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TO: BOARD OF DIRECTORS

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SUBJECT: RED LINE VEHICLE INSPECTION UPDATE

ISSUE

This report serves as a preliminary update regarding the two recent mechanical breakdowns experienced on the Metro Red Line base buy vehicles and immediate actions taken to date to minimize similar recurrences.

The information included in this report is a result of the preliminary investigation conducted today by Metro's Safety/Risk Management department.

DISCUSSION

Metro Red Line operates two types of rail vehicles manufactured by Breda. The original cars, also known as the "base buy" consist of 30 vehicles, and the second type, known as the "option cars" consists of 74 vehicles.

Between early March and mid-April, two base buy vehicles experienced mechanical breakdowns of an electrical motor, which provides power to propel the train, while in revenue service.

Based on preliminary investigation of the first incident, which occurred on March 8, 2015, Operation's Quality Assurance department staff determined the most

probable cause was the result of worn motor support mounts (bushings), resulting in moderate damage to the motor.

This incident triggered maintenance staff to conduct an initial inspection of the fleet and prompted immediate engagement of our Vehicle Engineering department to provide additional insight and input.

In the second incident, which occurred on April 11, 2015, the electrical motor mount sheared off resulting in damage to the motor. Staff's initial investigation revealed that the most probable cause of the incident was due to lack of lubrication in a gear mechanism, known as a coupling. The design of the electrical motor does not include a practical means to lubricate the gear mechanism, and requires significant effort to perform the simple task.

Neither incident resulted in significant impact to service (less than 20 minute delay) or injuries to patrons on board the trains. In both incidents, passengers were offloaded at the next stations and the trains were returned to the yard for evaluation.

The following actions have been taken in response to the above incidents. Operation's Rail Fleet Service (RFS) inspected all the bushings on each base buy vehicle. The significant majority of them were found to be in good condition, with only two needing replacement, which have been replaced.

RFS staff has hired an independent expert to investigate both incidents jointly with the manufacturer of the electrical motor and Metro staff. Staff expects the consultant to provide his report within two weeks.

In order to maintain transparency, today Metro staff informed the California Public Utilities Commission (CPUC), and invited them to participate in the on-going investigation. CPUC staff has accepted the invitation and will begin their preliminary investigation.

NEXT STEPS

Effective tonight, the RFS jointly with Safety & Risk Management departments will begin inspecting all base buy Breda vehicles to verify the integrity of the gear mechanisms. If a vehicle is found to have any anomalies, it will be taken out of service until repairs can be made.

RFS will limit the use of the base buy cars only to supplement the service needs, which will reduce the probability of service interruptions occurring on the mainline.

RFS, jointly with the Procurement department, will explore options to expedite procuring the needed parts to maintain the vehicles and will establish sufficient levels of inventory to minimize the down time of vehicles.

RFS will immediately implement the recommendations made by the independent consultant upon receipt of their report.

Staff will update the Board on the CPUC's findings and direction on this issue in addition to Safety & Risk Management's on-going investigation. Moreover, staff will also provide a service plan to address potential service impact to our customers.

Finally, Metro is in the process of purchasing 64 new subway rail cars to replace the original fleet and provide for system expansion of the Purple Line. The Request for Proposal for this procurement is expected to be released in early May 2015. Current schedule for this procurement, manufacturing and delivery of the rail cars could take up to five years.