



**Santa Clara Valley
Urban Runoff
Pollution Prevention Program**

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TO: Trash Ad Hoc Task Group

FROM: John Fusco and Vishakha Atre, Program Staff

DATE: September 13, 2004 (Final)

SUBJECT: Background Information on Trash Management Efforts- Los Angeles Stormwater Programs

Background

In accordance with the Trash Work Plan submitted to the Regional Board on February 28, 2003, five tasks are scheduled for FY 03-04¹. Task #3 involves summarizing management actions and monitoring activities associated with the control and reduction of trash within the Los Angeles Basin.

During the October 23, 2003 Trash AHTG meeting, members stated that this task may help determine the Program's trash management strategy. In addition, it was suggested that the Program narrow its approach in identifying and documenting trash management practices within California and possibly other regional states. AHTG members stated that an investigation of practices conducted worldwide, as stated originally in Task #3 may not be relevant in identifying a locally useful trash management strategy.

County of Los Angeles NPDES Permit

The County of Los Angeles, the Los Angeles County Flood Control District and 84 incorporated cities within the Los Angeles County Flood Control District (except the City of Long Beach) are listed as the Permittees of the 2001 NPDES permit issued by the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB)². The Permit covers an area of approximately 3,100 square miles and serves a population of approximately ten million (2000 U.S. census). The permit designates the Los Angeles County Flood Control District as the Principal Permittee and requires it to coordinate with other municipalities and facilitate program implementation.

Trash TMDLs- Los Angeles River and Ballona Creek Watersheds

Background

The 1996 and 1998 303(d) lists submitted by the State of California to the United States Environmental Protection Agency (USEPA) identified the reaches of the Los Angeles River (at the Sepulveda Flood

¹ The remaining four tasks include: Task #1) Inventorying, documenting and evaluating existing trash management practices; Task #2) Identifying and documenting known trash problem areas; Task #4) developing protocols for trash evaluations and train municipal staff; and Task #5) developing standardized documentation and reporting format.

² NPDES CAS004001 Order No. 01-182, December 13, 2001

Basin and downstream) and the reaches of Ballona Creek as being impaired with trash. On March 22, 1999, a consent decree between USEPA, the Santa Monica Baykeeper and Heal the Bay, Inc. was signed. This consent decree required that all TMDLs for the Los Angeles Region (n=92) be adopted within 13 years (i.e., by 2012). In addition, the consent decree dictated schedules for the adoption of certain TMDLs, including trash TMDLs for the Los Angeles River and Ballona Creek watersheds.

In September 2001, the LARWQCB developed trash TMDLs based on existing, readily available information concerning the conditions in the Los Angeles River and Ballona Creek watersheds and other watersheds in southern California; and TMDLs previously developed by the State of California and USEPA. The trash TMDLs require the Permittees to attain water quality standards by establishing a ten-year plan for reducing the amount of trash discharged to the watershed (by ten percent annual increments); and meeting a final water load allocation of zero³ trash discharge. To meet the numeric target of zero trash, the Permittees are required to implement end-of-pipe full capture structural controls, partial capture control systems and/or institutional controls. The trash TMDLs for the Los Angeles River and Ballona Creek watersheds were approved by the Office of Administrative Law on August 1, 2002.

In response to these required control strategies, various City and County of Los Angeles agencies filed lawsuits challenging the provisions of the ten-year plan. These lawsuits challenged the following:

- Designation of a full capture device that limited an agency's choice of a structural device to only one product/vendor;
- Requirement of removing all trash within the water bodies;
- The absence of a methodology for converting a narrative water quality objective into a numerical water quality objective; and
- The inadequacy of economic analysis in setting water quality standards.

In September 2003, the City and County of Los Angeles dismissed their lawsuits with the LARWQCB. The dismissal was based on the LARWQCB's willingness to recognize more than one treatment device as suitable for full capture of trash; to reopen the trash TMDL after five years for a review of the zero trash numeric limit; and to develop additional findings that create a methodology for creating numerical limits in water quality objectives. In addition, the LARWQCB approved inserting a phrase requiring Permittees (currently not implementing the TMDL) to implement regular storm drain operation and management requirements if TMDL implementation did not begin by October 2003. The permit requires all Permittees to continue implementing some BMPs (e.g., set frequencies for the inspection and cleaning of catch basins and maintaining data on trash collected) until trash TMDL implementation measures are adopted. Thereafter, the subject Permittees are required to implement programs in conformance with the TMDL implementation schedule. Additional details regarding the NPDES Permit requirements for trash may be found at http://www.swrcb.ca.gov/rwqcb4/html/programs/stormwater/la_ms4_final/FinalPermit.pdf

In addition to the City and County of Los Angeles lawsuits, twenty-two Southland cities filed a complaint for injunctive and declaratory relief in U.S. District Court in June 2002. These cities charged that USEPA violated the Clean Water Act in its adoption of the Los Angeles River watershed trash TMDLs. Specifically, the complaint stated that the TMDLs violate state and federal processes and USEPA guidelines by establishing unreasonable and impractical water quality standards; and that the various regulatory agencies failed to conduct necessary scientific and economic studies prior to adoption. In November 2003, the Superior Court for the State of California, County of San Diego heard the complaint. The Court ruled that the LARWQCB abused its discretion when it failed to conduct a cost/benefit analysis or consider economic impacts as required by the Clean Water Act and State of California Water Codes. In addition, the Court ruled in favor of the twenty-two cities that the LARWQCB violated the California Environmental Quality Act (CEQA) and did not adequately analyze the environmental impacts of the TMDL; and that the LARWQCB failed to conduct assimilative capacity studies which might have shown that a trash "target" other than zero was appropriate. Currently, the State Water Resources Control Board (SWRCB) and LARWQCB are appealing this decision.

³ Los Angeles River Watershed and Ballona Creek Trash TMDLs, September 19, 2001.

In March 2004, the LARWQCB adopted the amended Ballona Creek watershed trash TMDL. An amended Los Angeles River watershed TMDL has not yet been adopted by the LARWQCB since the court decision with the twenty-two Southland cities and the SWRCB is under appeal.

Waste Load Allocation and Baseline Monitoring Plan

To achieve the allowable TMDLs for trash, LARWQCB will assign Waste Load Allocations to the Permittees. According to the trash TMDLs, the Default Baseline Waste Allocation for the Permittees is equal to 640 gallons of uncompressed trash per square mile per year. This value is based on data collected from a Continuous Deflective Separation (CDS) unit installed by the City of Calabasas in September 1999. The TMDLs allow for the Permittees to seek refinement of the Default Baseline Waste Load Allocation by implementing an approved "Baseline Monitoring Plan". The assigned Waste Load Allocations will be based on a phased reduction of trash from the estimated current discharge (i.e., baseline) to zero over a ten-year period ending September 30, 2015.

In the March 17, 2000 draft trash TMDL, the LARWQCB proposed a Baseline Monitoring Plan strategy for refining the default Waste Load Allocation. This Plan was based on dividing the Los Angeles River watershed into twelve types of land use for every city and unincorporated area within the watershed. The land use categories include: 1) high density residential, 2) low density residential, 3) commercial and services, 4) industrial, 5) public facilities, 6) educational institutions, 7) military installations, 8) transportation, 9) mixed urban, 10) open space and recreation, 11) agriculture, and 12) water. According to the TMDL Plan, during the first year of baseline monitoring, Permittees are required to capture and quantify trash from an area of no less than ten percent of the total land area over which they have jurisdiction and that drains to the Los Angeles River. The monitoring area will also represent ten percent of every land use within the group's jurisdiction.

A number of Permittees objected to the Baseline Monitoring Plan. Most objections were based on the cost of employing full-capture monitoring systems across ten percent of the watershed. In addition, finding a watershed that drains a single land use also was problematic. The Permittees were also concerned that the data from the City of Calabasas was not a good representation of an urban watershed.

To arrive at a less costly plan that would still provide representative data sufficient for deriving Baseline Waste Load Allocations, the Los Angeles County Department of Public Works (LACDPW) developed an Alternate Baseline Monitoring Plan. This Alternate Plan, which was accepted by the LARWQCB, identified the following five land use categories: 1) high density residential; 2) low density residential; 3) commercial and services; 4) industrial; and 5) open space and recreation. In accordance with the Alternate Plan, a minimum of ten representative sites will be sampled for each land use type. For each sampling site, a minimum of five catch basins will be fitted with inserts (for a total of fifty catch basin inserts per land type). Current land use practices employed by the City and County of Los Angeles will remain in place so that baseline monitoring will evaluate how much trash is washed into the system. In addition, the LARWQCB is requiring a structural, full-capture control device downstream of at least one sampling site for each land use type. As a result, all catch basins that are upstream of the full-capture control device must be fitted with inserts. This configuration will provide information on the relative effectiveness of the catch basin inserts.

Implementation of the Alternate Baseline Monitoring Program- County of Los Angeles

Within the unincorporated areas of Los Angeles County, an alternate Baseline Monitoring Program (in the high trash generation areas) is being implemented. The data collected will be used to refine the default Waste Load Allocations. Baseline data is being collected over a period of three years (FY 01-02 through FY 03-04). Initially, the County planned to collect baseline data during FY 01-02 and FY 02-03. Due to inadequate data collection at some sampling sites, the County decided to collect data for another year. The LARWQCB will consider the County to be in compliance with the Waste Load Allocations during the baseline monitoring phase, provided that all of the trash collected is disposed of in compliance with all applicable regulations. Currently, the baseline monitoring data has been submitted to the LARWQCB for

use in calculating Baseline Waste Load Allocations. The County of Los Angeles is also collecting trash and characterizing what percentage of the trash is “natural” versus “man-made”. This data will be used for P/IP purposes.

Implementation Phase

During FY 03-04, the implementation phase began concurrent to the third year of baseline monitoring. In accordance with the trash TMDL, the Permittees are allowed ninety percent of their baseline Waste Load Allocation during the first year of implementation. The allocation will then be reduced from the baseline by an average of ten percent through every year of implementation. During the implementation phase, the first compliance point is September 30, 2006. Compliance will be evaluated based on the total load discharged to watersheds during the period of October 1, 2003 through September 30, 2006. At this time, compliance is considered to be a twenty percent reduction of trash from the baseline level. After September 30, 2006, compliance will be evaluated at the end of each successive storm season and will be based on a rolling three-year average. The LARWQCB will reopen and review the current Waste Load Allocation of zero once a reduction of fifty percent has been achieved.

BMP Implementation

The County of Los Angeles is developing an 8-Point Plan for implementing the Trash TMDLs. This Plan details the implementation of eight BMPs (five structural and three institutional) designed to prevent trash from reaching storm drains and polluting waterways. A “menu” of potential BMPs (described below) allows flexibility in developing an appropriate trash reduction plan for specific local conditions and characteristics.

1) End-of-pipe full capture structural controls – A full-capture device or system will be provide strict compliance with the final Waste Load Allocation for the drainage area if:

- It is adequately sized, maintained and maintenance records are available for inspection by the LARWQCB;
- Traps particles retained by a 5mm mesh screen from all runoff generated from a one-year storm event (determined to be 0.6 inch per hour); and is
- Designed to prevent plugging or blockage of the screening module.

The two controls that meet these requirements are Continuous Deflector Separator (CDS) units and fresh creek trash nets or baskets. The City of Los Angeles will install approximately forty full-capture CDS units and fifty end-of-pipe trash baskets in high trash areas. The County of Los Angeles is installing full-capture devices at all the outlets in the unincorporated areas of the County.

2) Partial-Capture Control Systems

Partial-capture control systems require a combination of BMPs. They include the following devices:

- Catch Basin Screens are placed in storm drain inlets to filter dirt, leaves and litter, and are constructed to resist clogging and capture trash so that it is retained in the basin. The screen inserts must be periodically cleaned and replaced to be effective. Retention is approximately seventy percent of objects 5mm in diameter or greater.
- Catch Basin Inserts are attached to the entrance of a catch basin or mount inside the catch basin. They are designed to improve stormwater quality by preventing debris (e.g., trash) and pollutants from entering the basin, or by retaining or treating the water in the basin. They are used in combination with catch basin screens.

By October 2004, the County will have installed partial capture controls at all catch basins (approximately 800) within the unincorporated parts of the Ballona Creek watershed. Due to the recent installation of catch basin inserts and screens, the County expects a forty percent reduction of the trash load within the

Los Angeles River watershed (personnel communication, Dan Lafferty). In addition, the County has informed the incorporated Cities that they are willing to absorb the capital costs for purchasing and installing inserts in all of their priority A and Priority B⁴ catch basins if the Cities are willing to monitor and clear any blockages that might occur during serious storm events. The City of Los Angeles will be installing 34,000 catch basin screens and inserts.

3) Institutional Controls

The implementation strategy includes the following institutional controls: public education, business outreach, enhanced street sweeping and installation of additional trash receptacles.

Public Education

The major anti-litter education campaign within the Los Angeles region is the SWRCB's "Erase the Waste" campaign. This campaign was launched in August 2003. The two-year, \$5 million outreach campaign encourages County of Los Angeles residents to take ownership of their communities; help reduce storm water pollution from the local landscape; and be part of the "pollution solution" by adopting simple, everyday actions. Approximately fifty percent of the Campaign's \$5 million budget will be spent on advertising.

The Campaign includes English and Spanish print, radio and television advertisements including the first-time use of paid, networks television advertising to address the storm water issue in the Los Angeles media market. The Campaign is funded from California's Cleanup and Abatement Account (CAA), which derives funds from court judgments and administrative sanctions levied against corporate, government and industry polluters. By law, all CAA funds must be used for clean water purposes and do not represent taxpayer dollars.

In addition to advertising, the Campaign includes media relations, partnerships (with retailers, corporations, and nonprofit organizations), classroom and service learning projects and a "hands-on" community engagement campaign that enlists community stakeholders to bring pollution prevention information and activities into their neighborhoods.

In addition, Permittees are including anti-litter messages in their local outreach programs. Examples include the "Can it" Campaign by the County of Los Angeles (www.888CleanLA.org) and the City of Los Angeles P/IP program (www.lastormwater.org).

Enhanced Street Sweeping and Catch Basin Cleaning

In high trash areas, the County is increasing street sweeping and catch basin cleaning frequency. Both activities are expected to reduce the total volume of trash reaching full and partial-capture control systems.

Additional Trash Receptacles

Additional trash receptacles will be placed in high trash areas and other strategic locations.

Cost of Implementation

The cost of implementing the Trash TMDL in both watersheds ranges widely, depending on how the Permittee chooses to meet the Waste Load Allocations. Based on the implementation strategy presented in the original Trash TMDL documents for the Los Angeles River and Ballona Creek watersheds (dated September 19, 2001), the City of Los Angeles estimated the cost of implementing full-capture control

⁴ The Permit requires Permittees to designate catch basin inlets as Priority A (consistently generating the highest volumes of trash and/or debris), Priority B (consistently generating moderate volumes of trash and/or debris) and Priority C (generating low volumes of trash and/or debris)

systems (over a ten-year period) to be \$1.1 billion. In accordance with the recent settlement in September 2003, the City of Los Angeles has estimated that the implementation of full/partial control systems and institutional controls (over a ten-year period) to be \$119 million. Over the same time, the County has estimated that their implementation costs will be approximately \$48 million. In addition, the Coalition of Practical Regulation has estimated that it will cost approximately \$672 million for both County unincorporated areas and Cities to eliminate ninety percent of water-borne trash within both watersheds.

Discussion

- Currently, the County of Los Angeles is finalizing its 8-Point Plan for implementing the Trash TMDLs. The Program may find this Plan useful in determining the effectiveness of BMPs implemented by the County.
- Data used to generate the County of Los Angeles' Waste Load Allocations may be useful in determining the relationship between land use and trash loading; and for developing the Program's P/IP strategy. Raw data for the first two years of baseline monitoring will be available in late summer 2004.
- The County of Los Angeles installed BMPs in high priority trash areas, which were based on channel maintenance records. Would it be useful to identify the most problematic storm drain outfalls within the Program's jurisdiction?
- The County of Los Angeles' biggest concern is the zero trash discharge limit. If all contributions of trash to the storm drain system were stopped, there would still be trash deposited to the river (e.g. people throwing trash directly into the river or trash being deposited from the wind). Trash within the river can be interpreted as a TMDL violation and lead to penalties.
- The County of Los Angeles is attempting a regional approach regarding implementation of the Trash TMDLs. Since multiple agencies (e.g., many small cities) are involved with a wide range of priorities, this approach has been difficult.
- Maintenance costs (including staff time) associated with the installation of capture control systems is high. The County of Los Angeles is willing to install capture control systems at all storm drain inlets in the unincorporated areas of the County, but expects the Cities to take over maintenance responsibility. It is expected that all Cities will begin implementation once the Regional Board releases the Waste Load Allocation numbers.
- Since full and partial-capture controls contain many complicated components (e.g., weights and pulleys, automatic gates, etc.) which may fail, it is important to inspect and maintain these systems after most storms. Maintenance is time-consuming and may be expensive over the long-term.
- Certain catch basin screens are too fine. As a result, catch basins have been observed to be full of sediment rather than trash.
- The County of Los Angeles has had difficulty collaborating with Caltrans on trash management issues due to the current State budget crisis.
- The Permittees are interested in increasing the enforcement of litter laws. However, increased enforcement is difficult to achieve and is not a key strategy in reducing trash down to zero.
- The most prevalent types of trash observed in full and partial-capture control systems are plastic bags and disposal cups. Cigarette butts have not been a major problem.

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