



## Board Report

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### SYSTEM SAFETY, SECURITY AND OPERATIONS COMMITTEE NOVEMBER 16, 2017

**SUBJECT: P2550 & P2020 FRICTION BRAKE SYSTEM OVERHAUL**

**ACTION: APPROVE CONTRACT AWARD**

**RECOMMENDATION**

CONSIDER:

- A. AUTHORIZING the Chief Executive Officer to award an 84 month, indefinite delivery/indefinite quantity Contract No. MA24464000 to Knorr Brake Company for component overhaul services of P2550 and P2020 Light Rail Vehicle (LRV) Friction Brake Systems, for a total not-to-exceed amount of \$4,546,031; and
- B. AWARDING a single source procurement, pursuant to Public Utilities Code section §130237 for component overhaul services of the Metro Gold Line (MGL) P2550 and Metro Blue Lines (MBL) P2020 LRV Friction Brake Systems from the Original Equipment Manufacturer (OEM), to Knorr Brake Company.

(REQUIRES TWO-THIRDS VOTE OF THE FULL BOARD)

**ISSUE**

The P2020 fleet operates on Metro's Blue Line and is currently undergoing a Friction Brake Overhaul Program similar to the above mentioned P2550 fleet. Knorr Brake Company is the friction brake system OEM and because these programs are being executed in parallel, this procurement is for both fleet types.

The existing friction brake systems on both the MGL P2550 and MBL P2020 are proprietary and this procurement is for component overhaul services of existing equipment already in use. Execution of the overhaul will ensure that both fleet types remain in a continuous State of Good Repair (SGR) while safeguarding passenger safety, vehicle reliability and equipment longevity.

**DISCUSSION**

In June 2017, the Board of Directors approved Life of Project Budget for contracts to overhaul the P2550 Fleet under a Component Overhaul Program. The P2550 Component Overhaul Program

consists of a total of nine individual 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 friction brake overhaul is third in succession of the nine component overhaul procurements requiring board approval. This procurement is for the professional services to complete the overhaul of 53 friction brake assemblies inclusive of 3 spares for the P2550 fleet as recommended by the OEM established guidelines.

The Ansaldo Breda P2550 LRV is in its eighth year of operation. In order to ensure continued safety and performance of the friction brake systems a complete overhaul is required at the 600,000 mileage interval as defined by the OEM and monitored by the California Public Utilities Commission (CPUC). The friction brake overhaul consists of several assemblies inclusive of electrical and mechanical component parts as well as the air compressor and pneumatic components that wear out due to normal service and operations. Routine maintenance and periodic overhaul of the friction brake systems is of critical importance for passenger safety and accident prevention to ensure the vehicle stops within specified stopping distance during routine and emergency braking applications.

The Nippon Sharyo P2020 fleet is in its 23<sup>rd</sup> year of operation with over 1.7 million in-service miles. The friction brake overhaul is an element of the Preventative Maintenance Program PMP to be done at the 4 year interval as defined by the OEM and monitored by the CPUC. The overhaul consists of several assemblies including electrical, mechanical, and pneumatic systems that wear out during normal service and operations.

Rail Fleet Services (RFS) Engineering developed an equipment overhaul specification for the friction brake systems overhaul based on OEM recommendations and in conjunction with RFS maintenance expertise. The contractor will perform overhaul services in accordance with predefined schedules using Metro provided technical specification requirements.

### **DETERMINATION OF SAFETY IMPACT**

Passenger and employee safety are of the utmost importance to Metro and, therefore, it is imperative to maintain the P2550 & P2020 fleet to a constant state of good repair. The friction brake systems overhaul is in support of the complete P2550 component overhaul program. This effort will ensure that these vehicles are maintained in accordance with OEM recommendations and regulatory standards, according to the defined schedule and technical specifications requirements, and within Metro's internal Corporate Safety 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 \$1,431,697 for this Contract (P2550) is included in the FY18 budget in cost center 3944, Rail Fleet Services Maintenance, under project number 214001, line item 50441, Parts - Revenue Service. Funding of \$1,000,000 for this Contract (P2020) is included in the FY18 budget in cost center 3941, Rail Fleet Services Maintenance, under project number 211018, line item 50441, Parts - Revenue Service.

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

Impact to Budget

The source of funds for this procurement will come from Federal, State and local funding sources that are eligible for Rail Capital Projects. Use of these funding sources will maximize funds use given allocation provisions.

**ALTERNATIVES CONSIDERED**

Vehicle friction brakes are a safety critical system which are required to be overhauled per the OEM and regulatory requirements to avoid catastrophic events resulting from extending stopping distance of complete failure of the braking systems during emergency brake application. Deferring the friction brake overhaul is not recommended as Metro could also be subject to penalties mandated by the California Public Utilities Commission.

**NEXT STEPS**

Overhaul of the P2550 Light Rail Vehicle Friction Brake systems will continue in accordance with RFS scheduled requirements. If approved, the project is scheduled to commence in July 2018. In addition, the RFS Department will continue with the P2020 Component Overhaul of the Friction Brake systems as noted above with the exception of the friction brake overhaul which is a program that has already commenced.

**ATTACHMENTS**

Attachment A - Procurement Summary

Attachment B - DEOD Summary

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