



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

MEETING DATE: August 20, 2021

AGENDA ITEM 4.12

From: Mark Maloney, Director of Public Transportation and Operations

RECOMMENDED ACTION

Authorize staff to seek approval from the Federal Transit Administration (FTA) for the early retirement of four Proterra BE-35 vehicles.

BACKGROUND AND DISCUSSION

In 2012, with funding through the FTA's Small Starts Program and Federal Highways Administration Congestion Mitigation and Air Quality Improvement (CMAQ) Program, the RTC purchased four 100% electric buses. These vehicles are battery powered with an initial advertised range of up to 50 miles between charges. RTC was an early adapter of battery electric buses and these vehicles reflected state of the art technology at the time. The vehicles were received and placed into service in April of 2014.

The Proterra BE-35s are eligible for retirement in 2025 but due to several issues, RTC would like to seek permission from FTA for the early retirement of these vehicles. These issues include:

1. Range – The initial expected range of the BE-35 vehicles was up to 50 miles. A specific route, the Sierra Spirit, was assigned to these vehicles as it was a shorter route with time available for charging the batteries. This route was discontinued in March 2021, and replaced with the extension of the RAPID Virginia Line service. More importantly, over time the performance of the battery system has degraded to 80% capacity with age and a current operational range averaging only between 16.9 miles and 40.7 miles. This limited range increases RTC's cost to operate these vehicles as extra time and manpower has to be devoted to making sure the vehicles are continuously charged throughout the workday.
2. Battery Replacement Cost – The performance of the batteries for the BE-35 buses naturally degrade over time and have an expected life of 7-8 years before replacement is recommended. These buses, at 8 years old, are still on their original battery system. At the time of purchase of these vehicles, the expected cost of a battery pack was \$100,000 per vehicle (not including labor), but Proterra has been unable to provide a quote for a replacement system for these vehicles as this battery technology is now nearing obsolescence. Without a new replacement system, the only options for RTC to retain these vehicles in service is to either accept a remanufactured battery set if available or continuing to tolerate an increasingly reduced operational range for these vehicles putting a strain on service reliability.

3. Parts Availability and Costs – In addition to the difficulty in procuring replacement battery packs, there is an ongoing, severe problem with parts availability for these vehicles. Currently, two of the four vehicles have been long-term placed out of service due to the lack of available parts for the electrical/battery systems. This follows the trend that RTC has seen over the past several months, which is the inability of Proterra to provide parts in a timely fashion, and this trend will likely worsen in the future for these vehicles as much of their technology is obsolete by current standards and is no longer actively manufactured.

Foothill Transit in West Covina, California, with similar first generation Proterra vehicles, is also seeking permission for early retirement from FTA's Region 9 office. By passage of this resolution, RTC seeks to partner with Foothill Transit and discuss potential retirement options with FTA.

FISCAL IMPACT

There is no fiscal impact for this agenda item.

PREVIOUS BOARD ACTION

- Nov. 15, 2013: Authorize the Executive Director to extend the agreement with Transit Resource Center (TRC) for bus inspection services for the Proterra Bus procurement.
- Sept. 20, 2013: Acknowledged receipt of the Electric Bus Procurement Update.
- Aug. 23, 2013: Acknowledged receipt of the Public Transportation/Operations Report.
- Approved the Professional Services Agreement (PSA) with Transit Resource Center (TRC) to monitor and evaluate the performance of the four Proterra electric buses; authorized the RTC Executive Director to execute the agreement.
- Feb. 15, 2013: Acknowledged receipt of the Electric Bus Procurement Update.
- Aug. 17, 2012: Approved the agreement with Proterra Bus for the purchase of four electric buses, one fast charge station, and associated equipment and services; approved the agreement with Transit Resource Center (TRC) to provide electric bus production inspection services; authorized the Executive Director to execute both agreements.
- Jul. 20, 2012: Authorized the Executive Director to negotiate agreements with Proterra Bus, the Center for Transportation & the Environment (CTE), and Transit Resource Center (TRC).

- May 18, 2012: Received a report on the Public Transportation Fleet, Fueling, Facilities, and Funding Program.
- Oct. 21, 2011: Rejected the recommended Electric Bus Project Management award to TRC and directed staff to develop a new RFP for partnering with the RTC on alternative fuel development.
- May 20, 2011: Approved Scope of Work for the Electric Bus Project Management Request for Proposal.
- Mar. 18, 2011: Ratified the FTA TIGGER II electric bus project grant application.