

ZERO EMISSION BUS (ZEB) REGIONAL INFRASTRUCTURE

WINTER 2023 DRAFT UPDATE

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Regional Public Transportation Subcommittee
February 28, 2023 (updated post-meeting, 03/23)



Not Zero Emission Bus Infrastructure...Yet



Image: Demolished diesel fuel tanker at WMATA's Northern Bus Garage (Jordan Pascale/Twitter @jwpascale)



Background

- COG/TPB staff have previously analyzed regional transit electrification
 - 2019: EV Bus Infrastructure Report (Sulaiman Almaroof, DEP)
 - 2021: Electric Bus Overview (Antonio Castañeda, DTP)
- Today, 10 of 12 D.C. region operators have ZEBs in their fleets, initiated pilot programs, or studied electrification feasibility
- New implementation data to study

Image: New Electric Articulated MetroBus (WMATA/Twitter @wmata)



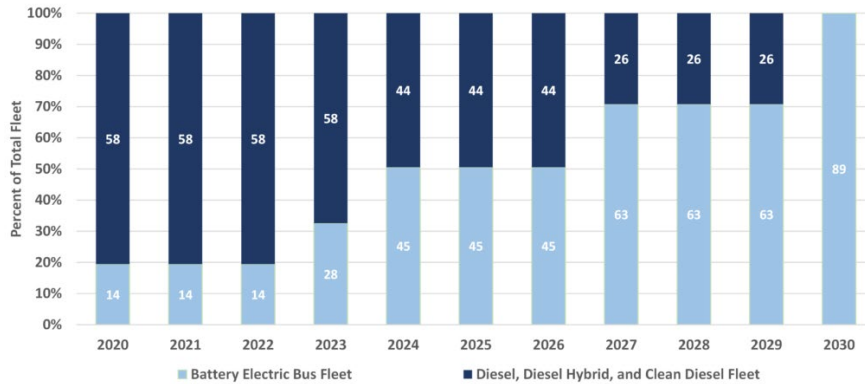
Purpose/Goals

- **Update** data from previous COG/TPB analysis
- **Gather** information about revenue vehicle and charging equipment being used and procured
- **Clarify** a current picture of the state of zero emission bus infrastructure in the Metropolitan Washington region
- **Identify** trends in planning, procurement, and implementation decisions
- **Collaborate** with local partners' efforts to regionally plan for zero emission vehicle adoption (i.e., NVTC, MTA, and WMATA Bus Leaders)
- **Report** results in the 2023 State of Public Transportation Report



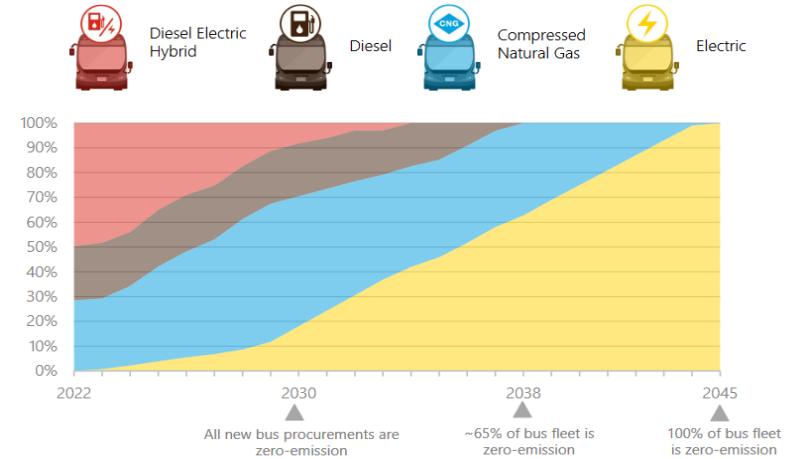
ZEB Procurement Schedule Examples

D.C. Circulator



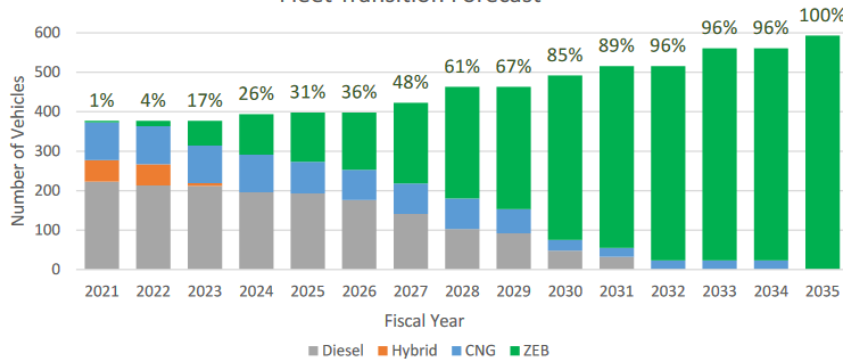
Vehicles as % of Fleet

WMATA

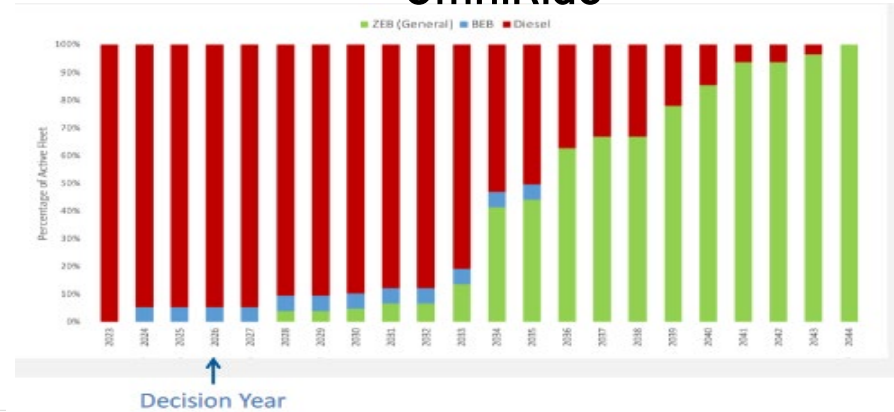


Ride On

Fleet Transition Forecast



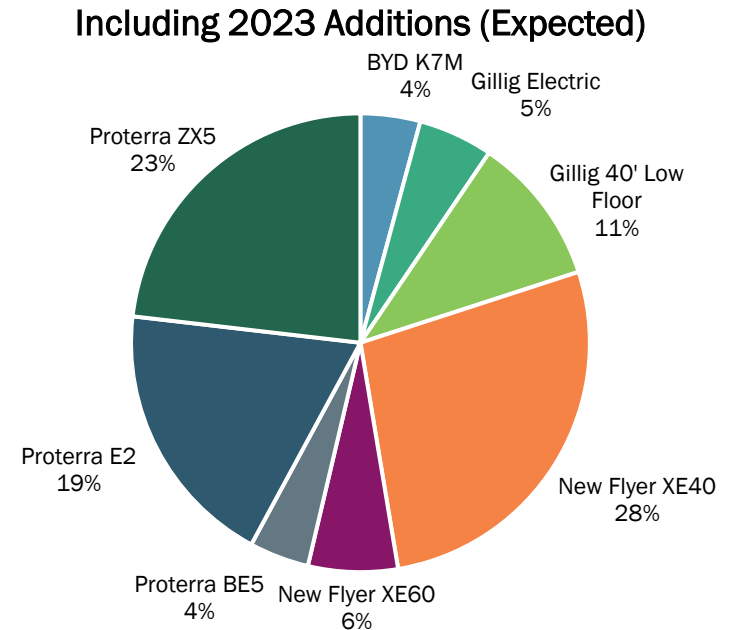
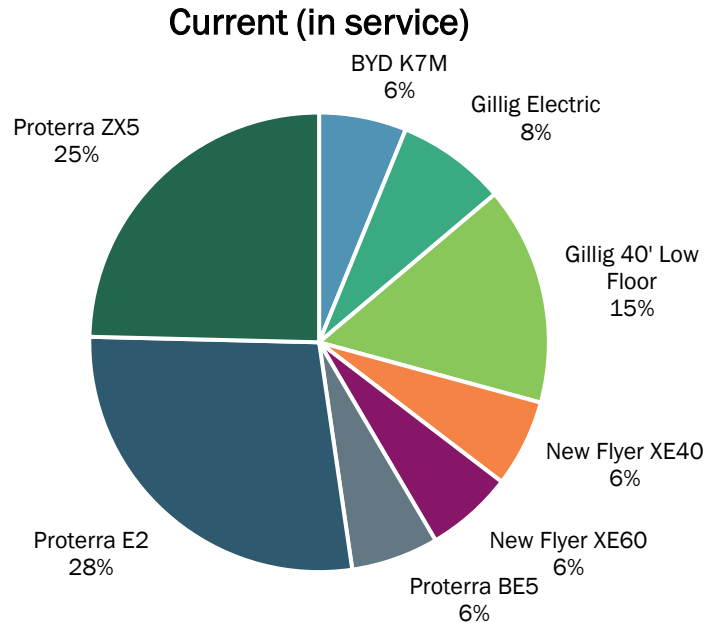
OmniRide



Sources: 2020-2030 Ride On Fleet Management Plan; DC Circulator Zero Emissions Bus Conversion webpage; WMATA December 2021 Fleet Management Plan; OmniRide Zero Emissions Bus Study



ZEB Models in Regional Service

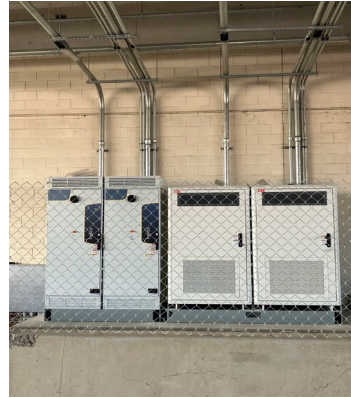


Manufacturer/Model	Current	(Upcoming)*	Operated By
BYD K7M	4	4	TransIT
Gillig Electric	5	5	TransIT
Gillig 40' Low Floor	10	10	Ride On
New Flyer XE40	4	26	DASH, (WMATA), (Fairfax Connector)
New Flyer XE60	4	6	DASH, (WMATA)
Proterra BE5	4	4	Ride On
Proterra E2	18	18	DC Circulator, The Bus
Proterra ZX5	16	22	DASH, (TheBus), DC Circulator
	56	76	

Sources: Agency websites, transit planning documents, NTD data, news articles; *=does not include The Bus' 2023 procurement



ZEB Charging Infrastructure



<u>Operator/Agency</u>	<u>Manufacturer/Provider</u>	<u>Year Installed (Appx.)</u>	<u>Charging Capacity</u>	<u>Type</u>
Ride On, WMATA	Heliox	2022, 2023	>400kW	Pantographs
WMATA	Abb	2023	>400kW	Pantographs
DASH	Abb	2020	150kW	Plug-in
The Bus, DASH	Proterra	2020	125kW	Plug-in
Ride On	Proterra	2017	60kW	Plug-in
D.C. Circulator	Tritium	2018	50kW	Plug-in
TransIT	CCW	2016	n/a	Plug-in
TransIT	BYD	2019	n/a	Plug-in

Sources: Agency websites, transit planning documents, press releases, and news articles

Images: D.C. Circulator/Zero Emissions Fleet Conversion webpage; WMATA/Twitter, @wmata; DASH/Zero Emissions Bus Program Presentation



Identified Early Trends



Image: TRANSIT Bus Charging (TRANSIT Services of Frederick County/Facebook)

- Regional ZEB operators can serve most of their existing routes using battery-electric buses
 - Infrastructure interventions can mitigate some weather-related issues
- In-ground charging units are increasingly 125 kW capacity or higher (with two or three dispensers per unit)
- There's more enthusiasm to incorporate ZEBs into fleets, but agencies are still doing more independently than collectively



How Can TPB Help?

Examples of how we can serve your zero emission transition needs:

- Conduct a regional study of potential on-street charging locations
- Offer other technical assistance (ex., conduct an internal or contractor-staffed study on X electrification issue)
- Coordinate joint procurement process or workforce development programs
- Serve as a region-wide depository for zero emission transit data
- Facilitate full regional scale meetings on operator electrification efforts
- Funding assistance?

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