LONG BEACH TRANSIT

Agenda Item No. 14
October 22, 2018

SUBJECT

Hybrid Bus Power Conversion

RECOMMENDED ACTION

To authorize the President and CEO to enter into a contract with US Hybrid Corporation to modify and convert 40 gasoline-electric hybrid buses to a solid state low-voltage charging system, for a total authorization amount not to exceed $201,475.

BACKGROUND

In support of Long Beach Transit's (LBT) strategic priorities, 'Improve Safety and Service Quality' and 'Exercise Financial Accountability,' staff is recommending a modification of the low-voltage charging system on 40 gasoline-electric hybrid (hybrid) buses.

LBT currently owns, operates and maintains 88 hybrid buses ranging in ages from nine to 14 years. These buses were manufactured by New Flyer Industries, Inc., (New Flyer) and include a hybrid drive system built by ISE Corporation, a firm that is no longer in business.

The original design of the hybrid buses utilizes a standard alternator powered by a pulley and a belt drive to charge its 12-volt batteries. The system has proven to be unrealiable and expensive to maintain. In the last year, LBT has had 74 failures on 40 buses.

Modifying the original system to a direct current to direct current inverter will result in the permanent removal of the pulley, alternator, alternator belt and belt tensioner. The redesigned charging system utilizes a solid state inverter to maintain the low-voltage batteries in a state of charge. A similar system is currently utilized on LBT's battery-electric bus fleet.

Based on the analysis of the historical rate of failures of the current charging systems and pulleys, the conversion to the solid state low-voltage charging system is expected to improve the reliability of the 40 hybrid buses.

PROCUREMENT

LBT issued a Request for Proposal (RFP) for the modification of 40 hybrid buses to several qualified firms and received one proposal from US Hybrid Corporation, located in Torrance, California. LBT's Purchasing department found US Hybrid Corporation to be a responsive and responsible bidder to the solicitation.

The initial proposal was to build a prototype that was then tested on a bus in service for a period of 90 days from June 20 to September 17, 2018. Based on the results of the test period, LBT reserved the right to continue or discontinue the program.

The prototype was deemed successful and met LBT requirements; therefore, the modification includes 39 additional buses.

DBE/SBE PARTICIPATION

The Disadvantaged Business Enterprise (DBE) goal established for the solicitation was seven percent. US Hybrid will be utilizing Magmotor Technologies, a DBE-certified firm, for wire harness kit and mechanical kit fabrication, to meet the established DBE goal.

ALTERNATIVES CONSIDERED

The Board may choose not to award this contract; however, staff does not recommend this option as the non-conversion of the power system will cause adverse impacts on transit service delivery and the ability to maintain the hybrid buses in a state of good repair.

BUDGETARY/FISCAL IMPACT

Staff is requesting LBT's Board of Directors to authorize the President and CEO to enter into a contract with US Hybrid Corporation to modify and convert 40 gasoline-electric hybrid buses to a solid state low-voltage charging system, for a total authorization amount not to exceed $201,475.

Funds for this contract were included in the previously approved Fiscal 2019 Capital Budget.

Kenneth A. McDonald
President and Chief Executive Officer