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

Metro

Board Report

File #: 2024-0807, **File Type:** Motion / Motion Response **Agenda Number:** 32.

OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE
JANUARY 16, 2025

SUBJECT: OPEN ACCESS LEASABLE FIBER

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE the report back on the feasibility of providing open access leasable fiber along the A Line South public right-of-way that could be accessed by City and County agencies.

ISSUE

At its July 2024 meeting, the Board directed staff to report back on the feasibility of open access leasable fiber. The findings are that open access leasable fiber is not feasible.

BACKGROUND

In the July 2024 Board Report, staff submitted a request to establish a Life of Project budget of $65,350,000 to implement the Communication Transmission System (CTS) upgrade, including installing a new fiber backbone on the Metro A, B, and D lines. The Board approved the request, as amended by Directors Dupont-Walker, Mitchell, and Butts, to report back on the feasibility of identifying areas along the public right-of-way where open access leasable fiber could be accessed by City and County agencies.

DISCUSSION

Staff conducted a feasibility study on installing an additional fiber optic cable with 432 strands available along the 22-mile, A Line South alignment for lease and usage by the City, as well as County agencies, which could be accessed near the Communications Equipment Rooms at the A Line South stations. This cable would be installed in existing underground conduits and manholes, which are also used for Metro's internal fiber optic cables. After reviewing the as-built drawings and conducting field surveys, the team found significant issues with providing leasable fiber as outlined below:

Financial and Resource Implications

Metro staff would be required to take on additional responsibilities and costs to maintain and repair the leasable fibers, conduits, inner ducts, as well as cable termination points. Given the

department's current and projected workload, staff does not have the capacity to absorb additional responsibilities. The potential maintenance responsibilities would require additional staff and vehicles to perform the necessary routine maintenance and to respond to any failures based on the agreed service level. These additional demands could disrupt Metro's ability to focus on its core priorities.

Cybersecurity Risks
Introducing leasable fiber cables into the same infrastructure as Metro's internal fibers (shared conduits and manholes) could create cybersecurity risks. Fiber optic tapping through the splices is possible due to utilizing the same splice trays, which creates a vulnerability, making Metro's internal communication systems susceptible to breaches.

In order to protect Metro systems against cybersecurity risks, the leasable fiber would need to be completely separate from Metro's fiber cables and conduits. This design and construction would allow use of Metro's right of way, but would not allow leasable fiber cable into the same infrastructure as Metro's fiber as the leasable fiber cable would be in a separate physical infrastructure, including conduits, manholes, and splice trays. In addition, any monitoring system to report on the condition of the leasable fiber would need to be a separate system, monitored by a dedicated maintenance team.

The addition of this work would likely delay the main CTS upgrade project schedule, which could also affect the timelines of major rail projects that need connectivity to the Rail Operations Control (ROC) Center, such as East San Fernando Valley (ESFV), Purple Line Extension (PLE)-1, PLE-2, PLE-3, Foothill 2B, and Metro Center Project (MCP).

Due to the concerns outlined above, open access leasable fiber is determined to be not feasible and not recommended.

EQUITY PLATFORM

The A Line South serves areas with a high Equity Focus Communities (EFC) concentration, including Watts, Willowbrook, Compton, Long Beach, Florance-Graham, and Downtown LA.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The Metro A, B, D Lines Communication Transmission System Upgrade Project supports the following Metro Strategic Plan Goals:

Goal # 1 Provide high-quality mobility options that enable people to spend less time traveling.

Goal # 3 Enhance communities and lives through mobility and access to opportunity.

NEXT STEPS
Staff will continue moving forward with the contract solicitation process for the main CTS fiber optic

cable upgrade project. Metro recommends municipalities to partner with fiber infrastructure firms to collaborate with other government entities to provide fiber optic cable access.

ATTACHMENTS

Attachment A - Motion #36

Prepared by:

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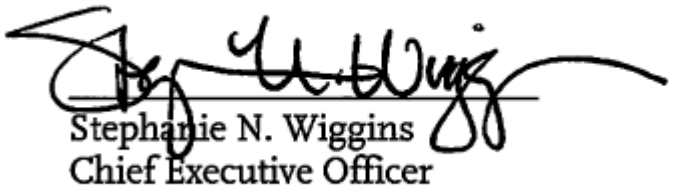
Reviewed by:

Conan Cheung, Chief Operations Officer, (213) 418-3034



Stephanie N. Wiggins
Chief Executive Officer

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File #: 2024-0375, **File Type:** Budget **Agenda Number:** 36.

REVISED
OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE
JULY 18, 2024

SUBJECT: APPROVE LIFE-OF-PROJECT BUDGET FOR METRO A, B, D, LINES COMMUNICATION TRANSMISSION SYSTEM UPGRADE

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

ESTABLISH a Life of Project (LOP) Budget of $65,350,000 for the Metro A, B, and D Lines Communication Transmission System Upgrade Project 205692.

DUPONT-WALKER, MITCHELL, AND BUTTS AMENDMENT: WE THEREFORE MOVE to amend Item 36 directing the Metro CEO to:

A. Report back by October 2024 on the feasibility of identifying areas along the public right-of-way where open access leasable fiber could be accessed at Metro's Communications Equipment Rooms by City and County agencies.

B. If feasible, include in the report back a map showing areas along the public right-of-way where open access leasable fiber could be accessed at Metro's Communications Equipment Rooms.

ISSUE

The Metro railway Communication Transmission System (CTS) uses a fiber optic network to transmit real-time data essential for the operation of Metro's railway systems and applications. However, the current fiber optic network's capacity to send data from the A, B, and D Lines to the Rail Operations Control (ROC) Center is limited and cannot support the additional bandwidth required for existing system upgrades and future rail expansion projects.

BACKGROUND

The existing CTS fiber optic network on the A, B, and D Lines is an original legacy system installed during the construction of the rail lines, which occurred as early as 1990. This network consists of older 48-strand fiber cables, which are crucial for a wide range of railway systems and applications. These fiber cables connect and transmit real-time data to the ROC for signaling and train control, train movements, traction power substation systems, passenger information systems, CCTV and

security systems, emergency communications, and public service announcements.

DISCUSSION

In May 2023, the Board approved annual funding of $600,000 as part of the FY24 budget for upgrading the communication transmission system for the B and D Lines. At the time of budget adoption, the plan was to return to the Board for the LOP approval. The annual funds were needed to survey the project work and develop design and construction specifications. As a result, it was determined that the project scope should be expanded to include the A Line South (7th/Metro to Long Beach). An engineering cost estimate was then prepared, resulting in a $65,350,000 Life of Project budget based on the necessary scope of work. The expenditure plan for the project is shown in Attachment A.

The project scope involves constructing a new backbone CTS fiber optic cable network to replace the existing legacy network. This includes installing new single-mode 288-strand fiber optic cables, patch panel equipment, connectors, network switches, and racks. The work will be completed in three phases. Phase 1 involves installation of fiber optic cable equipment for the A Line South to be completed between 7th/Metro and the ROC. Phase 2 involves installation of fiber optic cables and related equipment for the A Line South to be completed between the ROC and the Long Beach Loop. Phase 3 involves installation of fiber optic cable equipment for the B and D Lines to be completed between 7th/Metro, Union Station Gateway (USG), and the Metro Center (MC). Each phase is planned to be completed in approximately 12 months.

Upgrading the CTS fiber optic network is part of the Capital Improvement Program (CIP) to renew and enhance transit infrastructure assets. This investment will not only maintain the safety and efficiency of rail operations, but it will support the growth in rail services including aligning with the Metro's commitment to improving transit infrastructure.

This project supports our State of Good Repair work by providing additional network capacity to allow for the replacement of items such as CCTV cameras and Video Management System (VMS), Emergency Management Panels (EMPs), fire control panels, light rail tunnel lighting, Emergency Trip System (ETS), and addition of monitoring systems for predictive maintenance. Vandalism has also resulted in destruction of fiber.

This project further supports our expansion projects by providing high-capacity fiber network connectivity between the Rail Operation Control Center (ROC) and new rail projects (Foothill Phase2B, PLE1, PLE2,PLE3 and ESFV).

DETERMINATION OF SAFETY IMPACT

The CTS fiber optic network is central to various aspects of Metro rail operations. Upgrading to a modern 288-strand fiber optic network will ensure the efficient transmission of real-time data critical for signaling, train control, security systems, communications, and other operational needs. Customer experience and public safety will also be enhanced by expanding the CTS capacity which will allow for the addition of new equipment/systems such as Call Point Security Blue Light Boxes, Track and Tunnel Intrusion Detection System, cameras in B and D Line elevators, enhanced intrusion

detection systems for the underground stations ancillary areas, remote monitoring system for elevators and escalators and real-time security systems under consideration.

FINANCIAL IMPACT

This action will establish a $65,350,000 LOP budget for capital project 205692 - A, B, D Lines Communication Transmission System Upgrade. Annual funding required for this project is included in the FY25 budget.

Impact to Budget

The current source of funds for this action is Measure M 2% State of Good Repair. This funding is eligible for rail capital state of good repair projects only. Allocation of these funds to this effort maximizes their intended use given approved funding guidelines and provisions.

EQUITY PLATFORM

The equity benefits of this action include improving transit infrastructure and enhancing the safety of Metro riders, including assets along transit lines that provide service in and for Equity Focus Communities (EFCs) as well as low-income riders, who are the primary users of our system. Metro is committed to maintaining transit assets in marginalized communities, ensuring reliable and equitable transportation options for Metro riders.

Transit lines served by these improvements are located in communities with a high concentration of EFCs, including Long Beach, Compton, Watts, Florance-Graham, Downtown L.A., Westlake, Koreatown, Chinatown, Boyle Heights, Hollywood, East Hollywood, and North Hollywood. These transit lines also serve as connections for transfer to Metro and other bus service. Upgrading the fiber optic cable data capacity allows for the continuity of rail services through EFCs. Increasing the data transmission capability to the ROC allows for enhanced performance of high-definition CCTV and security systems, reliable station emergency communications assistance, and passenger information announcements that benefit low-income riders.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Approval of this recommendation supports the following Metro Strategic Plan Goals:

Goal # 1 Provide high-quality mobility options that enable people to spend less time traveling.

Goal # 3 Enhance communities and lives through mobility and access to opportunity.

ALTERNATIVES CONSIDERED

The Board may choose not to authorize the LOP budget for project 205692. However, this is not recommended because it is essential to increase the capacity and reliability of the CTS fiber optic network.

NEXT STEPS

Operations - Infrastructure Maintenance and Engineering will proceed with the project scope of work, contract solicitation, contract award, and project delivery.

ATTACHMENTS

Attachment A - Project 205692 Expenditure Plan

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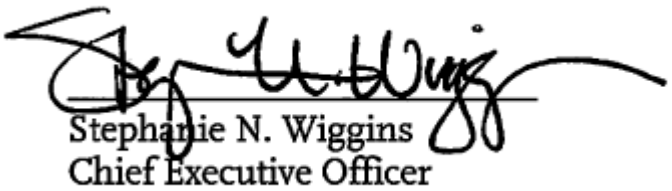

Stephanie N. Wiggins
Chief Executive Officer

INFRASTRUCTURE, MAINTENANCE, AND ENGINEERING

RESPONSE TO MOTION 36 OPEN ACCESS LEASABLE FIBER

Metro

Operations, Safety, & Customer Experience Committee Meeting
January 16, 2025

RECOMMENDATION

RECEIVE AND FILE the report back on the feasibility of providing open access leasable fiber along the A Line South public right-of-way that could be accessed by City and County agencies.

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ISSUE & DISCUSSION

ISSUE

At its July 2024 meeting, the Board directed staff to report back on the feasibility of open access leasable fiber. The findings are that open access leasable fiber is not feasible.

DISCUSSION

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