



## Board Report

File #: 2022-0822, File Type: Contract

Agenda Number: 24.

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### OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE NOVEMBER 16, 2023

**SUBJECT: A650 HEAVY RAIL VEHICLE ATC SYSTEM UPGRADE**

**ACTION: APPROVE RECOMMENDATIONS**

#### **RECOMMENDATION**

CONSIDER:

- A. AUTHORIZING the Chief Executive Officer (CEO) to negotiate, award, and execute Contract No. OP116496 to Hitachi Rail for 36 months for an amount not to exceed \$29,312,410, to upgrade the onboard train control system on 70 of Metro's A650 option order Heavy Rail Vehicles (HRVs) and a contract option for upgrading an additional 4 A650 HRVs, to ensure compatibility with upcoming upgrades to Metro's wayside signaling and communication systems, subject to the resolution of any properly submitted protest(s), if any; and
- B. FINDING that there is only a single source of procurement for the materials and work set forth in Recommendation A above and it is for the sole purpose of delivering, installing, and testing equipment compatible with the anticipated upgrades to Metro's wayside signaling/communication systems.

#### **ISSUE**

Staff has determined that the existing A650 HRVs will be incompatible with the upcoming upgrades to the wayside signaling and communication systems, meaning the HRVs cannot be used in service. Upgrading the A650 HRVs to be compatible with the upcoming wayside signaling system will require the purchase and installation of specialized rail transit equipment, as the signaling system throughout all of Metro's rail systems is produced by Hitachi Rail (previously known as Ansaldo STS). Due to this equipment being produced by only one company it is appropriate that the work to upgrade the Automatic Train Control (ATC) system on the A650 Option HRVs be procured through a sole source contract.

#### **BACKGROUND**

Hitachi Rail Inc. has been the single ATC system supplier of Metro's rail system for the past fifteen (15) years and is fully knowledgeable of Metro's current rail and wayside signaling systems. The Heavy Rail signaling system is comprised of wayside equipment on the tracks and onboard ATC

equipment that must communicate together to ensure safe operations, including speed restrictions and track occupancy detection. The onboard ATC equipment is safety critical equipment that protects the train and riders against collisions as well as speed overruns.

Hitachi Rail's onboard ATC equipment is already installed or being installed on all Metro's Heavy Rail and Light Rail Vehicle fleets, including the P3010, upcoming HR4000, P2000 modernization, and P2550 modernization vehicles. By installing Hitachi Rail's solution, the A650's ATC system will be aligned with all of Metro's other rail vehicle fleets.

All other existing heavy rail ATC systems must be replaced because it will be incompatible with upcoming wayside signaling system changes that will be included in the Division 20 Portal Widening and the D (Purple) Line Extension projects. The ATC system upgrade is therefore being split out from the re-bid of the A650 refurbishment, since refurbished vehicles are not expected to be completed until after the D (Purple) Line Extension is completed.

## **DISCUSSION**

Staff recommends a sole source procurement for this specialized, safety-critical system. The need for compatibility with the wayside systems dictates that only one company is currently able to provide the onboard equipment, making a competitive negotiation per PCC § 20217 impossible.

The wayside signaling equipment installed on Metro's Heavy Rail system is Hitachi Rail equipment, and no other vendor currently manufactures onboard equipment that can be installed on the A650 vehicles that are compatible.

Evaluation of other competing systems would therefore entail either replacing the entire heavy rail signaling system, including both wayside and onboard equipment for all Heavy Rail fleets, or replacing the onboard system of the A650 fleet with unproven new equipment.

Replacement of the entire signaling system is not a viable option, as multiple Heavy Rail Vehicle fleets would then need their equipment replaced along with all wayside equipment, vastly increasing the scope of this project. The entire system would also be disrupted while this changeover is being made, since the new equipment would not be able to communicate with the Hitachi equipment.

Replacing only the A650's onboard equipment would require the development of a brand-new system by a third party that is compatible with Hitachi's wayside equipment. This is prohibited by our standard contract terms, requiring 3 years of service proven history in the U.S. Eliminating this clause for a safety critical system like the ATC is not advisable, as an ATC system failure can result in catastrophic accidents. Creating a brand-new system would also require significantly higher costs and time, as it would require development of the system from the ground up and additional safety certifications.

The ATC system is a safety critical system, making it imperative to use a service proven system. Hitachi Rail has developed the onboard ATC system for all recent Metro rail projects, including the HR4000 HRV Procurement, P3010 LRV Procurement, P2000 Midlife Modernization and the P2550 Midlife Modernization. No other company produces a product that is compatible with Metro's wayside systems, and the development of a new system would pose significant safety, cost, and schedule

impact. Hitachi Rail is uniquely qualified as both the manufacturer of the ATC equipment and a Transit Vehicle Manufacturer (TVM) that is capable of performing the vehicle level work required for the installation and testing of the equipment.

The ATC system upgrade was previously included in the midlife overhaul of the A650 Option HRVs. Due to the cancellation of that contract, the ATC system upgrade must be accelerated to allow the A650 Option HRVs to be used after the opening of PLE.

### **DETERMINATION OF SAFETY IMPACT**

The approval of this capital project will have a direct and positive impact to safety, service quality, system reliability, performance, and overall customer satisfaction. A properly functioning ATC system protects the HRVs from collisions and is required for safe operation of Metro's rail service. Upgrading the train system on 74 HRVs will ensure the safety of these vehicles for Metro's passengers and staff.

### **FINANCIAL IMPACT**

Upon Board Approval, the contract will be executed and will not exceed the LOP 206038 A650 OCCRP, for the ATC Upgrade on the 74 A650 Option Vehicles. The project LOP not only covers the cost for the ATC Upgrade, it also includes Professional Services, Project Administration and Metro Labor. Since this project will occur over a multi-year period, the Cost Center Manager, Project Manager and Chief Operations Officer will be responsible for future fiscal year budgeting.

#### **Impact to Budget**

Upon approval, the recommendation shall be funded with a combination of Federal, State and Local funds, primarily consisting of Proposition A 35% and Federal State of Good Repair Section 5337 funds. Use of these funding sources maximizes funding allocations given the currently approved funding provisions and guidelines. This recommendation supports Operations State of Good Repair efforts. Current fiscal year funding may be required to enact this project and shall be funded via a net zero budget transfer from approved FY24 funded projects.

### **EQUITY PLATFORM**

The existing A650 option order HRVs are operating on Metro's B and D Lines and will be used on D (Purple) Line Extensions 1, 2 & 3. Approving these recommendations will ensure that safe, reliable HRVs are available to support the planned line and service expansions.

The modernized A650 fleet will operate on lines that are currently serving passengers living in predominately Equity Focus Communities (EFCs) who rely on public transportation for their daily jobs.

Based on the 2019 Customer Survey, the B and D heavy rail lines serve the following ridership:

- 27.7% below the poverty line

- 56.4% had no car available

Ethnicity:

- Latino 38.9%;
- Black 13.1%;
- White 25.8%;
- Asian/Pacific Islander 15.2%;
- Other 6.5%

The Diversity and Economic Opportunity Department (DEOD) did not recommend a Disadvantaged Business Enterprise (DBE) goal for this procurement as it is not applicable. This procurement falls under the Federal Transit Administration's (FTA) Transit Vehicle Manufacturer (TVM) goal in accordance with 49 Code of Federal Regulations (CFR) Part 26.49.

### **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

These recommendations support Metro Strategic Plan Goal No. 5) to “provide responsive, accountable, and trustworthy governance within the Metro organization”. This goal strives to position Metro to deliver the best possible mobility outcomes and improve business practices so that Metro can perform more effectively and adapt more nimbly to the changing needs of our customers.

### **ALTERNATIVES CONSIDERED**

The Board of Directors may choose to pursue a competitive bid, but this methodology is not recommended. There is no competition currently in the market and pursuing a competitive bid will cost time and money for the bidding process and will likely result in a single bid. Any alternate bidder would either need to procure the equipment from Hitachi Rail or reverse engineer and develop an alternate system. Both scenarios would result in additional overhead costs and schedule delays. For these reasons, staff does not recommend this alternative. The sole source procurement process will provide the safest, most expedient, and lowest cost implementation of the ATC system upgrade.

### **NEXT STEPS**

If these recommendations are approved, staff will proceed with a sole source contract award for the ATC system upgrade of 70 of the A650 option order HRV fleet with a contract option for an additional 4 A650 HRVs.

### **ATTACHMENTS**

Attachment A - Procurement Summary  
Attachment B - DEOD Summary

Prepared by: Annie Yang, Deputy Executive Officer, Vehicle Engineering & Acquisition, (213) 922-3254  
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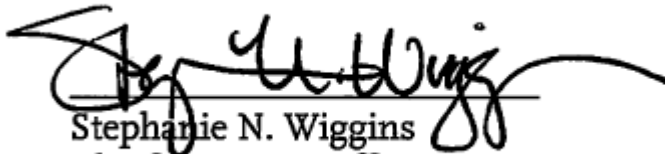
**Agenda Number:** 24.

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Stephanie N. Wiggins  
Chief Executive Officer

**ATTACHMENT A  
PROCUREMENT SUMMARY**

**A650 HEAVY RAIL VEHICLE AUTOMATIC TRAIN CONTROL UPGRADE**

1.	<b>Contract Number:</b> OP116496	
2.	<b>Recommended Vendor:</b> HITACHI RAIL STS USA, INC.	
3.	<b>Type of Procurement (check one):</b> <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input checked="" type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	<b>Procurement Dates:</b>	
	<b>A. Issued:</b> October 23, 2023	
	<b>B. Advertised/Publicized:</b> N/A	
	<b>C. Pre-Proposal Conference:</b> N/A	
	<b>D. Proposals Due:</b> October 27, 2023	
	<b>E. Pre-Qualification Completed:</b>	
	<b>F. Ethics Declaration Forms submitted to Ethics:</b> October 31, 2023	
	<b>G. Protest Period End Date:</b> December 15, 2023	
5.	<b>Solicitations Picked up/Downloaded:</b> One (1)	<b>Bids/Proposals Received:</b> One (1)
6.	<b>Contract Administrator:</b> Jessica Omohundro	<b>Telephone Number:</b> 213-922-4790
7.	<b>Project Manager:</b> Ray Saito	<b>Telephone Number:</b> 213-922-3141

**A. Procurement Background**

This Board Action is to approve Contract No. OP116496 issued in support of Metro's A650 Heavy Rail Vehicle (HRV) to procure services required to upgrade the onboard train control system to ensure compatibility with upcoming upgrades to Metro's wayside signaling and communication systems. It was determined by Metro's Engineering and Operations team that the design, manufacturing, installation, testing, and warranty be provided by the Original Equipment Manufacturer (OEM), Hitachi Rail.

The non-competitive Request for Proposal (RFP) was issued on October 23, 2023, in accordance with Metro's Acquisition Policy and the contract type is Firm-Fixed-Price.

**B. Evaluation of Proposal**

This single source procurement is consistent with Public Utility Code § 130237 for the duplication or replacement of existing equipment already in use. The proposal was evaluated in compliance with Metro's Acquisition Policy and Procedures.

Metro's Project Manager conducted an evaluation of the technical proposal submitted by Hitachi. The technical evaluation consisted of reviews of the Proposer's key personnel, management, and quality assurance plans. Metro Staff and Proposer are still negotiating price, terms, and schedule.

The recommendation for award to Hitachi Rail is made subject to resolution of any properly submitted protests.

**C. Cost/Price Analysis**

A cost analysis of the elements of cost including labor rates, indirect rates and other direct costs will be completed in accordance with Metro's Procurement Policies and Procedures, including fact-finding, clarification, and negotiations to establish a fair and reasonable price.

**D. Background on Recommended Contractor**

The recommended firm, Hitachi Rail STS USA, Inc., has been the single ATC system supplier of Metro's rail system for the past fifteen (15) years and conducts all its design and production operations at two major facilities in the United States: The Pittsburgh Technology Center (PTC) in Pittsburgh, PA and the Batesburg Manufacturing & Customer Service Center in Batesburg, SC. The company also has design and project management offices in Baltimore, Boston, and Los Angeles. Hitachi is directed by CEO and a separate President. The former is focused on business development and project delivery, while the latter is focused on daily functions such as administration, staffing and finance. However, both officers play extensive roles in decision-making across the entire organizational spectrum. Hitachi serves as a full-line supplier of signaling and automation systems, equipment, and services for all types of railway and guideway operations around the world.

DEOD SUMMARY

A650 HEAVY RAIL VEHICLE ATC SYSTEM UPGRADE

**A. Small Business Participation**

Hitachi Rail, a Transit Vehicle Manufacturer (TVM), is on the Federal Transit Administration's (FTA) list of eligible TVMs. Hitachi Rail, has submitted its overall Disadvantaged Business Enterprise (DBE) goal of 4.00% to FTA, in compliance with 49 Code of Federal Regulations (CFR) Section 26.49(a)(1). TVMs submits overall DBE goal methodology and semi-annual reports directly to FTA.

**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 is not applicable to this contract.

**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.





# A650 Heavy Rail Vehicle Signaling System (ATC) Upgrade

*Operations , Safety , and Customer Experience Committee  
November 16, 2023*



**Metro**

## Background

- Division 20 Portal Widening and Purple (D) Line Extensions (PLE) require upgrades to heavy rail wayside signaling.
- All HRVs require on-board signaling system upgrade for compatibility.
- Upgrade to A650 Option HRVs originally scheduled as part of mid-life contract. However, contract was canceled due to contractor's failure to perform.
- Upgrade to A650 Option HRV signaling system must be expedited to support planned services expansions.



**Metro**

## Recommendation

Award sole source contract to Hitachi Rail STS (HSTS) to upgrade A650 Option HRV signaling system.

- HSTS has necessary experience to expedite work:
  - Sole signaling system supplier for Metro's rail systems and rail cars for past fifteen years.
  - Wayside equipment supplier for D20 Portal Widening and PLE, as well as carborne equipment for the HR4000.
  - Signaling system supplier for terminated A650 midlife contract, thus, familiar with A650 Option fleet.
- HSTS is a registered Transit Vehicle Manufacturer (TVM) with required expertise for system integration and vehicle level testing.



**Metro**

## Scope

- Base contract: 70 A650 Option Vehicles
- Option order: 4 A650 Option Vehicles
  - Option order is for 4 vehicles in various states of disassembly from terminated mid-life contract. Must be executed if the corresponding Refurbishment contract option order is executed for these 4 vehicles.



Thank you



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