



## Board Report

File #: 2018-0150, File Type: Contract

Agenda Number: 23.

### SYSTEM SAFETY, SECURITY AND OPERATIONS COMMITTEE MAY 17, 2018

**SUBJECT: P2000 AUXILIARY INVERTER ASSEMBLY OVERHAUL**

**ACTION: APPROVE CONTRACT AWARD**

#### **RECOMMENDATION**

CONSIDER:

- A. AUTHORIZING the Chief Executive Officer to award a 31 month, indefinite delivery, indefinite quantity Contract No. MA46603 to KB Powertech Corporation, USA for overhaul services of the Siemens P2000 Light Rail Vehicle (LRV) Auxiliary Inverter Assembly for a total not-to-exceed amount of \$999,607, subject to resolution of protest(s), if any; and
- B. AWARDING a sole source procurement, pursuant to Public Utilities Code Section 130237 for component overhaul services of the Siemens P2000 LRV Auxiliary Inverter Assembly Overhaul the Original Equipment Manufacturer (OEM), to KB Powertech Corp.

(REQUIRES TWO-THIRDS VOTE OF THE FULL BOARD)

#### **ISSUE**

The P2000 LRV fleet auxiliary inverter assembly is due for overhaul services as recommended by the OEM established guidelines. This procurement is for the sole purpose of purchasing overhaul services for existing equipment already in operational use. Execution of this component overhaul acquisition will safeguard passenger safety while maintaining equipment performance in a continuous State of Good Repair (SGR).

#### **DISCUSSION**

The Siemens P2000 LRVs are in its 17<sup>th</sup> year of operation and consists of a total of seven procurements for the overhaul of the major vehicle systems inclusive of power axle, gearbox, traction motors, couplers, friction brake & air compressor, auxiliary inverter, and the propulsion system (gate driver board) overhaul. The auxiliary inverter overhaul is sixth in succession of the seven component overhaul procurements requiring board approval. This procurement is for the professional services to complete the overhaul of up to 52 auxiliary inverter assemblies for the P2000 fleet as recommended

by the OEM established guidelines. In order to ensure continued safety and performance of the auxiliary inverter assembly, an overhaul of the equipment is required at the vehicle mid-life service interval. The auxiliary inverter is an integral vehicle system necessary for safe operation of the vehicle that inverts the overhead catenary supply voltage of 750 (VDC) to 208/110 (VAC) supplying interior lighting, power to auxiliary motors, and supplies power for the Low Voltage Power Supply charging the 37.5 VDC battery and numerous control systems.

The overhaul consists of disassembly of the entire assembly down to circuit board and component level, a thorough cleaning and inspection of components, load testing of modules, replacement of electrolytic capacitor and lithium batteries, component replacement as needed, replacement of seals and gaskets, and a comprehensive testing of the entire inverter assembly for sustained output voltages.

Rail Fleet Services (RFS) Engineering developed a Statement of Work (SOW) for the contractor to follow while performing the overhaul. The contractor will perform overhaul services in accordance with predefined schedule at two (2) inverters per month.

### **DETERMINATION OF SAFETY IMPACT**

Passenger and employee safety are of the utmost importance to Metro and, therefore, it is imperative to maintain the P2000 fleet to a constant SGR. The auxiliary inverter assembly overhaul is in support of routine maintenance and an established component overhaul program. This effort will ensure that the fleet is maintained in accordance with OEM recommendations, regulatory standards, and within Metro's internal Corporate Safety policies and procedures.

### **FINANCIAL IMPACT**

The approved Life-of-Project (LOP) budget for the P2000 Fleet Component Overhaul Program (number 206006) is \$26,360,100 established in 2012. Funding of \$999,607 for this Contract is included in the FY19 budget in Cost Centers 3941 and 3943, Rail Fleet Services Maintenance, account 50441, Parts - Revenue Service. Since this is a multi-year contract, the Cost Center Manager and Project Manager will ensure that the balance of funds are budgeted in future years.

#### **Impact to Budget**

The current source of funds for this action is Prop A Bonds. This will maximize funding leverage given allowable funding provisions.

### **ALTERNATIVES CONSIDERED**

The auxiliary inverter assembly is a safety critical system that inverts the vehicle supply voltage of 750 VDC to 208/110 VAC critical for safe operation of the vehicle and is required to be overhauled per the OEM recommended interval and regulatory requirements. Deferring the auxiliary inverter

assembly overhaul is not recommended as vehicle performance and passenger safety could be adversely affected.

**NEXT STEPS**

Overhaul of the P2000 LRV auxiliary inverter assembly will continue in accordance with RFS Component Overhaul schedule requirements. Upon board approval staff will execute Contract No. MA46603 to provide overhaul services of the P2000 LRV auxiliary inverter assembly. The project is scheduled to commence July 2018.

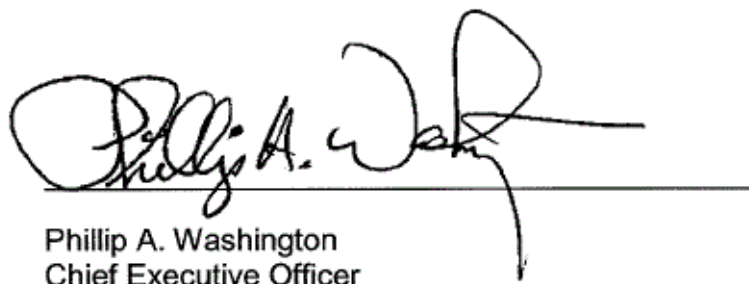
**ATTACHMENTS**

Attachment A - Procurement Summary

Attachment B - DEOD Summary

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