Los Angeles County
Metropolitan Transportation
Authority
One Gateway Plaza
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Los Angeles, CA

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**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE
NOVEMBER 17, 2022**

SUBJECT: NEXTGEN CAPITAL IMPROVEMENT - NEXTGEN WIRELESS CLOUD-BASED TRANSIT SIGNAL PRIORITY SYSTEM (TSP)

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

AUTHORIZE the Chief Executive Officer to award a firm fixed price Contract No.PS87006000 to Kimley-Horn for the design, development, and implementation of a wireless cloud-based transit signal priority (TSP) system on NextGen Tier One network in the City of Los Angeles for a total contract amount of $5,668,680, subject to resolution of properly submitted protest(s), if any.

ISSUE

In October 2020, the Metro Board approved the NextGen Transit First Service Plan (the Plan), which includes phasing out the existing Metro Rapid system in favor of a new high-frequency Tier One network that is more extensive than the existing Rapid system and will use different series of Metro buses.

A loop-based transit signal priority system was installed by Los Angeles Department of Transportation on selected transit corridors within the City of Los Angeles as part of the initial Metro Rapid system. The NextGen Wireless Cloud Based TSP project is one of the key components in the Plan to improve bus speed, reliability, and will replace the loop-based technology with GPS-Wireless technology using an Internet Cloud Service TSP system.

BACKGROUND

In 2018, Metro began the process of redesigning the bus system to improve the service for current and future riders. The Plan was approved by the Metro Board in October 2020 after extensive public outreach and review. The public communicated to Metro that improving bus speed and reliability is the single most important step Metro can take to retain and grow ridership by increasing the people throughput capacity of local roadways and shifting regional travel patterns toward more sustainable modes.

The Plan proposed improvements that would speed up buses, double the number of frequent Metro bus lines and provide over 80 percent of current bus riders with frequent service throughout the day.

Implementation of the Plan includes capital investment in transportation infrastructure utilized in high-frequency bus corridors on the Tier One network. The Tier One network is made up of transportation spines where 53 percent of today's bus riders use one of the top 25 corridors that make up this core network. These NextGen capital improvements include the upgrade and expansion of wireless cloud-based TSP, purchase, and installation of bus mobile validators to enable All-Door-Boarding, design and construction of bus priority lanes, bus bulbs and layover areas.

The NextGen Wireless Cloud Based TSP project will replace the loop-based technology with GPS-Wireless technology using Internet Cloud Service TSP system to improve bus speed and reliability on the NextGen Tier One network. It will develop and implement new cloud-based TSP software to enable TSP capability for all 33 corridors in NextGen Tier 1 network plus two future Bus Rapid Transit (BRT) corridors with approximately 1,638 signalized intersections. Furthermore, this project will design, procure, and install Ethernet communication equipment at 280 traffic signals and communications hubs to provide a more resilient traffic control communications system.

The NextGen capital program aims to improve TSP on numerous Tier 1 and 2 lines throughout the County of LA. This contract will modernize the existing TSP system in the City of LA while other efforts are underway to improve TSP throughout the rest of the County.

In August 2021, Metro applied and was successfully awarded $25 million from the State funded Local Partnership Program (LPP) to support the implementation of Metro's NextGen Speed and Reliability Improvements Program. The LPP grant plus the local match of $25 million (the combined $50 million) will fund four improvement projects: 1) development and implementation of an upgraded wireless cloud-based TSP in the City of Los Angeles to cover all Tier One network; 2) upgrade and expand the Countywide wireless TSP to cover all Tier One network serving Los Angeles County communities outside of the City of Los Angeles; 3) design and construction of new bus-only lanes and other transit priority improvements on up to 80 lane miles on the highest frequency corridors in the City of Los Angeles and neighboring cities; and 4) purchase, design and installation of new Bus Mobile Validators for fare payment to enable all-door-boarding on the Tier One and Two networks.

DISCUSSION

Approval of this contract award will ensure that the NextGen Bus Speed and Reliability Improvements Project remains a priority for the agency and Metro's commitment on the total project budget, match commitment and schedule as requirements of the Road Repair and Accountability Act of 2017 approved projects for the 2020 Local Partnership Program.

With the new cloud-based TSP system, the entire Metro bus fleet of more than 2,000 vehicles will have the capability of requesting and receiving signal priority at all the NextGen Tier One network. The wireless cloud-based TSP will eliminate the dilapidated maintenance needs for pavement loops, sensor cards and undercarriage transponders. As such, this project will deliver greater overall efficiency and future proofing than the existing loop-based TSP technology.

Findings

Metro staff worked closely with representatives from LADOT throughout the contract solicitation and

proposal evaluation processes. Kimley-Horn has demonstrated the technical, engineering experience, and capacity to support Metro to design, develop and implement a wireless cloud-based TSP in the City of Los Angeles.

Staff advertised and reached out to various consulting firms to provide them with information on this procurement to encourage more competition. Proposers were evaluated based upon Project Management Capacity, Technical Capacity of Proposer's Team, Technical Strength of Development and Operations of Cloud-Based TSP, Quality Control Management, and Cost. Four proposals were received in response to this solicitation and Kimley-Horn was ranked number one (1) in score based upon the evaluation criteria; further details can be found on Attachment A: Procurement Summary.

DETERMINATION OF SAFETY IMPACT

Board approval of this recommendation will improve the speed and reliability of Metro bus service on high-frequency corridors, which would potentially improve the safety of overall bus operations in the Los Angeles basin.

FINANCIAL IMPACT

The life of project budget is $15 million for the NextGen wireless cloud-based TSP (project 203046) which was included in the Capital Improvement Plan and approved by the Board as part of the FY2023 budget adoption. Because this is a multi-year project, the Cost Center Manager within Service Planning and Scheduling will be responsible for ensuring that the future year balance of capital funding is programmed and the cashflow is included in the annual budget adoption process. The estimated operating cost for this NextGen TSP project is $0.8 million per year to keep the TSP systems operating in an optimal manner with the TSP equipment well maintained and the cloud system updated at all times.

Impact to Budget

The funding source for this contract is Transportation Development Act (TDA) Article 4 Sales Tax Revenues, of which $1.6 million is included in the FY2023 budget in the Service Planning and Scheduling cost center. Use of these funding sources currently maximizes funding allocations given approved funding provisions and guidelines.

EQUITY PLATFORM

The speed and reliability improvements with the upgraded TSP systems are part of the NextGen Transit First Service Plan, which directly address the critical needs for low-income residents, and others who rely on public transit by serving the community-identified destinations with reliable and fast service, in particular to riders in the Tier One network that is primarily operated in the Equity Focus Communities. Wireless cloud-based TSP improves bus speed and reliability by reducing travel time which translates into more time available for work, leisure, or other activities. According to the Benefit Cost Analysis of the NextGen Project with three capital improvements (i.e., bus priority lanes, transit signal priorities, and all door boarding), the Project can achieve 8.76 M person hours traveled savings that can be accomplished in the period of 20 years.

The Diversity and Economic Opportunity Department (DEOD) established a 14% Small Business Enterprise (SBE) and 3% Disabled Veteran Business Enterprise (DVBE) goal for this solicitation. Kimley Horn exceeded the goal by making a 14.28% SBE and 3.11% DVBE commitment.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The recommendation supports strategic plan Goal 1: Provide high quality mobility options that enable people to spend less time traveling and Goal 2: Deliver outstanding trip experience for all users of the transportation system. This project will improve the speed and reliability of Metro Tier One bus service that runs through the heart of some of the most congested areas in the Los Angeles County with some of the most equity focused communities. This project will enhance transit customer experience in those areas by reducing travel times and improving schedule adherence.

ALTERNATIVES CONSIDERED

The Metro Board may elect not to award the contract as recommended by staff. However, this is not recommended since the California Transportation Commission has already approved funding Metro's Speed and Reliability Improvements Program with $25 million including $15 million for NextGen Wireless Cloud Based Transit Signal Priority Project. Delay to develop and implement the NextGen wireless cloud-based TSP may jeopardize the awarded LLP grant in its entirety. Furthermore, the existing loop-based TSP on selected Metro Rapid lines is obsolete. Without the implementation of a wireless cloud-based TSP in the City of Los Angeles, Metro will not be able to achieve the speed and reliability improvements outlined on the NextGen Transit First Service Plan, and Metro will not be able to attain improved on-time performance as quickly, without additional resources.

NEXT STEPS

Upon Board approval, staff will execute Contract No.PS87006000 with Kimley-Horn and issue a Notice-To-Proceed (NTP), and begin the design, development, and implementation of the NextGen wireless cloud-based TSP on Tier One network.

ATTACHMENTS

Attachment A - Procurement Summary
Attachment B - DEOD Summary

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