

DEPARTMENT OF PUBLIC WORKS

February 16, 2005

Mr. John Bishop, Executive Director  
California Regional Water Quality Control Board  
Los Angeles Region  
320 West 4<sup>th</sup> Street, Suite 200  
Los Angeles, California 90013

Attention: Ms. Melinda Becker  
TMDL, Unit Chief

Dear Mr. Bishop:

The Cities of Burbank, Glendale, La Canada Flintridge and Pasadena (Four-Cities) have joined together to find a cost effective method of achieving total compliance with the Los Angeles River Trash Total Maximum Daily Load (TMDL).

In June of 2004, these cities established the Four-Cities Trash TMDL Subcommittee. The Subcommittee has been meeting monthly to develop a Best Management Practice (BMP) for the full capture of trash. Based on concepts developed at the meetings, the City of Glendale has done a series of modifications to a few of their catch basins with excellent results.

On January 5, 2005, the Subcommittee's proposed BMP was presented at a special meeting of the Directors of Public Works and other key public works staff from each of the cities. The Directors approved the concept and directed the Subcommittee to request full capture system certification from the Regional Board.

Enclosed is a Request for Full Capture System Certification of the BMP developed by the Four-Cities. The Request was presented to the Directors of Public Works of the four cities at their meeting held on February 2, 2005. The Directors have reviewed and approved this Request.

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In anticipation of approval of our request for Full Capture System Certification, the Subcommittee is continuing to meet on a monthly basis to finalize the details for funding and implementing this BMP. Upon receipt of the requested certification, the Four-Cities will begin the implementation process.

If you have any questions, please feel free to call me at (626) 744-4265.

Sincerely,



Jim Valentine, Chair  
Four-Cities Trash TMDL Subcommittee

Enclosure

xc: Bruce Feng, City of Burbank  
Steven Zurn, City of Glendale  
Steven Castellanos, City of La Canada Flintridge  
Martin Pastucha, City of Pasadena

Request for  
FULL CAPTURE  
SYSTEM CERTIFICATION  
For the Los Angeles River  
Trash Total Maximum Daily Load

STATEMENT OF PURPOSE

The purpose of this request is to obtain full capture certification from the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), of a joint proposal from the Cities of Burbank, Glendale, La Canada Flintridge and Pasadena (Four-Cities) for the implementation of a cost effective Best Management Practice which will meet full compliance with the Los Angeles River Trash Total Maximum Daily Load (TMDL).

EXECUTIVE SUMMARY

The Four-Cities have agreed to work together to develop a method for full capture of trash to comply with the Los Angeles River Trash TMDL. After nearly a year of meetings and trial modifications of catch basins, the cities have developed a method to reduce the amount of large trash entering the catch basin and for capturing and removing all debris larger than 5 millimeters in size. In addition, a documentation process for the required annual 10 percent reduction of trash has been developed.

This entire process is described in this report and certification by the Regional Board is requested.

BACKGROUND

The Directors of Public Works and other key Public Works staff members from the Four-Cities meet bi-monthly to discuss items of common interest and solutions to common problems. A portion of every meeting is devoted to a discussion of the National Pollutant Discharge Elimination System (NPDES).

Associated with NPDES is a series of TMDLs that are to be adopted over the next several years. The first TMDL adopted for the Los Angeles River Watershed was for trash. Several cities have challenged the requirements of this TMDL, including seeking relief in the courts. Although the courts have granted some relief to some cities, the requirements of the Trash TMDL are still applicable to most cities.

Since the beginning of 2004, the Four-Cities have been discussing the Trash TMDL. At their June 2004 meeting, the Four-Cities agreed that efforts should be made to begin the implementation of the requirements of the Trash TMDL rather than waiting for the outcome of further legal challenges. Furthermore, the Four-Cities agreed to work together to submit a joint proposal to the Regional Board for certification of a full capture

Best Management Practice (BMP) to achieve compliance with the requirements of this TMDL.

### ANALYSIS

The County of Los Angeles has been collecting data to develop a County-wide Base Waste allocation which can be utilized instead of the default value that already exists in the Trash TMDL. In order to properly utilize the County's data, each city is required to collect data within its jurisdiction and to establish its own trash generation rate, then conduct a series of calculations to demonstrate a 10 percent yearly reduction of trash in the storm drain system for the next 10 years. The first compliance date is September 30, 2006 which is at the end of the third year of the TMDL, when a cumulative reduction of 30 percent is required.

The factors established by the County are based on samples taken from several land uses from different cities throughout the county. It is not known if these factors accurately reflect the actual conditions for each city. Furthermore, there are no specific guidelines as to how each city is to use these factors in determining the amount of reduction.

There is a concern that the county's baseline data could be incorrectly estimating the trash generated in some cities. As a result, it will be even more difficult for such cities to demonstrate the required reduction, especially when there is not yet an approved process for documenting compliance.

The Los Angeles River Watershed (LARW) has created a subcommittee to analyze the Trash TMDL and the County's base line data and to determine the best way to implement the requirements of this TMDL. There are several issues that need clarification, such as Daily Generation Rate (DGR), full versus partial capture and understanding the County's protocol and methodology.

### FOUR-CITIES PROPOSAL

Rather than waiting for the LARW's Trash TMDL Subcommittee to provide guidelines for collecting and analyzing the County's data, the Four-Cities are proposing to develop a program to install devices to block and to capture debris so that no debris can enter the storm drain system from the catch basins. In theory and in practice, the capture will achieve a 100 percent reduction at that location and by modifying every catch basin, 100 percent total citywide reduction will be achieved. By modifying 10 percent of the catch basins per year, 100 percent compliance will be achieved in ten years.

The Four-Cities Subcommittee members believe that in order to receive full capture certification of the proposed BMP without the need for the use of any trash generation data, the following issues must be addressed to the satisfaction of the Regional Board:

1. The proposed catch basin modifications are effective in capturing the required amount and size of debris.

2. The proposed catch basin modifications will not add to other contaminants to be addressed in future TMDLs.
3. The annual schedule for and locations of catch basin modifications will comply with the required annual 10 percent trash reduction.

#### Issue No. 1 - Catch Basin Modification

The City of Glendale has taken the lead in testing various catch basin modifications to capture trash. The City has installed various items in its basins with mixed results.

#### Metal Mesh (Over the Opening)

Metal mesh installed over the catch basin opening as shown in Figure 1 below was found to be effective in keeping debris out of the catch basin, but reduced the amount of water entering the basin when clogged with debris. In heavy runoff situations, the basins could become ineffective and result in flooding. For this reason, other solutions were sought.

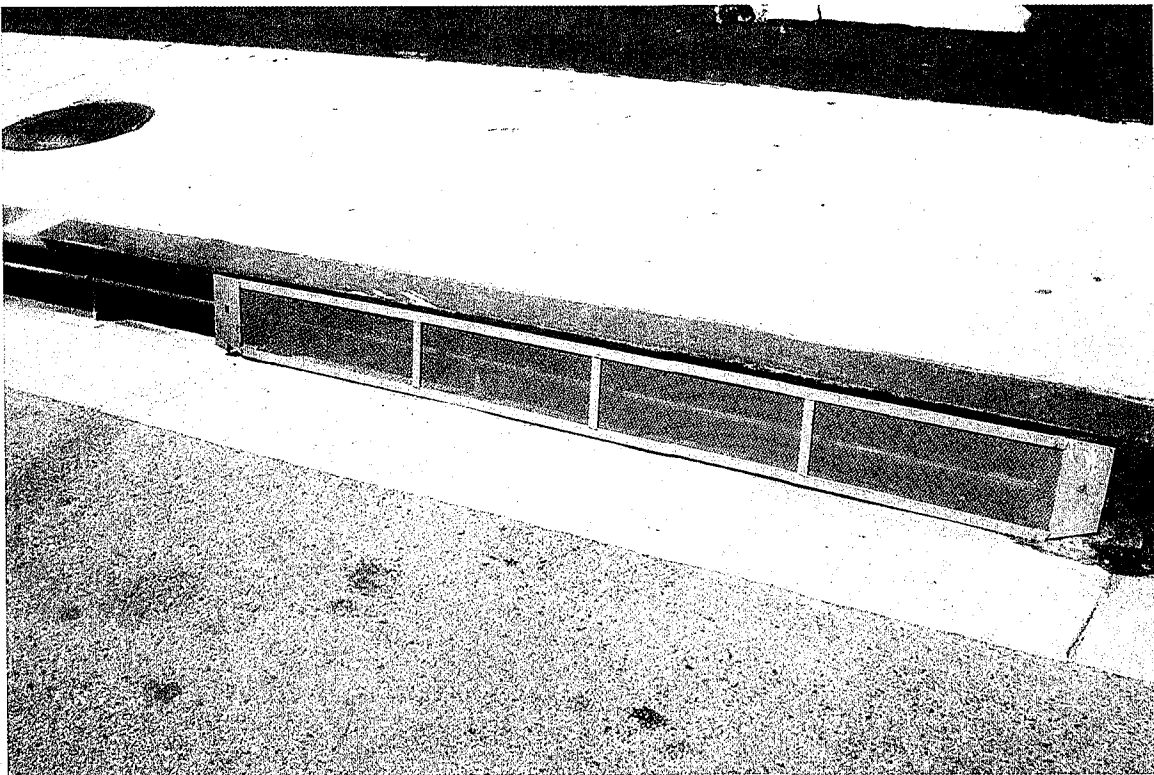


Figure 1 - Metal Mesh over Catch Basin Opening

## Filter Packs

Filter packs are devices installed just inside the catch basin opening and are designed to catch debris and other contaminants (See Figure 2). These devices are costly, require continual maintenance and have very limited debris capacity. As shown in Figure 3, debris, both large and small, can bypass this device. For these reasons, filter packs were not considered for this proposal.

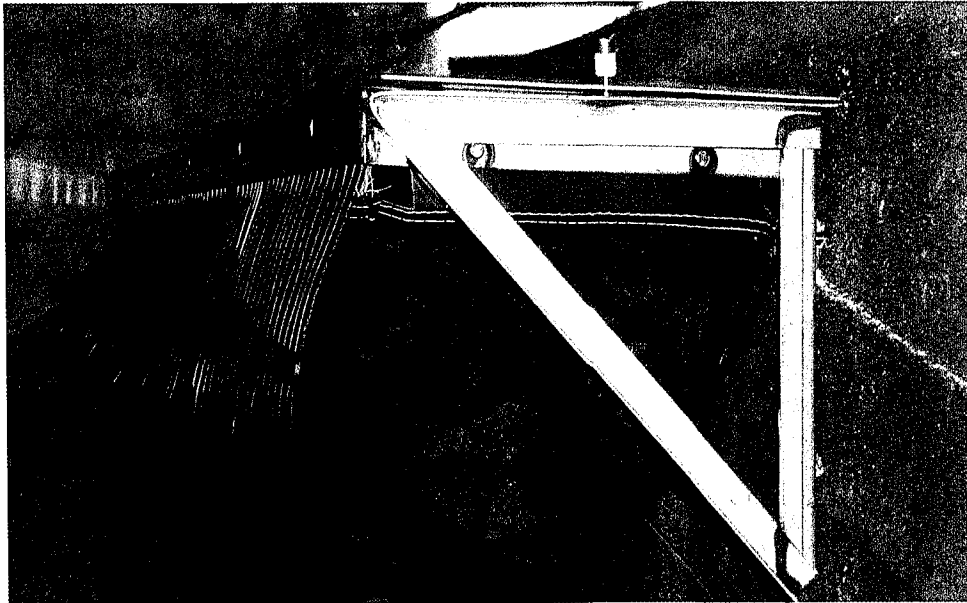


Figure 2 - Filter Pack

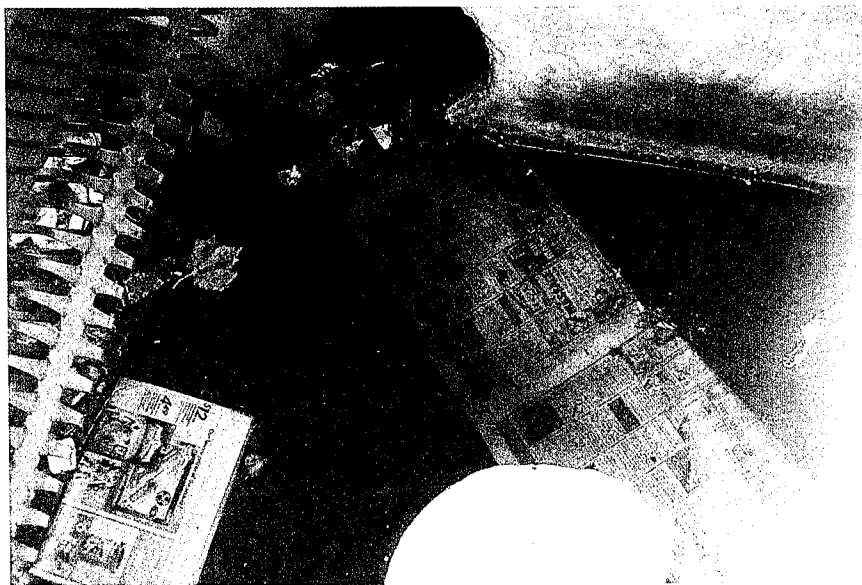


Figure 3 – Debris not Captured by Filter Pack

## Brush Material

Glendale maintenance staff has discovered a brush-like material that, when installed over the catch basin opening, is effective in reducing the amount of large debris that enters the catch basin, while allowing the flow of water into the basin. This material, which was designed as a type of mud flap for use on large trucks and motor homes, is stiff enough to keep large items from entering the catch basin so these items remain in the street where they can be removed by mechanical street sweeping.

Glendale experimented with various installations, ranging from partial to full width of the opening and from half to full height. This material was also installed in combination with filter packs. The brush material was installed on the upstream end and filter packs on the downstream end of the inlet. Again, due to the high cost, excessive maintenance and the ineffectiveness of the filter packs, this configuration was abandoned.

Another brush material configuration was the installation for full width, but only on the bottom half of the opening. This configuration was abandoned because debris was blown over the brush material into the catch basin by passing vehicles. This material was found to be most effective when installed for the full width and height of the catch basin opening (See Figure 4).



Figure 4 – Brush Material Covering Entire Opening

### Metal Mesh (In the Basin)

As effective as the brush material is at keeping large trash out of the catch basin, it is not effective in keeping out smaller debris that exceeds the 5-millimeter requirement of the Trash TMDL. Therefore, to address this issue, Glendale installed metal mesh in the catch basin, just above the level of the outlet pipe as shown in Figure 5. The mesh slopes down from the upstream end to the downstream end so that the debris can be flushed with a hose to the downstream end where it can be removed by vacuum trucks through the access hole in the top of the catch basin. The size of the openings in the mesh is slightly less than 5 millimeters, so any debris passing through the mesh is allowed by the Trash TMDL.

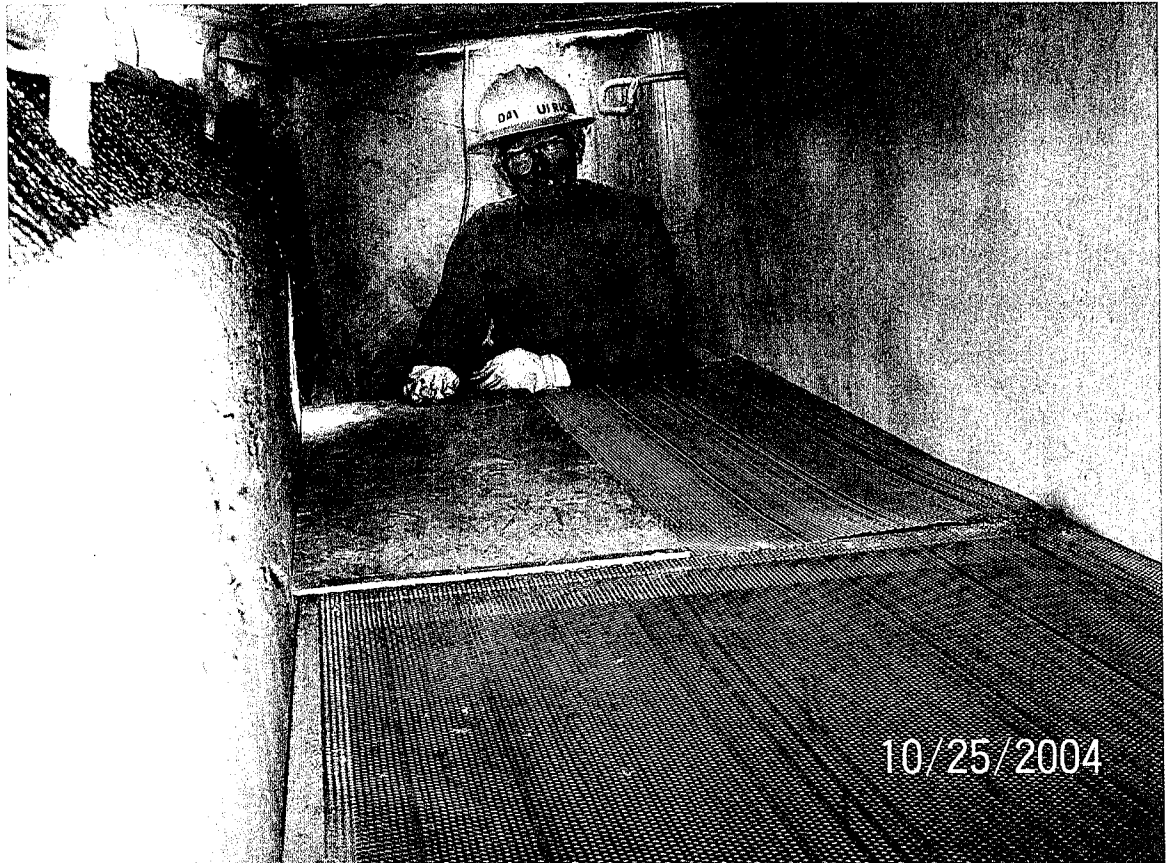


Figure 5 – Metal Mesh in Catch Basin



The combination of the brush material and metal mesh has been found to be an effective method of full capture of debris through mechanical street sweeping and catch basin capture and removal (See Figure 6). Also, this combination allows the use of most of the catch basin volume capacity compared to filter packs, insert filters and other alternatives with very limited trash capacity. Furthermore, unlike some other methods of capturing trash, there is no standing water that would provide a habitat for mosquitoes.



Figure 6 – Full Capture of Debris that Entered the Catch Basin

The cost of the materials for the 21-foot test catch basin, as originally modified, was approximately \$500. The cost to modify a catch basin of this size incorporating subsequent design improvements is approximately \$650. These materials are available at a substantial price break when purchased in large quantities. The Four-Cities plan to make a joint annual purchase of the necessary materials which is expected to bring the materials cost for this size of catch basin down to the range of \$500 to \$550. Furthermore, by awarding a single annual contract to install these materials in the basins in all four cities, the estimated installation cost is in the range of \$100 to \$125 each. These costs will vary depending on the size of the catch basin.

### Issue No. 2 – Introduction of Other Contaminants

The initial metal mesh installation used steel mesh and support angle irons. These materials began to rust soon after installation. Not only was rusting a concern, but it raised a concern that the steel mesh could introduce other contaminants that would be in violation of the proposed Metals TMDL. As a result, that installation was modified, using aluminum mesh and angle supports.

Since aluminum does not rust, it is assumed that the change in material will arrest the introduction of contaminant metals into the passing water. For verification, the City of Glendale will be taking samples of rainwater as it enters the catch basin and again after it passes through the aluminum mesh to test for metals and any other contaminant that may result from the proposed catch basin modifications.

### Issue No. 3 – Documentation of the Required Annual 10% Reduction of Trash

As stated above, one of the goals of this BMP is to achieve compliance with the Trash TMDL without having to go through major data collection and a mathematical analysis, such as using the County's trash generation figures and calculating tributary areas to the various catch basins. By using a full capture system such as proposed above, the need for such detailed data collection and analysis is eliminated.

A 100 percent trash reduction at the end of 10 years must be conceded if 100 percent of the City's catch basins are modified in such a manner so as to capture 100 percent of all trash 5 millimeters and larger before it can leave the basin. What remains is a method of documenting the annual incremental reduction prior to the tenth year.

If every catch basin in a City received the exact amount of trash, then modifying 10 percent of the total number of catch basins each year would achieve the required annual reduction. Unfortunately, the amount of trash entering catch basin varies throughout a City, so documentation will be a little more difficult. The proposed method of documenting compliance will be based on street sweeping data.

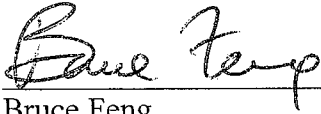
Each city knows how much trash is collected citywide by weight each week. What is needed is a ranking of the areas of the city by the amount of trash collected. It is then just a simple matter of modifying the catch basins in areas based on the rankings, from highest to lowest. At the end of the first three years, 30 percent of the basins will be modified. Since the catch basins with the most trash will be modified in the early years, compliance will be accelerated beyond 30 percent reduction required by the end of the third year. By following the rankings each subsequent year, the required achievement will be surpassed, even though the exact percentage of achievement will not be known.

SUMMARY

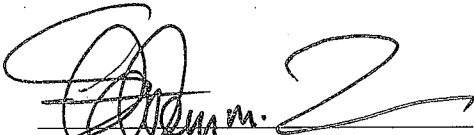
The Cities of Burbank, Glendale, La Canada Flintridge and Pasadena remain dedicated to the reduction or elimination of trash and other constituents into the storm drain systems. This joint proposal for complying with the Trash TMDL provides for full capture of debris exceeding 5 millimeters at each modified catch basin. Not only does this comply with the Trash TMDL for man made litter, but it also captures natural litter, which is not required by the TMDL. This extra benefit, along with not having to conduct a complicated mathematical analysis which causes delays and unnecessary expense, makes this proposal an ideal method of complying with the Trash TMDL.

Full capture certification by the Regional Board is requested.


Respectfully Submitted,



Bruce Feng  
Deputy City Manager/Public Works  
and Capital Projects  
City of Burbank



Stephen M. Zurn  
Director of Public Works  
City of Glendale



Steven Castellanos  
Director of Public Works  
City of La Canada Flintridge



Martin Pastucha  
Director of Public Works  
City of Pasadena



# California Regional Water Quality Control Board

## Los Angeles Region



Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Alan C. Lloyd, Ph.D.  
Agency Secretary

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Arnold Schwarzenegger  
Governor

May 4, 2005

Mr. Jim Valentine, Chair  
Four Cities Trash TMDL Subcommittee  
Burbank Department of Public Works  
100 N Garfield Avenue  
Pasadena, CA 91109-7215

### **CERTIFICATION OF A BEST MANAGEMENT PRACTICE (BMP) FOR TRASH CONTROL AS A FULL CAPTURE SYSTEM – FOUR-CITIES REQUEST**

Dear Mr. Valentine:

We received the February 16, 2005, Cities of Burbank, Glendale, La Canada Flintridge (Four-Cities) request for Full Capture System Certification of the BMP developed by the Four-Cities.

After reviewing your request and additional data on BMP's performance and schedule of maintenance, including street sweeping and catch basin debris removal, Regional Board staff determined that your proposal consisting of a combination of brush material and aluminum mesh installed at catch basins meets the criteria for an effective method of full capture of debris as required by the Trash TMDL.

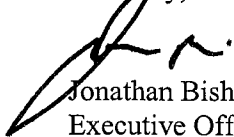
Regional Board staff recommends that the Four-Cities continue to evaluate the performance of the system over time to meet the requirements of the Trash TMDL. We suggest that the progress in implementation and performance of the BMP be summarized as a comment in the Annual Program Report submitted under the Los Angeles Municipal Storm Water Permit.

The Regional Board will review and consider performance data on a continuing basis. In the event, the data demonstrate that the systems are not performing to the full capture design standard established by the trash TMDL, then the Regional Board reserves the ability to rescind the certification for subsequent installations.

We appreciate your efforts, ingenuity and dedication to meet the goal of protecting the water quality in the Los Angeles Region.

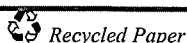
Should you have any questions or comments regarding this topic, please contact Melinda Becker at (213) 576-6681, or Xavier Swamikannu at (213) 620-2094.

Sincerely,

  
Jonathan Bishop  
Executive Officer

cc: Mr. Michael Lauffer, Office of Chief Counsel, State Water Resources Control Board

**California Environmental Protection Agency**



*Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.*