submitted by:

City of Orinda

22 Orinda Way

Orinda, California 94563



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 ORINDA
SHORT-TERM TRASH LOAD REDUCTION PLAN**

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:



Charles G. Swanson
Director, Public Works and
Engineering Services Department

February 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
CR	Credits
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ERP	Enforcement Response Plan
FOC	Friends of Orinda Creeks
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
OMC	Orinda Municipal Code
Q	Flow
QF	Quantification Formula
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 (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), the City of Orinda 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 Orinda'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 and to demonstrate 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 Orinda in compliance with the portions of MRP provision C.10.a.i listed as 1a and 3 above. In compliance with 1b, 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), the City of Orinda 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 Orinda’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;
- Trash Baseline Load Estimate;
- Load Reduction Calculation Process
- Planned Implementation of New or Enhanced Control Measures;
- 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.

In compliance with Provision C.10.a.ii of the MRP, the City of Orinda worked collaboratively with other MRP Permittees through BASMAA to develop data and the process necessary to establish baseline trash loading estimates to MS4s. 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 municipal separate storm sewer systems (MS4s), while acknowledging that uncertainty in trash loads still exists.

- Step #1:** Conduct literature review
- Step #2:** Develop conceptual model
- Step #3:** Develop and implement sampling and analysis plan
- Step #4:** Test conceptual model
- Step #5:** Develop default trash generation rates
- Step #6:** Develop trash baseline loading rates by adjusting trash generation rates based on existing levels of control measure implementation
- Step #7:** Apply trash baseline loading rates and calculate baseline load

Through the collaborative BASMAA project, default baseline trash generation rates (volume per area) for wet and dry seasons 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 applicable jurisdictional areas¹ within the City of Orinda. Trash generation rates were then adjusted based on baseline street sweeping and storm drain inlet maintenance conducted in each applicable area. The sum of the trash loads (i.e., rate multiplied by area) from each jurisdictional area represents the City of Orinda'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.

This section provides a summary of land use characteristics and demographics in the City of Orinda that, based on the results of the BASMAA *Trash Generation Rates Project*, appear to affect trash generation rates. The process by which the City of Orinda's trash baseline loading estimate was developed is also more fully described below.

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

PERMITTEE CHARACTERISTICS

Incorporated in 1985, the City of Orinda covers 8,236 acres in Contra Costa County, and has a jurisdictional area of 5,117 acres. According to the 2010 Census, it has a population of 17,643, with a population density of 1,389.4 people per square mile, and average household size of 2.69. Of the 17,643 who call the City of Orinda home, 25.6% are under the age of 18, 4.1% are between 18 and 24, 15.5% are between 25 and 44, 34.6% are between 45 and 65, and 20.1% are 65 or older. The City of Orinda is mostly residential and had a median household income of \$117,637 in 2000².

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 Orinda. The City of Orinda’s jurisdictional areas includes all urban land areas within the City of Orinda boundaries that are subject to the requirements in the MRP.

² From the 2000 Census. The median household income for the City of Orinda from the 2010 Census is not currently available.

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 Contra Costa County;
- 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 Orinda’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 Orinda are presented in Table 2-2.

Table 2-2: Jurisdictional areas and effective loading areas in the City of Orinda 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	53	37	1
Low Density Residential	3,368	2,857	73
Rural Residential	1,394	872	22
Commercial and Services/ Heavy, Light and Other Industrial	111	85	2
Retail and Wholesale	35	33	1
K-12 Schools	131	38	1
Urban Parks	24	18	0
TOTAL	5,117	3,938	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 Orinda 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 Orinda 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 Orinda 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 Orinda's baseline street sweeping program varies, but in general curbed streets in residential areas are swept between once and nine times per year, streets in the downtown areas are swept once per week, and Camino Pablo and Moraga Way (the main arterial streets connecting downtown to residential areas in north and south Orinda, respectively) are swept eight or nine times per year. Note that a significant portion (the majority) of the residential streets in the City of Orinda do not have curbs. Parking enforcement signs for street sweeping are not posted in the City, but parking enforcement equivalent occurs in the downtown area, some residential streets, on Camino Pablo and a portion of Moraga Way near the downtown. Parking enforcement equivalent in the downtown area consists of sweeping the downtown area in the early morning hours when no cars are parked on the street. Parking enforcement equivalent on Camino Pablo consists of either no parking signs or simply the inability to park on the street (no shoulder for parking, street bordered by retaining wall, etc.). The estimated trash load reduced via baseline street sweeping is presented in Table 2-3. Figures 2-2 and 2-3 depict the City of Orinda's baseline street sweeping frequency in the dry and wet season, respectively. Figure 2-4 depicts the City of Orinda's baseline parking enforcement for street sweeping. Please note that there are minor errors in the street sweeping frequency maps; the maps will be revised and presented in a subsequent version of this plan as will a revised estimated of the trash load reduced via baseline street sweeping.

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 Orinda 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 Pump Station Maintenance

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

Baseline Trash Loading Estimates

The estimated baseline trash load from the City of Orinda 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 Orinda 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 Orinda.

Category	Annual Load (gallons)
Preliminary Generation Trash Load	6,461
Load Removed via Baseline Street Sweeping	994
Load Removed via Baseline Storm Drain Inlet Maintenance	273
Load Removed via Baseline Stormwater Pump Station Maintenance	0
Preliminary Trash Baseline Load	5,194

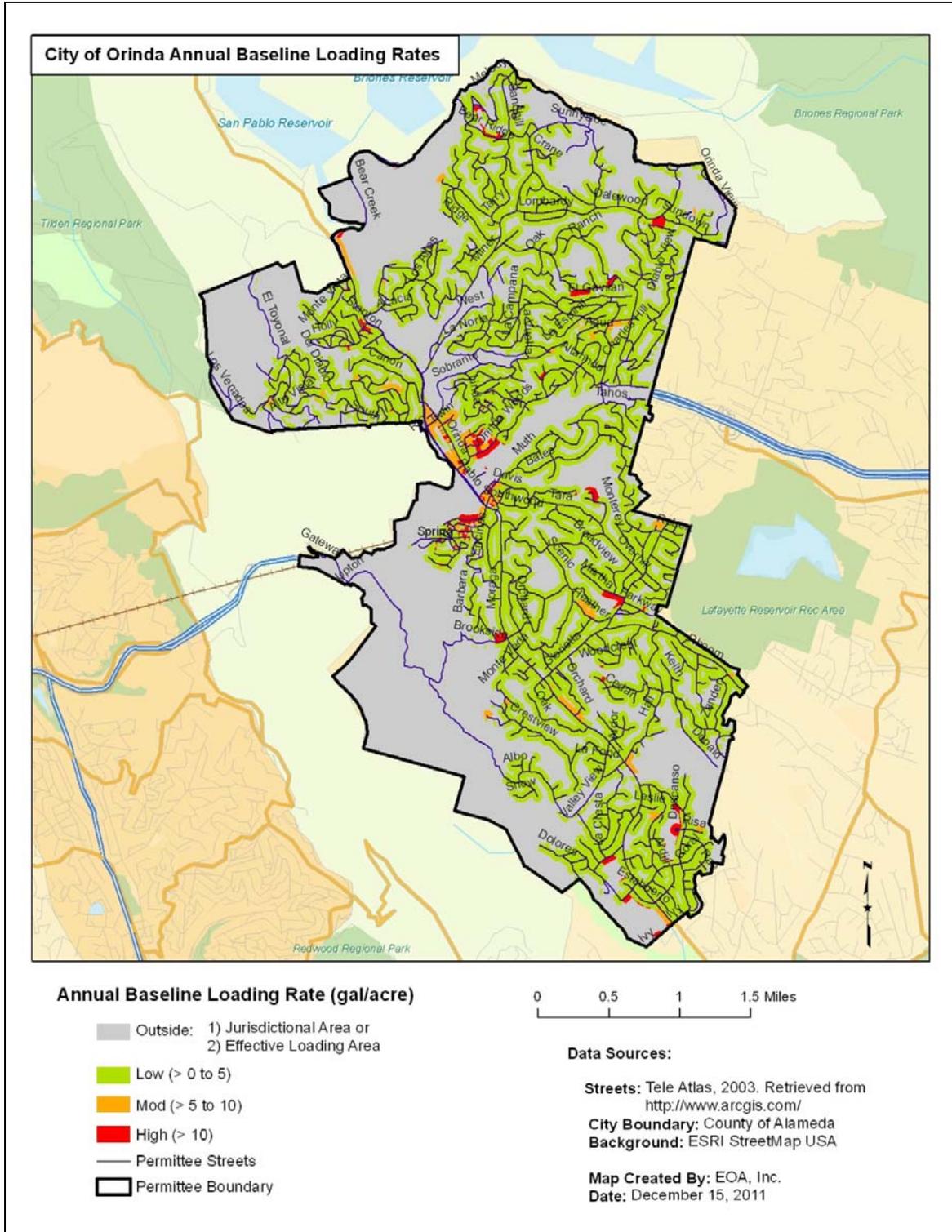


Figure 2-1: Estimated trash baseline loading rates for geographical areas in the City of Orinda.

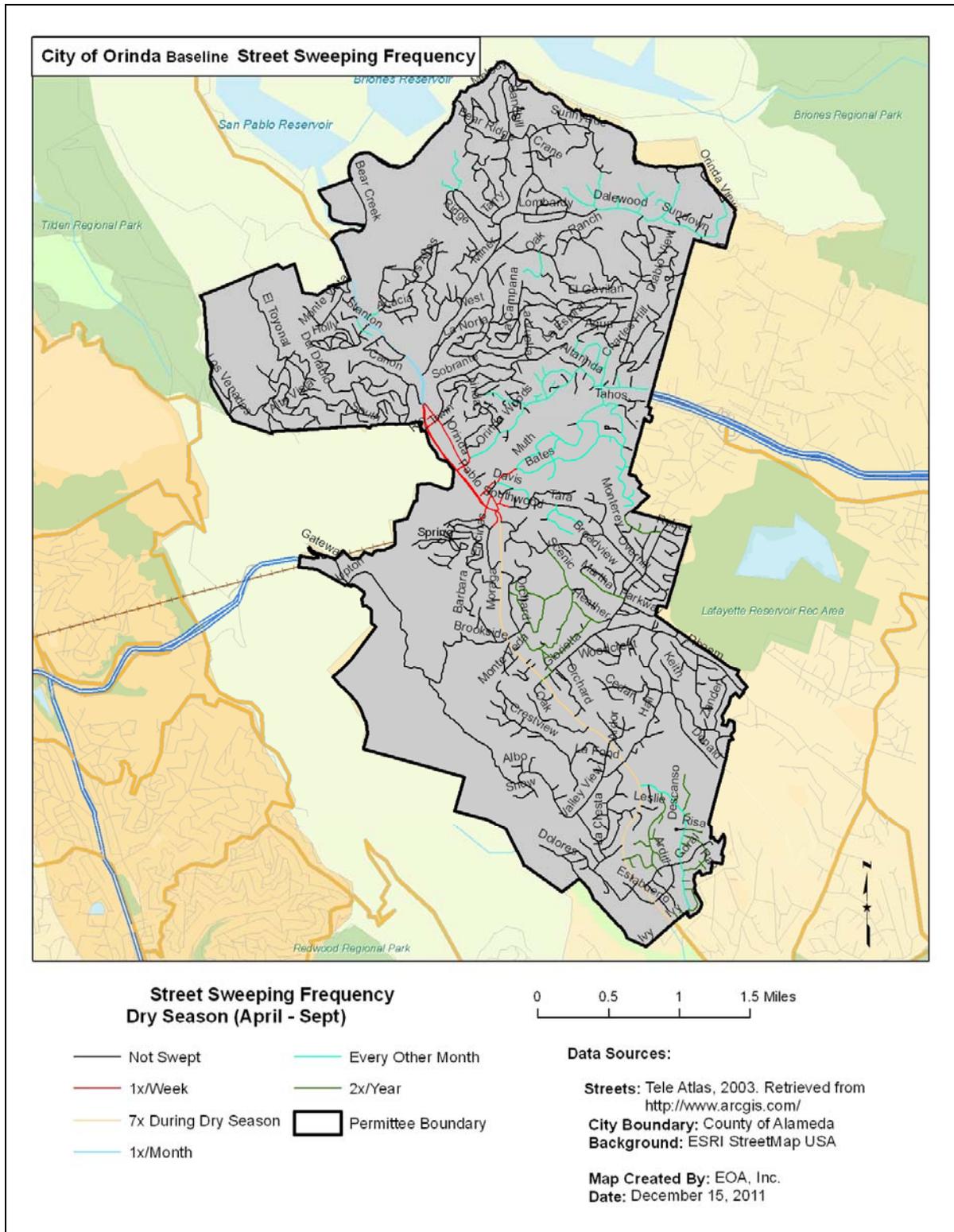


Figure 2-2: Baseline Street Sweeping Frequency (Dry Season) in the City of Orinda.

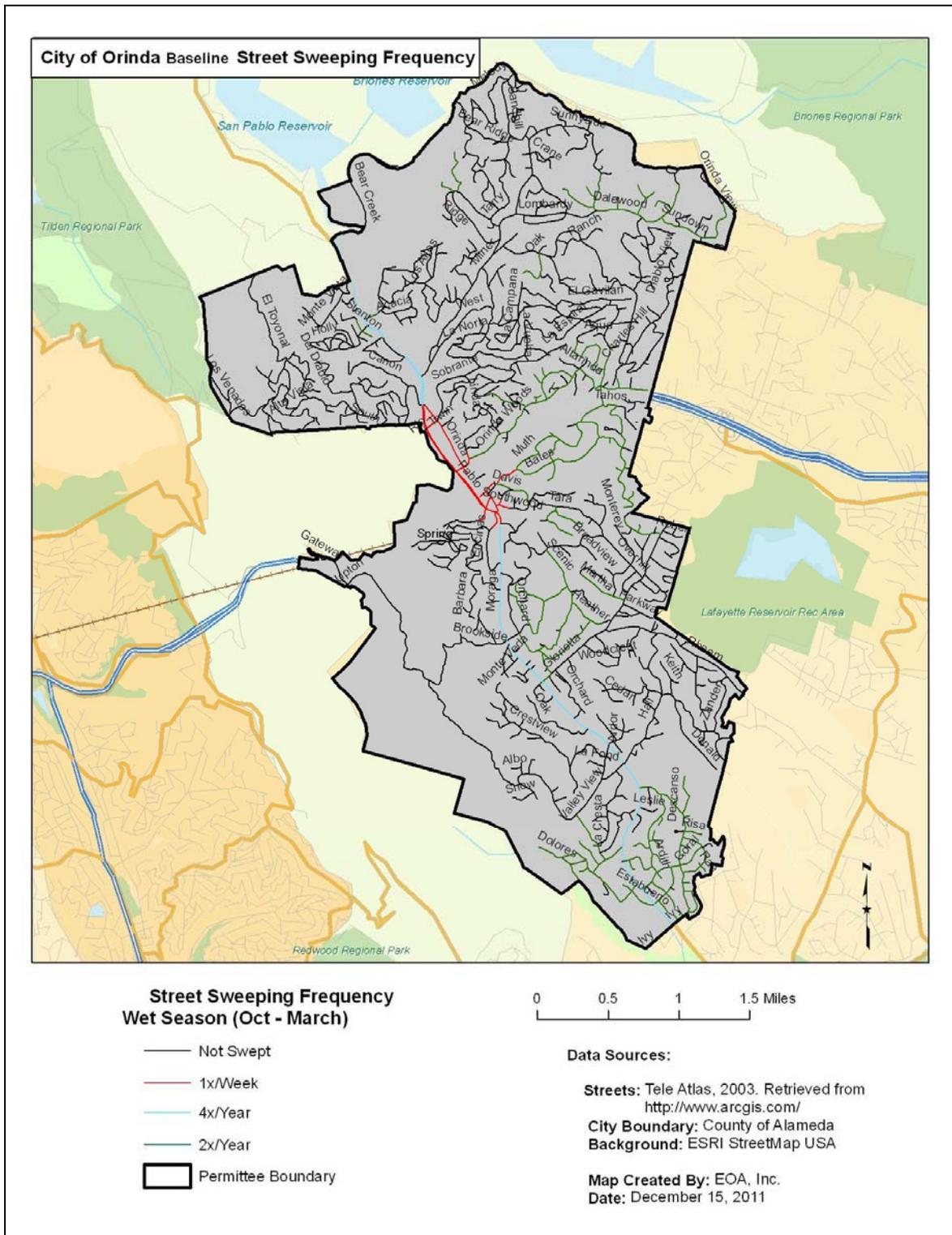


Figure 2-3: Baseline Street Sweeping Frequency (Wet Season) in the City of Orinda.

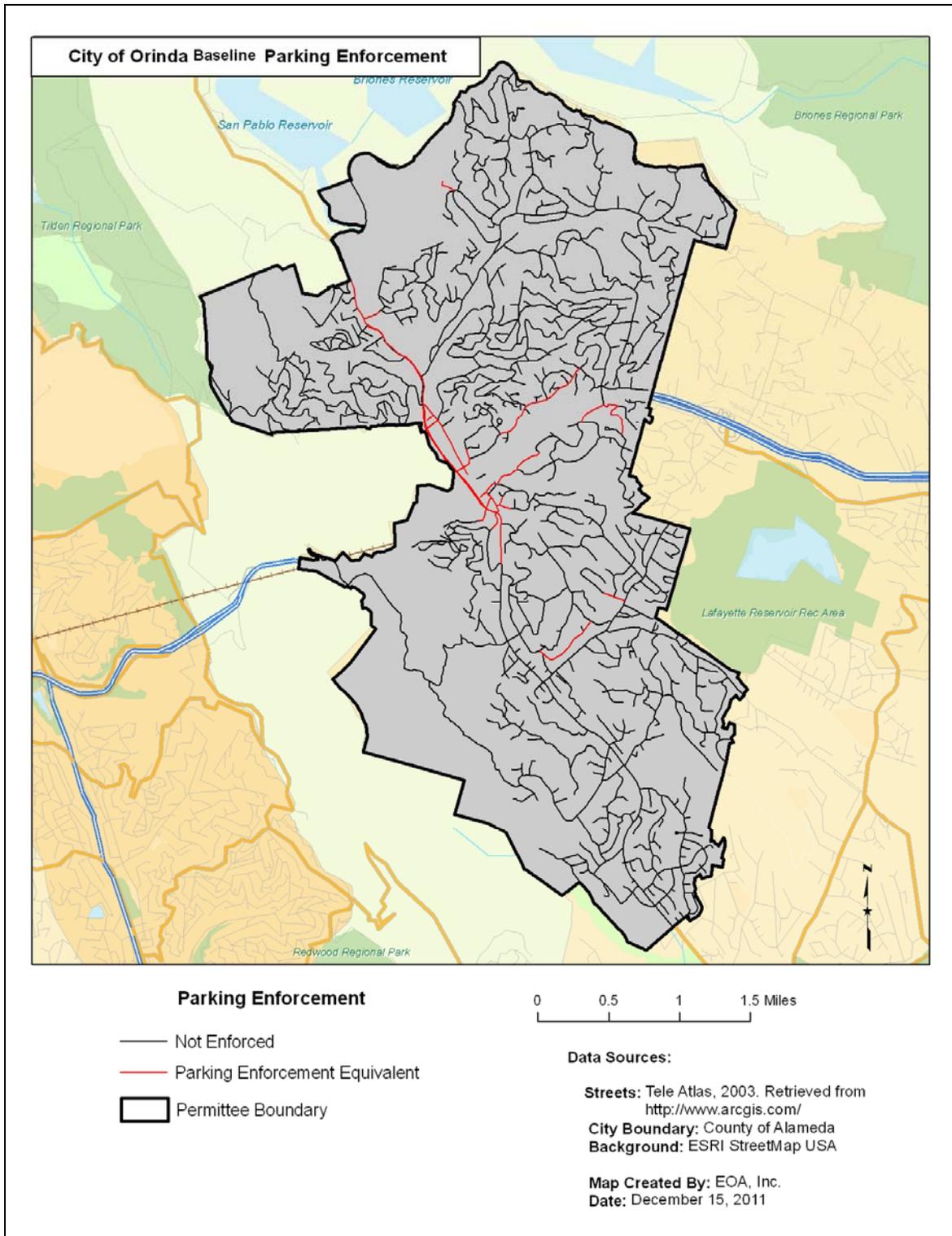


Figure 2-4: Baseline Parking Enforcement in the City of Orinda

3.0 LOAD REDUCTION CALCULATION PROCESS

Using the guiding principles and assumptions described 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 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. 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 controls measures implemented may be applied in-parallel, but should be applied prior to calculating on-land interception measures discussed in Step #3.³ 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).

³ 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 Orinda. 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 City of Orinda include those listed in Table 4.1.

Table 4.1. Trash control measures that will be implemented by the City of Orinda to reach the 40% trash load reduction by July 1, 2014.

Control Measure
Public Education and Outreach Programs
Reduction of Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management (Municipally or Privately-Controlled)
Enhanced On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

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

The City of Orinda implemented the following public education and outreach control measures prior to the effective date of the MRP : hosted an outreach event at the City’s Fourth of July festival. This control measure is considered baseline because it was either not related to trash reduction specifically, or it is not planned to be continued during the term of the MRP. New actions or actions started prior to the effective date of the MRP and continued into the future are described under the next section.

Enhanced Level of Implementation

The City of Orinda implemented the following public education and outreach control measures prior to the effective date of the MRP and will continue to do so: participation in the Used Oil Campaign which focuses on certifying used oil collection centers, distributing information at public events, providing a school program (using Mr. Funnelhead) targeted to third, fourth, and fifth graders, and advertising on cable television and newspapers; contributed stormwater pollution prevention articles to the City’s

newsletter; sponsored a community service day (Orinda In Action) in conjunction with the Orinda Association that included creek cleanup and other activities; and participated in county-wide outreach activities with the CCCWP.

The City of Orinda implemented the following public education and outreach control measures since the effective date of the MRP: participation in the Kids for the Bay, which educates fourth- and fifth-graders about their local watershed and field activities including shoreline or creek trash clean-up; sponsoring and distribution of outreach material at the Bringing Back the Natives Garden Tour; and participated in county-wide outreach activities with the CCCWP.

In 2010-2011, the CCCWP developed additional pieces for the “Fancy...Litter?” advertising campaign that began in 2009-2010. Media pieces were developed for radio, outdoor/transit, alternative media, in-store ads (on shopping carts), online, direct mail, grassroots, and youth (via bowling alley ads, facebook ads targeted for residents under 18, etc.). Please refer to CCCWP’s 2010-2011 Annual Report for further information, including information about the pre- and post-campaign survey.

Outreach to school-age children is through the Kids for the Bay Program, which delivers its “Watershed Action Program” to fourth-grade students. The City began participation in this program in 2011-2012; information about the program in other Contra Costa municipalities can be found in the 2010-2011 Program-wide section of the CCCWP Annual report.

The City used free media in its advertisement of creek cleanups and other community outreach events (native gardening for example) organized by local citizens and sponsored by the City. Flyers posted around town and on websites advertised the dates for various creek cleanups. In addition, the City uses its Orinda Youth Association e-newsletter Media relations to send anti-litter messages to families with children participating in sports at the local fields.

Percent Reduction from Enhancements

The City of Orinda will receive an eight (8) percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. The eight(8) percent reduction credit will be applied to the City of Orinda’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 and which its contents escape⁴, 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

⁴ 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.

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 Orinda 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 Orinda will implement the following enhanced control measures to reduce trash from vehicles with uncovered loads prior to July 1, 2014. The City will develop and include language in its hauling service contract(s) that require contracted trash and construction debris haulers to cover loads when transporting trash and debris to municipally or privately-owned landfills or transfer stations.

Percent Reduction from Enhancements

The City of Orinda will receive a one (1) percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The one (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 Orinda. 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.

CR-5: Anti-Littering and Illegal Dumping Enforcement Activities

Successful anti-littering and illegal dumping enforcement activities include laws or ordinances that make littering or dumping of trash illegal. Laws are enforced by various municipal agency staff (e.g., police, sheriff and public works department staff) who issue citations in response to citizen complaints or other enforcement methods (e.g., surveillance cameras, signage and/or physical barriers installed at illegal dumping hot spots). In some California jurisdictions, the minimum fine for littering is \$500 and the maximum penalty for highway littering is \$1000 (City of San Francisco 2001). However, it is difficult to enforce small littering events unless they are witnessed or solid proof exists linking the offender to the litter. As a result, enforcement tends to focus on larger scale illegal dumping activities.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of Orinda has adopted a basic anti-littering and illegal dumping enforcement program that entails receiving and responding to complaints from citizens as resources allow. Prior to the MRP, City staff would respond to calls of illegal dumping and littering, resulting in removal of dumped material.

Enhanced Level of Implementation

The City of Orinda has implemented the following enhanced anti-littering and illegal dumping enforcement control measures since adoption of the MRP. With the development and adoption of the City's Enforcement Response Plan (ERP), the City has augmented its response to calls of illegal dumping

and littering. In addition to investigating the complaints received, the City has formalized (through the ERP) its enforcement procedures including citations and is collecting evidence as available from illegal dump sites in an attempt to track down the offender. There is not a high level of occurrence of illegal dumping of trash in Orinda; the most common illegal dumping is of wood mulch. As such, other measures (use of surveillance cameras and physical barriers/improvements) have not been selected for implementation at this time).

Percent Reduction from Enhancements

The City of Orinda will receive a two (2) percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The two (2) 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 Orinda. 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.

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 Orinda has not implemented enhanced trash bin/container management practices prior to effective date of the MRP. The City ensures adequate private trash service and enclosures by having an ordinance for appropriate trash service for private properties. City of Orinda Municipal Code (OMC) Chapter 8.28 (Refuse Collection and Disposal) refers to and adopts by reference the Central Contra Costa Solid Waste Authority's Ordinance (No. 97-01). Ordinance No. 97-01 requires that all solid waste created, produced, or accumulated at commercial, residential and industrial premises be removed from the premises at least once a week except for materials which are retained for recycling or composting and do not create a health hazard by a longer retention. The ordinance prohibits the accumulation of waste/nuisance, requires a minimum of one solid waste container for each unit unless an adequately sized common disposal bin is provided, and requires adequately sized bins for commercial, industrial and large multi-family residential premises.

The City does not have a formal program that identifies businesses or households that have inadequate trash service (i.e., insufficient trash collection or use of bins which are too small).

With regard to public area trash containers, additional containers were installed in the downtown commercial areas prior to MRP implementation. These trash containers are serviced a minimum of five times a week.

Enhanced Level of Implementation

The City of Orinda will implement the following improved trash bin/container management practices prior to July 1, 2014.

The City will review its ordinance and revise as needed to enforce private property owners having adequate trash service. In addition, the City will develop and implement a formal program that identifies businesses or households that have inadequate trash service (i.e., insufficient trash collection or use of bins which are too small). Either through municipal code enforcement or other means, the City will require businesses or household to sufficiently remedy the issue (reduce trash generation such that current receptacles are adequate or obtain additional trash service). Upon development of the program, the City will determine if coordination with waste haulers is feasible.

The City does not plan to implement a strategic plan for public area trash containers because as noted above additional containers were installed prior to the MRP and the containers are regularly serviced. Likewise, the City does not plan to establish business improvement districts with trash reduction control measures litter pickup and maintenance of public area trash containers is already occurring at a frequency greater than the minimum of once per week in retail/wholesale and commercial areas.

Percent Reduction from Enhancements

The City of Orinda will receive a three (3) percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The three (3) 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 Orinda. 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.

QF-1: Enhanced On-Land Trash Cleanups (Volunteers and/or Municipal)

On-land cleanups conducted by Permittees and volunteers have been successful in removing trash from identified trash hot spots and engaging local citizenry in improving their communities. Permittees have several programs in place to address on-land trash. Municipal efforts relate to ongoing beautification of impacted areas and coordination of cleanup events. Volunteer on-land cleanups involve the meeting of individuals, creek and watershed groups, civic organizations, businesses and others at designated or adopted on-land sites to remove trash. On-land trash cleanups are conducted as single-day or throughout the year.

Baseline Level of Implementation

The City of Orinda implemented the following on-land cleanup activities prior to the effective date of the MRP. In April 2009, citizen volunteers organized the first Orinda In Action Day, an all-volunteer effort to perform projects in the City including landscaping; painting; creek projects including trash pick-up, invasive vegetation removal, and native planting; on-land trash cleanup; electronic recycling; and canned food drive. In 2009, the quantity of trash removed from the on-land cleanup was recorded as 90 cubic feet or 3.3 cubic yards. On-land trash cleanup was conducted in the following areas in town: from BART to Theatre Square; along Moraga Way, Glorietta Boulevard, and Camino Pablo; and at Glorietta School and Orinda Intermediate School. These control measures are considered baseline because they were accounted for in the preliminary trash generation rates established through the BASMAA Baseline Trash Loading Rates Project. New or enhanced actions that began or are planned to begin after to the effective date of the MRP are described under the next section.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of Orinda will be supporting the following enhanced on-land trash cleanup activities listed below. These on-land cleanups will be conducted or coordinated each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

The first Orinda In Action event was such a success the first year (2009) that it has become an annual event and has continued to expand with regard to the number of volunteers and number of projects. The City sponsors the event and provides staff to support the event, and at the time of this report, had already begun planning for the 2012 event. In 2010, on-land trash cleanups were expanded from the areas in 2009 to include essentially all of the downtown commercial area north and south of Highway 24 and all the elementary schools. As such, the quantity of trash removed from the on-land cleanups increased to 13.4 cubic yards in 2010. In 2011, the quantity of trash removed from the on-land cleanups increased to 13.9 cubic yards.

The City assumes that 13.3 cubic yards of trash will continue to be collected annually during the Orinda In Action event, and thus an increase of approximately 10 cubic yards from the baseline (pre-MRP). However, due to limitations placed on the load reduction credit received for enhanced on-land trash cleanups and creek cleanups (total of 15% load reduction for both measures), the City took credit for only 1.7 cubic yards of trash collected during this event. The City plans to implement use of the standardized data collection form being developed by BASMAA as soon as it is available.

Please note that **only trash that has the potential of entering the MS4 will be tracked**. As a result, large items (e.g., appliances, shopping carts, furniture, mattresses, televisions, tires, lumber, etc.) that will be removed during on-land trash cleanups are not part of the volume determination since they do not have the potential of entering the MS4.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced beginning July 1, 2014 as a result of implementing on-land trash cleanups is 1.7 cubic yards (or 46 cubic feet or 335 gallons). This volume is equal to approximately a 6.4 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 Orinda. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.

QF-2: Enhanced Street Sweeping

Street sweeping is conducted by most, if not all, Bay Area municipalities to remove trash and debris that collect in the gutters at the edge of streets. Parked cars and large storms that produce significant runoff can impact the effectiveness of street sweepers. However, increasing parking enforcement or more frequent street sweeping (as compared to the frequency of storm events) may increase the trash load reduced to MS4s. Permittees who choose to enhance street sweeping may do so to demonstrate trash load reductions to their MS4s and progress towards trash load reduction goals required by the MRP.

Baseline Level of Implementation

The baseline trash load described in Section 2.0 incorporates the trash load reductions due to baseline street sweeping. The City of Orinda's baseline street sweeping program includes sweeping at a frequency of once a week on average in retail areas and a variable frequency in residential areas ranging from once to nine times a year. Please refer to Section 2 for a description of baseline street sweeping.

The City of Orinda does not have traditional parking enforcement. In the downtown district (which is swept weekly), City staff can operationally get to the curb during sweeping due to: the timing of sweeping (no parked cars) which occurs in the early morning areas. As such, the City claims an "equivalency" to parking enforcement for this route. Along Camino Pablo and many portions but not all of Moraga Way, parking is not allowed (and indicated by signage) or is simply not feasible due to lack of sufficient shoulder. Parking enforcement was assumed for Camino Pablo but not Moraga Way.

Enhanced Level of Implementation

Enhancements to street sweeping frequencies and parking enforcement (or equivalent measures) control measures will be used to calculate loads reduced from enhanced street sweeping, consistent with the trash load reduction tracking method (BASMAA 2012b). A list of planned enhancements is included in Table QF-3-1. Enhancements include:

- Sweeping both Camino Pablo (Route 8) and Moraga Way (Route 9) monthly throughout the year.
- Equivalent parking enforcement along Moraga Way (Route 9) by sweeping in the early morning hours (immediately following completion of downtown route).

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of enhanced street sweeping is six (6) cubic feet (or 42 gallons). As described in the Trash Load Reduction Summary Table included in Section 5, this volume is equal to approximately a 0.8 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 Orinda.

Baseline Trash Load and Short-Term Trash Load Reduction Plan

Table QF-2-1. Planned enhanced street sweeping program in the City of Orinda.

Route ID	Approximate Length Swept (curb miles)	Baseline		Enhanced	
		Frequency	Parking Enforcement	Frequency	Parking Enforcement
Route 8 (Camino Pablo)	2.8	<i>Monthly (dry)</i> <i>Quarterly (wet)</i>	Yes	<i>Monthly (dry)</i> <i>Monthly (wet)</i>	Yes
Route 9 (Moraga Way)	6.7	<i>Monthly (dry)</i> <i>Quarterly (wet)</i>	No	<i>Monthly (dry)</i> <i>Monthly (wet)</i>	Yes

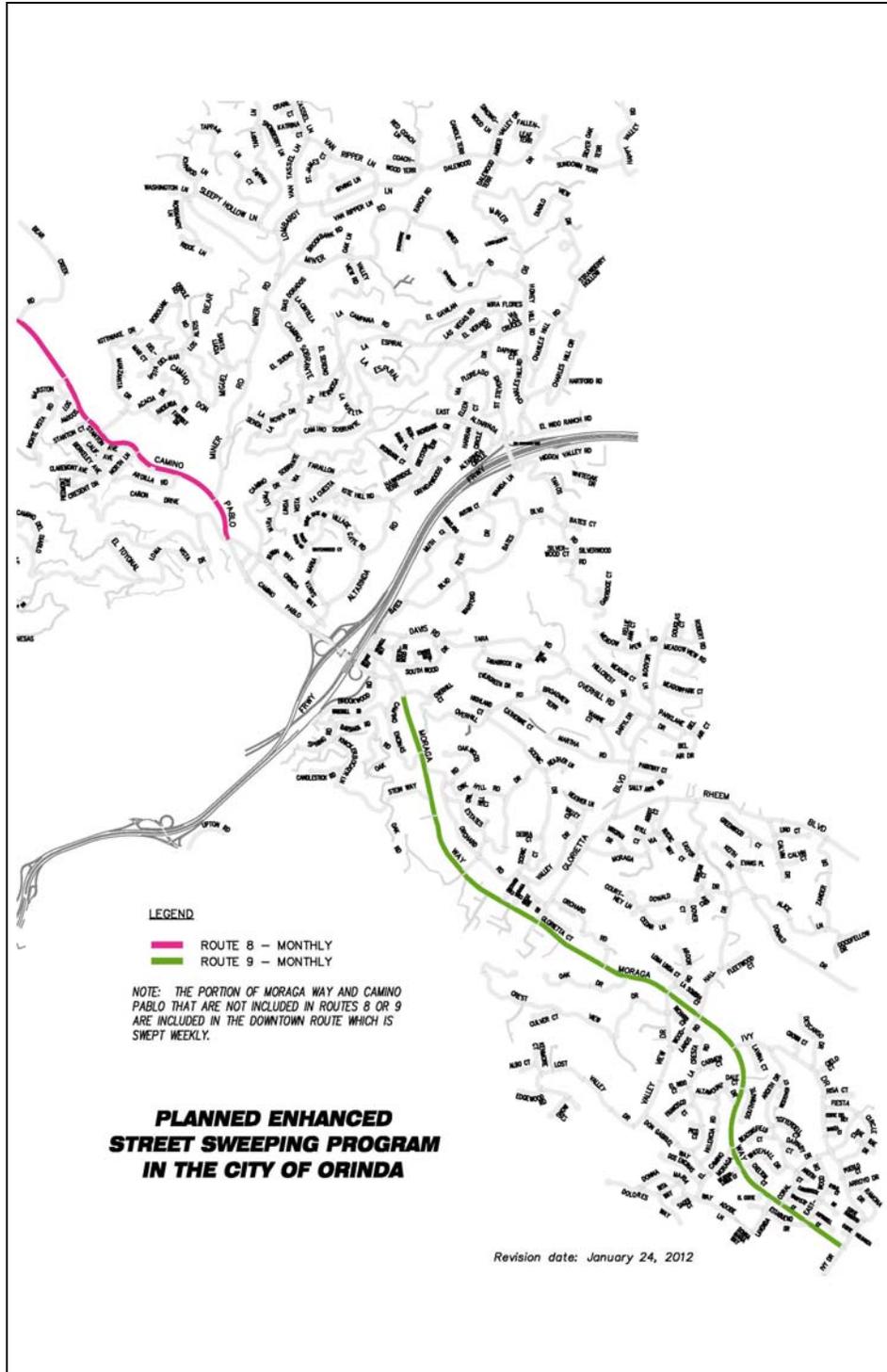


Figure QF-2-1: Planned enhanced street sweeping program in the City of Orinda.

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 one-year, one-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 eight (8) trash full-capture treatment devices are planned for installation in the City of Orinda 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).

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 69 cubic feet (516 gallons). This volume is equal to approximately a ten (10) 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 Orinda. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.

Table QF-6-1. Trash full-capture treatment devices within the jurisdictional boundaries of the City of Orinda that are 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 (gallons)
1153	Public	Trash Guard (BioClean)	Bryant Way (West of Moraga Way)	Summer 2012	4.9	60
1161	Public	Trash Guard (BioClean)	Camino Pablo at Brookwood/	Summer 2012	4.9	60
2968	Public	Trash Guard (BioClean)	Camino Sobrante (West of Orinda Way)	Spring 2013	4.9	71
2864	Public	Trash Guard (BioClean)	Orinda Way (across from Library)	Spring 2013	4.9	56
1011	Public	Trash Guard (BioClean)	Orinda Way (near Nos. 19/23)	Spring 2013	4.9	65
519	Public	Trash Guard (BioClean)	Bryant Way/East of Moraga Way	Spring 2014	4.9	71
2925	Public	Trash Guard (BioClean)	Santa Maria (west of Orinda Way)	Spring 2014	4.9	71
2484	Public	Trash Guard (BioClean)	Brookwood (SW of Moraga Way)	Spring 2014	4.9	60

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 Orinda'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 Orinda will conduct MRP-required⁵ and the following non MRP-required creek/channel/shoreline cleanups⁶ 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.

As discussed above under QF-1 (Enhanced On-Land Trash Cleanups), citizen volunteers organized in April 2009 the first Orinda In Action Day, an all-volunteer effort to perform projects in the City including landscaping; painting; creek projects including trash pick-up, invasive vegetation removal, and native planting; on-land trash cleanup; electronic recycling; and canned food drive. Orinda In Action Day has become an annual event. The quantity of trash removed from the creek cleanups was recorded as 1.4 cubic yards in 2010 and 1.5 cubic yards in 2011.

In addition to the Orinda In Action event, cleanup of the City's single trash hot spot results in collection of 0.6 to 0.7 cubic yards (based on Spring 2010 and Fall 2011 events). The local creeks group, Friends of Orinda Creeks (FOC) assists at the Orinda In Action event and with the cleanup of the City's trash hot spot. In addition, FOC also regularly undertakes an additional creek cleanup, which results in collection of 0.8 to 2.1 cubic yards of trash.

However, as discussed above under QF-1, due to limitations placed on the load reduction credit received for enhanced on-land trash cleanups and creek cleanups (total of 15% load reduction for both measures), the City took credit for only: 0.7 cubic yards (140 gallons) of trash collected during the trash hot spot cleanup and 1.5 cubic yards (300 gallons) during the Orinda in Action event. The City is not taking credit for the additional creek cleanup performed by FOC. The City plans to implement use of the standardized data collection form being developed by BASMAA as soon as it is available.

⁵ Creek/channel/shoreline cleanups conducted in accordance with Permit Provision C.10.b.

⁶All "other" creek/channel/shoreline cleanups conducted by a municipality that are not required by Provision C.10.b.

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 approximately 59 cubic feet (440 gallons). This volume is equal to approximately a 8.4 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 Orinda. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.

5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS

The City of Orinda 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 5-1. The enhancements are intended to comply with the 40% trash load reduction goal in MRP provision C.10.

Baseline Trash Load and Short-Term Trash Load Reduction Plan

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

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced (gallons)	Cumulative % Reduction (Compared to Baseline)
Existing Enhanced Street Sweeping	Parking Enforcement along Downtown Route	1.0	53	1.0
Public Education and Outreach Programs (CR-3)	Advertising Campaigns Outreach to School-age Children/Youth Media Relations Community Outreach Events	7.9	411	8.9
Reduction of Trash from Uncovered Loads (CR-4)	Require Municipal Trash Haulers to Cover Loads	1.0	51	9.9
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Anti-Littering and Illegal Dumping Enforcement Program	2.0	103	11.9
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	Ensure Adequate Private Trash Service	3.0	154	14.9
Enhanced On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	Volunteer-Led/City-Sponsored Annual Cleanup Event	6.4	335	21.3
Enhanced Street Sweeping (QF-2) – (Future Enhanced)	Monthly Sweeping of Routes 8 and 9 (Camino Pablo and Moraga Way)	0.8	42	22.1
Full-capture Treatment Devices (QF-5)	Installation of Eight (8) Devices	10.0	516	32.1
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Hot Spot Cleanup Volunteer-Led/City-Sponsored Annual Cleanup Event	8.4	440	40.5

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

Consistent with MRP Provision C.10.d (i), the City of Orinda 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 and quantification of progress towards trash load reduction goals.

Similar to other MRP provision, annual reporting formats will be consistent region-wide. Annual reports are intended to provide a summary of control measure implementation and demonstrate progress toward MRP trash reduction goals. For more detailed information on specific control measures, the City of Orinda 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).

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 Orinda 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 Orinda's MS4 by 40% by July 1, 2014.

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), the City of Orinda may chose 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 Orinda's annual reporting process.

Baseline Trash Load and Short-Term Trash Load Reduction Plan

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

Trash Control Measure	Beginning Date of Implementation
Public Education and Outreach Programs (CR-3)	Ongoing
Reduction of Trash from Uncovered Loads (CR-4)	Fall 2012
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Spring 2013
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	Summer 2013
Enhanced On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	On-going
Enhanced Street Sweeping (QF-2)	Fall 2012
Full-capture Treatment Devices (QF-5)	Summer 2012 through Spring 2014
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Ongoing

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