



Board Report

File #: 2017-0132, Version: 1

REVISED
REGULAR BOARD MEETING
JUNE 22, 2017

SUBJECT: METRO BLUE LINE SIGNALING REHABILITATION AND OPERATIONAL IMPROVEMENTS PROJECT

ACTION: AWARD CONTRACT

RECOMMENDATION

AUTHORIZE the CEO to award Contract No. C1081 to Mass Electric Construction Co/Parsons, the selected best value contractor to design and construct the **Blue Line State of Good Repair signaling rehabilitation and operational improvements** for a contract value of \$81,513,000.

ISSUE

The existing MBL light rail transit system is over 25 years old. Signaling and Overhead Catenary Systems (OCS) are in need of rehabilitation as they are essential subsystems for safe and effective light rail operations. Currently, the MBL is operating with a limited number of interlockings, which are trackwork and signaling components that allow trains to cross from one track to another during planned maintenance or in the event that there is a disabled train. With the existing six interlockings between Washington Station and Willow Station, some segments of the MBL are limited to 30 - 40 minute headways during emergency situations. The addition of four new interlockings is expected to improve single tracking headways to approximately 15 - 20 minutes and allow a better overall emergency operation response.

Finally, the MBL Division 11 Yard is operating with an obsolete signal system that is very limited and relies on manual control. The Yard signal system portion of this project will update the signaling of Division 11 and provide a more efficient and safe yard operation.

BACKGROUND

As a State-of-Good-Repair project, Metro Blue Line Signaling Rehabilitation and Operational Improvements (Signal/Interlocking/OCS) Project will:

1. Replace all vital relays
2. Install four additional interlockings and one siding at 95th Street
3. Install the associated Solid State Interlockings (SSI) and the associated communications equipment
4. Install new frequency converters for the train detection sub-system

5. Redesign the switch between the two redundant power supplies in the Signaling bungalows to address recurring loss of signal power issues
6. Replace code transmitter relays for the speed control sub-system
7. Replace the OCS in the Long Beach loop and Downtown Los Angeles
8. Upgrade the Signal system in the Division 11 yard

These activities will improve single tracking capability that take place during planned maintenance or unplanned incidents. In addition, the additional siding track near 95th Street will provide train storage for more operational flexibility.

The OCS contact wires operating in sections in downtown Los Angeles and Long Beach have experienced significant wear over time, resulting in an increasing probability of a wire failure and service disruptions. Replacing and re-tensioning these wires will provide a more reliable and safer operation. The OCS in the 7th Street/Metro Center tunnel is also approaching the end of its useful life. The replacement of the existing wire system with new Overhead Contact Rail (OCR) system will reduce future maintenance needs and will support the Regional Connector tunnel OCR which is currently under construction.

The new train control system in the Division 11 Yard will provide efficient and safe yard operations for Metro staff. The control tower will have the ability to route trains remotely and monitor MBL operation more easily.

DISCUSSION

Scope and Use of Advanced Technologies

1. This scope enables the use of advanced technologies. For example Solid State Interlocking (SSI) technologies for the control of the interlockings will be used instead of relays. Solid state electronic equipment is much more reliable due to the use of electronic circuits and components. SSI technologies have a much lower failure rate than relays and a longer life, which improves system reliability and is more cost effective in the long term. Finally the use of SSI technologies will align the MBL with the Expo line or the Regional Connector project in terms of technologies between projects to improve the overall efficiency and effectiveness of maintenance.
2. Due to the use of more advanced technologies for the interlockings, one of the crossovers added to the project requires a new bungalow to house the new train control and communication equipment. The existing Metro Right-of-Way is not adequate to add a new bungalow; the project is proposing to purchase a small property adjacent to the MBL tracks.

3. The scope of the project also addresses reliability. The existing MBL Signaling bungalows currently house 3,500 vital relays. These relays are 25 years old and approaching the end of their useful life. Therefore, the replacement of all 3,500 vital relays is included in the scope of this project to improve reliability.
4. The project is also replacing the code generators of the existing signal system. The existing code generators required urgent replacement. The cost of procurement and installation for the complete code generator replacement is included in the scope of this project.
5. Finally in order to minimize the disruptions of Operations during the construction of the project on the Blue Line, it is critical to have Metro Inspectors and Flagmen support the construction of the project. Not only is this a new CPUC regulation, but it is also a direct experience from the success of the MBL stations enhancements project. Metro Inspectors and Flagmen are needed to grant contractors access to Metro equipment rooms and equipment and tracks, including the Signaling bungalows. They also assist with shutting down the traction power when appropriate, and authorizing and inspecting all contractor activities to ensure the safety of our system.

FINANCIAL IMPACT

The amount of this contract action is \$81,513,000. Funding for the FY 18 effort and ~~approval for an \$118,900,000 Life of Project budget are included in the proposed~~ were approved by the 2017 May Board item 30 FY18 budget board report scheduled for consideration at the May Finance and Budget and regular board meeting.

It is proposed that since this is a multi-year project, the Project Manager, Cost Center Manager, and Chief Officer of Program Management will ensure that costs will be budgeted in future years.

Impact to Budget

The source of funds for this procurement will come from Prop A 35%, TDA Article 4, Measure M 2% and California Cap and Trade Transit and Intercity Rail Capital Program (TIRCP) grant funding.

ALTERNATIVES CONSIDERED

The Board may choose not to award this contract. This alternative is not recommended because rejecting this project would have the MBL continue to operate on the aging signaling and catenary system equipment as well as the difficulties of providing adequate service during single tracking for routine maintenance and in the event of an incident. The aging MBL systems will require additional maintenance and still suffer more breakdowns, which would lead to less reliable operations.

NEXT STEPS

Upon approval of the contract award, staff will work with Vendor/Contract Management to issue a Notice to Proceed for Contract C1081 MBL Signaling Rehabilitation and Operational. It is anticipated that the project will be completed within 36 months from issuance of the Notice to Proceed.

ATTACHMENTS

Attachment A - Sources and Uses Table

Attachment B - Procurement Summary

Attachment C - DEOD Summary

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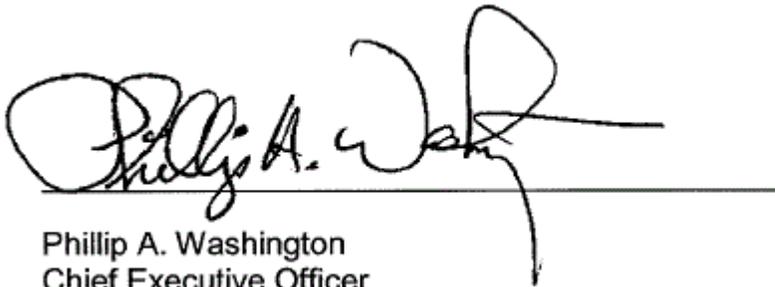
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