

**Metro**Los Angeles County
Metropolitan Transportation AuthorityOne Gateway Plaza
Los Angeles, CA 90012-2952213.922.2000 Tel
metro.net**PLANNING AND PROGRAMMING COMMITTEE
MARCH 18, 2009****SUBJECT: POST 1989 RETROFIT SOUNDWALL PROGRAM****ACTION: APPROVE RECOMMENDATIONS****RECOMMENDATIONS**

- A. Program \$200,000 in Proposition C 25% to the California Department of Transportation (Caltrans) for design support services during our construction of Soundwall Package 4;
- B. Program an additional \$11.164 million in Proposition C 25% funds for Soundwall Packages 5, 6, 7, 8 and 10 as follows:
 - 1. \$5.923 million to cover cost increases to complete the design of Soundwall Packages 5 (I-405 in the San Fernando Valley), 6 (I-405 in the Gateway Cities), 7 (SR-134 in the City of Burbank), 8 (I-605 in the Cities of Santa Fe Springs and Irwindale) and 10 (I-210 in the Cities of Pasadena and Arcadia); and
 - 2. \$5.241 million for right-of-way capital and utility relocation costs for Soundwall Packages 5, 7, 8 and 10. Attachment A contains the location of the Soundwall packages; and
- C. Adopt our Caltrans Cost Control procedures for the highway and Soundwall Program and delegate to the Chief Executive Officer future administrative updates. Attachment B contains a flow chart outlining the procedure.

ISSUE

At its February 26, 2009 meeting, the Board deferred approval of \$200,000 to Caltrans to provide design support services during our construction of Package 4 and \$11.164 million for Packages 5, 6, 7, 8 and 10 for cost increases and for right-of-way and utility relocation costs. With this deferral, the Board requested additional information from Caltrans to justify the \$5.923 million in design cost increases as well as steps we, in conjunction with Caltrans, were taking to control costs and whether there were alternative soundwall materials or delivery methods that could be used to reduce soundwall costs. This report provides the information requested by the Board.

POLICY IMPLICATIONS

On April 27, 2000, the Board adopted the list of Post 1989 Retrofit Soundwall projects, including a delivery and funding plan. In April 2003, the Board approved working priorities for the Post 1989 Retrofit Soundwalls. These priorities guide the delivery of the Soundwall program. Through previous Board actions, we have been systematically funding the design and construction of the soundwall design packages contained in the Phase I, Priority 1 and 2 lists.

ALTERNATIVES CONSIDERED

With regard to the \$200,000 for design support during our construction of Package 4, the Board could reduce the amount or not provide the funding. These alternatives are not recommended, since the Board authorized us to construct this soundwall at their February 26, 2009 meeting and Caltrans' design support services are necessary as they are the designer of record. As such, any necessary design changes required during construction would need to be made by them. Additionally, we have reviewed their request and feel that it is appropriate.

With regard to Packages 5, 6, 7, 8, and 10, the Board has the alternatives of canceling these projects or having us assume the design responsibility. Additionally, the Board has the options of not programming the right-of-way capital and utility relocation costs or providing a reduced amount. None of these alternatives is recommended as the Soundwall packages are over 50% complete, and it would cost more to cancel and restart them at a later date or have us assume design responsibility. Additionally, the right-of-way capital and utility relocation costs are based on engineering completed to-date and Caltrans needs to complete this work prior to the soundwalls being advertised for construction.

FINANCIAL IMPACT

The FY 09 budget contains \$3 million in Cost Center 0441, Subsidies to Others, Project #410040, Task #8410.02.09 for the construction of Soundwall Package 4, which based on the February Board action, is being transferred to Cost Center #4370, the San Fernando/North County Valley Area Team. Additionally, the Board previously programmed \$22.2 million in Proposition C 25% for Soundwall Package 4 construction. The FY 09 budget also contains \$5.2 million in Proposition C 25% funds in Cost Center 0441, Subsidies to Others, Project #410040 for Soundwall Packages 5, 6, 7, 8 and 10.

The additional \$11.364 million for Packages 5, 6, 7, 8, and 10 soundwalls' design, right-of-way and utility relocation and design support services for Package 4 will be funded using Proposition C 25% dollars within the existing FY 09 budget due to the under expenditure of other projects in the Highway Program Subsidies budget. Since this is a multi-year activity, the cost center managers and Chief Planning Officer will be responsible for budgeting future year expenses.

DISCUSSION

Since assuming responsibility for the Soundwall Program, we have been meeting with Caltrans on a regular basis to manage the Program's delivery. We continually conduct financial compliance audits as well as track project costs. Packages 2 and 3 are under construction and Packages 5, 6, 7, 8 and 10 are under design. Caltrans has not received authority for any additional Soundwall work.

Soundwall Cost Increase Justification

Through on-going management of the Program, we notified Caltrans earlier in the year that support costs were significantly higher than percent of work completed. At that time, we requested a projection of the cost to complete each Package's design. Based on these projections, we notified Caltrans in December 2008 to stop work and to formally notify us of the additional dollars necessary to complete these packages' design so that we could obtain Board authorization. On January 16, 2009, Caltrans provided the formal notification which is contained in Attachment C.

Based on the Board's February 26, 2009 direction, we have requested Caltrans to provide additional justification for the cost increases. The following is a summary of the information provided.

In 2006, the Board approved the design support funding based on the capital costs identified in the Noise Barrier Scope Summary Reports (NBSSRs) prepared in 2002 and 2003 by our contractors. At that time, the capital cost was estimated at \$65.47 million. The design support funding was based on 15% of the capital costs, not the engineering hours needed to complete the scope of work.

In 2007 and 2008, Caltrans completed Supplemental NBSSRs which showed the capital costs had increased to \$102,874,000, a 57% increase. Further, during the soundwalls' design Caltrans staff needed to perform additional hazardous waste investigation and soil testing, as well as more design than originally anticipated for bridge widening in various locations, and conflict with existing utilities. Also, updated geometric requirements for sight distance needed to be incorporated into the designs. The proposed adjusted support cost would be at 15.9% of the revised capital cost.

Detailed justification for the design cost increases is included in Attachment D. It should be noted that the \$205,500 additional funds for Package 10 represented the design cost increase for the westbound wall located north of I-210 in the City of Arcadia. The eastbound wall at the same location would start its design at a later date, awaiting the completion of NBSSR. The originally allocated \$4,022,000 for design support was for both sides of the soundwall, but due to its lacking of NBSSR for the eastbound wall, the entire allocated amount was used for the westbound wall only. Upon Caltrans completion of the NBSSR, we will need to program design funds for the eastbound wall.

On-Going Management to Further Reduce Costs

As part of the close management of Soundwall Program's delivery, we met with Caltrans District 7 Executive staff to identify a path forward to reduce the costs to deliver the Soundwall Program. The following summarizes the actions that have been or will be undertaken:

- A. Dedicated Soundwall Unit: Caltrans established a Soundwall unit whose sole responsibility is delivering our 1989 Soundwall Retrofit program. They feel that this will reduce the support costs necessary to deliver the Program;
- B. Cost Control Procedure: We recently implemented a cost change review procedure with Caltrans to control cost changes for the Soundwall program. The cost change procedure requires that each cost change be fully documented and reviewed and approved by both Caltrans Management and our Construction Department before additional funds, if any, are requested;
- C. Design and Construction Responsibilities: Caltrans District staff is supportive of us assuming contracting responsibilities for both the design and construction of future soundwalls to determine if we could deliver the Program cheaper than Caltrans, and have informed us that they could provide free oversight should we decide to pursue this option. With Board authorization in February 2009, we are pursuing this option by constructing Package 4 and designing Package 11, with us ultimately constructing Package 11; and
- D. Design-Build Method: County Counsel has determined that our enabling legislation does not authorize us to enter into design-build contracts to build non-transit related facilities, such as soundwalls. Further, Caltrans does not have authority to enter into design-build contracts. Therefore, our Government Relations Department is exploring the feasibility of us obtaining Design-Build authority to allow us to construct freeway soundwalls.

Alternative Soundwall Materials and Methods

With regard to alternative soundwall materials, soundwalls can be made of many different materials as long as they meet the density requirements to provide acoustical benefits. Alternative soundwall materials can be made of masonry blocks, concrete panels, steel, wood, composite/fiberglass, or transparent glass. All the materials have to be tested and approved by Caltrans with respect to aesthetical installation, acoustical performance, structural, safety, maintenance, and costs before they can be used on any state or national highway systems. The USDOT and Caltrans has tested and certified several most viable materials, including concrete (cast-in-place or precast), metal (steel, aluminum or stainless steel), wood (pressure preservative treated lumber, plywood or glue laminated products), transparent panels (glass either tempering or laminated), plastics (polyethylene, PVC, fiberglass, Plexiglas, Butacite, Surlyn, Lexan, or acrylic products), recycled rubber (scrap tires

or any buffings from rubber product manufacturers), earthen materials (soil, stone, rock, rubble, rice straw-bale, etc.), and composites (two or more primary materials from above). The method of construction would depend on the type of material used.

Additionally, we contacted both the Florida and New York Departments of Transportations (DOTs). Florida DOT mainly uses pre-cast concrete for all their Type I (highway projects on a new location or reconstruction of existing highways) projects due to the durability of this material and it can be easily shaped, molded, and textured to take on different appearances and design. From a recent conversation with Florida DOT's Structure Design Office, they've indicated that their average construction cost of soundwalls is approximately \$3 million per mile (\$6 million both directions). They have existing foundation and design standards and specifications that reduce their average cost of design. The New York State DOT has an average soundwall construction cost of \$5.4 million per mile (\$10.8 million both directions).

Our Retrofit Soundwall Program is considered Type II soundwall projects (highway projects for noise abatement on an existing highway) by the Federal Highway Administration (FHWA). The most common material we use for soundwall construction is masonry blocks (slump block, cinder block), which average \$5 million per mile (\$10 million for both directions).

NEXT STEPS

Upon Board approval, we will amend the design Funding Agreements (FAs) with Caltrans to increase the programmed funding for Packages 5, 6, 7, 8, and 10, respectively. We will also execute an FA with them for Package 4 design support.

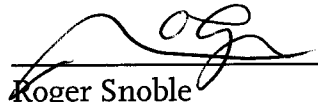
ATTACHMENTS

- A. Location of Soundwall Packages
- B. Caltrans & Metro Process Flow of Program Change Request (PCR)
- C. Caltrans' \$11.164 million Cost Increase Request
- D. Caltrans Detailed Breakdown of Support Cost for Packages 5, 6, 7, 8 and 10

Prepared by: Brian Lin, Director, San Fernando Valley/North County Area Team
Henry Fuks, Deputy Executive Officer, Construction Management
Renee Berlin, Executive Officer, Transportation Development and Implementation



Carol Inge
Chief Planning Officer
Countywide Planning and Development

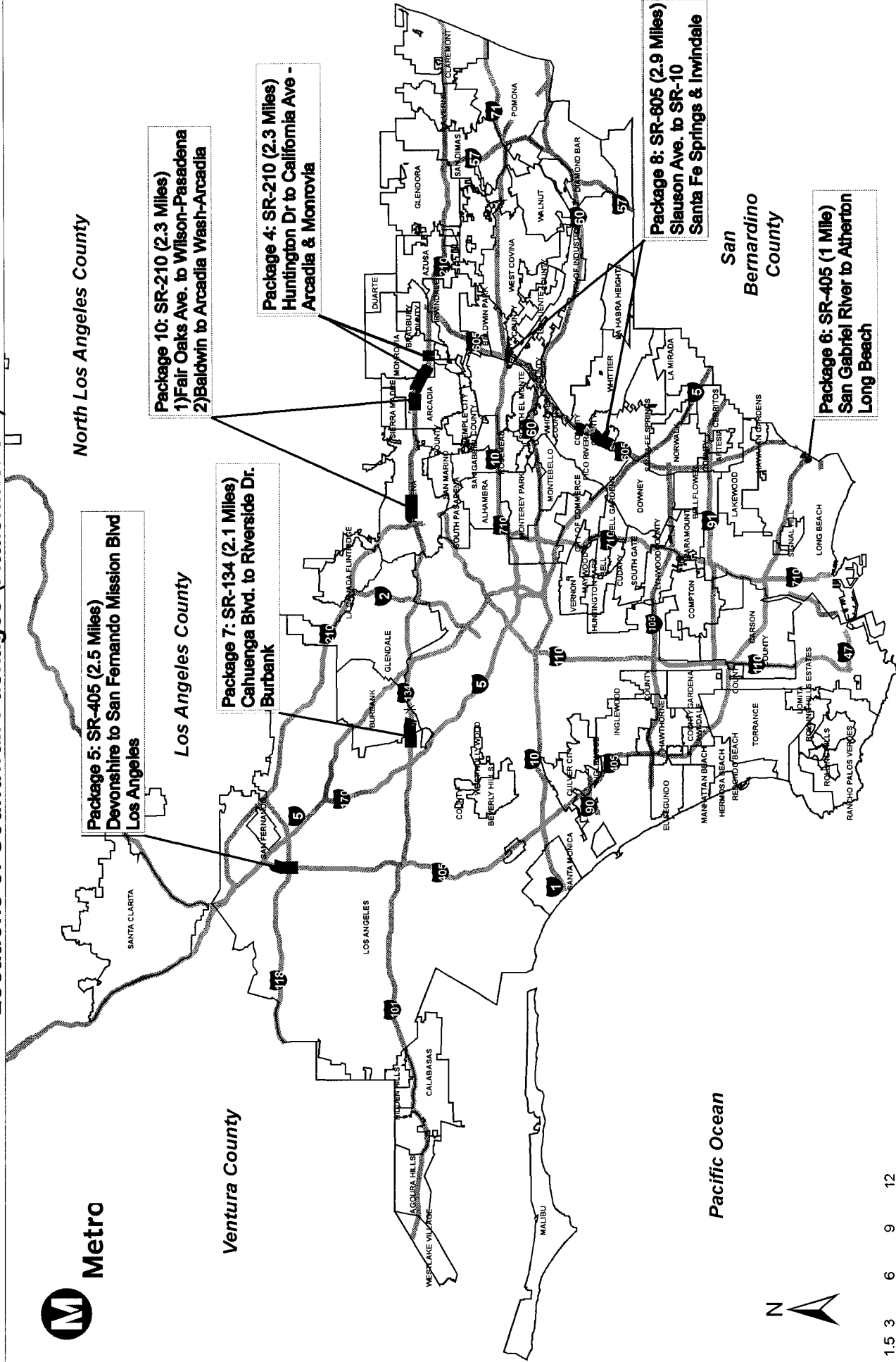


Roger Snoble
Chief Executive Officer

Locations of Soundwall Packages (Attachment A)



Metro



North Los Angeles County

Los Angeles County

Ventura County

Pacific Ocean

San Bernardino County

Orange County

Package 10: SR-210 (2.3 Miles)
 1) Fair Oaks Ave. to Wilson-Pasadena
 2) Baldwin to Arcadia Wash-Arcadia

Package 4: SR-210 (2.3 Miles)
 Huntington Dr to California Ave -
 Arcadia & Monrovia

Package 7: SR-134 (2.1 Miles)
 Cahuenga Blvd. to Riverside Dr.
 Burbank

Package 8: SR-605 (2.9 Miles)
 Slauson Ave. to SR-10
 Santa Fe Springs & Inwindale

Package 6: SR-405 (1 Mile)
 San Gabriel River to Alherton
 Long Beach



METRO/CALTRANS COST CONTROL PROCEDURES



Metro

CALTRANS & METRO

PRE-DESIGN MEETING(S)

CALTRANS & METRO

PROJECT APPROVAL & ENVIRONMENTAL IMPACT DOCUMENT CLEARANCE

CALTRANS & METRO

AGREEMENT ON SCOPE, COST, & SCHEDULE



METRO

SUPPLEMENTAL FUNDING REQUEST APPLICATION SUBMITTED
MTA BOARD ACTION REQUIRED

CALTRANS

PROGRAM CHANGE REQUEST (PCR) PROCESSED

CALTRANS & METRO

PROPOSED CHANGES REQUIRED

APPROVED PCR

CALTRANS

FINAL DESIGN COMPLETION

CALTRANS IPO

CONSTRUCTION

IF APPROVED
IF NOT APPROVED

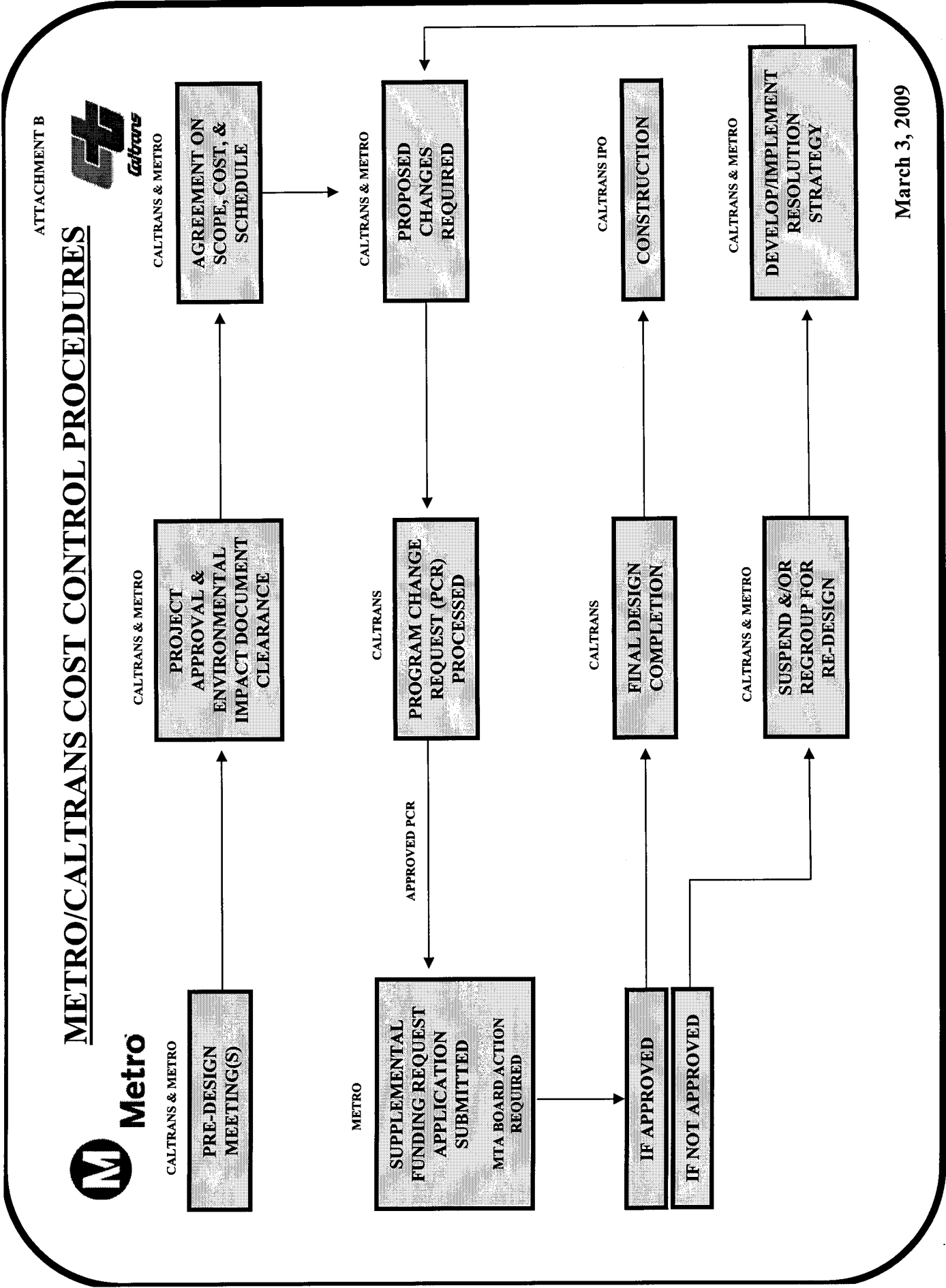
CALTRANS & METRO

SUSPEND &/OR REGROUP FOR RE-DESIGN

CALTRANS & METRO

DEVELOP/IMPLEMENT RESOLUTION STRATEGY

March 3, 2009



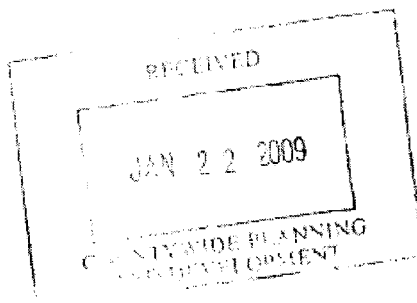
DEPARTMENT OF TRANSPORTATION

DISTRICT 7 SUITE 100
 100 MAIN STREET
 LOS ANGELES, CA 90012-3606
 PHONE (213) 897-0362



*Flex your power!
 Be energy efficient!*

January 16, 2009



Carol Inge, Chief Planning Officer
 Countrywide Planning and Development
 Metropolitan Transportation Authority
 One Gateway Plaza
 Los Angeles, CA 90012

Subject: Request for additional support cost for Soundwall Projects

Dear Ms. Inge, *Carol*

Department of Transportation (Department) has been providing services to Metro for Design and Right of Way phases of Soundwall Packages 5, 6, 7, 8 and 10. We anticipate that we will exceed the allocated support cost for Design and Right of Way phases. The executed agreements underestimated the support cost for following reasons:

1. The hourly rate for reimbursed projects is about 28% higher than the Departments' STIP or SHOPP projects due to indirect overhead costs. For this reason the support cost for the above reimbursed Soundwall projects was underestimated by 28%.
2. The Department Engineering staff has received substantial pay raises since the agreements were executed. The pay increases were not known at that time and were not taken into consideration when the agreements were executed.
3. The Department finished the design and right of way phase of the May 89 retrofit Soundwall at 20% of capital cost due to nature of projects. The May 89 Soundwall projects were considered STIP projects. The agreements for above packages were executed at 15% of capital cost, which is far less than the support cost needed for this kind of projects.

The following table shows the allocated amount for each package and the additional support cost required to deliver the projects by December 2009. The right of way acquisition is usually completed during the design phase. Therefore we are also requesting the funding for right of way capital to complete the design and right of way phase and have the projects ready for advertisement. The current estimate for construction and right of capital for all the above packages is \$93,559,000 and the support cost including the requested additional amount is \$16,575,000 which is about 18% of the capital cost. Please provide us with direction if you would like the Department to continue providing services to deliver the projects within the schedule. We appreciate the opportunity to provide services and will continue to work closely with your staff to provide them with updates. Should you have any questions, please do not hesitate to call me at (213) 897-0691.

Addressee

Date

Page

Package	Allocated amount for Design Support only	Additional request for Design and R/W Support	Right of Way capital Cost
5 (EA 22460)	\$2,102,000	\$1,283,000	\$57,000
6 (EA 26020)	\$841,000	\$1,052,000	0
7 (EA 26030)	\$2,235,000	\$1,324,000	\$4,500,000
8 (EA 23310)	\$1,452,000	\$2,058,500	\$53,000
10 (EA 23290)	\$4,022,000	\$205,500	\$631,000

Sincerely,



Tad Teferi
Deputy District Director, District 7
Program and Project Management

ATTACHMENT D

Breakdown of Support Cost for Packages 5, 6, 7, 8 & 10

Original NBSSR		Supplemental NBSSR				Estimated Support Cost			Additional Amount Required		Design Comments	
EA	Date of approval of original NBSSR	Package	EA	Date of Approval of Supplemental NBSSR	New Estimated Cost	Allocated Amount for Design Support	Design	RW	Total	Design & RW Support		RW Capital Cost
22460	11/07/02	5	22460	01/29/08	\$36,223,000	\$2,102,000	\$3,358,500	\$28,500	\$3,386,000	\$1,283,000	\$57,000	1. The original NBSSR didn't address the current standard of Caltrans and DTSC. Additional soil testing and analysis are required; 2. The original NBSSR was done in Metric. The current policy calls for the design to be done in English unit. Hence additional survey has to be performed.
26030	11/07/02	6	26020	01/04/08	\$3,790,000	\$841,000	\$1,878,700	\$15,000	\$1,893,000	\$1,052,000	\$0	1. The original NBSSR didn't call for widening of the bridge. More design effort is required; 2. Additional Soil testing is required; 3. No impact to existing storm drain system according to original NBSSR. However special design for foundation is required to newly discovered impact to storm drain; 4. The removal existing retaining wall as well as piles supporting the wall was not addressed in the original NBSSR.
26030	11/07/02	7	26030	06/08/07	\$23,700,000	\$2,325,000	\$3,549,000	\$100,000	\$3,649,000	\$1,324,000	\$4,500,000	1. The original NBSSR called for reconstructing Riverside Dr. retaining wall. However this isn't possible and the existing bridge will be cantilevered to accommodate the soundwall; 2. No utility impact was identified in original NBSSR, however alternate design need to be investigated to avoid existing transmission lines; 3. The original NBSSR assumed temporary lane and shoulder closures to construct SW using K-rail, however this is not possible and alternate strategies need to be looked at.
23310	06/01/03	8	23310	09/17/06	\$14,000,000	\$1,452,000	\$3,485,000	\$25,000	\$3,510,000	\$2,058,000	\$53,000	1. The original NBSSR survey was done in metric and had to be re-done converted to English units; 2. Signal distance restrictions at some locations were missed in the original NBSSR and needed to be addressed, along with new alignments and new retaining walls; 3. Sound wall across a channel (LA County Wash) had to be re-designed to address structural and environmental concerns, which involved new piles and footing. This was overlooked during the original NBSSR; 4. Re-design of structural sound walls to avoid utility conflicts; 5. Standard design issues overlooked in the original NBSSR.
23290	09/08/07	10	23290	Pending	\$25,251,000	\$4,022,000	\$4,133,000	\$84,500	\$4,217,500	\$205,500	\$631,000	
Total =					\$102,874,000	\$10,742,000	\$16,401,500	\$263,000	\$16,664,500	\$5,922,500	\$5,241,000	

Note: The original NBSSR and estimate were done by Metro's consultant

The original capital estimate (not working hours) was used to estimate and program the support cost