Metro

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

Board Report

File #: 2024-0478, **File Type:** Contract **Agenda Number:** 26.

**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE
NOVEMBER 21, 2024**

SUBJECT: REPLACE G-LINE OPPORTUNITY CHARGERS

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

AUTHORIZE the Chief Executive Officer (CEO) to execute Contract Modification No. 24 with New Flyer of America in the not-to-exceed amount of $7,938,707 under Contract No. OP28367-001, to procure seven on-route opportunity chargers, replace the same number of chargers installed on the G-Line Bus Rapid Transit (BRT) line and include a Service Level Agreement to ensure reliability and availability, increasing the total contract value from $66,460,743 to $74,399,450. This Contract Modification does not increase the Life of Project (LOP) budget of $80,003,282.

ISSUE

The G-Line charging infrastructure is experiencing significant reliability and availability issues, adversely impacting Metro's Operations and Service. For the majority of 2024, four of the eight opportunity chargers were out of service. This has resulted in Metro periodically needing to substitute Battery Electric Buses (BEBs) with Compressed Natural Gas (CNG) buses, fueled with renewable natural gas, to maintain service.

The primary issue is that neither the industry nor the technology had matured when the G-Line was converted to zero-emission operations in 2021. As a result, there were significant initial integration issues between the chargers and the BEBs.

BACKGROUND

In July 2017, the Board approved Motion 50 by Directors Bonin, Garcetti, Najarian, Hahn, and Solis (Attachment A) to convert the Orange Line (G Line) to a full Zero Emission (ZE) operation. That same month, New Flyer of America (New Flyer) was awarded a contract to deliver forty 60-foot articulated Battery Electric Buses and eight opportunity chargers to service the G-Line: two chargers each for the Chatsworth and Canoga Stations and four more chargers for the North Hollywood Station. New Flyer subcontracted the procurement and delivery of the chargers to Siemens. Although Siemens is a well-established company in the transit industry, its entry into the EV charging field under its eMobility division was relatively recent at the time of the subcontract.

Full battery electric bus service on the G Line commenced in January 2021, while all the opportunity chargers were installed in October 2021. In June 2021, one of the North Hollywood Station chargers was permanently damaged when it was struck by one of Metro's buses.

Numerous obsolescence and technical issues have plagued the system. Nonetheless, Metro and the contractor were generally able to mitigate the issues and keep the chargers operational until the start of 2024, when the chargers began developing technical challenges that could not be resolved. As of July 31, 2024, four chargers were permanently offline (one due to the collision and three for technical issues). The remaining chargers have experienced intermittent issues impacting their performance and availability. Specifically,

- The equipment is not fully compatible with the operating environment, resulting in numerous out-of-service periods due to rain and warm weather;
- The diagnostic system is not fully developed, not allowing for local troubleshooting and repairs;
- The vendor's technical staff was not fully trained, requiring support from non-local engineers; and
- The supply chain is not fully developed, leading to parts shortages.

Further, Metro included procurement of the chargers with the bus solicitation. Metro later learned that the existing reliability and availability provisions were insufficient to hold the contractor accountable for ensuring the chargers performed according to Metro's requirements.

The obsolescence of the equipment makes troubleshooting, part replacement, and repairs very challenging, limiting the availability of the chargers for service and causing range anxiety for operators.

DISCUSSION

New Flyer proposed Heliox as the replacement charger supplier. Metro staff reviewed the recommendation to ensure proposed chargers will meet G-Line operational requirements. Through outreach with other transit agencies, staff has reviewed performance, reliability, technical support, and approved these chargers as replacements. Staff recommends replacing the seven obsolescent Siemens chargers experiencing technical issues with more technically mature Heliox chargers. The eighth charger will be replaced via warranty with a similar Heliox charger. This charger was deemed unrepairable and decommissioned by New Flyer. In a previous agreement, New Flyer agreed to replace the charger as part of the warranty coverage.

Heliox was founded in 2009, and its core business is delivering charging systems for public transport. In 2023, Siemens ceased manufacturing its own chargers and procured Heliox to manufacture its chargers. As of that year, they have delivered and installed over 1600 DC rapid chargers. Further, Heliox's North American headquarters is in Atlanta, Georgia, and includes design, training, and manufacturing units. Therefore, trained and experienced Heliox staff should be more readily available to support Metro's ZE operating system. Supply chain issues should also be mitigated since the chargers are manufactured domestically. Although there are other charger vendors, there are very few whose core business is delivering charging systems for public transport and have a domestic manufacturing, design, and training presence.

Staff also recommends procuring a Service Level Agreement (SLA) for all eight new chargers within the change order to ensure qualified and experienced staff are available to troubleshoot and repair the equipment and maintain a high level of reliability and availability. The SLA incorporates lessons learned from the existing contract. It includes performance requirements to ensure that qualified and trained staff are available to respond expeditiously to ensure equipment availability and reliability. For example, the SLA requires 97% availability of the chargers for the contractor to receive 100% of the scheduled milestone payment. Lesser charger availability will result in lesser amounts being paid.

Metro conducted negotiations with New Flyer to secure a prorated credit for the remaining, unused warranty life as the existing chargers are replaced. This consideration reflects Metro’s commitment to fiscal responsibility, ensuring that the value of the underutilized equipment is accounted for within the overall contract modification. By securing this credit, Metro aims to maximize cost efficiency while transitioning to a more reliable, technically mature charging infrastructure.

DETERMINATION OF SAFETY IMPACT

The recommendations support the successful operation of the G Line and the 40 New Flyer 60-foot BEBs. Adopting this recommendation will provide operators with dependable on-route charging, which will reduce operator range anxiety and ensure reliable operation of the equipment.

FINANCIAL IMPACT

Total LOP funding of $80,003,282 is included in Cost Center 3320-Vehicle Technology, under project 201073, with an LOP available of $11,681,039. The FY25 annual budget is $2,067,838. This action is within the project LOP.

Since this is a multi-year contract, the Cost Center Manager will be responsible for ensuring that future year funding is programmed.

Impact to Budget

The current source of funds for this action is Measure R 35%. This funding is not eligible for bus and rail operating projects. The use of this fund meets the project allocation intent, given approved provisions and guidelines.

EQUITY PLATFORM

The G Line provides dedicated rapid transit bus service to many Equity Focus Communities (EFCs) on a 17.7-mile route from Chatsworth Station to North Hollywood Station in the San Fernando Valley. The line services roughly 97 High Need or Very High Need EFCs with the following demographics:

- 61% percent of households within the line’s EFCs are low-income.
- 12% are zero-vehicle households.
- 81% of the population is Black, Indigenous, and People of Color (BIPOC).

As previously noted, reduced charger availability impacts Metro's ability to operate BEBs on the G Line, necessitating that Metro deploy CNG vehicles to meet service levels. These impacts reduce service reliability and create greater pollution within these EFCs. Renewable Natural Gas (RNG) powered CNG buses can generate up to 0.75 metric tons of carbon monoxide per year, and the short duration of time with RNG-powered buses used on the G Line produced a portion of this amount per bus.

New Flyer of America, Inc., a Transit Vehicle Manufacturer (TVM), is listed on the Federal Transit Administration's (FTA) list of eligible TVMs and submitted its overall Disadvantaged Business Enterprise (DBE) goal of 4.01% to FTA for FY25. TVMs submit overall DBE goals and report participation directly to FTA annually.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

This recommendation supports Goal #3, Enhance communities and lives through mobility and access to opportunity, and Goal #4, Transform LA County through regional collaboration and national leadership.

ALTERNATIVES CONSIDERED

An alternative to the proposed new chargers is to continue using the current obsolescent chargers on the G Line. This option is not viable due to significant operational challenges, including limited support from OEM vendors and difficulties in procuring necessary repair parts. Additionally, as technology advances, these chargers will become incompatible with newer buses equipped with updated charging protocols.

Another option is to enforce the warranty, but Staff does not recommend due to a lack of Service Level Agreement (SLA) in place with the current chargers, therefore, the contractor is not incentivized to quickly and permanently resolve issues.

NEXT STEPS

Upon Board approval, staff will execute the Contract Modification to purchase and install chargers for North Hollywood, Chatsworth, and Canoga.

ATTACHMENTS

Attachment A - Board Motion 50 Strategic Plan for Metro's Transition to Zero Emission Buses
Attachment B - Procurement Summary
Attachment C - Contract Modification/Change Order Log
Attachment D - DEOD Summary

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File #: 2017-0524, **File Type:** Motion / Motion Response **Agenda Number:** 50

REVISED
REGULAR BOARD MEETING
JULY 27, 2017

Motion by:

DIRECTORS BONIN, GARCETTI, NAJARIAN, HAHN and SOLIS
AS AMENDED BY SOLIS, KUEHL and BARGER

FRIENDLY AMENDMENT BY FASANA

July 27, 2017

Strategic Plan for Metro's Transition to Zero Emission Buses

LA Metro has developed a comprehensive plan to deliver a complete transition to zero emission electric buses by 2030. The transition plan is contingent on two primary factors: continuous advancements in electric bus technology (which must increase range, reduce bus weights, reduce charging times, extend battery life cycles), as well as a drop in prices as the technology develops.

As electric bus technology continues to advance, our electric grid is becoming cleaner by gradually eliminating coal from our energy portfolio and replacing it with renewable sources. A full transition to electric buses coupled with renewable energy sources promises mobility with significantly lower environmental impacts from this form of transportation.

In order to maintain our bus fleet in a state of good repair, Metro plans to continue replacing its aging bus fleet at approximately 200 buses per year. With firm local hiring requirements in Metro bus procurement, routine bus procurement presents a recurring opportunity that bolsters our local labor force in perpetuity.

In 2012, Metro's U.S. Employment Plan resulted in the award of an $890 million contract to Kinkisharyo, a factory in Los Angeles County, and 404 quality railcar manufacturing jobs. Similarly, Metro can leverage recurring bus replacements to bolster labor throughout Los Angeles County

Metro plans to spend nearly one billion dollars on bus procurements in the next ten years That level of investment, coupled with a transition to all electric buses, presents an opportunity for LA County to demonstrate leadership on combating climate change, and can make Los Angeles the central marketplace for new electric bus technology: a County rich with quality manufacturing jobs rooted in technologies that provide mobility, sustain a healthy environment and create career paths in clean energy technologies.

SUBJECT: MOTION BY BONIN, GARCETTI, NAJARIAN, HAHN AND SOLIS AS AMENDED BY SOLIS, KUEHL AND BARGER

RECOMMENDATION

WE THEREFORE MOVE that the Board:

A. ENDORSE the Strategic Plan for Metro's Transition to Zero Emission Buses;

B. DIRECT the CEO to create a zero emission bus infrastructure working group comprised of Metro staff, federal and state regulators and local utility companies to track market availability and to cultivate ongoing collaboration among stakeholders. The working group will monitor market rates for emerging zero emission bus technology to support Metro's 2030 transition plan:

1. Working group to report to the Board annually with the latest technology innovations to support the cost/benefit analysis of fleet conversion

2. MTA to host an industry forum to solicit innovative solutions to delivering the 2030 plan;

C. AMEND the Metro federal legislative plan to advocate for local jobs as a critical factor in the evaluation criteria of MTA procurements; and

D. DEVELOP an equity threshold consistent with Title VI regulations for priority deployment of electric buses in underserved communities.

FURTHER MOVE that the Board direct staff to:

A. As part of establishing a working group:

   1. EXPAND the invitation to regional air quality regulators (e.g. South Coast Air Quality Management District), the American Public Transportation Association and California Transit;

   2. EXAMINE and TRACK vehicle technology and performance, energy production and pricing, infrastructure needs and life-cycle analysis and creative funding opportunities.

B. COORDINATE with the County of Los Angeles to explore opportunities to develop a countywide incentive structure to promote and attract more companies to manufacture, assemble and produce zero-emission transit vehicles and related technologies and infrastructure in Los Angeles County;

C. Widely PROMOTE and ENCOURAGE municipal transit agencies/operators to participate in the established process by which to co-procure ("piggyback procurement" provisions) zero-emission transit vehicles;

D. ENSURE that MTA maintains the flexibility to explore the best available technologies that contributes to zero-emissions and/or net-negative emissions in the Los Angeles County public transit sector.

FRIENDLY AMENDMENT BY FASANA that staff report back to the board with a timeline and any commitments by parties before we undertake our next bus purchase and answers to the following questions:

A. Will electric buses and their batteries deliver the guaranteed range and service?

B. Can municipal and electric utilities timely invest in the grid in order to power electric buses?

C. Which strategies will maximize Metro's ability to receive cap and trade credits?

D. How and when can charging infrastructure be deployed at our bus divisions? More importantly, how will such infrastructure be paid for?

E. Why is Metro's role critical for the adoption of low NOX engines in the trucking industry? What assurances do we have that this will take place when Metro has operated cleaner engines since the 1990s without adoption of these technologies by the trucking industry?

F. What are the resiliency impacts to our service if electricity or natural gas service is disrupted? What is our back-up plan?

G. Metro can intervene in regulatory proceedings at the California Public Utilities Commission for investor owned utilities regarding transportation electrification and equivalent natural gas proceedings as appropriate. Metro needs to assess the current regulatory schedule for such proceedings, develop advocacy position, and indicate that our adoption of electrification may be affected if electric transportation infrastructure is funded by shareholders, recovered through rates, and implemented on a timely basis.

H. Conversely, how will Metro undertake the capital investments directly? Foothill Transit has intervened in the active proceeding. Antelope Valley and other providers are engaged. Metro needs to be more actively engaged and needs to report back to our Board on what is at stake. In SCE's service area, demand charges make the operating costs of electric buses more costly than natural gas vehicles. Are we working to influence changes to the rate schedules?

I. Can RNG be adopted without direct Metro involvement by substituting RNG for natural gas purchased out of state? We should participate in any state framework that could create linkages between Metro's adoption of RNG and RNG implementation by the trucking industry.

ATTACHMENT B

PROCUREMENT SUMMARY

REPLACE G-LINE OPPORTUNITY CHAGERS/OP28367-001

1.	**Contract Number:** OP28367-001			
2.	**Contractor:** New Flyer of America, Inc. (NFA)			
3.	**Mod. Work Description:** Procure seven (7) on-route opportunity chargers and replace same number of chargers installed on the G-Line Bus Rapid Transit (BRT) line.			
4.	**Contract Work Description:** Procure 60' Low-Floor ZE transit buses			
5.	**The following data is current as of:** 11/8/2024			
6.	**Contract Completion Status**		**Financial Status**	
	Contract Awarded:	07/27/17	**Contract Award Amount:**	$51,211,033
	Notice to Proceed (NTP):	11/15/17	**Total of Modifications Approved:**	$15,249,710
	Original Complete Date:	09/16/19	**Pending Modifications (including this action):**	$7,938,707
	Current Est. Complete Date:	11/30/2030	**Current Contract Value (with this action):**	$74,399,450
7.	**Contract Administrator:** Antonio Monreal		**Telephone Number:** (213) 922-4679	
8.	**Project Manager:** Daniel Surmenian		**Telephone Number:** (213) 922-5830	

A. Procurement Background

This Board action is to approve Contract Modification No. 24 to procure seven (7) on-route opportunity chargers, replace same number of chargers installed on the G-Line Bus Rapid Transit (BRT) line, and include a Service Level Agreement to ensure reliability and availability, in the not-to-exceed amount of $7,938,707, including tax and delivery.

This Contract Modification will be processed in accordance with Metro's Acquisition Policy and the contract type is firm fixed price contract.

On July 27, 2017, the Board awarded Contract No. OP28367-001 to New Flyer of America, Inc., to manufacture and deliver thirty-five (35) sixty-foot (60') ZE transit buses in the Not-To-Exceed amount of $51,211,033. Refer to Attachment B – Contract Modification /Change Order Log for a list of pending and negotiated change orders.

B. Cost Analysis

The recommended amount has been determined to be fair and reasonable based on independent cost estimate (ICE), technical analysis, cost analysis, fact finding and negotiations. Metro staff successfully negotiated cost savings in the amount of $968,478.

Original Proposal Amount	Metro ICE	Recommended Not-to-Exceed Amount
$8,907,185	$8,074,722	$7,938,707

ATTACHMENT C

CONTRACT MODIFICATION/CHANGE ORDER LOG

REPLACE G-LINE OPPORTUNITY CHARGERS /OP28367-001

Mod No.	Description	Status (approved or pending)	Date	$ Amount
1	Add 5 option buses to base order and increase authorization for optional configuration	Approved	3/30/18	$7,371,287.00
2	Pilot buses battery capacity upgrade from 250kwH to 320 kwH	Approved	8/30/18	$226,384.00
3	Upgrade battery capacity from 250kwH to 320 kwH for 27 production buses	Approved	10/25/18	$2,792,074.05
4	Optional Bus Configurations	Approved	11/13/18	$485,933.00
5	Update Special Provision-38 Terms	Approved	1/9/19	$0
6	Training Aids and E-Learning Modules	Approved	8/13/19	$1,514,419.00
7	Modify Bus Configurations	Approved	10/23/19	$(30,107.00)
8	Modify project delivery terms	Approved	10/29/19	$0
9	Modify contract payment terms	Approved	2/25/20	$0
10	Depot charging equipment changes	Approved	2/27/20	$26,017.34
11	Upgrade of 4 on-route charging equipment	Approved	6/1/20	$853,869.00
12	Update changes on Pricing Forms	Approved	6/23/20	$0
13	Modify project delivery terms	Approved	7/13/20	$0
14	Procure 8 additional units of depot charging equipment	Approved	8/27/20	$1,138,133.00
15	Additional special tools	Approved	8/27/20	$4,240.00
16	Pantograph Upgrade for Canoga & Chatsworth Stations	Approved	12/1/20	$46,619.00
17	Additional Special Tools	Approved	12/15/20	$10,975.00
18	Chatsworth Electrical Service	Approved	2/1/21	$89,603.00
19	Modify Period of Performance to 6/30/2021	Approved	3/31/21	$0
20	Centre Axle Toolkits	Approved	3/31/22	$32,384.28
21	Charge Management System	Approved	8/19/22	$684,431.59
22	Siemens EVC3 Software License	Approved	9/13/22	$3,447.36
23	Technical Specifications Clarifications	Approved	12/22/22	$0
24	Procure 7 Chargers for G-Line and Service Level Agreements	Pending	TBD	$7,938,707.00
	Modification Total:			**$23,188,417.00**
	Original Contract:			**$51,211,033.00**
	Total:			**$74,399,450.00**

DEOD SUMMARY

REPLACE G-LINE OPPORTUNITY CHARGERS/OP28367-001

A. Small Business Participation

New Flyer of America, Inc., a Transit Vehicle Manufacturer (TVM), is listed on the Federal Transit Administration’s (FTA) list of eligible TVMs and submitted its overall Disadvantaged Business Enterprise (DBE) goal of 4.01% to FTA for FY25, in compliance with 49 Code of Federal Regulations (CFR) Section 26.49(a)(1). TVMs submit overall DBE goals and report participation directly to FTA annually.

B. Living Wage and Service Contract Worker Retention Policy Applicability

The Living Wage and Service Contract Worker Retention Policy is not applicable to this contract.

C. Prevailing Wage Applicability

Prevailing Wage requirements are applicable to this contract. DEOD will monitor contractors’ compliance with the State of California Department of Industrial Relations (DIR), California Labor Code, and, if federally funded, the U S Department of Labor (DOL) Davis Bacon and Related Acts (DBRA).

D. Project Labor Agreement/Construction Careers Policy

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. PLA/CCP is applicable only to construction contracts that have a construction related value in excess of $2.5 million.

VEHICLE ENGINEERING AND ACQUISITION

REPLACE G-LINE OPPORTUNITY CHARGERS

Metro

Operations, Safety, and Customer Experience Committee
November 21, 2024

RECOMMENDATION

AUTHORIZE the Chief Executive Officer (CEO) to execute Contract Modification No. 24 with New Flyer of America in the not-to-exceed amount of $7,938,707 under Contract No. OP28367-001, to procure seven on-route opportunity chargers, replace the same number of chargers installed on the G-Line Bus Rapid Transit (BRT) line, and include a Service Level Agreement to ensure reliability and availability, increasing the total contract value from $66,460,743 to $74,399,450. This Contract Modification does not increase the Life of Project (LOP) budget of $80,003,282.

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ISSUE

The G-Line chargers are experiencing significant reliability and availability issues, due primarily to lack of design maturity at time of procurement, adversely, impacting Metro's Operations and Service. Examples of issues include:

- Chargers are no longer fully supported by vendors
- Chargers are not fully compatible with operating environment
- Diagnostic capabilities are not fully developed, impacting ability to troubleshoot
- Supply chain does not fully support current chargers due to obsolescence, resulting in long lead times and part shortages

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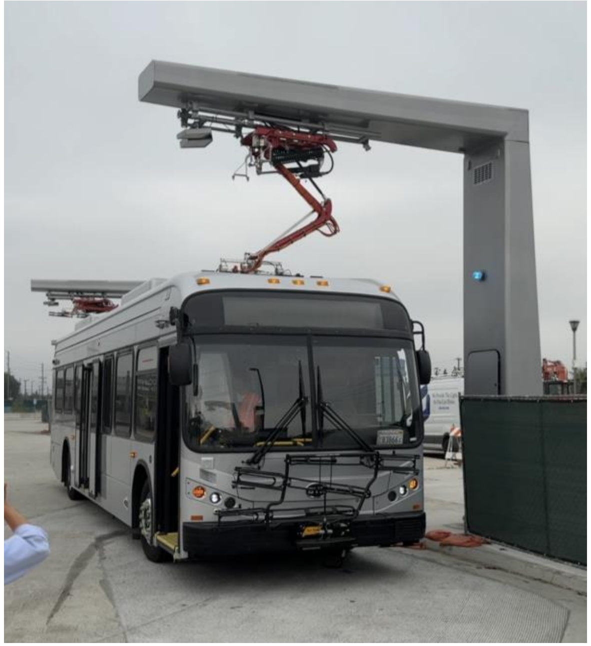
DISCUSSION

Staff recommends replacing the seven (7) obsolete Siemens chargers with more technically mature Heliox chargers.



Contract to include Service Level Agreement (SLA):

- To ensure qualified and experienced staff are available to troubleshoot, repair and maintain equipment in high State of Good Repair
- To incentivize the contractor to ensure that chargers are consistently reliable and available for Metro's operation

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