Los Angeles County
Metropolitan Transportation
Authority
One Gateway Plaza
3rd Floor Board Room
Los Angeles, CA

Metro

Board Report

File #: 2016-0466, **File Type:** Budget **Agenda Number:** 24.

SYSTEM SAFETY, SECURITY AND OPERATIONS COMMITTEE
SEPTEMBER 15, 2016

SUBJECT: METRO GREEN LINE TRAIN CONTROL TRACK CIRCUITS AND TWC REPLACEMENT

ACTION: ESTABLISH A LIFE OF PROJECT BUDGET

RECOMMENDATION

ESTABLISH a Life-of-Project (LOP) Budget of $28,851,200 for the **Metro Green Line Train Control Track Circuits and TWC Replacement Project** (CP205107).

ISSUE

The Metro Green Line's train control systems are equipped with legacy AF900 track circuit units and PC-Genisys based Train-to-Wayside Communication (TWC) hardware that has been operational from the start of revenue service in 1995. The systems are obsolete and no longer supported by the Original Equipment Manufacturer (OEM). Their replacement is necessary to maintain a State of Good Repair (SGR) of the Green Line train control system.

DISCUSSION

Commencing in 2012, Metro Wayside Systems has implemented a phased program of rehabilitation of the Metro Green Line train control system. The first phase of work (replacement of obsolete vital control processors) is nearing completion. The next phase is to replace obsolete track circuits and Train-to-Wayside Communication (TWC) equipment. Upon completion, the Green Line train control system will have been rehabilitated to the same equipment and configuration as the new Crenshaw Line, thus providing a fully up-to-date system, and conforming across the entire Green Line and Crenshaw system.

The scope of the project is to replace all 450 existing track circuits which provide train detection as well as transmitting cab signals to maintain safe train speed and safe train separation. Track circuit equipment is located in Train Control and Communication (TC&C) rooms throughout the line. At each of the 19 TC&C rooms, TWC equipment will also be replaced, comprising of non-safety train routing, train berthing, communication and local control panel equipment.

DETERMINATION OF SAFETY IMPACT

Approval of the recommendations will have a positive impact on safety as the project will move forward to ensure compliance with the OEM's replacement cycle specifications. Further, maintaining the rail system in a State of Good Repair (SGR) is essential to providing a safe and reliable service to riders who ride the Metro rail system daily.

FINANCIAL IMPACT

This action will establish an LOP budget of $28,851,200 for the replacement of the MGL track circuits and TWC. A portion of the LOP budget includes support for bus bridges to transport Metro patrons from closed station(s) to the nearest open station(s) during track closures to replace track circuits. Staff has calculated that it will cost approximately $2,620,600 to provide the necessary bus bridge support.

For FY17, funds of $83,500 has been budgeted and approved by the Board as part of the adopted annual budget for development of engineering technical specifications and procurement activities. Since this a multi-year project, the Project Manager will ensure that the balance of funds is budgeted in future years. The expenditure plan for CP205107 is shown in Attachment A.

Impact to Budget

The source of funds will come from Prop A 35% Bonds, which are eligible for Rail Capital projects. This funding source will maximize the provisions for fund use for these activities.

ALTERNATIVES CONSIDERED

The Board may choose not to authorize the life-of-project budget for CP205107. But this is not recommended by Metro staff because without proceeding to replace track circuits and TWC, any failure(s) will cause delays in MGL service as train movements will need stop until repairs are completed. Not performing or postponing these replacements is not recommended as these rail infrastructure components are safety sensitive; and if not properly maintained, will impact service reliability, passenger safety and comfort. Additionally, unscheduled maintenance repair costs on a per component basis will result in higher operating costs versus reduced costs when performing work as scheduled.

NEXT STEPS

Metro Maintenance of Way (MOW) will proceed forward with preparation of engineering specifications, contract solicitation, evaluation, and contract award in FY17.

ATTACHMENTS

Attachment A - CP205107 Expenditure Plan

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ATTACHMENT A

CP205107 Expenditure Plan

Metro Green Line Train Control Track Circuits and TWC Replacement Project

Use of Funds	FY 17	FY 18	FY 19	FY 20	FY 21	Total
Track Circuits and TWC Workstations	-	5,036,000	7,536,000	5,036,000	2,536,000	20,144,000
Metro Installation Labor	-	796,300	818,100	844,400	883,800	3,342,600
Agency Costs	83,500	71,500	74,000	76,200	78,000	383,200
Bus Bridge Support	-	562,400	577,800	596,400	624,200	2,360,800
Contingency 9%						2,620,600
Total Project Funding	83,500	6,466,200	9,005,900	6,553,000	4,122,000	28,851,200