

**Board Report**

File #: 2019-0042, **File Type:** Contract**Agenda Number:** 22.

**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE
MARCH 21, 2019****SUBJECT: P2550 LIGHT RAIL VEHICLE PROPULSION INVERTER PHASE MODULE
OVERHAUL AND UPGRADE****ACTION: CONTRACT AWARD****RECOMMENDATION**

AWARD a 40-month, indefinite delivery/indefinite quantity Contract No. MA53984000 to AmePower, Incorporated to overhaul and upgrade up to four-hundred-thirty-seven (437) P2550 Light Rail Vehicle Propulsion Inverter Phase Modules for a not-to-exceed amount of \$6,065,920 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 and upgrade of Propulsion Inverter Phase Module 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 Propulsion Inverter requires an overhaul at the eighth year or 600,000 mileage interval as defined by the OEM. The propulsion inverter phase module equipment consists of high power electrical components such as capacitors, resistors, relays, and circuit boards that wear out and are of parts obsolescence concern. The propulsion equipment is an integral vehicle system that provides the regulated power to the vehicles traction motors, gearbox, and wheels; therefore, it is critical to maintain the propulsion inverter systems 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 2017. Metro is requesting the approval of the propulsion module overhaul contract which will be the 8th in succession of the nine component overhaul procurements

requiring board approval. This procurement is for the professional services to complete the overhaul of fifty (50) 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 performing the recommended OEM mid-life overhauls and addressing the design and obsolescence issues on the P2550 fleet, will result in vehicles reaching their intended 30-year life based on statistical condition decay models.

Rail Fleet Services (RFS) Engineering developed an equipment overhaul specification for the propulsion inverter phase module overhaul and upgrade based upon both the OEM recommendations and RFS maintenance experience. The contractor will perform overhaul services and equipment upgrades in accordance with a defined schedule and with Metro's technical specifications requirements.

DETERMINATION OF SAFETY IMPACT

Approval of this will have a positive safety impact which is of the utmost importance to Metro and, is therefore, imperative in the maintenance of the P2550 fleet. The propulsion inverter phase module overhaul and component upgrade is in support of 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 \$400,000 for this contract will be included and proposed in the FY20 budget in cost center 3948, 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 current 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

Deferral of this program is not recommended as the OEM is out-of-business and parts obsolescence is a significant concern to keep the propulsion inverter operational until such time it will be a candidate for replacement during the Modernization overhaul. The propulsion inverter is a safety critical device that, if not properly maintained, could result in catastrophic events due to loss of traction effort, train won't move, loss of regenerative braking, and/or fire from high power component shorting out, all of which impact vehicle safety and reliability. Should the propulsion inverter overhaul be deferred there would be a high risk to passenger safety, negative impact to vehicle availability and reliability. Such deferment is not recommended.

NEXT STEPS

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

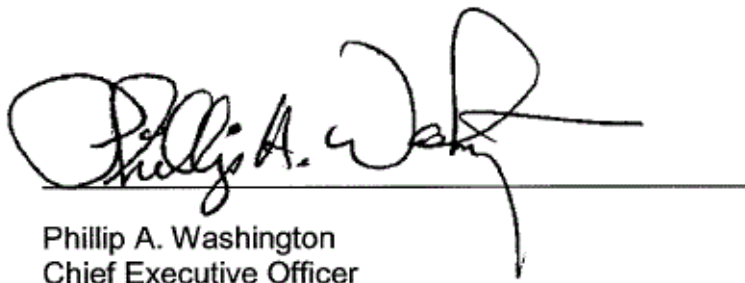
ATTACHMENTS

Attachment A - Procurement Summary

Attachment B - DEOD Summary

Prepared by: Bob Spadafora, Sr. Executive Officer, Rail Fleet Services
(213) 922-3144
Richard M. Lozano, Sr. Director, Rail Vehicle Maintenance,
(323) 224-4042

Reviewed by: James T. Gallagher, Chief Operations Officer, (213) 418-3108
Debra Avila, Chief Vendor/Contract Management Officer,
(213) 418-3051



Phillip A. Washington
Chief Executive Officer