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JANUARY 2013

# Ventura River Estuary 2011-2012 Trash TMDL TMRP/MFAC Annual Report

*submitted to*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,  
LOS ANGELES REGION

*on behalf of the*

CITY OF VENTURA, VENTURA COUNTY, VENTURA COUNTY  
WATERSHED PROTECTION DISTRICT, CALIFORNIA  
DEPARTMENT OF FOOD AND AGRICULTURE, PARTICIPANTS  
IN THE VCAILG, CALIFORNIA STATE PARKS, AND CALIFORNIA  
DEPARTMENT OF TRANSPORTATION



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## **Executive Summary**

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This Annual Report is being submitted to fulfill the compliance requirements of the Amendments to the Water Quality Control Plan – Los Angeles Region for the Ventura River Estuary Trash TMDL (Trash TMDL), Resolution No. R4-2007-008. The purpose of this report is to present the results of the third-year point source and non-point source monitoring efforts conducted in accordance with the Trash TMDL (effective March 6, 2008) and Trash Monitoring Reporting Plan (TMRP) Minimum Frequency Assessment Collection/ Best Management Practice (MFAC/ BMP) Program approved on January 28, 2009. Responsible parties participating in the Program effort include the City of Ventura, County of Ventura, Ventura County Watershed Protection District (VCWPD), California State Parks, Ventura County Fairgrounds, California Department of Transportation (Caltrans), and participating members of the Ventura County Agricultural Irrigated Lands Group (VCAILG). Non-point source-responsible parties may comply with the Trash TMDL through the implementation of the MFAC/ BMP Program while point source-responsible parties may comply with Trash TMDL through the installation of full capture systems on conveyances discharging to the estuary or achieve a certain percent reduction in trash from the baseline Waste Load Allocation (WLA) phased over a five-year period. As such, the point and non-point source-responsible parties implemented a Los Angeles Regional Water Quality Control Board-approved TMRP MFAC/ BMP Program and documented the results in this Annual Report to satisfy the reporting requirements for the MFAC/ BMP Program implemented during 2011-2012.

As presented in the 2010-2011 annual report, monitoring during the second year of the TMRP had indicated that significant reductions in trash were occurring in the Ventura River Estuary and that the responsible parties were well on their way to complying with the interim milestone reductions for March 2013. However, while conducting the MFAC Program during 2011-2012, it was evident that trash totals were higher this monitoring year than the previous monitoring year. As soon as the increasing trend was identified, the point and non-point source responsible parties began reviewing their existing implementation programs and identifying modifications to the existing programs or additional actions that could be implemented to address the Trash TMDL requirements. As a result of this review, point and non-point source responsible parties identified additional actions, as discussed below. Additionally, the responsible parties have implemented a monthly review of the data to evaluate trends and try to keep trash reductions on pace to meet Trash TMDL requirements.

To address trash in the Ventura River Estuary, the point source-responsible parties have decided to install full capture devices on all conveyances that discharge to the Ventura River Estuary. To date, the point source responsible parties have installed full capture systems on 55% of the conveyances that discharge to the Ventura River Estuary as defined in the Trash TMDL Staff Report (Staff Report). The Ventura River Estuary, according to the Staff Report, is defined “north-southerly between the Pacific Ocean and Main Street Bridge in the City of San Buenaventura, easterly adjacent to Seaside Wilderness Park where Ventura County Fairground is and which frequently hosts events and allows direct access to the estuary area, westerly next to Ventura Beach RV Park between Main Street and Highway 101, and Emma Wood State Park under oversight of California Department of Parks and Recreation”. Per the Trash TMDL, the installation of full capture devices on conveyances discharging to the estuary is equivalent to a measured reduction in trash from the baseline WLA. As a result, the installation of full capture

devices on 55% of the conveyances discharging to the estuary area defined in the Staff Report indicates that the point source-responsible parties are in compliance with the 40% reduction of trash from the baseline WLA interim limit for 2013.

Given that full capture devices have been installed in the majority of the total number of the conveyances discharging to the Ventura River Estuary, the increase in trash is likely due to non-point sources. The non-point source-responsible parties conducted the required MFAC events and also installed and implemented structural and non-structural BMPs to reduce the impact of trash to the estuary. Aside from legacy trash issues in the Ventura River Estuary, the MFAC Program resulted in zero trash in-stream immediately after all monitoring events as required by the Trash TMDL for non-point sources indicating compliance for non-point source-responsible parties.

In addition, based on the increasing trends in trash identified during the monitoring year, the non-point source-responsible parties began conducting special clean-ups, in addition to the regularly scheduled MFAC events, in an attempt to reduce the accumulation of trash within the estuary. During this monitoring period, three clean-up events within the estuary were conducted (February 2012, May 2012, and June 2012). In addition, the City of Ventura conducted two clean-up events including the first event on October 25, 2012 near the Main Street Bridge and the second event on November 2, 2012 near the Front Street Drain. The clean-up events focused on removing trash and debris from these areas. Over seven and a half tons of trash was removed during the October 25<sup>th</sup> event and over two and a half tons during the November 2<sup>nd</sup> event. The VCWPD Operations and Maintenance crews implemented two separate trash removal events on February 24-25, 2012 and September 17, 2012, which resulted in the removal of approximately 300 tons of trash from VCWPD-owned properties within the Trash TMDL area. These removal projects focused on areas near the estuary that are often covered with the giant reed *Arundo donax* (Arundo), occupied by homeless camps, and are difficult to access during MFAC events. Additionally, the Trash TMDL-responsible parties worked together and with third party agencies, such as Ventura Hillside Conservancy and Wildscape Restoration, to address the homeless/ trash issue within the estuary and areas surrounding the estuary.

Third-year monitoring was conducted between October 2011 and September 2012. Overall, monitoring data indicate an increase in the amount of total pieces of trash collected during the 2011-2012 monitoring year compared with results from the previous year. The main types of trash collected included plastic, paper, and glass materials with the majority of the trash collected from the banks of the sites as opposed to in-stream locations. Other types of trash collected include household, landscaping, metal, automotive, biohazard, toxic/ hazardous, personal, and sports-related materials.

For the 2011-2012 monitoring year, the highest amounts of trash were generally collected during the summer and fall months (June – November) with Site 3, Site 4, Site 5, and Site 8 having significantly more pieces of trash compared with the other sites monitored. The total amount of trash collected between October 2011 and September 2012 was 8,919 pieces, which is greater than the baseline waste load allocation of 8,828 pieces. The total pieces of trash collected during the second year of monitoring (October 2010 through September 2011) was 5,021 indicating that the responsible parties met the 2012 and 2013 compliance milestones of a 20% (7,062) reduction and a 40% (5,297) reduction respectively.

The increase in trash was a completely unexpected result given that a 56% reduction in trash from the baseline WLA was observed in the monitoring data during the previous monitoring years and the responsible parties were implementing more BMPs than during the 2010-2011 monitoring year. The responsible parties investigated the data and cannot definitively explain the increase. It is likely that the weather conditions, a significantly windier year than the previous year, played a role, but the variable nature of trash and non-point trash sources to the estuary make it challenging to definitively identify a reason.

Point source-responsible parties will continue to install full capture systems to meet the required 100% installation goal and will inspect and maintain all installed full capture devices to ensure proper operation and effectiveness. Non-point source-responsible parties will continue to conduct all required MFAC events and implement and/ or install non-structural and structural BMPs at high trash generating areas as well as watershed-wide to reduce the discharge of trash from their jurisdictions to minimize the impact of trash in the watershed. It is anticipated that the homeless population within the Ventura River Estuary will continue to be a source of a majority of the trash found within the estuary. The homeless issue provides a unique challenge when trying to identify the appropriate BMPs to address trash, but the responsible parties are currently implementing and will continue to implement actions within their control to address the concern. This includes continuing to engage in community efforts related to the homeless within the estuary and surrounding areas to reduce a major source of trash.

Based upon the experiences from third-year monitoring and to improve the MFAC/ BMP Program, the following MFAC revisions are recommended for approval:

**1. MFAC Trash Metric**

After the first year of monitoring, total pieces of trash was identified as the metric to be used to determine compliance with the Trash TMDL and a total pieces of trash baseline number was provided in the first year Monitoring Report. This metric was chosen when the responsible parties intended to comply with both point and non-point source requirements through the use of the MFAC/ BMP Program. However, as point source compliance will now be attained through the installation of full capture devices and non-point source compliance through the MFAC/ BMP Program, a baseline number is no longer required to determine compliance. That is, the responsible parties will no longer need to show a phased percent reduction in total trash pieces collected per year. Therefore, total trash weight is being proposed as the new metric to assess and quantify trash within the watershed and to guide implementation of the MFAC/ BMP Program. The reasoning for this is that weighing trash instead of counting individual pieces provides the same information, yet saves resources and funding, which can be used to cover more areas of the estuary for trash clean-ups. Additionally, the time and resources that are saved will be reinvested in installing and implementing structural and non-structural BMPs to address trash within the watershed.

**2. MFAC Frequency at Site 6 and Site 7**

Site 6 and Site 7 are not required to be included in the MFAC, but were initially included in the TMRP as a way to assess upstream sources of trash. Site 6 and Site 7 have been cleaned and assessed monthly for the past three monitoring years. However, Site 6 and Site 7 have routinely had low trash totals. It is clear that the majority of the trash is found on the east side of the estuary (Sites 3, 4, and 5) as well as Site 8 along highway 33. Therefore, the responsible parties feel it is best to spend time and effort at these high

trash generating areas, and are proposing to remove the Sites 6 and 7 from the monitoring program entirely to allow resources and staff effort to be directed towards high trash areas and high trash priority issues.

**3. MFAC Frequency at Site 1**

The total pieces of trash collected during the first year, second year, and third year of monitoring at Site 1 (Lower Ventura River Estuary) are 49, 43, and 105, respectively. The trash data collected at Site 1 indicate there is no significant impact to the Lower estuary from trash. Therefore, it is recommended to remove Site 1 from the monitoring program or reduce the MFAC frequency from monthly to quarterly consistent with the requirements for the minimum MFAC program as outlined in the Trash TMDL. Quarterly assessment and collection events will still provide for the effective removal of trash while also allowing field crews to spend more time at the high trash generating areas of the estuary and Site 8.

**4. MFAC Frequency at Site 2**

The total pieces of trash collected during the first year, second year, and third year of monitoring at Site 2 (Upper Ventura River Estuary) are 103, 62, and 352, respectively. The trash data collected at Site 2 indicate there is no significant impact to the Upper Estuary from trash. Therefore, it is recommended to remove Site 2 from the monitoring program or reduce the MFAC frequency from monthly to quarterly consistent with the requirements for the minimum MFAC program as outlined in the Trash TMDL. Quarterly assessment and collection events will still provide for the effective removal of trash while also allowing field crews to spend more time at the high trash generating areas of the estuary and Site 8.

**5. MFAC Frequency at Site 3**

In accordance with recommendations provided in the 2010-11 Annual Report, we recommend to reduce monitoring frequency at Site 3 from weekly to monthly.

## Overview

This Annual Report is being submitted to fulfill the compliance requirements of the Amendments to the Water Quality Control Plan – Los Angeles Region for the Ventura River Estuary Trash TMDL (Trash TMDL), Resolution No. R4-2007-008. The purpose of this report is to present the results of the third-year monitoring efforts conducted in accordance with the Trash TMDL (effective March 6, 2008) Trash Monitoring Reporting Plan (TMRP) Minimum Frequency Assessment Collection/ Best Management Practice (MFAC/ BMP) Program.

This report includes:

- Results from monitoring efforts completed from October 2011 through September 2012 including:
  - A summary of completed collection events per site; and
  - A summary of trash data collected through third-year monitoring.
- Data evaluation;
- Compliance assessment;
- BMPs strategy;
- Analysis of the effectiveness of the MFAC/ BMP Program; and
- Proposed revisions to the MFAC Program.

This effort is being completed on behalf of the responsible parties to the Trash TMDL as listed in **Table 1**.

**Table 1. Responsible Parties participating in the TMRP and MFAC Program**

Responsible Party	Nonpoint Source (NPS)	Point Source (PS)
City of Ventura (City)	X	X
Ventura County (County)	X	X
Ventura County Watershed Protection District (VCWPD)	X	X
California Department of Food & Agriculture (Ventura Fairgrounds)	X	X
Caltrans	X <sup>1</sup>	X
California Department of Parks and Recreation	X	
Participants in the VCAILG <sup>2</sup>	X	

1. Caltrans was not given a NPS Load Allocation (LA) in the TMDL yet is voluntarily participating in the MFAC to meet the TMDL goals.

2. Ventura County Agricultural Irrigated Lands Group.

To complete this effort, the responsible parties hired the California Conservation Corps (CCC) to conduct all field monitoring efforts and Larry Walker Associates (LWA) to oversee monitoring and complete reporting requirements. The monitoring efforts were conducted according to a modified version of the Rapid Trash Assessment Protocol (RTAP) that was developed by members of the San Francisco Bay Regional Board's Surface Water Ambient Monitoring Program (SWAMP). The RTAP was modified in some ways to be better suited to the goals of the TMRP and MFAC Programs.

## **Assessment Site Locations**

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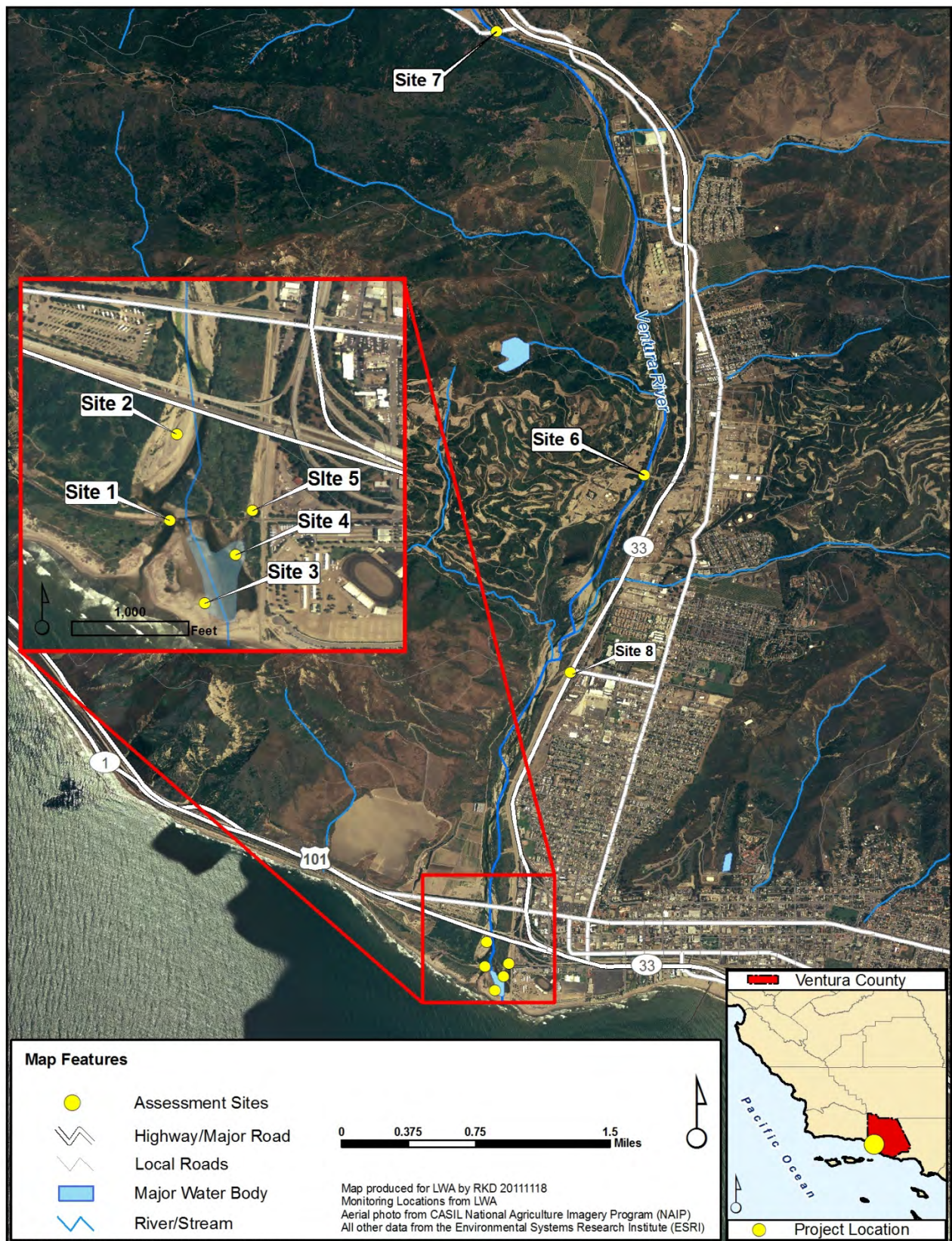
### **SITE LOCATIONS AND MONITORING FREQUENCY**

The initial TMRP required trash assessments at nine locations including set assessment sites and rotating assessment sites (Site 1 and Site 2). However, the monitoring frequency at Site 1 and Site 2 was adjusted from a quarterly to a monthly basis, starting with the second year of monitoring, in order to provide for a better understanding of the characteristics of the estuary. Monthly sampling of Site 1 and Site 2 continued for the third year of monitoring. The third-year assessment sites listed below are also depicted in **Figure 1** and detailed in **Appendix 1**.

#### **Assessment Site Descriptions**

#### **Assessment Sites**

- Site 1: Lower Ventura River Estuary Below U.S. 101 Freeway (MFAC)
- Site 2: Upper Ventura River Estuary Below U.S. 101 Freeway (MFAC)
- Site 3: Sandy beach area between the estuary and the ocean and along the bike path (MFAC)
- Site 4: Ventura County Fairgrounds: defined as the area where water is discharged from the catch basin to the estuary (MFAC)
- Site 5: Front Street Storm drain (MFAC)
- Site 6: Ventura River at State Freeway 33 and Shell Road
- Site 7: Ventura River near State Freeway 33 at Casitas Vista Road (above City of Ventura)
- Site 8: Caltrans site on State Freeway 33 near Stanley Avenue on-ramp



**Figure 1. TMRP MFAC assessment sites locations**

## Completed Monitoring Events

Third-year monitoring for the Trash TMDL was conducted from October 2011 to September 2012 at the frequencies detailed in **Table 2**. See **Table 3** for completed monitoring events.

**Table 2. Monitoring event frequency**

Site	Frequency
Site 1 - Lower Estuary below U.S. 101 Freeway <sup>1</sup>	Once per Month (MFAC)
Site 2 - Upper Estuary below U.S. 101 Freeway <sup>1</sup>	Once per Month (MFAC)
Site 3 - Sandy Beach Area <sup>2</sup>	Weekly from May through September, then once per month for the remainder of the year. (MFAC)
Site 4 - Ventura County Fairgrounds	Once Monthly and after major public events that occur in the Ventura County Fairground that charge an admission price and are attended by greater than 7,000 people. (MFAC)
Site 5 - Front St. Storm Drain	Once per Month (MFAC)
Site 6 - Ventura River off Ventura Rd.	Once per Month
Site 7 - Casitas Vista Rd. at State 33 Freeway	Once per Month
Site 8 - Caltrans site off Hwy. 33	Once per Month

1. These sites are listed as a quarterly MFAC requirement in the Trash TMDL but the frequency has since been increased to monthly monitoring to give a better representation of the estuary.

2. These sites are required to be sampled weekly from May 15<sup>th</sup> to October 15<sup>th</sup>, then once per month for the remainder of the year. October weekly sampling occurred in the 2012-2103 monitoring year; the results of which will be presented in next year's Annual Report.

**Table 3. Completed monitoring events (October 2011 – September 2012)**

Site	Month											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	X	X	X	X	X	X	X	X	X	X	X	X
2	X	X	X	X	X	X	X	X	X	X	X	X
3	X	X	X	X	X	X	X	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
4 <sup>2</sup>	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X
7	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X

X = monitoring event completed

1. Required weekly sampling events at Site 3 completed during given month

2. All required monitoring events occurred after a Ventura County Fairgrounds event with over 7,000 participants

## Data Summary and Analysis

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This section presents the types, quantities, locations, and weights of trash collected during the third year of monitoring.

### TYPES OF TRASH COLLECTED

The CCC collected or accounted for all trash greater than five millimeters. Trash collected in the field is first identified under a general category based on common characteristics and then identified under the actual brand or more specifically, if possible. General categories for the trash collected during the third-year monitoring effort are as follows:

- **Plastics/ Styrofoam Material** - including such items as Styrofoam food containers, plastic bags, plastic cup lids
- **Paper/ Biodegradable Material** - including newspapers, boxes, paper wrappers
- **Household Items** - including chairs, buckets, other household items not including appliances
- **Landscape Items** - including yard waste items like grass clippings and wood debris
- **Metal Items** - including aluminum foil, cans, scrap metal
- **Automotive** - including auto parts and tires
- **Toxics/Hazardous Items** - including aerosols and other materials that are deemed toxic or hazardous
- **Glass Materials** - including as glass bottles or pieces of broken glass
- **Biohazard** - including pet waste, diapers, and dead animals
- **Personal Items** - including clothing, condoms, and cigarette butts
- **Sports Items** - including basketballs, baseballs, and golf balls
- **Miscellaneous Item** - including any items that cannot be identified in the above categories

Typically, the most common category (by number of pieces) of trash collected at each site was Plastic/ Styrofoam Materials while the second most common category collected at each site was either Paper/ Biodegradable Materials or Glass Materials. All sites except Site 3 had more pieces of trash on the banks than in-stream or in the wetted area.

### TOTAL PIECES OF TRASH

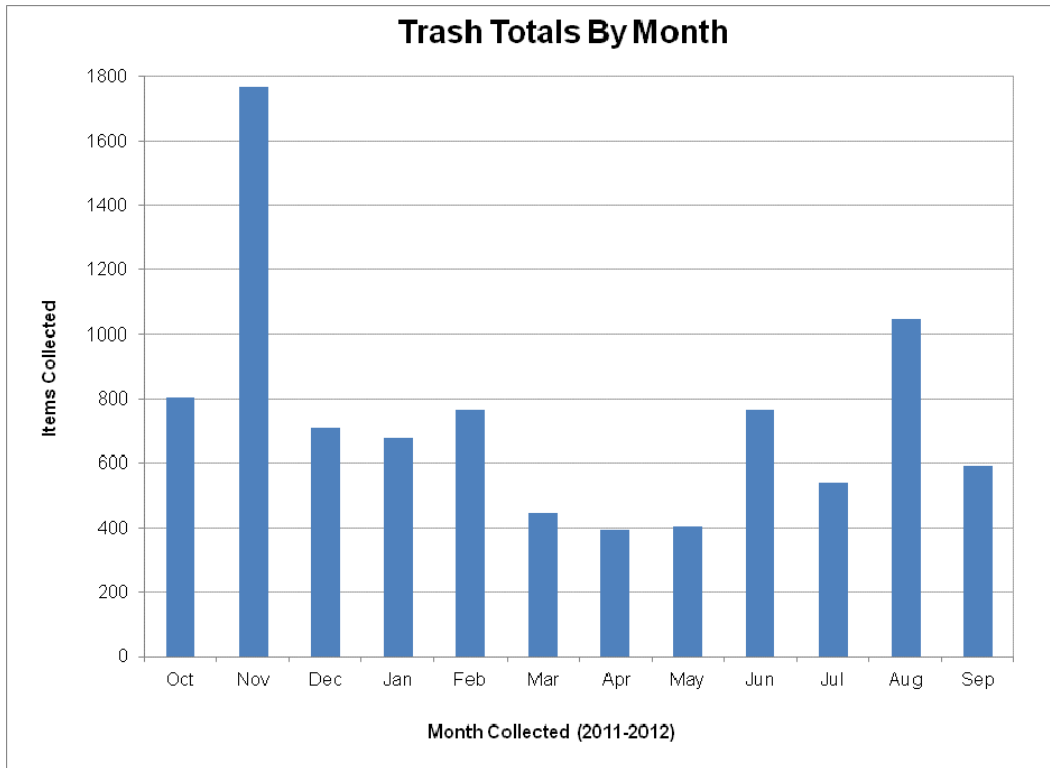
During the third year of monitoring, approximately 8,919 pieces of trash were collected. Elevated levels of trash were found from October 2011 through February 2012 and June 2012 through September 2012, with the overall highest amounts of trash collected in November 2011 and August 2012. In addition, Site 3, Site 4, Site 5, and Site 8 had significantly higher amounts of trash compared with the other monitored sites, although collection frequency at Site 3 was greater than that performed at all other sites and the designated area of Site 8 is larger than the other sites. **Table 4** lists the total pieces of trash collected per month and per site. **Figure 2** shows the total pieces of trash per month, **Figure 3** shows the monthly totals per site, and **Figure 4** shows the total pieces of trash per month per site.

**Table 4. Total Pieces of Trash Collected per Site and per Month (October 2011 – September 2012)**

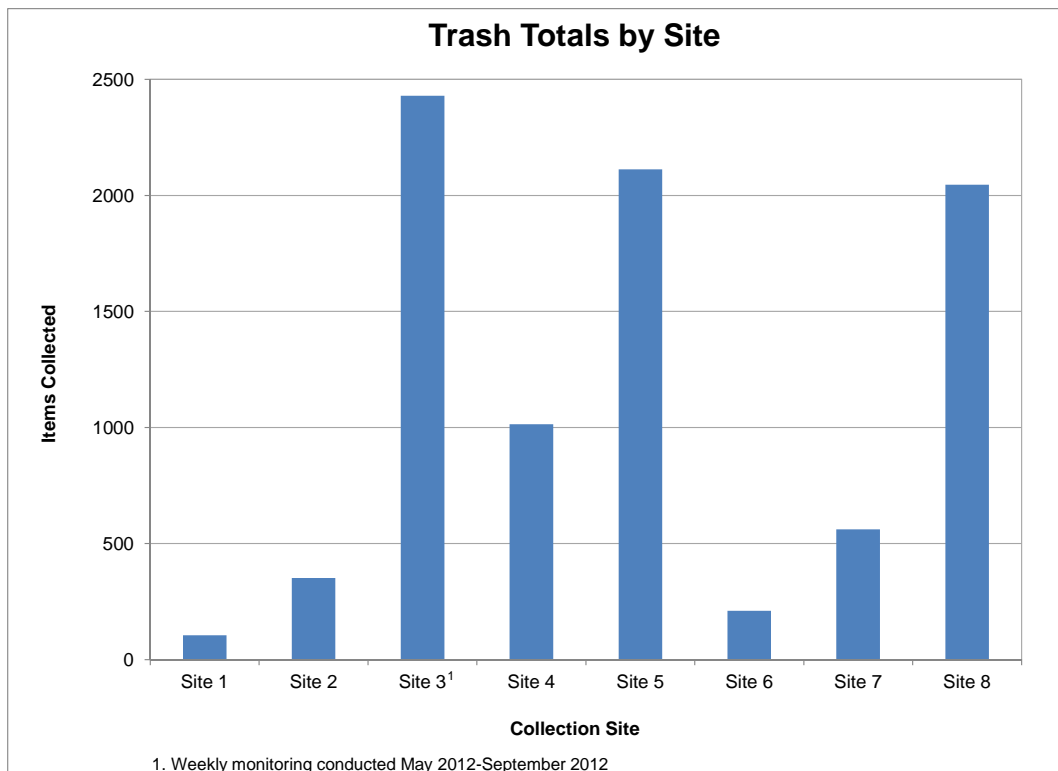
Site	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total pieces per site
Site 1	10	29	21	17	24	2	1	0	0	0	1	0	105
Site 2	20	54	121	68	22	7	0	2	15	18	22	3	352
Site 3	57	357	92	105	167	14	18	115 <sup>1</sup>	424 <sup>1</sup>	257 <sup>1</sup>	582 <sup>1</sup>	330 <sup>1</sup>	2,518
Site 4	135	111	96	47	172	47	34	46	102	30	108	86	1,014
Site 5	422	471	202	222	184	186	161	73	40	38	62	51	2,112
Site 6	28	52	31	11	22	6	4	0	10	18	21	8	211
Site 7	44	212	34	36	19	18	14	21	26	26	66	45	561
Site 8 <sup>2</sup>	90	482	114	172	157	165	163	149	149	151	186	68	2,046
Total pieces per month	806	1,768	711	678	767	445	395	406	766	539	1,048	591	<b>8,919</b>

1. Includes trash collected weekly.

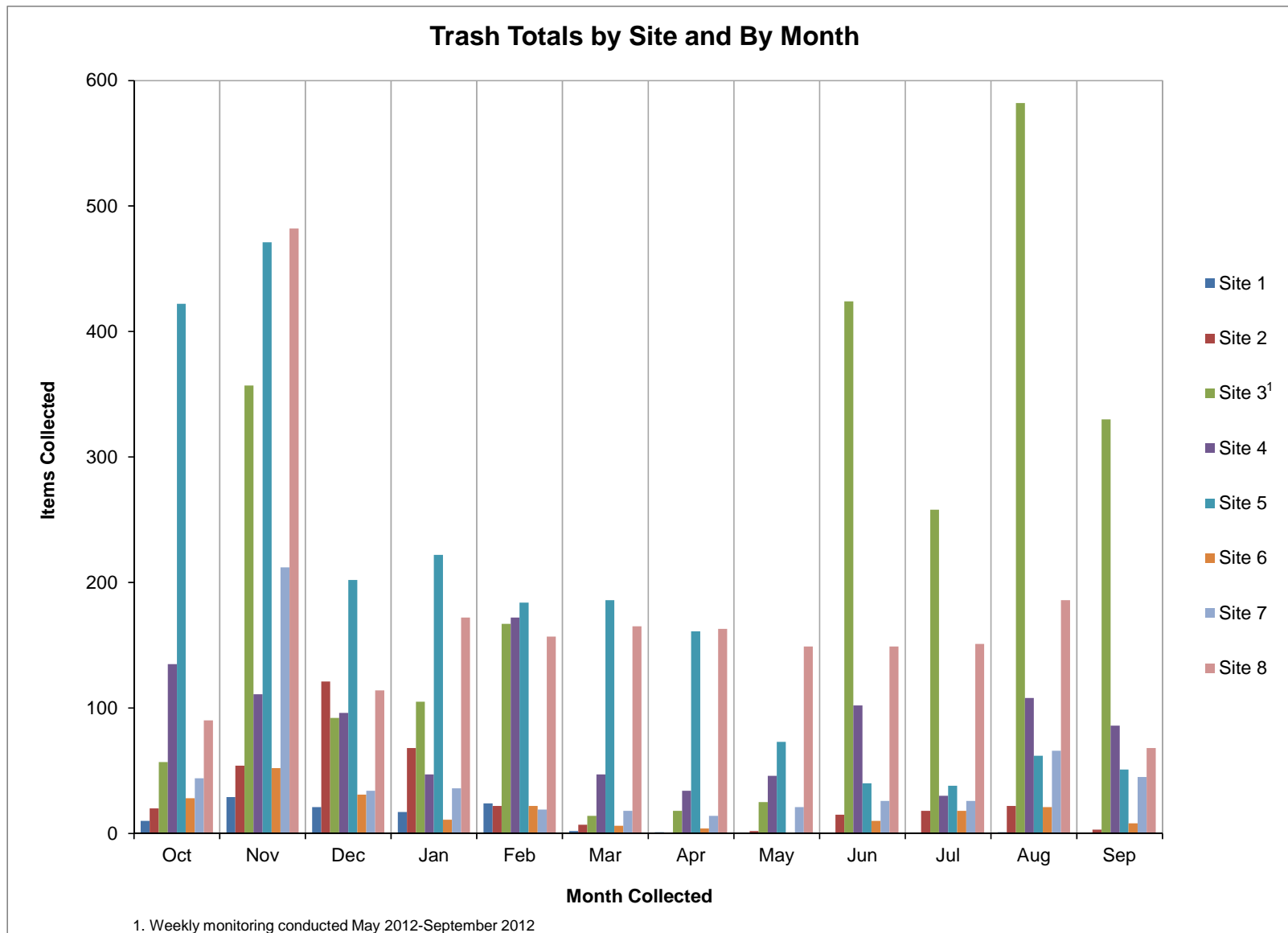
2. Site 8 data includes trash from both the freeway and a stormwater channel west of State Route 33. This stormwater channel receives drainage from the immediate area on the freeway and a substantial drainage area in the City of Ventura to the east.



**Figure 2. Total pieces of trash collected per month**



**Figure 3. Total pieces of trash collected per site between October 2011 and September 2012**



**Figure 4. Pieces of trash collected per month per site (October 2011 – September 2012)**

## TRASH WEIGHT

During the 2011-2012 monitoring year MFAC events, trash weight was also collected. Trash weight was collected because trash weight is the proposed metric to be used in 2012-2013 (See **MFAC Revisions** Section). Presenting the 2011-2012 weight data in this Annual Report will provide for the comparison between third-year and fourth-year trash weights in next year's Annual Report.

For the 2011-2012 monitoring year, 37.7 pounds (lbs) of total trash were collected. The sites with the highest trash weights were Site 3, Site 4, Site 5, and Site 8. In addition, the months with the highest trash weights include October 2011, November 2011, and March 2012. **Table 5** lists the weight collected per site and per month for the 2011-2012 monitoring year.

**Table 5. Total Weight of Trash Collected per Site and per Month (October 2011 – September 2012)**

Site	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Weight per site (lbs)
Site 1	0.28	0.67	0.34	0.08	0.14	0.01	0.01	0.00	0.00	0.00	0.01	0.00	<b>1.54</b>
Site 2	0.14	0.05	0.31	0.04	0.02	0.14	0.00	0.01	0.04	0.04	0.03	0.02	<b>0.84</b>
Site 3	0.26	0.38	0.76	0.46	0.34	0.21	0.33	1.73 <sup>1</sup>	0.53 <sup>1</sup>	0.62 <sup>1</sup>	1.09 <sup>1</sup>	0.62 <sup>1</sup>	<b>7.32</b>
Site 4	2.17	0.84	0.33	0.45	0.31	0.09	0.39	0.30	0.28	0.18	0.23	0.17	<b>5.74</b>
Site 5	5.38	1.06	0.43	0.70	0.89	3.92	0.43	1.00	0.59	0.99	0.14	0.21	<b>15.76</b>
Site 6	0.00	0.41	0.01	0.40	0.13	0.03	0.05	0.00	0.08	0.11	0.10	0.05	<b>1.36</b>
Site 7	0.07	0.16	0.07	0.39	0.04	0.08	0.11	0.08	0.09	0.07	0.01	0.18	<b>1.36</b>
Site 8 <sup>2</sup>	0.58	0.44	0.16	0.38	0.20	0.48	0.28	0.26	0.21	0.31	0.43	0.12	<b>3.83</b>
Weight per month (lbs)	<b>8.87</b>	<b>4.02</b>	<b>2.41</b>	<b>2.89</b>	<b>2.09</b>	<b>4.95</b>	<b>1.60</b>	<b>3.38</b>	<b>1.80</b>	<b>2.33</b>	<b>2.04</b>	<b>1.37</b>	<b>37.7</b>

1. Includes trash collected weekly.

2. Site 8 data includes trash from both the freeway and a stormwater channel west of State Route 33. This stormwater channel receives drainage from the immediate area on the freeway and a substantial drainage area in the City of Ventura to the east.

## Data Evaluation

Trash data collected from the third year of monitoring were evaluated to determine the change in trash collected from the baseline waste load allocation (WLA) presented in the first-year TMRP Annual Report. The data were also evaluated to identify high trash generating areas where implementation actions may be focused. In addition, the data were analyzed to evaluate the effectiveness of the MFAC/ BMP Program. The following sections provide information regarding the reduction in trash from the baseline WLA, high trash generating areas, and MFAC/ BMP Program effectiveness.

### TRASH REDUCTION FROM BASELINE WLA

Point source-responsible parties may comply with Trash TMDL requirements through the installation of full capture systems on conveyances discharging to the estuary or achieve a certain percent reduction in trash from the baseline WLA phased over a five-year period. The 2013 point source requirement is either the installation of full capture devices on 40% of the conveyances discharging to the estuary or a 40% reduction in trash from the baseline WLA

(Table 6). The baseline WLA is 8,828 pieces of trash and the total pieces of trash corresponding to a 40% reduction in trash is 5,297.

**Table 6. Compliance Milestones, Allowable Pieces of Trash, and Compliance Milestone Dates**

Compliance Milestone	Pieces of Trash	Compliance Milestone Date
Baseline WLA	8,828	N/A
20% Installation or Reduction	7,062	2012
40% Installation or Reduction	5,297	2013
60% Installation or Reduction	3,531	2014
80% Installation or Reduction	1,766	2015
100% Installation or Reduction	0	2016

The total pieces of trash collected during the second year of monitoring (October 2010 through September 2011) was 5,021 indicating that the responsible parties met the 2012 and 2013 compliance milestones of a 20% (7,062) reduction and a 40% (5,297) reduction respectively. The total pieces of trash collected during the 2011-2012 monitoring year was 8,919.

The increase in trash during the third year of monitoring was a completely unexpected result given that a 56% reduction in trash from the baseline WLA was observed in the monitoring data during the previous year and the responsible parties were implementing more BMPs than during the previous year. During the monitoring year, the responsible parties identified that trash totals appeared to be increasing and began taking steps to try and reduce the amount of trash in the Estuary. First, the responsible parties investigated the data to try to determine if a new source or issue could be identified that could be addressed through BMPs. However, the analysis could not definitively explain the increase. It is likely that the weather conditions, a particularly windier year than the previous year, played a role, but the variable nature of trash and the non-point trash sources to the estuary make it challenging to definitively identify a reason.

In addition, the responsible parties began a review of their existing implementation program to identify areas where improvements could be made to increase the amount of trash reductions achieved as soon as an increasing trend was identified. The steps taken to reduce the trash levels are discussed under the **Compliance Strategy Section**. They also implemented a monthly data review to quickly identify increasing trash trends and implement actions as necessary to try to reduce trash levels further.

While the point source-responsible parties did not achieve a 40% reduction in trash from the baseline WLA, **full capture devices were installed in 55% of the conveyances discharging into the estuary** as defined in the Ventura River Estuary Trash TMDL Staff Report (Staff Report). The Ventura River Estuary, according to the Staff Report, is defined “north-southerly between the Pacific Ocean and Main Street Bridge in the City of San Buenaventura, easterly adjacent to Seaside Wilderness Park where Ventura County Fairground is and which frequently hosts events and allows direct access to the estuary area, westerly next to Ventura Beach RV Park between Main Street and Highway 101, and Emma Wood State Park under oversight of California Department of Parks and Recreation”.<sup>1</sup> There are 25 catch basins associated with the

<sup>1</sup> Los Angeles Regional Water Quality Control Board, 2007. Total Maximum Daily Load for the Ventura River Estuary – Staff Report. Pg. 5. July 11, 2007.

Front Street Drain in the City of Ventura, and of which, 14 have been addressed through full capture devices. In addition, there are two additional conveyances that discharge to the estuary, one of which is from the Ventura County Fairgrounds. The conveyance discharging from the Ventura County Fairgrounds contains a Contech© filtering full capture device. Per the Trash TMDL, **the point source-responsible parties are assumed to be in compliance because at least 40% of the conveyances were addressed via full capture devices.**

## HIGH TRASH GENERATING AREAS

Site 3, Site 4, Site 5, and Site 8 were identified as high trash generating areas due to the elevated number of pieces of trash collected at these locations compared with the other monitoring sites. Site 3 had 2,518 pieces of trash, Site 4 had 1,014 pieces of trash, Site 5 had 2,112 pieces of trash, and Site 8 had 2,046 pieces of trash. **Table 4** lists the trash totals for all of the monitoring sites.

Site 3 is located directly next to a bike path along the sandy beach area at the end of the estuary adjacent to the Pacific Ocean. Based on the data and field observations, this area of the Ventura River Estuary receives increased amounts of visitation resulting from its close proximity to the beach and bike path. In addition, most of the pieces of trash collected here are very small and comprised of plastic pieces and expanded polystyrene (e.g., Styrofoam), which comingle with the organic materials along the estuary/ shoreline interface. Site 3 had over 2,000 pieces of trash, but the total weight of the trash was only 7.3 lbs. Appendix 3 includes photos of trash collected at Site 3 to illustrate the small sizes of trash pieces collected at this site.

Site 4 is located between Site 3 and Site 5 on the other side of the bike path from the Ventura County Fairgrounds and consists of rip rap, vegetation, and portions of the estuary's main water body. As with Site 3, this area has high visitation due to its proximity to the bike path and the beach. In addition, the majority of the trash is found within the rip rap along the bank of the estuary and often includes broken glass, food wrappers, bottle caps, and other items indicating that the trash is from people using the rip rap as a place to associate.

Site 5 is located beneath the Front Street Storm Drain near a large section of Arundo that is clearly inhabited by a large homeless population. There are several trails near Site 5 that are heavily used by the homeless and other visitors to the estuary. During March 2012, the presence of a homeless camp at Site 5 prevented the removal of trash due to safety concerns<sup>2</sup> for the collection staff as well as the difficulty in differentiating between personal effects and trash. In addition, it has been determined that there is a significant amount of trash buried in the stream substrate just below the Front Street Storm Drain that is continually being exposed due to erosion which may lead to the elevated amounts of trash found at the site. Site 5 had the second highest total trash pieces and the highest total trash weight of all the sites.

Site 8 is located along the west side of State Freeway 33 adjacent to the Stanley Avenue on-ramp and consists of the side of the road area of a catch basin as well as a stormwater channel connected to the catch basin on the other side of an earthen embankment to the west of the freeway. The stormwater channel receives drainage from the immediate area on the freeway and a substantial drainage area in the City of Ventura to the East.

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<sup>2</sup> Collection staff were specifically instructed by a homeless individual to refrain from taking his belongings.

## MFAC/ BMP PROGRAM EFFECTIVENESS

As outlined in the TMRP, a further assessment of MFAC/ BMP Program effectiveness was to be conducted after the third year of monitoring. The following steps were used to assess MFAC/ BMP Program effectiveness:

1. Review of BMP implementation, including identification of BMPs, location of BMPs, and time frame (e.g., when activity was implemented or installed);
2. Comparison of monitoring results between monitoring locations and between events before and after BMP implementation; and
3. Comparison of annual monitoring data to the baseline WLA from the first year of monitoring.

Given the broad nature of most of the BMPs implemented to date (e.g., education programs, ordinances, street sweeping), the highly variable amounts of trash collected over the three years, and the relatively short time frame that full capture devices have been installed, trends were not identified in the monitoring data that could be used to determine effectiveness of individual BMPs. As discussed in the **Data Summary and Analysis Section**, the trash data from the past three years indicate that trash levels are highly variable. During the previous monitoring year, implementation of the MFAC/ BMP program appeared to be resulting in significant trash reductions. Conversely, during this monitoring year, the trash levels increased at the same time that additional BMPs were being implemented and full capture devices were being installed. It is likely that the weather conditions, in particular the fact that this year was significantly windier than the previous monitoring years, impacted monitoring data. As a result, the implementation of the MFAC/ BMP program is not clearly reflected in the trash monitoring results from this year and the program implementation is being evaluated to consider these results.

The results indicate, that due to the highly variable nature of trash, the MFAC/ BMP Program was not effective enough at reducing the total number of pieces of trash collected over the monitoring year to meet the 40% reduction in trash pieces from the baseline WLA required for point sources. It is likely that trash amounts will continue to be highly variable depending on a variety of circumstances including wind and rain events and that the MFAC/ BMP Program will not be effective enough to meet the stringent annual phased requirements of the Trash TMDL for point sources. However, aside from legacy trash issues, the MFAC/ BMP Program resulted in zero trash in-stream immediately after the monitoring events as required by the Trash TMDL for non-point sources. From this analysis, it was determined that the MFAC/ BMP Program was effective for meeting the non-point source requirements.

## Compliance Strategy

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The Trash TMDL requires all annual reports to include proposals to enhance BMPs and to revise the MFAC (if needed) and prioritize the installation of full capture devices or other compliance measures including structural BMPs or trash collection events for high trash generating areas. Additionally, the Trash TMDL requires point source-responsible parties to install full capture systems at 100% of the conveyances discharging to the Ventura River Estuary or achieve a 100% reduction from the baseline WLA by 2016. This section describes the proposed compliance strategies to be utilized to meet the Trash TMDL requirements.

As discussed in the **Data Evaluation Section** of the report, the unexpected increase in trash during the 2011-2012 monitoring year resulted in an evaluation of steps the responsible parties could take to further reduce trash discharges into the Ventura River Estuary. The evaluation resulted in some modifications to the compliance strategy proposed by the responsible parties in the previous annual reports. The proposed approach and suggested modifications are identified below.

Non-point source-responsible parties will continue complying with the Trash TMDL through a MFAC/ BMP Program that includes a combination of a MFAC events and structural and non-structural BMPs. The MFAC/ BMP Program will focus on efficient and effective compliance with the Trash TMDL (e.g., less focus on counting pieces of trash and more focus on cleaning up the trash). The responsible parties will also utilize adaptive management to allow for flexibility in determining the correct BMPs to implement and the correct locations to implement the BMPs. The proposed adaptive management compliance strategy is as follows:

1. Continue implementation of the current approved MFAC Program with the proposed revisions discussed in the **MFAC Revisions Section**;
2. Continue to implement the current suite of BMPs identified in the TMRP with the additions described in the **Current Best Management Practices Section**;
3. Implement BMPs in the future based on information generated from the MFAC/ BMP Program focusing on the high trash generating areas as described in the **Future Potential Best Management Practices Section**; and
4. Evaluate the effectiveness and needs for additional BMPs and/ or MFAC revisions semi-annually based on the results of the MFAC/ BMP Program. The evaluation will consider the amount of trash, on a site-by-site and watershed basis, to prioritize the areas where additional BMP implementation may be most effective in reducing trash levels. Proposed revisions to the MFAC/ BMP Program and/ or other measure installation/ implementation prioritization will be included in each annual report.

As the MFAC/ BMP Program is not effective enough to meet the trash reduction goals for point sources, point source-responsible parties will utilize the installation of full capture devices to meet the requirements of the Trash TMDL. Point source-responsible parties will continue to install the required full capture systems to meet the 100% installation goal of 2016 and will inspect and maintain all installed full capture devices to ensure proper operation and effectiveness.

The following sections outline the jurisdictional BMPs currently being implemented, the additional BMPs to be implemented in prioritized areas, the BMPs being considered for implementation throughout the watershed, and a BMP implementation schedule.

## **CURRENT BEST MANAGEMENT PRACTICES**

The TMRP listed a suite of BMPs that each responsible party was implementing in their respective jurisdictions. Though the BMPs listed in the TMRP are still relevant, there have been several revisions and/ or additions to the suite of BMPs listed in the TMRP. Presented below is the original suite of BMPs listed in the TMRP as well as the revisions and/ or additions made to the BMPs listed in the TMRP.

Furthermore, the Responsible Parties contracted the CCC to conduct additional clean up events in the months of February 2012, May 2012, and June 2012 in response to the elevated trash counts from the regular MFAC Program data assessments.

### **City of Ventura Litter Management Program:**

Provided below, are non-structural BMPs the City employs annually or performed during the 2011-2012 monitoring year:

- The City sponsored several cleanup events during the 2011-2012 monitoring year, including:
  - Earth Day Beach Cleanup:  
Volunteers removed litter and other debris from Surfers' Knoll Beach in April 2012.
  - Coastal Cleanup Day:  
Volunteers removed trash and debris from San Buenaventura State Beach, Seaward Beach, Marina Park, Ventura Harbor, and the Ventura Promenade in September 2012.
- The City sweeps arterial streets two to four times per month and residential areas on a monthly basis.
- The City inspects and cleans all City-maintained catch basins one to three times per year depending on the priority categorization for catch basins.
- All City catch basins are labeled with durable, all-weather placards stating, "Don't Dump – Drains to Ocean – Only Rain Down the Drain".
- The City event permit language requires event coordinators to provide litter receptacles and to clean-up litter following events.
- The City identifies and requires corrective measures for any litter or litter sources found during commercial, industrial, and construction site inspections.
- The City collects trash from 18 public trash receptacles located within the watershed two or three times per week depending on the locations of the receptacles.
- In response to the elevated trash totals seen during the monitoring year, the City conducted two debris clean-up events. One event occurred under the Main Street bridge on October 25, 2012 and the other near the Front Street Storm Drain on November 2, 2012. The goal of the clean-ups was to remove accumulated trash and debris from these areas. Over seven and a half tons of trash were removed during the October 25<sup>th</sup> event and over two and a half tons were removed during the November 2<sup>nd</sup> event.
- This past year, the Ventura City Council established a work plan to eliminate encampments in the Ventura River and to implement an on-going enforcement program by March 2013. The work plan includes organizing stakeholder partners, conducting civic engagement, developing an action plan and corresponding follow-up steps, posting camps, conducting camp removal and launching post-camp removal strategies. The project was initiated on September 17, 2012 when the City conducted a large stakeholder meeting that included landowners, social services, public safety agencies, and maintenance staff. Since the meeting was held, over 45 camps and 100 individuals have

been relocated and over 250 tons of trash and Arundo have been removed from the river bottom. Steps to implement the work plan have commenced and will include:

- Conducting quarterly public safety meetings;
- Mapping camp locations over time, to promote the eventual concentration of personnel at or near such areas;
- Having each member agency devote one day per month to “patrolling” the Ventura River in a coordinated deployment effort that will split the river into geographic areas; and
- Meeting with various Ventura River land owners to explain the details of the patrolling operation once the terms of the agreement are solidified.

A permanent long-term funding source is required to successfully implement the plan, though funding for these efforts has not yet been solidified.

Provided below, are structural BMPs the City has installed since the implementation of the Trash TMDL began:

- The City has installed 103 full capture trash devices (excluders) within the watershed and conducts inspection and maintenance on these devices one to four times per year to ensure proper operation and efficiency. Of the 103 excluders, 14 are installed on conveyances discharging to Ventura River Estuary. There are 11 catch basins that still need to be addressed via excluders.
- Completion of the installation of full capture devices at 100% of City-owned or City-managed conveyances discharging into the Ventura River Estuary is anticipated in June 2013.

#### **County of Ventura and VCWPD Litter Management Program:**

Provided below, are non-structural BMPs the County and/ or VCWPD employs annually or performed during the 2011-2012 monitoring year:

- On July 31, 2012 the County of Ventura Board of Supervisors received and filed a draft model Single-Use Bag Ordinance referred to the County by the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON). The County endorsed the use of up to \$8,000 as the County’s pro-rata share of a regional Environmental Impact Report (EIR) to be prepared by BEACON, which is required to be completed under the California Environmental Quality Act (CEQA) before the model single-use bag ban can be adopted. This is the first step for the County to move forward with the consideration of adoption of a single-use plastic bag ban.
- Catch basin cleaning - Catch basins are inspected at least once a year and cleaned when filled to 25% or more of the catch basin’s capacity. During storm season, all drainage facilities are inspected and cleaned as necessary.
- Ventura County’s catch basins are labeled, “Don’t pollute, Flows to Waterways”.
- Open channel storm drain maintenance - All VCWPD-owned and -maintained channels are cleared, inspected, and cleaned as required at least once per year.

- Trash Management at Public Events - A proper management of trash and litter plan is required when obtaining a permit for staging public events. This plan requires adequate facilities for trash collection and disposal.
- Public areas - Trash receptacles have been placed within high trash generation areas. These devices are cleaned and maintained regularly to prevent trash overflow.
- The amended Ventura County Stormwater Quality Management Ordinance for Unincorporated Areas (Ventura County Ordinance No. 4450) has been in effect since August 2012. It includes litter and trash specific prohibitions (§ 6942) of the discharge or deposition of trash that may enter the County storm drain system or receiving waters. The revised ordinance also includes increased civil penalties for violations and provisions for issuing administrative fines, recovery of costs and misdemeanor violations.
- The County and VCWPD continue to participate in the Countywide Stormwater Program to provide outreach and education retaining the services of “The Agency”, a professional advertisement group that designs and conducts Countywide, bilingual outreach programs advocating proper trash disposal. The most recent addition to the outreach program is trash prevention and protection of stormwater quality education using Facebook®. This program has had made over 3,899,515 countywide media impressions (TV, radio, internet, transit shelters) in the spring of 2012 and 2,080,573 countywide impressions during the fall of 2012.
- The County conducts commercial, industrial, and construction facility/ site inspections to ensure proper pollutant prevention BMPs are being applied and to educate the employees on the importance of pollution prevention.
- The County manages Foster Park, which is situated along the Ventura River, to ensure that trash originating from the park does not enter the river. Management actions include:
  - Park host and rangers removing trash and enforcing the litter ordinance.
  - Increased enforcement and collection during high trash generating events (holidays).
  - Covered trash receptacles and frequent trash pick-up and removal.

In response to the elevated trash totals seen during the monitoring year, the VCWPD implemented two Arundo homeless encampment trash removal projects. These efforts were conducted by VCWPD Operations and Maintenance crews on VCWPD-owned properties within the Trash TMDL area, resulting in the removal of 200 tons of trash on February 24<sup>th</sup> and 25<sup>th</sup>, 2012 and 100 tons of trash on September 17<sup>th</sup>, 2012. Example photos of the February cleanup effort are included in **Appendix 2. VCWPD Cleanup Events Photos**, and a corresponding video is available for viewing from the VCWPD.

In conjunction with this multi-agency effort to reduce trash and homeless encampments in the river bottom, the County of Ventura Behavioral Health Department utilized \$100,000 for a pilot program in September 2012 to provide motel vouchers for homeless individuals living in the Ventura River Estuary bottom who met specific program requirements.

### **VCAILG Litter Management Program:**

During the 2011-2012 monitoring year, VCAILG performed over 90 hours of education and outreach at 29 independent workshops to a diverse group of owners and growers throughout Ventura County. These workshops included education about trash BMPs for agricultural areas.

On October 7, 2010 the Los Angeles Regional Water Quality Control Board (Regional Board) adopted a new *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands within the Los Angeles Region* (“Conditional Waiver”, Order No. R4-2010-0186).

As specified in the Conditional Waiver, if an applicable water quality benchmark has not been met, then a Water Quality Management Plan (WQMP), which includes BMPs to address constituents of concern, must be developed. Acting as a unified discharger group, VCAILG performed required monitoring for compliance with the Conditional Waiver during 2011-2012. The first-year Annual Monitoring Report (AMR) will be submitted by the February 2013 deadline. Based on the monitoring results reported in the AMR, VCAILG will submit an updated WQMP, which will include trash-specific BMPs, as required by the March 2013 deadline. These BMPs will subsequently be submitted in the fourth-year Trash TMDL annual report for the 2012-2013 monitoring year.

VCAILG members also participate in a strawberry plastics recycling program that is responsible for collecting discarded plastics used during strawberry growing. The recycling of the plastic is an effective method for reducing plastic trash from entering the Ventura River and the Ventura River Estuary.

### **California State Parks**

State Parks utilizes one mixed use (refuse and recycling) container to collect and dispose of trash and debris (approximately 20,000 pounds) from May to September.

### **Ventura County Fairgrounds**

Ventura County Fairgrounds implements BMPs on a schedule that varies depending on the time of the year. When the Ventura County Fair is being held at the Fairgrounds, the following BMPs are implemented daily and on an as needed basis:

- Litter pick-up in the main parking lot, the beach parking lot, and the overflow parking lot;
- Litter pick-up in the areas surrounding the event;
- Trash cans emptied;
- Recycle bins emptied; and
- Storm drains are diverted to the sewer during the Fair (July – August).

When the Ventura County Fair is not at the Fairgrounds, the above BMPs are still implemented, but on a daily, weekly, and/ or on an as needed basis depending on the specific BMP. In addition, Ventura County Fairgrounds instituted daily trash pick-up for six new trash cans placed along the bike path near Site 3 and installed several recycling bins targeting beverage containers in the same area.

### **Caltrans Litter Management Program:**

Caltrans implements a variety of BMPs in the watershed along the freeways and highways. These BMPs are a suite of programs done to reduce trash as follows.

1. Street Sweeping
2. Trash Collection
3. Adopt-a-Highway Program.

The California Highway Patrol also enforces the Vehicle Code which prohibits littering of any kind on the highway, and prescribes fines and mandatory public service for those convicted. In addition enforcement signs are located on state highways informing motorists that trash/ litter is illegal and carries a mandatory fine.

### **FUTURE POTENTIAL BEST MANAGEMENT PRACTICES**

It is anticipated that the homeless population within the Ventura River Estuary will continue to be a source of a majority of the trash found within the estuary. The homeless issue provides a unique challenge when trying to identify the appropriate BMPs to address trash, but the responsible parties will implement actions within their control to address the concern. Non-point source-responsible parties will focus BMP efforts at the high trash generating areas and continue watershed-wide BMP activities as a means to further reduce the discharge of trash from their jurisdictions. Point source-responsible parties will continue to implement the required full capture devices and will inspect and maintain all installed full capture devices to ensure proper operation and effectiveness. Future potential BMPs specific to each responsible agency are detailed below.

### **City of Ventura Litter Management Program:**

For non-point sources, the City will continue to implement its current suite of BMPs and will implement future potential BMPs as needed including possible targeted clean-ups of the homeless encampments within the estuary. For point sources, the City will continue to implement the required full capture systems and will inspect and maintain all installed full capture devices to ensure proper operation and effectiveness.

### **County of Ventura and VCWPD Litter Management Program:**

The County will implement the following activities:

- Continue to monitor the trash management at Foster Park to determine whether current practices are sufficient.
- Evaluate existing signage at Foster Park advising visitors of litter ordinances and prohibitions to determine whether current signs are sufficient.
- The County will conduct targeted outreach to schools within the area covered by the Trash TMDL to educate the students, staff, and faculty on the importance of pollution prevention specifically regarding trash.
- The County will install anti-dumping and anti-littering signage at key locations including high trash generating areas as well as at known illegal dumping locations.

- The County will install full capture devices on County's MS4 conveyances discharging directly to the Ventura River Estuary subwatershed and tributaries.

### **VCAILG Litter Management Program:**

As part of the current Conditional Waiver, VCAILG will provide educational classes focused on improving water quality, including identifying trash as an impairment of water quality. Furthermore, based on 2011-2012 monitoring results, VCAILG will assist members with the implementation of additional BMPs as necessary by following the adaptive process identified in the WQMP. In addition, VCAILG members will continue to be billed separately for Trash TMDLs to further reinforce the idea, through a fiscal measure, that there are trash problems in the watershed.

### **California State Parks**

State Parks will continue to implement its current BMPs and will add BMPs on an as needed basis.

### **Ventura County Fairgrounds**

Ventura County Fairgrounds will continue to implement its current BMPs and will add BMPs on an as needed basis.

### **Caltrans Litter Management Program:**

Caltrans will continue to implement its current suite of BMPs as outlined in the TMRP and will implement future potential BMPs including full capture devices as needed. The continued implementation of current BMPs and the implementation of future potential BMPs will be directed by results obtained from future monitoring events as part of the adaptive management compliance approach. Caltrans anticipates installing 1 infiltration basin, 3 media filters, and 15 gross solid removal devices by 2016 or following years subject to funding availability.

## **BEST MANAGEMENT PRACTICES IMPLEMENTATION SCHEDULE**

Non-point source-responsible parties will continue complying with the Trash TMDL through the MFAC/ BMP Program, which may include the installation or implementation of structural or non-structural BMPs. The initial MFAC/ BMP program, included in the TMRP, and enhanced in this report will continue to be implemented. Additional BMP implementation will be scheduled as appropriate to address the identified high trash generating areas.

Point source-responsible parties will continue to install the required full capture systems to meet the 100% installation goal and will inspect and maintain all installed full capture devices to ensure proper operation and effectiveness. Installation of full capture devices at 100% of the conveyances discharging to the Ventura River Estuary will be completed by 2016.

## **MFAC Revisions**

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Based upon the experiences gathered from the monitoring completed to date and to improve the MFAC/ BMP Program, the following MFAC revisions are recommended for approval. All revisions to the MFAC Program will commence with the April 2012 monitoring event.

### **1. MFAC Trash Metric**

After the first year of monitoring, total pieces of trash was identified as the metric to be used to determine compliance with the Trash TMDL and a total pieces of trash baseline number was provided in the first year Monitoring Report. This metric was chosen when the responsible parties intended to comply with both point and non-point source requirements through the use of the MFAC/ BMP Program. However, as point source compliance will now be attained through the installation of full capture devices and non-point source compliance through the MFAC/ BMP Program, a baseline number is no longer required to determine compliance. That is, the responsible parties will no longer need to show a phased percent reduction in total trash pieces collected per year. Therefore, total trash weight is being proposed as the new metric to assess and quantify trash within the watershed and to guide implementation of the MFAC/ BMP Program. The reasoning for this is that weighing trash instead of counting individual pieces provides the same information, yet saves resources and funding, which can be used to cover more areas of the estuary for trash clean-ups. Additionally, the time and resources that are saved will be reinvested in installing and implementing structural and non-structural BMPs to address trash within the watershed.

### **2. MFAC Frequency at Site 6 and Site 7**

Site 6 and Site 7 are not required to be included in the MFAC, but were initially included in the TMRP as a way to assess upstream sources of trash. Site 6 and Site 7 have been cleaned and assessed monthly for the past three monitoring years. However, Site 6 and Site 7 have routinely had low trash totals. It is clear that the majority of the trash is found on the east side of the estuary (Sites 3, 4, and 5) as well as Site 8 along highway 33. Therefore, the responsible parties feel it is best to spend time and effort at these high trash generating areas and are proposing to remove Sites 6 and 7 from the monitoring program entirely to allow resources and staff effort to be directed towards high trash areas and high trash priority issues.

### **3. MFAC Frequency at Site 1**

The total pieces of trash collected during the first year, second year, and third year of monitoring at Site 1 (Lower Ventura River Estuary) are 49, 43, and 105, respectively. The trash data collected at Site 1 indicate there is no significant impact to the Lower estuary from trash. Therefore, it is recommended to remove Site 1 from the monitoring program or reduce the MFAC frequency from monthly to quarterly consistent with the requirements for the minimum MFAC program as outlined in the Trash TMDL. Quarterly assessment and collection events will still provide for the effective removal of trash while also allowing field crews to spend more time at the high trash generating areas of the estuary and Site 8.




**4. MFAC Frequency at Site 2**

The total pieces of trash collected during the first year, second year, and third year of monitoring at Site 2 (Upper Ventura River Estuary) are 103, 62, and 352, respectively. The trash data collected at Site 2 indicate there is no significant impact to the Upper Estuary from trash. Therefore, it is recommended to remove Site 2 from the monitoring program or reduce the MFAC frequency from monthly to quarterly consistent with the requirements for the minimum MFAC program as outlined in the Trash TMDL. Quarterly assessment and collection events will still provide for the effective removal of trash while also allowing field crews to spend more time at the high trash generating areas of the estuary and Site 8.

**5. MFAC Frequency at Site 3**

In accordance with recommendations provided in the 2010-11 Annual Report, we recommend to reduce frequency at Site 3 from weekly to monthly.

## Appendix 1. Assessment Site Descriptions

<p><b>Site 1 - Lower Ventura River Estuary</b></p> <p>This site is located below the U.S. 101 Freeway on the southwest side of the estuary. The site consists of beach areas and the open water areas of the intermittent lagoon that develops adjacent to the main water body of the Estuary.</p> <p><u>GPS Coordinates:</u> Lat: 34.27697 Lon: -119.308593</p>	
<p><b>Site 2 - Upper Ventura River Estuary</b></p> <p>This site is located below the U.S. 101 Freeway on the west side of the estuary. The site consists of mud flats, open water, and emergent vegetation depending on water levels.</p> <p><u>GPS Coordinates:</u> Lat: 34.278968 Lon: -119.308874</p>	
<p><b>Site 3 - Sandy Beach Area between the Ocean and the Estuary</b></p> <p>This site consists of the beach areas between the end of the estuary's main water body and the ocean as well as the rip rap along the bike path on the east side of the Estuary.</p> <p><u>GPS Coordinates:</u> Lat: 34.275035 Lon: -119.308217</p>	

**Site 4 - Ventura County Fairgrounds**

This site consists of the rip rap, vegetation, and portions of the estuary's main water body near where stormwater is discharged from a catch basin into the Estuary on the east side of the Ventura River and runs for approximately 100 feet.

GPS Coordinates:

Lat: 34.276169

Lon: -119.307505

**Site 5 - Front Street Storm Drain**

This site is located north of the train track trestle and begins at the base of the Front Street storm drain (bottom left corner of the picture) and consists of the area inside the channel as well as the vegetation along the sides of the channel and runs north-south for approximately 100 feet.

GPS Coordinates:

Lat: 34.277196

Lon: -119.307107

**Site 6 - Ventura River at State Freeway 33 and Shell Road**

This site consists of both banks along the Ventura River as well as the accessible portions of the river for approximately 100 feet running upstream to downstream.

GPS Coordinates:

Lat: 34.316625

Lon: -119.296173



**Site 7 - Ventura River at State Freeway 33 at Casitas Vista Road**

This site consists of the accessible portions of the Ventura River as well as both bank areas along the river for approximately 100 feet upstream to downstream. This site also consists of the rip rap on top of the bank on the east side of the river.

GPS Coordinates:

Lat: 34.352464

Lon: -119.308071

**Site 8 - Caltrans Site on State Freeway 33**

This site consists of the area south of a catch basin (white pole in middle of picture) located along the west side of State Freeway 33 adjacent to the Stanley Avenue on-ramp. This site also consists of the stormwater channel connected to the catch basin on the other side of an earthen embankment to the west of the freeway. The stormwater channel receives drainage from the immediate area on the freeway and a substantial drainage area in the City of Ventura to the east.

GPS Coordinates:

Lat: 34.300807

Lon: -119.302178



## Appendix 2. VCWPD Cleanup Events Photos

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Figure 1. Main Street Bridge Area before VCWPD cleanup event held February 24-25, 2012



Figure 2. Main Street Bridge Area before VCWPD cleanup event held February 24-25, 2012



**Figure 3. Main Street Bridge Area during VCWPD cleanup event held February 24-25, 2012**



**Figure 4. Main Street Bridge Area after VCWPD cleanup event held February 24-25, 2012**



**Figure 5. Main Street Bridge Area after VCWPD cleanup event held February 24-25, 2012**

## Appendix 3. Site 3 Trash Types Photos

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**Figure 1.** Small pieces of trash embedded in floating organic materials to be removed by hand. Counting and characterizing individual trash pieces adds unneeded time and effort to MFAC event; weighing trash significantly reduces both.



**Figure 2.** Small pieces of trash removed from floating organic materials by hand. Counting trash pieces adds unneeded time and effort to MFAC event; weighing trash significantly reduces both.