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**MEMORANDUM**

To: Office of Design "D" File

Date: September 20, 2007  
File No.: 07 -LA-10, 405  
PM-18.4 / 31.3, 3.3 / 7.6  
Storm Water Mitigation Program –  
Trash Total Maximum Daily Loads  
EA 26080K  
Category 400

From: Gregory Damico, PE  
Office of Design "D"  
DISTRICT 7  
DEPARTMENT OF TRANSPORTATION

Subject: Change of Project Limits

The above referenced project was analyzed as a portion of the District 7 Storm Water Mitigation Program–Trash Total Maximum Daily Loads (TMDL), to attain required quality standards for storm water discharged from the State's drainage system to the Los Angeles River basin. The limits of the study performed for this project covered LA-10 from PM 18.4 to 31.3 and LA-405 from PM 3.3 to 7.6. This study conducted under EA 26080K was originally designated as Trash Phase 2C.

Upon completion of field reviews and planning level engineering analysis, it was determined that only four locations in the Route 405 segment deemed further detailed design investigation for possible placement of stormwater treatment devices. As a result, the conclusion of this PSSR is to recommend as a candidate for potential programming of construction funding only the portion of Route 405 spanning the identified locations. In order to reflect these changes, it is recommended that the limits for description of this candidate project be changed to:

**07-LA-405**  
**PM 6.1 to PM 7.3**  
**In Los Angeles County from Atlantic Ave. to Pacific Place**  
**Construct Stormwater Treatment Devices.**  
**07-26080\_**

The project information associated with further development of EA 26080\_ should be updated to reflect the changed limits and reduced scope of proposed work.

*Gregory B. Damico*  
GREGORY DAMICO, PE  
Senior Transportation Engineer  
Office of Design "D".

Cc: Ojas Sheth  
Robert Wu

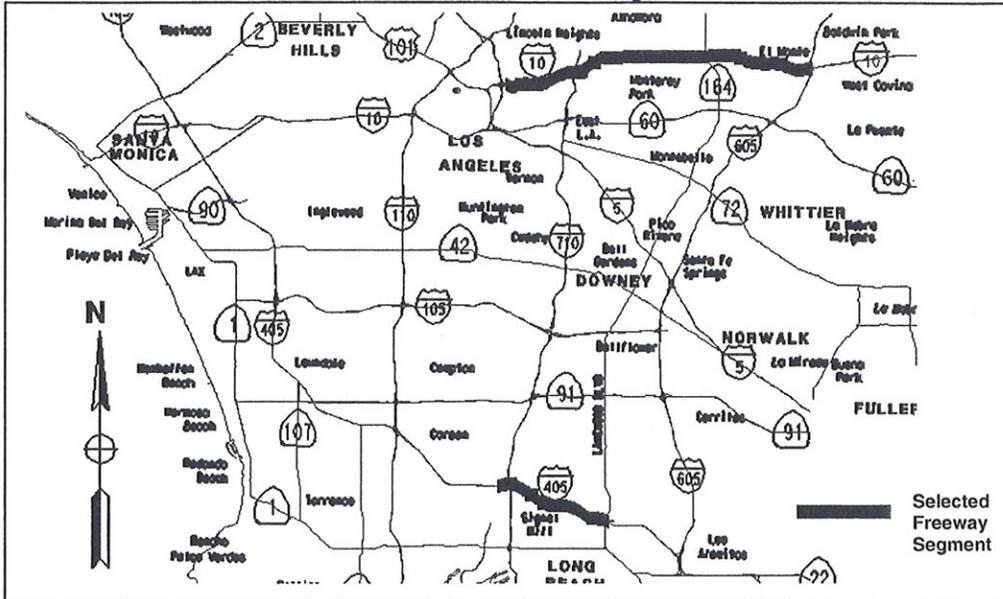
# PROJECT SCOPE SUMMARY REPORT

## Trash Total Maximum Daily Loads

### For

### Los Angeles River

### Phase 2-C (2nd Year) of Implementation

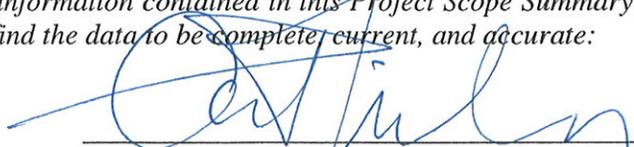


On Route 10 and 405

From Route 5, Lakewood Boulevard

To Route 605, Route 710

I have reviewed the right of way information contained in this Project Scope Summary Report and the R/W Data Sheet attached hereto, and find the data to be complete, current, and accurate:

  
\_\_\_\_\_  
Andrew P. Nierenberg, RIGHT OF WAY  
PROJECT DELIVERY MANAGER

APPROVAL RECOMMENDED:  
 9/24/07  
\_\_\_\_\_  
Ojas Sheth, PROJECT MANAGER

CONCURRED:  
  
\_\_\_\_\_  
William H. Reagan, DEPUTY DISTRICT DIRECTOR-DESIGN

APPROVED:  
  
\_\_\_\_\_  
Douglas R. Failing, DISTRICT DIRECTOR

9/27/07  
\_\_\_\_\_  
DATE

This Project Scope Summary Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



REGISTERED CIVIL ENGINEER

September 17, 2007

DATE



# PROJECT SCOPE SUMMARY REPORT

## Trash Total Maximum Daily Loads For Los Angeles River Phase 2C

### 1. Introduction

On September 19, 2001, the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) adopted the Trash Total Maximum Daily Loads (TMDL) for the Los Angeles River (the River) and Ballona Creek. The purpose of these TMDLs is to attain water quality standards for trash in the Los Angeles River and Ballona Creek, and to enhance water quality in both watersheds. The TMDLs set a numeric standard, zero (0), for trash discharge by storm water runoff into the water bodies. The TMDLs require a ten-year implementation program by reducing 10% of trash discharge each year until the zero discharge is achieved.

In response to the TMDL, the District is initiating projects to implement the program. The project scope summary reports (PSSRs) for Phase I (1<sup>st</sup> Year), Phase II (2<sup>nd</sup> Year) and Phase III (3<sup>rd</sup> Year) have been approved by the District and funded from SHOPP. Subsequently, the original Phase 2 was split for the number of projects – Phase 2-A, EA 226714 (Route 60, 710), Phase 2-B, EA 2267A4 (Routes 10, 91, 105, 110). Most selected outfall locations of the above projects contributed to the Ballona Creek watershed. The specified project limits for this Phase are entirely located in the Los Angeles river watershed area.

The Los Angeles River and Tributaries Metals TMDL became effective on January 11, 2006. To comply with this TMDL each project location has also been evaluated for the possibility of constructing media filters and other approved devices to capture these pollutants.

Some of the locations within the limits of this project contribute to the San Gabriel River and Los Cerritos Channel watersheds. The Trash TMDL for the East Fork of San Gabriel River has been in effect since December 14, 2000. Caltrans is not a responsible party. The San Gabriel River and Impaired Tributaries Metals and Selenium TMDL is anticipated to become effective in the near future. Caltrans will be working with groups of Responsible Agencies to jointly comply with the TMDL.

The freeway corridors examined for this project are Route 10 between Route 5 and Baldwin Avenue and Route 405 between Lakewood Boulevard and Route 710. A detailed list of the selected freeway sections is provided in Table 1.

Total project cost is estimated at \$2,640,000. In addition to the costs of installing the water quality treatment devices, this cost also includes possible hazardous waste mitigation and disposal, storm water pollution control and prevention, maintenance access installation, and resident engineer's office. A cost summary is provided in Section 10. Detailed cost breakdown is provided in Attachment C.

### 2. Background

The California Water Quality Control Plan, Los Angeles Region (the Basin Plan), adopted by the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB), sets standards for surface waters and groundwaters in the regions. These standards are comprised of designated beneficial uses for surface and ground waters. The standards identify numeric and

narrative objectives necessary to support beneficial uses and the State's Antidegradation Policy. The standards are mandated for all water bodies within the State under the Porter-Cologne Water Quality Act (the California Water Code).

Section 305(b) of the federal Clean Water Act (CWA) mandates biennial assessment of the nation's water resources, with these water quality assessments being used to identify and list impaired waters. The resulting list is referred to as the 303(d) list. The CWA also requires the State to establish a priority ranking for impaired waters and to develop and implement Total Maximum Daily Loads (TMDLs). A TMDL specifies the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and allocates pollutant loadings to point and non-point sources. The United States Environmental Protection Agency (USEPA) has oversight authority for the 303(d) program. The USEPA approves the state's 303(d) lists and each specific TMDL.

As part of California's 1996 and 1998 303(d) list submittals, the LARWQCB identified the reaches of the Los Angeles River and Ballona Creek as being impaired due to trash. In January of 2001, the LARWQCB adopted the Order of Trash Total Maximum Daily Loads (Trash TMDL) for the Los Angeles River. A similar Trash TMDL was adopted for Ballona Creek in September of 2001. The numeric standard for these Trash TMDLs is currently set at zero (0). The Trash TMDLs specify a two-year optional baseline monitoring, then followed by a ten-year implementation program that requires reduction of trash discharge into the Los Angeles River and Ballona Creek by 10% each year until the zero discharge is achieved.

In addition to Trash and Metals TMDL, the Los Angeles River Nitrogen Compounds and Related Effects TMDL became effective March 23, 2004. The Department's monitoring data depicts Caltrans discharges to be below the TMDL limits, thus no additional measures are needed to be considered for meeting the conditions of the Nitrogen TMDL.

### 3. The TMDLs – Needs & Purpose

#### 3.a. Los Angeles River and Tributaries Metals TMDL

The purpose of the metals TMDL is to eliminate in a progressive manner the discharges into the Los Angeles River and Tributaries of the following targeted pollutants -total copper, lead, zinc, cadmium and selenium. Caltrans works with 5 groups of Responsible Agencies toward compliance of the TMDL.

#### 3.b. Trash TMDL

The purpose of the trash TMDL is to eliminate trash discharges into the Los Angeles River in a progressive manner. Two suggested methods of removing trash from storm drain systems are installation of permanent structural devices such as end-of-pipe full trash capture devices and partial trash capture devices. A full capture device is defined as "Any device that traps all particles retained by a 0.2 in (5 mm mesh) screen and has a design treatment capacity of not less than the peak flow during a one-year storm (determined to be 0.6 inch per hour for the Los Angeles River watershed)." The devices that do not meet the definition for a full capture device will be considered as partial capture devices. Other compliance methods like street sweeping and institutional controls including public education and law enforcement are also recommended.

Each municipal permittee of the National Pollution Discharge Elimination System permit (NPDES) such as cities, counties and State agencies has been assigned with a default trash load that is currently being discharged into the Los Angeles River and the Ballona Creek annually. The default trash loads for Caltrans are 7,944 cubic feet (225 cubic meters), in the Los Angeles River watershed and 1,635 cubic feet (46.3 cubic meters), in the Ballona Creek watershed.

The compliance schedule provided for two years of optional baseline monitoring followed by a 10-year implementation. Baseline monitoring allowed for refinement of the assigned default trash load by monitoring trash generation rates at various sample locations in the watersheds. During 10 years of implementation, an average of 10% reduction of trash load each year is required. The TMDL for the Los Angeles River targets implementation from 2003 through 2014.

An inventory of the District's storm drain outfalls and discharge points in Los Angeles County was completed in 2000. Based on the inventory database, 2197 outfalls and discharge points for the total of 6952 acres of tributary drainage area discharge to the Los Angeles River.

#### 4. Implementation Strategy

It is recommended that full capture devices be implemented targeting 10% of the total drainage areas in the watersheds each year. The work involved includes design and construction of trash capture devices at or adjacent to storm drain outfalls or discharge points before storm water leaves Caltrans rights-of-way. An outfall is the end of a drain pipe that daylights within Caltrans right-of-way. A discharge point is a point in the storm water conveyance system, where storm water leaves Caltrans right-of-way or is connected to an underground separate storm drain system.

Every effort has been made to include as many locations as possible. However, site constraints have limited the number of locations proposed in this report. These constraints include but are not limited to existing traffic conditions, proximity to railroad tracks, underground utilities, and/or environmental conditions. Due to time constraint, full-scale investigation for every location is not feasible at the present time. Nevertheless, the expected watershed drainage area covered in Phase 2C will include the maximum possible watershed drainage area for this purpose.

#### 5. Project Scope

This project is intended to cover the Phase 2C. The scope of this project includes design and construction of permanent stormwater treatment devices at or adjacent to outfalls or discharge points to remove all pollutants to a maximum possible extent. The devices that will be considered include media filters, biofiltration strips, biofiltration swales and detention basins. In the event the construction of media filters will not be possible, trash capture devices will be constructed at a minimum at selected locations. Trash capture devices that are approved for implementation are Gross Solid Removal Devices (GSRD) such as Inclined Screen and Linear Radial units. Combination of GSRD with other devices to achieve the maximum removal of pollutants from stormwater is also under consideration.

#### 6. Project Limits

The freeway sections on Routes 10, 405 not covered by the previous projects have been selected. These freeway sections are listed in Table 1 below. This table also provides information on drainage area and the number of outfalls in each section of the freeway. An area map highlighting the selected freeway sections is provided in Attachment A.

Watershed area provided by District 7 TMDL map indicates that the project limits (LA 10, 405; PM 18.4 / 31.3, 3.3 / 7.6) lie within the Los Angeles River Watershed. Further evaluation of the outfalls using the Caltrans Outfall Database showed that some of the outfalls within the project limits drain into the San Gabriel River Watershed. These outfall locations were eliminated during preliminary evaluation and were not surveyed further.

**Table 1**

Route	Post Miles		Interchanges		% WS	Drain Area (Acres)	No. of Outfall	Acres Per Outfall	Watershed Total in Acres
	From	To	From	To					
<b>Los Angeles River</b>									
10	18.4	28.1	5	Baldwin Ave	2.7%	186.96	32	5.84	
405	3.3	7.6	710	Lakewood Blvd	0.2%	12.64*	4	3.16*	
				<b>Total</b>		199.60	36		6,952.14
* - assume average drainage area, drainage area data is not available in the "LA outfall inventory" database				<b>% of WS</b>	2.9%				

Lists of outfall locations and results of initial site assessment for possibility of construction of stormwater treatment devices are provided in Attachment B. It is anticipated that some permanent treatment devices at the outfalls identified during the field investigations as potential for retrofit will be constructed as a part of I-10 projects: HOV widening EA 117071, rehabilitate roadway and ramps EA 1668U1, and that some of the locations in conjunction with GSRD or instead of it will be equipped with other stormwater treatment devices such as biofiltration swales, biofiltration strips, detention basins, media filters and others. Some outfalls on Route 10 contribute to San Gabriel River and some outfalls on Route 405 contribute to Los Cerritos Channel. These outfalls are outside the scope of this project and are not included in this survey. Table 2 below summarizes the results of preliminary field investigation.

**Table 2**

ROUTE	TOTAL NO. OF OUTFALLS CONSIDERED	NO. OF OUTFALLS DRAINING TO SAN GABRIEL RIVER SCREENED OUT DURING PRELIMINARY EVALUATION	NO. OF OUTFALLS DRAINING TO LOS ANGELES RIVER SURVEYED	POTENTIAL NO. OF OUTFALLS ABLE TO BE RETROFITTED WITH BMP DEVICE
LA-10 PM 18.4/31.3	76	45	31	0
LA-405 PM 3.3/7.6	30	7	23	4*

\*All four selected outfalls are in Los Angeles River Watershed

**7. Environmental Status**

The Division of Environmental Planning in the District has reviewed this project. A conditional Categorical Exemption (CE) is included in Attachment E.

**8. Storm Water Pollution Control and Prevention Plan**

In compliance with the District Directives DD-31 and DD-81, the current Storm Water Pollution Control standards will apply. Special Provisions, SSP 7-345, SSP 7-346, and separate bid items for soil stabilization and sediment control will be included in the Contract Special Provisions based on total area of soil disturbance including possible adjacent projects that may be underway concurrently.

Six percent (6%) of total construction cost has been incorporated in the total project costs for storm water quality control. In addition, Five percent (5%) of construction cost has also been included in the total project cost for possible hazardous waste mitigation and disposal.

## 9. Traffic Data and Impacts

Average Daily Traffic volumes (ADT) for the selected freeway sections are provided in Table 3 below. One of the selection considerations is to start the work in the areas where the traffic will be least impacted. Because the work for constructing trash capture devices is mostly off the traveled way, it is anticipated that the need for lane closures, detours and traffic control would be minimal.

**Table 3**

Route	Post Miles		Interchanges		ADT				
	From	To	From	To	Max.	PM	Min.	PM	Avg.
<b>WB</b>									
10	18.4	31.3	5	605	121,512	22.82	40,942	18.53	81,227
<b>EB</b>									
10	18.4	31.3	5	605	139,270	22.91	42,974	18.53	91,122
<b>NB</b>									
405	3.3	7.6	710	19	129,126	3.44	101,707	7.22	115,416
<b>SB</b>									
405	3.3	7.6	710	19	180,572	4.81	91,088	7.22	135,830

## 10. Cost Estimates

Project cost estimate is based on quantity estimates shown on the preliminary structural plans for media filters. These devices have been approved by Headquarters for implementation. Funds have also been allocated for possible construction of biofiltration swales, biofiltration strips and detention basins within the project limits.

Costs are estimated with consideration of the actual unit construction costs for the stormwater treatment devices that were built in the most recent projects in District 7. Unit costs per area for each device are developed using the construction costs and potential tributary drainage area treated. District Office of Design D performed independent cost evaluations for the devices. These independent cost evaluations and detailed cost breakdown are provided in Attachment C.

<u>Structural Section Work</u>	<u>Lane-Kilometers</u>	<u>Number</u>	<u>Cost</u>
Rubberized AC (Type G) Overlay	None		\$0
Hot Recycled AC	None		\$0
Cold Recycled AC	None		\$0
Reconstruct Lanes(s)	None		\$0
AC Overlay of PCC Pavement	None		\$0
PCC Overlay of PCC Pavement	None		\$0
PCC Pavement Rehabilitation	None		\$0
Ramps and OC/UC Approaches	None		\$0
Remove and Install AC Dike	None		\$0
Bridge Approaches (ground, replaced)	None		\$0
Total Lane-Kilometers of Rehabilitation	None		\$0
<u>STRAIN Work**</u>	None		\$0
		<b>Costs Subtotal</b>	<b>\$0</b>

<u>Does the Project Include?</u>	<u>Yes/No*</u>	<u>Cost</u>
Main Line Widening (lanes and/or shoulder)	No	\$0
Bridge Widening and Rail Upgrade	No	\$0
Included in Project	No	\$0
Deferred (why)*	No	\$0
Bridge Rail Upgrade – Without Widening	No	\$0
Included in Project	No	\$0
Deferred (why)**	No	\$0
Vertical Clearance Adjustment (VCA)	No	\$0
Drainage Rehabilitation	Yes	\$1,608,750
(List appropriate work type: roadbed surface, roadside, offsite, substitutes, etc.)**	No	\$0
Pedestrian Facilities	No	\$0
Alterations Required (List):**	No	\$0
<b>COSTS SUBTOTAL</b>		<b>\$1,608,750</b>

<b>Safety</b>	<b>Yes/No*</b>	<b>Cost</b>
Rumble Strip	No	\$0
Superelevation Correction	No	\$0
Vertical Alignment	No	\$0
Horizontal Alignment	No	\$0
Kilometer Post/Markers/Traffic Striping	No	\$0
Metal Beam Guardrails	No	\$0
Median Barrier	No	\$0
Approach Bridge Guardrail (Terminal System-SRT)	No	\$0
K-Rail	Yes	\$21,000
Fence and Gates	Yes	\$10,500
Roadside Cleanup and Landscape	Yes	\$28,000
Hazardous Waste Mitigation	Yes	\$100,000
Fiber Optic Mitigation	No	\$0
Utility Relocation	No	\$0
Railroad Agreements	No	\$0
Right of Way	No	\$0
Environmental Mitigation	Yes	\$2,000
Traffic Management – TMP	Yes	\$33,000
Temporary BMPs (including SWPPP, Implementation, and Maintenance)	Yes	\$104,000
Resident Engineer Office	Yes	\$92,400
<b>COSTS SUBTOTAL</b>		<b>\$1,999,650</b>
<b>SUM SUBTOTAL</b>		<b>\$1,999,650</b>
<b>10% CONTINGENCY</b>		<b>\$199,965</b>
<b>TOTAL CONSTRUCTION COST</b>		<b>\$2,199,615</b>
<b>TOTAL SUPPORT COST</b>		<b>\$439,923</b>
<b>TOTAL PROJECT COST</b>		<b>\$2,639,538</b>
<b>CALL</b>		<b>\$2,640,000</b>

This project will be submitted in the 2008 State Highway Operation Protection Program (SHOPP) and will be funded from the SHOPP Storm Water Mitigation Program 20.10.201.335. The current cost for the project as of January 2008 is \$2,640,000. The escalated cost for the project in January 2009 is \$2,772,000. The escalated cost for the project in January 2010 is \$2,910,000. The escalation factor used is 5% per year.

## 11. Other Alternatives

### Alternative "No Project"

The only other alternative is the "No Project" alternative. The "No Project" alternative would be considered non-compliant by the LARWQCB. It would certainly invoke enforcement action by the LARWQCB. Consequently, implementation of the program would remain a legal requirement. The cost and resources needed for implementation would most likely be much higher due to an accelerated schedule if the "No Project" alternative were to be chosen.

## 12. Other Agencies Involved

The LARWQCB will be enforcing and monitoring the implementation of the Trash TMDL. Potential locations that would require other agency's involvement (for permits or agreements) will be excluded from the project.

## 13. Other Considerations

### HAZARDOUS WASTE DISPOSAL SITE REQUIRED? IF YES, WHERE ARE SITES?

Only potential locations with no known hazardous waste disposal will be included in the Phase 2C.

### MATERIALS AND OR DISPOSAL SITE NEEDS AND AVAILABILITY?

Ten percent (10%) of the total construction costs for possible handling of lead contaminated soils and other hazardous materials have been included in the total project costs as indicated in Attachment C.

### UTILITY INVOLVEMENT:

None, only locations with no utility conflicts will be included in the project.

### RAILROAD INVOLVEMENT:

There is a Metrolink railroad that runs parallel to Route 10 in the vicinity of the project, however it is located within a distance sufficient to prevent a construction impact. No locations with railroad impacts will be included in the project.

### CONSISTENCY WITH OTHER PLANNING:

No change to the existing facilities. Whenever possible, placement of the stormwater treatment devices will accommodate planned modifications to the existing facilities. There currently are several I-10 projects under design to construct HOV widening, EA 117071 and rehabilitate roadway and ramps, EA 1668U1. Any and all conflicting projects will be coordinated with the proposed construction activities.

### SALVAGING AND RECYCLING OF HARDWARE AND OTHER NON-RENEWABLE RESOURCES:

Not applicable.

### PROLONGED TEMPORARY RAMP CLOSURES:

None.

EFFECTS ON BICYCLE TRAFFIC:

None.

EFFECTS ON EXISTING ROADSIDE PLANTING:

In the existing landscaped area, vegetation will be cleared during construction. Since these devices have small footprints, impact to the existing planting is expected to be minimal. All areas disturbed during construction will be re-landscaped. Existing irrigation lines will be re-routed as necessary.

AESTHETIC ISSUES:

Permanent Stormwater Treatment Devices have varying footprints. They will be installed at or below grade as much as possible to reduce visual impact to the existing site conditions.

HEALTH ISSUES:

Permanent Stormwater Treatment Devices are designed for minimal maintenance effort to reduce maintenance costs. The required maintenance frequency could be as little as once a year.

ENVIRONMENTAL ISSUES:

No major environmental issues are anticipated. Only locations with no major environmental impacts will be examined in the project.

WHAT ARE THE CONSEQUENCES OF NOT DOING THIS ENTIRE PROJECT?

It would most likely invoke enforcement action by the LARWQCB or intervention from external stakeholders. This would consequently increase the costs and require more resources to attain compliance and require an accelerated schedule to implement.

14. Has the project been field reviewed by

District Division of Env. Planning, CE is included as Attachment E Date 9/17/07

ESC-MET Not Applicable Date \_\_\_\_\_

15. Project Reviewed by

District Maintenance Stormwater Coordinator Date 2/28/07

District Safety Quality Review Meeting conducted Date 9/6/07

HQ Division of Design Office of Storm Water Management Date 9/5/07

HQ Maintenance Program Not Applicable Date \_\_\_\_\_

FHWA Not Applicable Date \_\_\_\_\_

Type of federal Involvement: None

Others \_\_\_\_\_ Date \_\_\_\_\_

## 16. Proposed Funding

This project will be submitted for consideration for programming in the 2008 State Highway Operation Protection Program (SHOPP) midcycle revision and will be funded from the Storm Water Mitigation element of Environmental Improvement, 20.10.201.335. It is recommended that initially set project limits be modified to exclude Route 10 from the project reference, as none of the locations on this Route were selected for design and construction.

The Revised project description should be:

07-LA-405 PM 6.1 to PM 7.3 in Los Angeles County from Atlantic Ave. to Pacific Place - Construct Stormwater Treatment Devices.

## 17. Project Support

Fiscal Years	Design		R/W		Construction		Project Mgmt		total
		50%		5%		37%		8%	100%
08/09	0.50	109,981	0.70	15,397	0.01	1,628	0.50	17,597	
09/10	0.40	87,984	0.25	5,499	0.20	32,554	0.40	14,078	
10/11	0.10	21,996	0.05	1,100	0.79	128,590	0.10	3,519	
									<b>Final cost</b>
<b>Subtotal</b>	<b>1.00</b>	<b>219,961</b>	<b>1.00</b>	<b>21,996</b>	<b>1.00</b>	<b>162,772</b>	<b>1.00</b>	<b>35,194</b>	<b>439,923</b>

## 18. Project Schedule

Milestone	Date		Duration	
	1st Group	Last Group	Working Days	Weeks
Begin Site Screening	2/1/07	2/28/07		
			499	100
Begin PS&E		12/30/08		
			196	39
PS&E TO DES-OE		9/30/09		
			23	5
End PS&E, Ready to List		11/1/09		
			24	5
Advertise		12/4/09		
			26	5
Bid Opening		1/10/10		
			42	8
Award		3/10/10		
			36	7
Begin Construction		4/30/10		
			174	35
End Construction		12/30/10		

## 19. Remarks

It's imperative to mention that the investigation and analysis of the suitability of the proposed Stormwater Treatment Devices in so far as the existing field conditions and the type of outlets are concerned involves two distinct stages. In the first stage of screening, District Design and Maintenance personnel conduct a cooperative field investigation. The purpose of this stage is to

separate and select outlets suitable for the proposed Stormwater Treatment Devices based on the factors such as maintenance accessibility, conflict with bridge columns, abutments, retaining walls or other structures, conflict with utilities and type of outlet itself. Detailed explanation of this stage of screening can be found in Attachment "B" of this PSSR. The Summary at the end of the Attachment "B" indicates that only 4 outfalls out of 30 existing outfalls on the selected Route within the project limits were found to be suitable for further considerations.

The second stage of the screening process involves detailed hydraulic analysis, capacity of the outlets versus the inflow capacity of the Stormwater Treatment Devices, depth of the outlet pipe and other hydraulic design factors that may or may not make the outfall a suitable candidate for the proposed Stormwater Treatment Devices installation.

The cost estimate also includes the funds allocation for other permanent BMP treatment devices such as biofiltration swales/biofiltration strips and detention basins that could be constructed as part of this project.

## 20. List of Attachments

- A. Location Map
- B. List of Selected Outfall Locations and Field Investigation Report
- C. Estimated Project Costs
- D. Permanent Stormwater Treatment Devices - Schematic Diagram
- E. Categorical Exemption
- F. Right of Way Data Sheet
- G. Initial Site Assessment
- H. Transportation Management Plan
- I. Storm Water Data Report
- J. Memorandum – Change of Project limits