



Board Report

File #: 2018-0787, File Type: Motion / Motion Response

Agenda Number: 7.

REVISED
AD HOC CONGESTION, HIGHWAY AND ROADS COMMITTEE
FEBRUARY 20, 2019

SUBJECT: SOUNDWALL PROGRAM ANALYSIS, DELIVERY OPTIONS AND FUNDING

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE Countywide soundwall program outline and analysis of potential delivery options to construct the remaining prioritized retrofit soundwall projects, utilizing materials currently approved by the California Department of Transportation (Caltrans) for construction of soundwalls and funding opportunities in response to the October 25, 2018 Board Motion 9.1.

ISSUE

In October 2018, the Board directed staff to identify options to fund and construct the remaining soundwalls on the Post-1989 soundwall lists. This report presents a short term plan to fund the remaining Phase I soundwalls and a long term plan to fund the soundwalls in Phase II.

BACKGROUND

Metro assumed the responsibility for delivery of the retrofit soundwall projects in Los Angeles County after the passage of SB 45 in ~~1999~~ 1998. Prior to that, Caltrans was responsible for nominating soundwalls for funding through the California Transportation Commission (CTC) and constructing soundwalls along the freeway system.

The majority of the soundwall needs after passage of SB 45 consisted of retrofit soundwalls needed to alleviate noise levels in qualified communities adjacent to freeways with no active freeway improvement projects. New freeway improvement projects are required to evaluate noise impacts and consider the construction of soundwalls as part of project mitigation requirements.

In order for a location to qualify for retrofit soundwalls, it must meet all of the following criteria:

- Residential property built prior to the freeway or prior to a freeway capacity enhancing project.
- Exposed to an hourly noise level exceeding the 67-decibel (Leg) threshold established by Federal and State agencies.
- Achieve at least a 5-decibel noise reduction at an eligible residence after installation of

soundwall(s).

- Cost may not exceed \$92,000 per residential unit (“2017” dollars).

Between 2001 and 2003, Metro developed the list of priority retrofit soundwalls by classifying them in “Phases”.

Phase I: Soundwalls that were required to be constructed as part of the High Occupancy Vehicle Lanes (HOV) projects but were deferred; and

Phase II: All other retrofit/after-the-fact soundwall locations deemed eligible along the various freeways.

Within Phase I, three priority lists were established:

Priority 1: Soundwalls warranted for construction within the limits of newly-constructed HOV lane projects but built only on one side of the freeway.

Priority 2: Soundwalls warranted for construction within the limits of newly-constructed HOV lane projects but not built on either side of the freeway.

Priority 3: Soundwalls that met the requirements to be in Phase I but were identified after establishment of the initial Phase I list.

Within those priorities, soundwall “packages” were identified which consisted of bundled walls that could be built together for project delivery and cost effectiveness.

All Phase I Priority 1 Soundwalls are constructed.

Package 10 in Priority 2 is in final design and soundwall package 11 in Priority 2 group is in construction.

The list of the remaining walls under Priorities 2 and 3 are included as Attachment A.

The Phase II list is currently not funded.

From time to time, Metro staff may request and the Board may approve, to the extent that funds are available, funding to implement soundwalls.

To identify and validate soundwall needs on the highway system, standard Caltrans process must be followed. The first step in determining the need for soundwalls is to prepare a Noise Barrier Scope Summary Report (NBSSR). An NBSSR identifies the locations, lengths, and heights of walls, as well as the resulting impacts to the roadway, structures, right of way, and the environment within the project limits. Reasonableness and feasibility tests are applied to see if a project can be recommended to move to design and construction, if funded.

Priority and order of implementation is determined by a soundwall Priority Index Number (PIN), which is calculated with consideration of the existing noise level, the anticipated noise reduction after implementation, the number of residential units benefiting from the project and the project's estimated cost. The PIN helps determine the magnitude of benefit received by residential units upon construction of a soundwall. Currently, all walls in Phase I have a PIN. Not all walls in Phase II have PINs.

As for construction, Caltrans requires that all walls placed along the edge of freeway shoulders be constructed on a safety barrier. Walls constructed on bridges are to be installed on top of the bridge railing. Walls to be constructed in a safe distance from the freeway have more flexible design criteria.

To-date, Caltrans has approved and utilized only a limited number of materials for soundwalls, the list of which is provided in Attachment B. The most frequently used material is masonry block. Acrylic clear panels are an alternative material to masonry block and have been approved for mounting on bridge rails. For any other material approved by Caltrans, walls must be located in the Clear Recovery Zone which is 30 feet from the traveled way or located a minimum 18 inches behind a barrier that meets the Manual for Assessing Safety Hardware (MASH) criteria. Thus, very few LA County locations may be able to use one of the approved alternative systems.

DISCUSSION

Soundwall packages 12 through 14 in Phase I, Priority 2 and all walls in Priority 3 require NBSSR updates to commence design. Funds are identified and available in the Long Range Transportation plan as early as 2024 for implementation of soundwalls. Upon Board approval, funds may be obligated for early development work.

The Phase II list contains 100 freeway segments that had qualified noise readings for soundwalls. No funds have been identified for development and implementation of the Phase II list. A cursory check of the land use along the freeway segments under Phase II suggests approximately 68.8 miles of soundwall would be needed (Attachment A).

It is the Board's intention to identify possible options to fund and implement as many eligible soundwalls as possible.

Staff will continue construction of soundwalls on the current order of priority starting with completion of Phase I priorities as funds become available.

The current estimate of cost of implementation of the remainder of Phase I; Priority 2 (Packages 12-14) and Priority 3 soundwalls is between \$216 to \$433 Million.

Upon completion of Phase I or depletion of available funds, staff will report back to the Board and identify alternative approaches to implementation of Phase II soundwalls as well as any potentially remaining Phase I walls.

Pros: Implementation of soundwall program in accordance with the current Board policies.

Cons: Implementation of Phase II walls would not occur any time soon as the cost of implementation of Phase I priorities is not budgeted and is rising due to market conditions.

FINANCIAL IMPACT

Using the current average cost range of \$10 to \$20 million per mile for soundwall design, right-of-way, and construction (including potential roadway and structure work), the current Rough Order of Magnitude (ROM) cost estimate to complete the remaining Phase I (Priority 2, Package 12-14 and Priority 3 lists) is between \$216.6 million to \$433.2 million, and the non-prioritized Phase II list at \$688 million to \$1.3 billion. The Measure R Expenditure Plan designated a total of \$250 million for countywide soundwalls. In addition, the LRTP (as amended) programmed \$57.6 million of Proposition C 25% transit related highway funds and \$282.1 million in State Regional Improvement Program (RIP) funds for eligible Phase I soundwalls through FY 2040, for a total of \$589.7 million for the completion of Phase I projects.

To-date, the Board has approved Life-of-Project (LOP) budgets totaling \$238.9 million in Measure R funds towards the completion of Phase I, Priority 1 (Packages 4-8) and Priority 2 (Packages 10 and 11), which leaves a balance of \$350.8 million in LRTP funds between FY 2025 and FY 2040, plus any project savings from the completion of Priority 1 and 2 projects, available to deliver the remaining Phase I Priority 2 (Packages 12-14) and Priority 3 projects.

There are no funds assigned to Phase II at this time. Availability of funds for Phase II walls is highly unlikely due to other Metro funding priorities. A long-term plan for the implementation of Phase II could include the following strategies:

- Authorize a reasonable percentage of the Subregional Measure M allocations to be spent on construction of soundwalls at the election of the Subregion and allow the Subregions to construct soundwalls based on established priorities within each subregion.
- Seek Caltrans funding contribution from the ~~State Highway Operations and Protection Program (SHOPP)~~ SB1 LPP - Local Partnership Program for the Phase II walls.

Staff will continue to identify other funding sources to support the implementation of the Countywide Soundwall Program.

Additionally, as new highway capacity enhancement projects are developed, soundwall segments on the Phase I or Phase II list that are within the limits of those projects will be built as part of the project if deemed eligible.

Impact to Budget

This report is for information only, does not recommend funding beyond the current levels, and therefore does not impose any impact to Metro's budget. Depending on the Board's direction for the next steps, budget impacts will be identified and explained in the follow up reports to the Board.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Recommendation supports strategic plan goal #5: Provide responsive, accountable and trustworthy governance. This report is intended to identify best practices, access the full life-cycle costs of infrastructure investments and identify trade-offs.

ALTERNATIVES CONSIDERED

Alternative 1: Revise Board's policies and priorities on implementation of soundwalls.

De-prioritize implementation of Phase I soundwalls; identify alternative methodologies to reprioritize the program blending the remainder of Phase I priorities with the Phase II walls and conducting noise studies across the board for all projects.

Pros: Potential opportunities for advancing some of the Phase II walls that otherwise may not be built any time soon.

Cons: Potential delay in implementation of eligible soundwalls that were required to be constructed as part of the HOV lane projects but were deferred due to other priorities.

This alternative is not recommended. Conducting noise studies, preparing documents, and assigning priority index numbers to all candidate walls requires substantial investment without a guarantee of being able to pay for the environmental, design, and construction of those walls.

NEXT STEPS

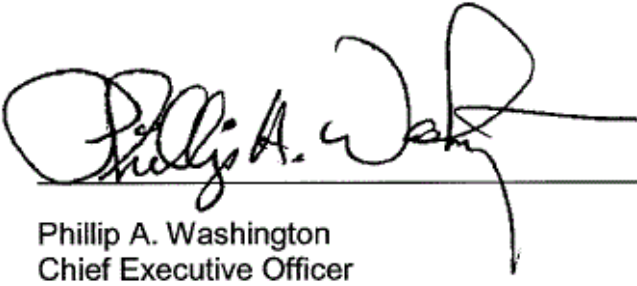
Staff will return to the Board in June 2019 to seek budget authority to continue implementation of the remaining walls in Phase I. Upon completion of Phase I, staff will return to the Board to identify potential available funding and recommend alternatives to establish order of priority for Phase II soundwalls.

ATTACHMENTS

Attachment A - Countywide Soundwall Lists
Attachment B - Soundwall Types Approved by Caltrans
Attachment C - Soundwall Location Maps by Subregion

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