



**Massachusetts Bay  
Transportation Authority**

# Silver Line Bus Fleet Replacement

---

Fiscal and Management Control Board

November 23, 2020

Bill Wolfgang

# Overview

The MBTA continues to invest in new vehicle procurements for service needs and to replace aging fleets with more efficient and reliable vehicles.

- Today's presentation defines the overall program and approach to replace the aging 2004-2006 Neoplan Dual Mode Articulated (DMA) fleet
- Vehicle Engineering plans to exercise an available option to procure a new fleet of 60-foot Enhanced Electric Hybrid (EEH) buses under Contract No. 683 with New Flyer
- Delivery of the 45 EEH buses is anticipated to begin with the delivery of a pilot bus at the beginning of 2022 with all buses delivered by the end of summer 2022.



# Background

---

- New Bus Procurement Contract No. 683 with New Flyer Industries was executed in December 2015 for 44 hybrid 60-foot buses
- MBTA exercised an available option for a single prototype EEH bus which entered service in late 2018 with the capability of zero-emissions operation in the Silver Line Transitway Tunnel
- Successful evaluation of the New Flyer EEH prototype bus in Silver Line operation allows MBTA to recommend a contract option for 45 additional EEH buses to replace the aging DMA fleet originally procured in 2004-2006
- As presented during the FMCB meeting on November 9<sup>th</sup>, the EEH technology has performed well in passenger service, provides advancements in emissions reduction and is considered a viable bridge technology pending significant advancements of all-electric vehicles and charging network capabilities



# New Flyer 60-foot Enhance Electric Hybrid Bus: Purpose

- Replace the aging 32 Neoplan Dual Mode Articulated (DMA) bus fleet purchased in 2004-2006
- Enhanced driver's area, improved passenger & ADA accommodations
- Modern, efficient, proven vehicle design offers improved fleet reliability
- Estimated to reduce fuel consumption (compared to DMA fleet) by 195,611 gallons and GHG emissions by 3,898 tons over the lifecycle of the 45 EEH fleet



# New Flyer 60-foot Enhance Electric Hybrid Bus: Features

The 45-bus EEH option offers reliability of service-proven hybrids and significant zero-emissions operation.

- Equipped with ZF center-driven axle for superior traction (4-wheel drive) eliminating need to remove 60-foot bus fleet from service during winter storms
- Seamless integration into existing operations and preventative maintenance programs
- Incorporates on board ESS charger to supply the approx. 800+ kWhr daily needs
- Extended operation with engine-off enables improved fuel efficiency and reduced emissions (50%+ engine-off, emissions-free operation)
  - **“Start/Stop” and “Arrive & Go”** - features turn the engine off if in traffic / traffic signals, as the bus slows to a stop, and in low speeds after a stop
  - **Geofencing** - is planned to be incorporated in this fleet for use on some routes in order to maximize selective engine-off operation and emissions reduction
  - Design features: Driver’s barrier, battery management system, and flip-up seating configuration preferred by passengers who use mobility devices and people using baby carriages.



# Project Timeline & Budget

## Vehicle Procurement Timeline:

- Notice of Award New Flyer 45 EEH 60' buses Today
- 45 Option Vehicle Design Review Activities Jan 2021
- 45 Option Vehicle Deliveries Begins Jan 2022
- 45 Option Vehicle Deliveries Concludes July 2022

## Project Budget:

- Procurement of 45 EEH buses \$80,889,990
- Force account (in-house labor) \$236,075
- Project administration \$978,799
- Indirect costs and internal capital oversight \$1,699,854
- Professional Services \$1,875,000
- Contingency \$3,765,272

***Total project budget: \$89,444,990***



# Request of the Fiscal and Management Control Board

---

**VOTED:** That, subject to the completion of FTA Buy America audit requirements, the General Manager be, and hereby is, authorized to execute, in the name of and on behalf of the Massachusetts Bay Transportation Authority, and in a form approved by the General Counsel., an option to Formal Contract No. 683 with New Flyer of America, Inc. for the manufacture, furnishing and delivery of 45 sixty-foot Enhanced Electric Hybrid New Flyer Buses with spares, training/training aids, special tools, publications and communications, for a total not to exceed delivered cost of \$80,889,990.

