

**Board Report**

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**File #:** 2019-0043, **File Type:** Contract**Agenda Number:** 16.

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**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE  
MARCH 21, 2019****SUBJECT: P2550 LIGHT RAIL VEHICLE STATIC INVERTER APS/LVPS OVERHAUL****ACTION: CONTRACT AWARD****RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to award a 60-month, Indefinite Delivery/Indefinite Quantity (IDIQ) Contract no. MA51966000 to AmePower, the lowest responsive and responsible bidder, for the overhaul of P2550 Light Rail Vehicle Static Inverter Auxiliary Power Supply/Low Voltage Power Supply (APS/LVPS) Overhaul. This award is a not-to-exceed amount of \$2,714,220 subject to resolution of protest(s), if any.

**ISSUE**

In June 2017, the Board of Directors approved the implementation of a P2550 Component Overhaul Program. This procurement is for the professional services to complete the overhaul of the Static Inverter APS/LVPS equipment for the P2550 fleet as recommended by the Original Equipment Manufacturer (OEM) established guidelines. Execution of the overhaul will ensure that the fifty (50) rail car fleet remains in a constant State of Good Repair (SGR) while safeguarding passenger safety, vehicle performance and equipment longevity.

**DISCUSSION**

The Ansaldo Breda P2550 Light Rail Vehicle (LRV) fleet is in its 11th year of revenue operations. In order to ensure continued safety and reliability the Static Inverter requires overhaul at the eighth year or the six-hundred thousand (600,000) mileage interval as defined by the OEM. The Static Inverter equipment consists of low and high power electronics that drive the inverter modules, transduce voltages, and convert direct current voltages to power the various vehicle systems. The static inverter equipment consists of capacitors, resistors, relays, and circuit boards that degrade and drift over time. This is an integral component of the vehicle systems that provides regulated power to the vehicle inverter systems therefore it is critical to maintain the Static Inverter equipment in a constant state of good repair.

The P2550 Component Overhaul Program consists of a total of nine procurements for the overhaul of the major vehicle systems inclusive of propulsion, pantograph, battery, doors, couplers, high voltage and auxiliary power, friction brakes and truck systems. The power axle assembly, coupler, and friction brake contracts were awarded in December of 2017. Metro is requesting the approval of the Static

Inverter APS/LVPS overhaul contract which is the ninth and final component overhaul procurements requiring board approval for this project. This procurement is for the professional services to complete the overhaul of fifty kits in addition to five spare kits to support the maintenance activities.

Metro's Transit Asset Management and Operations staff conducted a condition assessment of the P2550 fleet in the fall of 2016. The P2550 fleet's overall State of Good Repair (SGR) rating is 3.7 out of 5.0 for an overall adequate rating. This represents an asset that has reached its mid-life and has some moderately defective or deteriorated components. The condition assessment suggested that by performing the recommended OEM mid-life overhauls and addressing the design and obsolescence issues on the P2550 fleet, it is expected that the vehicles can reach their intended 30-year life based on statistical condition decay models.

Rail Fleet Services (RFS) Engineering developed an equipment overhaul specification for the Static Inverter APS/LVPS overhaul based upon the OEM recommendations and with RFS maintenance experience. The contractor will perform overhaul services in accordance with a defined schedule and with Metro's technical specifications requirements.

### **DETERMINATION OF SAFETY IMPACT**

Safety is of the utmost importance to Metro and, therefore, it is imperative to maintain the P2550 fleet. The Static Inverter overhaul supports the complete P2550 overhaul program, ensuring the fleet is overhauled in accordance with regulatory standards, according to the defined schedule and technical specifications requirements, and within Metro's internal standards, policies and procedures.

### **FINANCIAL IMPACT**

The approved Life-of-Project (LOP) for the P2550 Fleet Component Overhaul Program under capital project number 214001 is for the amount of \$35,007,546. Funding of \$357,356 for this Contract will be included and proposed in the FY20 budget in cost center 3944, Rail Fleet Services Maintenance, under project number 214001, line item 50441, Parts - Revenue Vehicle.

Since this is a multi-year Contract, the cost center manager, project manager and Sr. Executive Officer, Rail Fleet Services will ensure that the balance of funds is budgeted in future fiscal years.

#### **Impact to Budget**

The current source of funds for this action is Transportation Development Act Article 4 (TDA). Use of this funding source currently maximizes project funding allocations within approved funding provisions and guidelines.

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

Approval of this recommendation supports the following Metro Strategic Plan Goal 2, Deliver outstanding trip experience for all users of the transportation system.

### **ALTERNATIVES CONSIDERED**

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Deferral of this program is not recommended as the OEM is out-of-business and parts obsolescence is a significant concern to keep the static inverter operational until such time it will be a candidate for replacement during the Modernization overhaul. The static inverter is a safety critical device that, if not properly maintained, could result in equipment failures and events due to loss of vehicle 'house power' to door systems, interior lighting, and battery charging. The static inverter provides control power to all vehicle systems and upon failure, poses a high risk to passenger safety, negative impact to vehicle availability and reliability.

**NEXT STEPS**

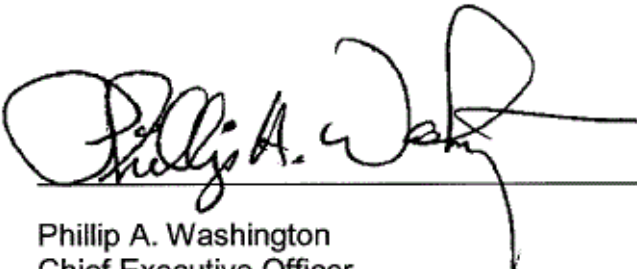
Overhaul of the P2550 Light Rail Vehicle Static Inverter APS/LVPS will continue in accordance with Rail Fleet Services' scheduled requirements. If approved, the project is scheduled to commence in August 2019.

**ATTACHMENTS**

Attachment A - Procurement Summary  
Attachment B - DEOD Summary

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