



## Engineering and Public Works Department

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DATE: February 24, 2025

TO: Alicia Hughes-Skandijs, Chair  
Public Works and Facilities Committee

THROUGH: Denise Koch, Engineering and Public Works Director

FROM: Rich Ross, Capital Transit Superintendent

SUBJECT: Battery Electric Bus Update

As of December 2024, all seven (7) Gillig Battery Electric buses have been received. Installation of the permanent charging infrastructure at the Capital Transit bus barn is currently underway, with an estimated completion date in early May 2025. While the arrival of the electric buses represents a significant milestone, the charging infrastructure at the bus barn is not yet fully operational. This is primarily due to delays in the execution of grant agreements, which dictate the timeline for fund obligation by CBJ. These delays, combined with extended lead times for critical electrical components like switchgear, impacted the project schedule, resulting in the buses arriving prior to the completion of the planned charging infrastructure. In the interim, two (2) portable chargers have been procured, enabling bus charging within approximately 10 hours. Since late January, Capital Transit has successfully placed two to three (2-3) battery electric buses into daily service utilizing the portable chargers. This has allowed us the opportunity for a soft launch for the buses.

The buses have demonstrated adequate range, even during the cold winter conditions. As an example, on February 8th, one bus operated for nearly 11 hours, traveled 190 miles, and returned to the bus barn with a 27% state of charge remaining. Driver feedback has been positive, with drivers noting the significantly smoother driving experience compared to conventional diesel buses. Riders have also expressed positive comments, appreciating the quiet operation and the modern amenities, such as the convenient USB charging ports located between the seats. While the interior layout is like our previous bus models, the overall experience is enhanced by the quieter ride and the ability to charge personal devices during their commute.

The implementation of the new electric buses and portable chargers has presented some unique challenges. Intermittent issues with charge sessions randomly stopping before a full charge are frequent. Capital Transit is actively working with the charging equipment and bus vendors to diagnose and resolve these charging issues. Additionally, the buses were experiencing intermittent disabling issues when shut off at the downtown transit center, requiring a mechanic to reset the bus with a laptop. It has been discovered that leaving the buses running for five minutes after driving before shutdown mitigates this issue. Capital Transit is working with the vendor to determine a permanent fix.

Capital Transit has prioritized training for both drivers and maintenance personnel to ensure the safe and efficient operation of the new electric buses. Drivers participated in a familiarization class covering warning lamps and indicators, operation, and behind-the-wheel driving time. The maintenance department received initial training covering lockout tagout procedures, personal protective equipment (PPE), and component identification/location upon the buses' arrival. In January, they received 24 hours of advanced multiplexing training, which covered the complex interactions between the buses' various computer modules and components. Upcoming training will include advanced diagnostics on the drivetrain, training on the HVAC system, and refrigerant handling certifications. These buses are equipped with air conditioning, a required component of the Battery Thermal Management System.

Capital Transit will continue operating two to three (2-3) battery electric buses daily until the permanent charging infrastructure project is completed at the Bus Barn. Upon completion, all seven (7) electric buses will be deployed.