



Board Report

File #: 2016-0250, File Type: Contract

Agenda Number: 36.

**REVISED
CONSTRUCTION COMMITTEE
MAY 19, 2016**

SUBJECT: METRO GOLD LINE INTERSTATE 210 BARRIER REPLACEMENT

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

AUTHORIZE the Chief Executive Officer (CEO) to:

- A. **ADOPT** a Design Life of Project Budget for \$11,078,366 for the **I-210 Barrier Replacement Project to develop a Risk Assessment Study, Environmental Clearance and Final Design documents** for future construction consideration;
- B. **AMEND** FY16 Budget by \$553,918 and **AMEND** FY17 Proposed budget by \$9,970,529 to fund aforementioned efforts;
- C. **AWARD AND EXECUTE** a fourteen-month labor hour Task Order No. 12 for Contract No. PS4730-3070. Highway Programs on-call support services, to CH2M Hill Inc. in an amount not-to-exceed \$4,799,967 for Architectural and Engineering (A&E) services for the preparation of the Project Report and Environmental Documents (Categorical Exemption) and the Plans, Specifications and Estimates for the Metro Gold Line Interstate 210 Barrier Replacement; and
- D. **EXECUTE** Modification No.1 to Contract No. PS4730-3070 to increase the not-to exceed value by \$4,799,967 from \$10,000,000 to \$14,799,967.

ISSUE

Since the opening of the Metro Gold Line, there have been six accidents in which a big rig vehicle, traveling on the 210 Freeway, has entered into the operating Right-of-Way. The latest incident occurred on Sunday, March 6, 2016. During the incident, the tractor caught fire causing damage to the Gold Line system and a major disruption. The Gold Line required immediate repairs which were not complete until early the following morning. Staff proposes to develop design options for barrier improvements for the Pasadena Gold Line and effectively mitigate the risks of future breaches into Metro's Gold Line Right-of-Way. Once the barrier improvements have been approved by Caltrans, Metro will procure a construction contract for installation of the

improvements.

DISCUSSION

We have provided the Board with two board boxes on this critical safety issue on May 7, 2014 and again on December 3, 2015. In these board boxes, we explained that Metro staff determined the need to proceed with the replacement of the existing barriers and have been working on developing a plan to do so. We explained that Metro Engineers have investigated the various barrier alternatives available which meet Caltrans standards and for which installation will have minimal effect on our

Right-of-Way, and will be sturdy and tall enough to reduce the risk of vehicles breaching the median barrier and colliding with one of our trains or injure Metro patrons on station platforms. We have had several meetings with Caltrans to discuss this issue and to share our findings. Metro Engineering's preliminary view is that there is a need to replace the existing 32" high Type 50 barriers (which do not provide adequate protection) with a taller 56" high, Type 60 G Caltrans barrier. This improved barrier will provide the highest available level of crash test worthiness, TL 5 or Test Level 5 that is currently available and in-use, and will bring the Interstate 210 corridor in line with similar Caltrans improvements already implemented as part of the Interstate 710 center median.

The study and design for which we are seeking Board approval, includes preparation of a Project Report (PR) which will either validate the barrier Type 60 G as appropriate for our needs, or recommend an alternate Caltrans Standard barrier(s) which might better fit our needs.

It should be noted that we have reviewed the possibility of using taller barriers than the Caltrans Type 60 G, and found such an approach to be incompatible with the existing conditions as the existing bridges were not designed to carry such a larger load. Also, when the contractor finally replaces the barriers on the existing bridges, some minor strengthening of the existing girders may be needed. Therefore, staff believes that the final design must limit the amount of additional load added to the bridge to avoid triggering seismic retrofits. Additionally, using barriers taller than 56" may result in reduced sight distance for the drivers on the freeway and require reconfiguration of the freeway lanes to bring sight distance to required code limits; potentially a costly addition to the project's cost.

We are asking the Board to authorize the necessary funding to allow Metro staff to enter into contracts to complete the first phase of the project, which is to prepare a risk assessment study under a separate contract to be issued, while concurrently obtaining environmental clearance (Categorical Exemption) under the recommended Task Order. The second stage of the project will be to develop the final design and a construction cost estimate. The final stage of the project will be to solicit a separate construction contract to install the improvements.

Risk Assessment Study:

Funding will be used to hire a consultant to prepare a risk assessment study, with the objective of developing a plan for protecting the Gold Line from the same kind of accidents that have occurred thus far along the I-210 freeway. The objective is to assess the risks associated with each type of accident, their particular locations and their impacts on the operation of the Gold Line. Impacts of accidents include such things as loss of life, property damage, and short and long-term service disruptions.

New Barriers - Environmental Clearance (Categorical Exemption) Final Design and Construction Cost Estimate

Metro Engineers have prepared two options for the replacement of the existing barrier. The first option (minimal approach) is a partial barrier replacement which would provide only the minimum level of enhanced crash barriers adjacent to stations locations and designated critical equipment (train control cases and bungalows) along the east and west bound directions of the alignment. The second option (full approach) would replace the full 12 miles of barriers in both east and west bound directions.

In the interest of time it was decided that during the development of the risk assessment study, the design for the whole 12 miles (full approach) will be developed and adjusted as a result of the findings and recommendations of the risk assessment study to refine the design at appropriate locations. Upon completion of the final design, it will be included in the solicitation package which will be prepared to bid the job.

Intrusion Detection System

Metro Engineers will evaluate the feasibility of using an intrusion detector which would be installed on the top of the new barriers system; when the intrusion detection system is activated, the signal will serve to stop all trains in the vicinity, thus reducing the probability that a train may be hit by a vehicle breaching into our Right-of-Way. If the solution appears feasible and the level of potential false alarms of this sensitive system is low enough to be acceptable, we will proceed with developing the design of this system and will coordinate the interfaces between the installation of the system and the new barriers systems.

Task Order No. 12 Work and Caltrans Participation

In order to be responsive to this high priority and urgent project, we elected to use the Metro On-Call project management and quality assurance/control support services Contract No. PS4730-3070 with CH2M Hill Inc. (CH2M). CH2M has the experience on this type of work and has

committed to prepare this Phase 1 effort within the required timeframe.

CH2M will use Metro's Preliminary Engineering Package as a starting point to develop a Final Design package (plans, specifications and estimates) for the barriers replacement. CH2M's proposal also includes constructability reviews of their design with the objective of ensuring that their design will minimize the number and types of disruptions to Gold Line Operations during construction. In addition, the risk assessment study results will help determine with more accuracy whether or not there is a need to replace all of the existing barriers along the entire 12 miles alignment (full approach) or only at selected sections of the alignment. CH2M will also develop a more definitive construction cost estimate and Metro staff will come back to the Board in early FY18 with a request to approve funds for Phase 2, construction of the project.

Metro staff met with Caltrans several times in the last year to share their approach and seek a consensus with this important partner for this project. As recently as April 14, 2016 we met with Caltrans executives and sought their comments on CH2M's scope of services, which were then incorporated by CH2M in a revised scope of work. Caltrans' specific request was to increase the number of Alternatives in the Project Report from one to three, to expand the mapping limits of the project, and to add Landscape Architecture services to the scope; which were all incorporated into the revised scope of work. This coordination process culminated in a three way meeting on April 19, 2016 between Metro, Caltrans and CH2M to make sure there was a consensus on the resulting scope for CH2M and on the role of each partner for this project.

In addition Caltrans has made us aware of their plan to design and build an Active Traffic Management (ATM) System on the I-210. This ATM system consists of signs placed above each lane of the freeway, approximately every half a mile and displaying the maximum speed allowed on each lane: Metro agreed that the design work by CH2M for Metro I-210 project will provide for future installation by Caltrans of this ATM equipment. In other words, based on inputs to be provided timely by Caltrans to Metro, CH2M will ensure their design of Metro I-210 project can accommodate Caltrans ATM facilities such as pylons, ductbanks and conduits to be installed by Caltrans at a later stage.

Finally, Further, we have also secured direct participation of Caltrans to support the Metro I-210 barriers replacement project, review the work of CH2M and issue the permit at the end of Phase 1 through the issuance of a work order under the existing Master Cooperative Agreement for \$1,815,306.

Phased Construction

Considering the concurrence of activities of this complex project with a risk assessment study prepared while we develop final design and estimate, it is the intention of staff to develop a strategy to be submitted to the board approval at the end of this design phase, which will discuss

a potential phased construction approach. Depending on the results of the risk assessment study and of the project report staff might propose to install these new barriers in a phased way: First phase would very likely covers the stations areas where we have large number of patrons, a second phase would be in areas where sensitive equipment such as signaling bungalows are located, a third phase would include sections of the freeway with a tight radius curves, etc. Staff might also recommend to install the new barriers system for the entire affected 6 miles alignment.

DETERMINATION OF SAFETY IMPACT

This Board's decision to approve this Project is paramount to ensuring public safety along the Metro Gold Line I-210 corridor.

Implementation of this project will be an important step in improving safety and to reduce the likelihood of future breaches into Metro's Gold Line Operational Right-of- Way. The improvements described in this project are necessary for public safety.

FINANCIAL IMPACT

Upon approval of the recommendations, staff will establish a project number and a Life of Project budget for \$ 11,078,366 to execute the final design and supplementary requirements as described. Final design budget will be programmed in the FY16, FY17 and FY18 budgets as per Attachment A, Sources and Uses Table. A majority of the budget will reside under cost center 8510 - Construction Procurement, Account number 50316 - Professional and Technical Services.

Since this will likely be a multi-year project, the Project Manager, Cost Center manager, and Executive Director of Program Management will be responsible for budgeting the cost in future fiscal years.

Impact to Bus and Rail Operation or Capital Budgets

The FY16, FY17 and FY18 budget amendments for this action will come from Proposition C 25% (PC25%) as a result of the workscope aligned with Highway related improvements. This fund source is not eligible for Bus or Rail Operations. No other fund source was considered.

ALTERNATIVES CONSIDERED

The Board could choose not to approve this project. However, Metro staff believe that it is necessary to study alternatives to the existing form of barrier that exists along the 210 Freeway corridor through which the Gold Line operates, to reduce the risk of future vehicle intrusions into the Metro Gold Line I-210 median operating area.

NEXT STEPS

Upon Board approval, Metro staff will hire a consultant to prepare a risk assessment study to determine the appropriate level of improvements to the existing barrier, issue Task Order No. 12 to CH2M, and issue a Work Order to Caltrans to coordinate the work, review and approve the work of CH2M.

ATTACHMENTS

Attachment A - Design Life of Project Cost Estimate

Attachment B - Procurement Summary

Attachment C - Task Order Log

Attachment D - DEOD Summary

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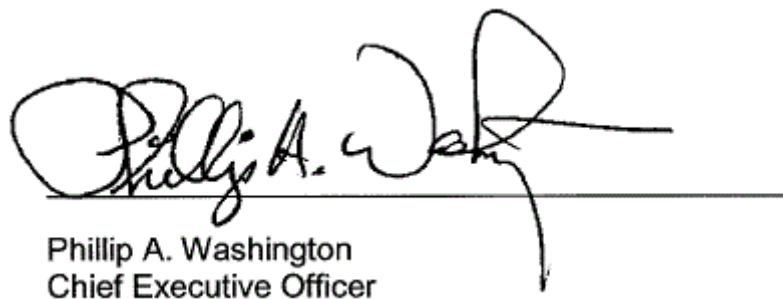
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