

**Board Report**

File #: 2019-0787, **File Type:** Budget**Agenda Number:** 37.

**CONSTRUCTION COMMITTEE
NOVEMBER 21, 2019****SUBJECT: 7TH AND METRO STATION RADIO REPLACEMENT****ACTION: APPROVE RECOMMENDATION****RECOMMENDATION**

INCREASE the Life of Project (LOP) Budget for the Regional Connector Concurrent Non-FFGA Activities Project, capital project number 861228 by \$6,450,000 to a total amount of \$46,441,168. This will address critical radio system interface requirements at 7th & Metro.

ISSUE

The existing radio system at 7th & Metro station is more than 25 years old and is obsolete. The age and obsolescence of this life-expired equipment could present possible safety risks to Metro's rail operations due to potential reliability and intermittent maintenance issues. The radio infrastructure ("head-end") at 7th & Metro is uniquely critical to Metro's rail system as it currently serves the Metro Red, Purple, Blue, and Expo lines, including operations, maintenance, security and emergency response radio channels. Moreover, this location is critical to the forthcoming operation of the Regional Connector line, facilitating extension of rail service to Azusa and East Los Angeles.

The Regional Connector Project, in collaboration with Metro Operations and Corporate Safety, have studied how to integrate a new radio system into Metro's existing radio infrastructure, including the extension of new Regional Connector radio channels into the existing station and tunnels. Staff have concluded that it is not practicable to achieve this integration, in compliance with the revised Metro Rail Design Criteria (MRDC), without a complete replacement of the existing radio system at 7th & Metro.

With the understanding that the existing infrastructure requires replacement and that seamless radio operation is essential for operational safety along the Regional Connector, Expo and the Blue Line tunnel, it is recommended that the Regional Connector Project execute contract modifications to design, procure, install and test a new "head-end" radio system at 7th & Metro.

DISCUSSION

Metro Blue Line service to 7th & Metro commenced in 1991, with Section 1 of the Metro Red Line opening for revenue service at the station in 1993. The 7th & Metro Station includes existing radio transmission and reception equipment (i.e., a "head end") to service the Metro Blue, Red, and Purple

lines, including radio channels for operations, maintenance, Metro Security and emergency response & law enforcement. The existing system was expanded in 2012 to add two Metro Operations channels to accommodate the Expo line.

Metro Corporate Safety conducted a condition assessment in 2016 and concluded that replacement of the existing head-end was needed due to the system's age, condition, and risk of inability to repair. A reliable head-end was critical to rail operations safety, incident & emergency response, and to maintenance ability. The recommendations put forth by Corporate Safety are being included in a future radio replacement project for the Red/Purple lines

The Regional Connector Project is installing a radio system for the new tunnels & stations, including a new radio head-end at the 1st & Central/Little Tokyo station. This new radio system will be expanded to include channels for Gold Line Operations that do not currently exist at 7th & Metro or within the existing Metro rail tunnels. It was realized that it would be impractical to expand the radio system at 7th & Metro as required utilizing the existing head-end equipment. This was primarily due to the existing equipment being obsolete, the liability and risk of damaging existing equipment, and a determined inability to achieve seamless radio operation through the connected underground rail systems. Therefore, a modified approach was proposed which included a complete replacement of the existing 7th & Metro head-end to serve as the main communication system, with the second head-end being installed at the new 1st & Central station under the Regional Connector project serving as the 'hot-standby' system. This redundancy is required to meet the recently updated Metro Design Criteria.

By performing this work in conjunction with the Regional Connector Project, system and equipment compatibility and consistency is provided, to the advantage of operations, maintenance and emergency services. Additional cost efficiencies can also be realized by combining the work with similar work already underway by the Project.

Thus, these planned enhancements to the radio system will extend radio channels into the existing infrastructure, replace life-expired equipment due for replacement, and potentially mitigate operational safety risks by improving system continuity and redundancy.

DETERMINATION OF SAFETY IMPACT

The approval of this Work Scope and LOP Budget increase will allow Metro to address potential operational safety concerns, while improving overall service quality and system reliability. The new radio head-end will replace an obsolete system to provide for seamless operation between the new and existing infrastructures and additional operating and emergency responder channels throughout the tunnels and stations.

FINANCIAL IMPACT

Adoption of Recommendation will increase the LOP Budget for Project no. 861228 (Concurrent non-FFGA Activities Project) by \$6,450,000 to the total amount of \$46,441,168. The concurrent non-FFGA Activities are for projects related or being performed by the Regional Connector project, but

part of the base scope of that project. The \$300,000 required in FY20 for the radio system upgrade is included in FY20 adopted budget. The Project Manager and Chief Program Management Officer are responsible for budgeting for all costs associated with 7th & Metro radio system in the future.

Impact to Budget

The additional \$6,450,000 is funded with Measure M State of Good Repair 2%. This is an appropriate source for the upgrade of an existing radio system at 7th & Metro head-end.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Approval of the recommended action is consistent with Metro Strategic Plan Goal 1: providing high-quality mobility options that enable people to spend less time traveling.

ALTERNATIVES CONSIDERED

The Board may decline to approve the recommended actions. Staff do not recommend this alternative because potential safety concerns with the existing station and tunnels would not be addressed and there is a risk of not receiving CPUC approval once the Regional Connector is completed due to the inability to achieve seamless radio operation through the connected underground rail systems.

NEXT STEPS

Upon approval by the Board, Staff will complete negotiations with the Regional Connector contractor and execute a contract modification under authorization delegated to the CEO for the work to be installed and commissioned during pre-revenue operations period.

ATTACHMENTS

Attachment A - Funding Plan

Attachment B - Measure R and Measure M Unified Cost Management Policy Analysis

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