

**Board Report**

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

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**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 8<sup>th</sup> in succession of the nine component overhaul procurements

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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.

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**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.

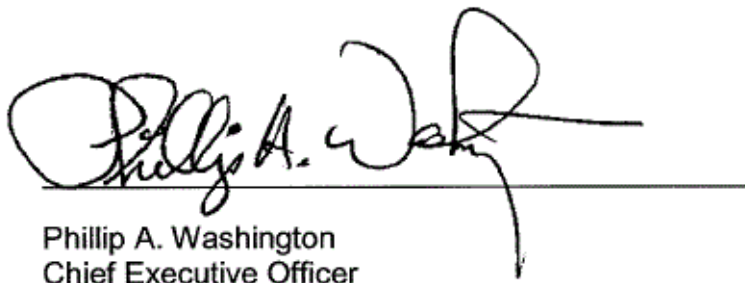
**ATTACHMENTS**

Attachment A - Procurement Summary

Attachment B - DEOD Summary

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Phillip A. Washington  
Chief Executive Officer

## PROCUREMENT SUMMARY

**P2550 PROPULSION INVERTER PHASE MODULE OVERHAUL & UPGRADE  
CONTRACT NO. MA53984000**

1.	<b>Contract Number: MA53984000</b>	
2.	<b>Recommended Vendor:</b> AmePower	
3.	<b>Type of Procurement (check one):</b> <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	<b>Procurement Dates:</b>	
	A. <b>Issued:</b> June 19, 2018	
	B. <b>Advertised/Publicized:</b> June 25, 2018	
	C. <b>Pre-Proposal Conference:</b> July 11, 2018	
	D. <b>Proposals Due:</b> October 16, 2018	
	E. <b>Pre-Qualification Completed:</b> January 17, 2019	
	F. <b>Conflict of Interest Form Submitted to Ethics:</b> December 1, 2018	
	G. <b>Protest Period End Date:</b> March 25, 2019	
5.	<b>Solicitations Picked up/Downloaded:</b> 19	<b>Proposals Received:</b> 3
6.	<b>Contract Administrator:</b> Jean Davis	<b>Telephone Number:</b> 213/922-1041
7.	<b>Project Manager:</b> Richard Lozano	<b>Telephone Number:</b> 323/224-4042

**A. Procurement Background**

This Board Action is to approve Contract No. MA53984000 issued in support of Metro's P2550 Light Rail Vehicle (LRV) to procure services required for the overhaul and upgrade of the Propulsion Inverter Phase Modules Assemblies. Board approval of contract award is subject to resolution of any properly submitted protest.

The Request for Proposals (RFP) was issued in accordance with Metro's Acquisition Policy and the contract type is an Indefinite Delivery, Indefinite Quantity (IDIQ).

Four (4) amendments were issued during the solicitation phase of this RFP:

- Amendment No. 1, issued on July 16, 2018 revised the proposal due date.
- Amendment No. 2, issued on September 4, 2018 revised the proposal due date and offered potential responders a Job Walk.
- Amendment No. 3, issued on September 10, 2018 provided changes to the RFP and Statement of Work.
- Amendment No. 4, issued on September 28, 2018 revised the proposal due date from October 1 to October 16, 2018.

A pre-proposal conference was held on July 11, 2018 and was attended by seven participants. During the procurement process, Metro provided formal responses to a total of 66 questions from potential proposers. Three (3) proposals were received on October 16, 2018.

## B. Evaluation of Proposals

This procurement was conducted in accordance and complies with Metro's Acquisition Policy for an explicit factors best value, competitive RFP procurement process. The RFP instructions required proposers to submit proposals for two distinct scopes of work scenarios: Scenario #1 - to provide all services and equipment for overhaul and upgrade of the propulsion inverter phase modules; and/or Scenario #2 - to provide complete replacement of propulsion inverters.

A Proposal Evaluation Team (PET), consisting of Metro staff members from Rail Fleet Services and Rail Vehicle Engineering departments, convened and conducted the evaluation based on the proposals received.

The proposals were evaluated based on the following evaluation criteria:

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|-------------------------|-----|
| 1. Proposed Design      | 30% |
| 2. Technical Capability | 20% |
| 3. Past Performance     | 15% |
| 4. Project Management   | 15% |
| 5. Cost                 | 20% |

The evaluation criteria are appropriate and consistent with criteria developed for similar Metro rail component overhaul services procurements. Several factors were considered when developing these weights, giving the greatest importance to the Proposed Design.

Three (3) firms submitted proposals for both scope of work scenarios. AmePower and PSI Repair Services, Inc. were both deemed to be fully responsive and responsible to the RFP requirements. Alstom Transportation, Inc. (Alstom) proposed material changes to Metro's technical specification and standard contract terms and conditions. After extensive discussions with Alstom, Metro's PET determined their requested changes materially altered Metro's technical and contract requirements; thus, the proposer was eliminated from further award consideration.

The three proposers are listed in alphabetical order below:

No.	Proposer Name
1.	Alstom Transportation, Inc.*
2.	AmePower
3.	PSI Repair Services, Inc. (PSI)

\*This Firm was eliminated from award consideration due to their requests for material changes to RFP's technical requirements and to the RFP's standard contract terms & conditions.

Based on Metro's PET comprehensive reviews and evaluation of all proposals, the PET elected to proceed with Scope of Work Scenario #1, for the potential awardee to provide all services and equipment for overhaul and upgrade to the propulsion inverter phase modules.

The PET concluded that two (2) of the three (3) proposers were deemed fully responsive and responsible to the RFP requirements.

**Qualifications Summary of Firms within the Competitive Range:**

**AmePower**

AmePower’s proposal, through discussions with their technical team, determined they had the technical capability to perform the required overhauls and upgrade services. Amepower possesses the required experience, equipment, tools, and personnel to handle the overhaul/upgrade or the replacement of the propulsion inverter per the technical specification.

Amepower provided a detailed narrative and test plan which demonstrated an in depth knowledge of the Statement of Work. Amepower has a past history of successful performance with projects similar to the project Metro is currently seeking. Amepower exhibited extensive rail overhaul experience and technical knowledge. Amepower offered the lowest price proposal.

**PSI**

PSI Repair Services, Inc. (“PSI”) was deemed by the PET to have the necessary facilities and equipment and technical capability and past performance experience to meet the RFP requirements. PSI proposed upgrades with service proven technologies and products and a test plan sufficient to test and commission the inverters. However, PSI has not performed design or vehicle performance testing services and planned to subcontract these services. The PET expressed concerns regarding PSI’s ability to provide corrective actions related to specific past performance issues. PSI’s cost proposal is 47.447% percent higher than the ICE and the second highest rated proposer.

The following is a summary of the PET evaluation scores:

<b>1</b>	<b>FIRM</b>	<b>Average Score</b>	<b>Factor Weight</b>	<b>Weighted Average Score</b>	<b>Rank</b>
<b>2</b>	<b>AMEPOWER</b>				<b>1</b>
<b>3</b>	Proposed Design	96.70	30.00%	29.01	
<b>4</b>	Technical Capability	100.00	20.00%	20.00	
<b>5</b>	Past Performance	93.33	15.00%	14.00	
<b>6</b>	Project Management	93.33	15.00%	14.00	
<b>5</b>	Cost Proposal	100.00	20.00%	20.00	
<b>7</b>	<b>Total</b>		<b>100.00%</b>	<b>97.01</b>	

<b>8</b>	<b>PSI REPAIR SERVICES INC.</b>				<b>2</b>
<b>9</b>	Proposed Design	93.33	30.00%	28.00	
<b>10</b>	Technical Capability	70.00	20.00%	14.00	
<b>11</b>	Past Performance	76.70	15.00%	11.51	
<b>12</b>	Project Management	80.00	15.00%	12.00	
<b>13</b>	Cost Proposal	49.89	20.00%	9.98	
<b>14</b>	<b>Total</b>		<b>100.00%</b>	<b>75.49</b>	

**C. Price Analysis**

This formal procurement resulted in an open procurement with price competition. The recommended price has been determined fair and reasonable based on adequate price competition, Independent Cost Estimate (ICE), and engineer’s technical review. Metro received two (2) qualified price proposals with the lowest price offered being deemed as fair and reasonable.

<b>Proposer Name</b>	<b>Proposal Amount</b>	<b>Metro ICE</b>
AmePower, Inc.	\$6,065,920	\$5,768,400
PSI Repair, Inc.	\$12,157,452	

**D. Background on Recommended Contractor**

AmePower is located in Miami, Florida and has been in business over 20 years. Amepower is a certified engineering company whose expertise includes: Insulated-Gate Bipolar Transistor (IGBT) to IGBT and Gate Turn-Off (GTO) Thyristor to IGBT technology conversions; overhaul, retrofit and manufacturing services for rolling stock systems including: Complete Converters; Low Voltage Power Supplies (LVPS); Phase Modules; Auxiliary Power Supplies (APS); and Battery Chargers. Amepower evolved as leading suppliers of power electronics components in the South East, to a full Power Electronics solutions provider, primarily focused in the Mass Transportation Industry.

Amepower has contracts for rail component overhauls with New York Transit of New York City and ACI Herzog of Puerto Rico. The firm has completed contracts to provide upgrade services with MARC of Maryland and WMATA of Washington, DC in the past 3 years. Amepower has a current contract with Metro to repair the A650 GTO Phase Modules which will be completed in 2019. Amepower’s contract performance with Metro has been satisfactory.

## DEOD SUMMARY

**P2550 PROPULSION INVERTER PHASE MODULE OVERHAUL & UPGRADE  
CONTRACT NO. MA53984000**

**A. Small Business Participation**

The Diversity and Economic Opportunity Department (DEOD) did not establish a Small/Disabled Veteran Business Enterprise (SBE/DVBE) goal for this procurement. While DEOD determined there was a lack of available SBE/DVBE certified firms to perform the specialized overhaul design and manufacturing work, staff continues to encourage eligible proposers to seek certification as SBEs. AMETRADE, Inc. responded accordingly, and was SBE certified prior to proposal due date. AMETRADE, Inc. made a 100% SBE commitment as a prime.

	<b>SBE Contractors</b>	<b>SBE % Committed</b>
1.	AMETRADE, Inc. (Prime)	100.00%
	<b>Total Commitment</b>	<b>100.00%</b>

**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. Project Labor Agreement/Construction Careers Policy is applicable only to construction contracts that have a construction contract value in excess of \$2.5 million.