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**REVISED
SYSTEM SAFETY AND OPERATIONS COMMITTEE
APRIL 18, 2013**

SUBJECT: METRO BLUE LINE SIGNAL REHABILITATION**ACTION: INCREASE LIFE-OF-PROJECT BUDGET****RECOMMENDATION**

Increase Life-of-Project (LOP) budget for Metro Blue Line (MBL) Signal Rehabilitation, CP 211005 by \$63,180,000, increasing the LOP budget from \$820,000 to \$64,000,000.

ISSUE

The existing MBL signal system is over 23 years old. Signals are essential to safe train operation, as they convey a visual message to the Train Operator concerning conditions affecting train movement. The MBL Signal Rehabilitation project was approved as part of the FY09 budget. When this project was established, the scope of work and LOP was intended to cover the cost of preliminary engineering and design. After this phase was complete and the total project scope was determined, the plan was to come back to the board to request an LOP increase, per the Financial Stability Policy Business Planning Parameters: capital projects with LOP budget changes that cause the project to exceed \$1 million or for which the change exceeds \$1 million shall be presented to the Board for approval.

DISCUSSION

The project scope of work now includes the following additional effort:

- Replacement of several "original" MBL interlockings (Washington, Florence, Imperial, Artesia, Main Yard and Willow) by solid-state electronic technology. Interlocking refers to the signals, switches, track and control apparatus that are interconnected to operate in sequence, allowing train movements only when non-conflicting conditions exist. Use of such technology removes a large percentage of the existing vital relay population and relieves Metro of periodic testing responsibilities.
- Building four new interlockings, including associated track and overhead catenary system work
- Interfacing of new and replaced interlockings to trackside equipment

- Associated alterations to the Supervisory Control and Data Acquisition (SCADA) system, which monitors traction power and related facilities, train control and communication buildings, track circuitry, passenger stations, platform and wayside intrusion systems, fire detection at vital facilities, and radio communication systems.

A key component of the signal system is the vital electromechanical relays, thousands of which are used throughout the system. Transcontrol, the original manufacturer of the vast majority of these relays, is no longer in business. Transcontrol-manufactured relays can be repaired by third parties however, the cost of these repairs is increasing as the system continues to age, and breakdowns are occurring more frequently. Additionally, with this older style of relays Metro is mandated by both California Public Utilities Commission (CPUC) and Federal Railroad Administration (FRA) to carry out periodic testing of all vital relays. This testing is disruptive to service and as such, has to be carried out at night. This project will replace the outdated technology with solid-state technology that does not require the same degree of testing without compromising safety. **Rehabilitation of the Blue Line signal system is a core effort in Metro's State of Good Repair efforts for Wayside Systems.**

Adding four interlockings in the vicinities of 55th Street, Century, Compton and Dominguez will facilitate daytime maintenance and better continuation of service when incidents occur. The current number of MBL interlockings, points at which trains may be crossed from one track to another, **only supports 30 to 40 minute service when single-tracking is necessary due to maintenance or an incident, such as equipment failure. Single tracking events occur most days on the Blue line, leading to frequent, and significant, reduction in service** ~~do not allow for acceptable service levels when single tracking takes place, meaning that any single tracking operations leads to a reduction in scheduled service, even during off-peak hours.~~ **By introducing four new interlockings, the single-tracking headway can be improved to 15 to 20 minutes, which supports off-peak service levels and will help reduce the impact of incidents and maintenance on the Blue Line.**

DETERMINATION OF SAFETY IMPACT

Rehabilitation of the signal system is essential for safe and on-time operation of the Metro Blue Line trains. Replacing the interlockings and adding interlockings at four new locations will reduce risk of injury to employees testing the vital relays as well as improve passenger safety.

FINANCIAL IMPACT

The increase to the life-of-project budget being requested is \$63,180,000. The funding of \$1,685,183 for this project is included in the proposed FY14 budget in cost center 3960 - Rail Transit Engineering under project number 211005 - MBL Signal Rehabilitation. Since this is a multi-year project, the cost center manager, project

manager, and Executive Officer, Wayside Systems will ensure that costs will be budgeted in future years.

Impact to Budget

The initial source of funds for this capital project is Prop A 35%, which is eligible for systems improvements, rail yards and rail cars. Staff will pursue federal and state funds for this project to maximize availability of local funding sources for other operating and capital improvement use.

ALTERNATIVES CONSIDERED

An alternative is to not proceed with rehabilitation of the interlockings and maintain testing of the vital relays status quo; however, this option is not recommended as costs and failures will continue to increase as the equipment ages.

NEXT STEPS

Upon Board approval, staff will work with Procurement to issue an Invitation for Bid, evaluate the bids received, select a contractor and return to the Board for contract award.

ATTACHMENTS

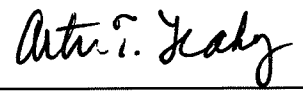
A. Funding/Expenditure Plan

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FUNDING/EXPENDITURE PLAN
 METRO BLUE LINE SIGNAL REHABILITATION - CP 211005

	FY13	FY14	FY15	FY16	FY17	FY18	Total	% of Total
Uses of Funds								
Project Administration	\$ 51.7	\$ 527.9	\$ 298.7	\$ 278.7	\$ 241.7	\$ 176.9	\$ 1,575.6	2%
Construction Management		\$ 8.5	\$ 8.7	\$ 8.9	\$ 9.1	\$ 9.3	\$ 44.5	0%
Metro Labor	\$ 12.1		\$ 363.6	\$ 372.3	\$ 380.8	\$ 325.9	\$ 1,454.7	2%
Professional Services	\$ 305.7	\$ 4,458.3	\$ 12,650.0	\$ 15,972.0	\$ 9,850.0	\$ 7,310.0	\$ 50,546.0	79%
Advertising		\$ 6.0					\$ 6.0	0%
Contingency						\$ 10,373.2	\$ 10,373.2	16%
Total Project Cost	\$ 369.5	\$ 5,000.7	\$ 13,321.0	\$ 16,631.9	\$ 10,481.6	\$ 18,195.3	\$ 64,000.0	100%
Sources of Funds								
Prop A 35%	\$ 369.5	\$ 5,000.7	\$ 13,321.0	\$ 16,631.9	\$ 10,481.6	\$ 18,195.3	\$ 64,000.0	100%
Total Project Funding	\$ 369.5	\$ 5,000.7	\$ 13,321.0	\$ 16,631.9	\$ 10,481.6	\$ 18,195.3	\$ 64,000.0	100%