
# ZERO EMISSION TRANSIT BUS PANEL

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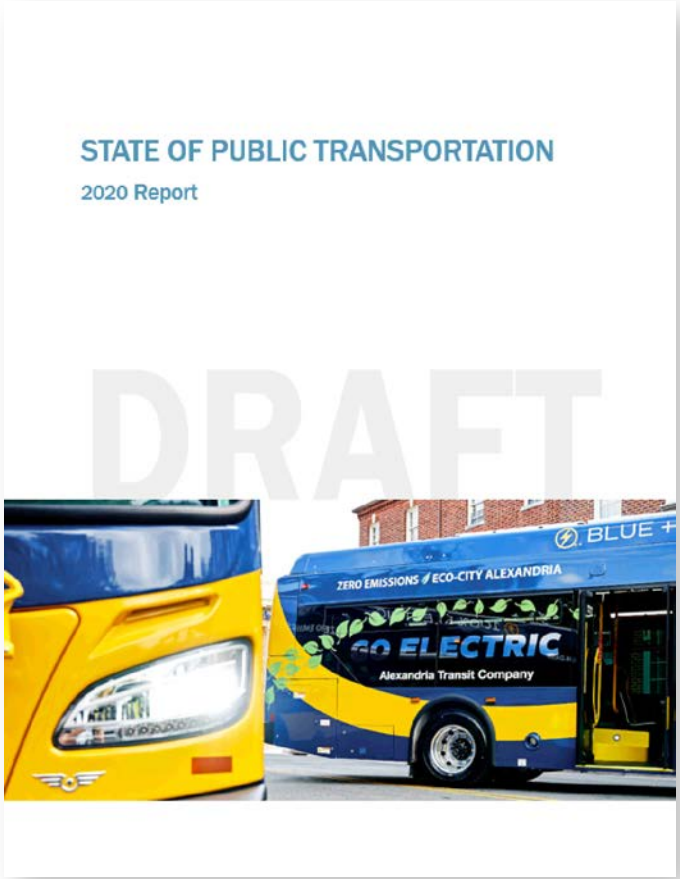
**COG Climate Energy and Environment Policy Committee**
**September 22, 2021**

# 2020 State of Public Transportation Report

- Overview of bus electrification activities throughout the region as listed in the 2020 SOPTR
- Increase in E-Bus procurement, studies and pilots in 2020
- The purpose of the report is to provide a snapshot of public transportation activities in the NCR
- Updated activities and procurement plans across the region into 2025



# Sections of the report

## Part I: COVID-19's Impact on Public Transportation

- Overview of health, safety impacts and responses from service providers and ridership levels through end of 2020

## Part II: Fixed Route Transit Services

- Profile sheets provide overview of ridership, operational expenses, revenue sources, recent accomplishments and system characteristics

## Part III: Other Public Transit Services

- Overview of additional transit services such as paratransit and commuter services and their recent accomplishments

## Part IV: Regional Public Transportation Organizations

- Information on organizations that operate, provide research or project development for public transportation

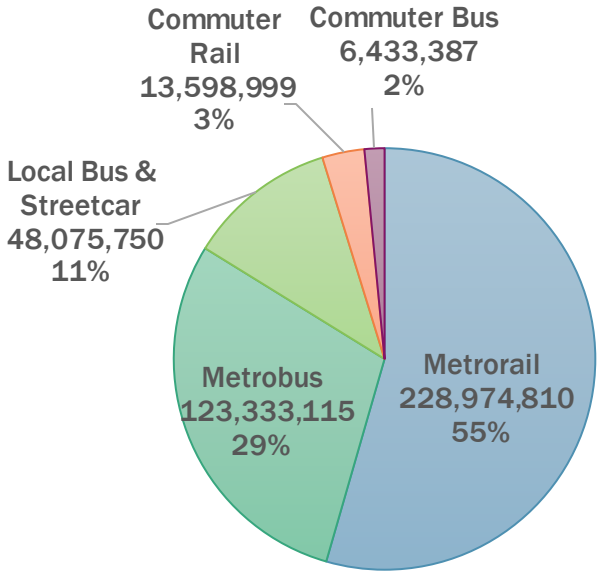
## Part V: Public Transportation Accomplishments

- Major studies planned, in progress or completed and significant operational achievements occurring during CY 2020 by service provider

## Part VI: Transportation Planning Board

- Overview of how the TPB assists with regional public transportation including RPTS, PBPP and Visualize 2045

# 2019 NTD Data NCR Overview

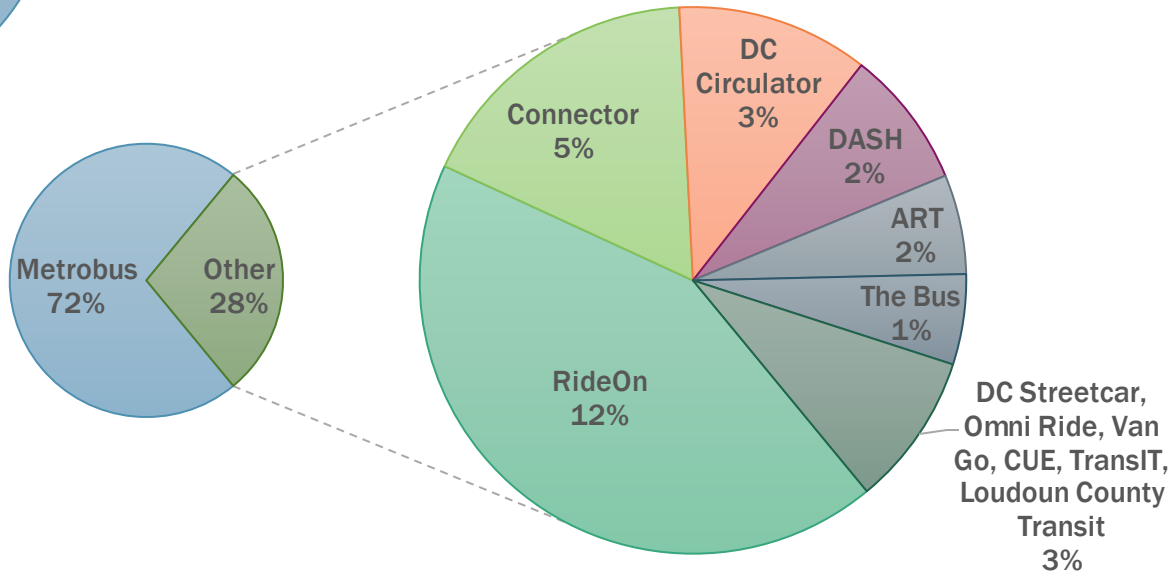



- Over **420 MILLION UNLINKED PASSENGER TRIPS** in 2019*

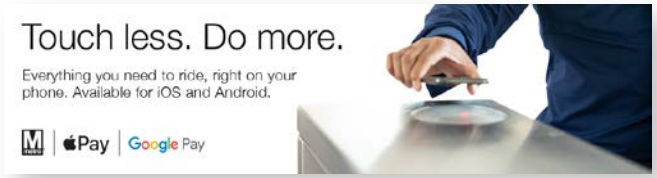
**MARC and MTA Commuter Bus imputed for NCR*

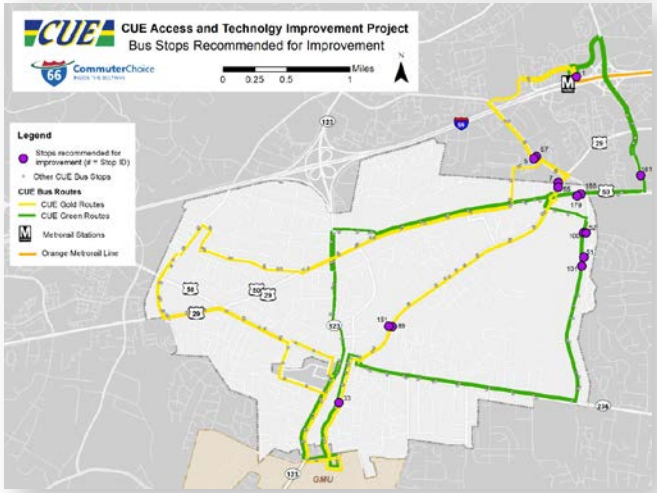
- **OVER 40% of all transit trips** in the region occurred **by BUS**

- 28% of bus trips occurred on local bus



# Highlights: Part II – Agency Profile Sheets



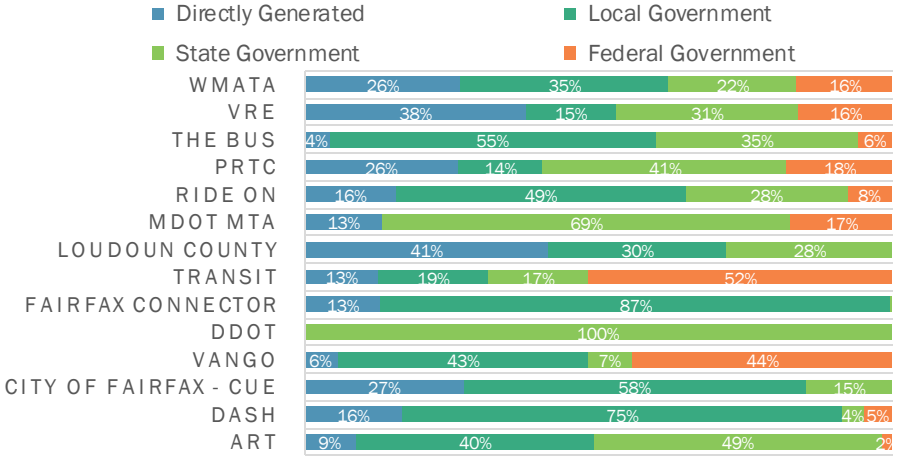





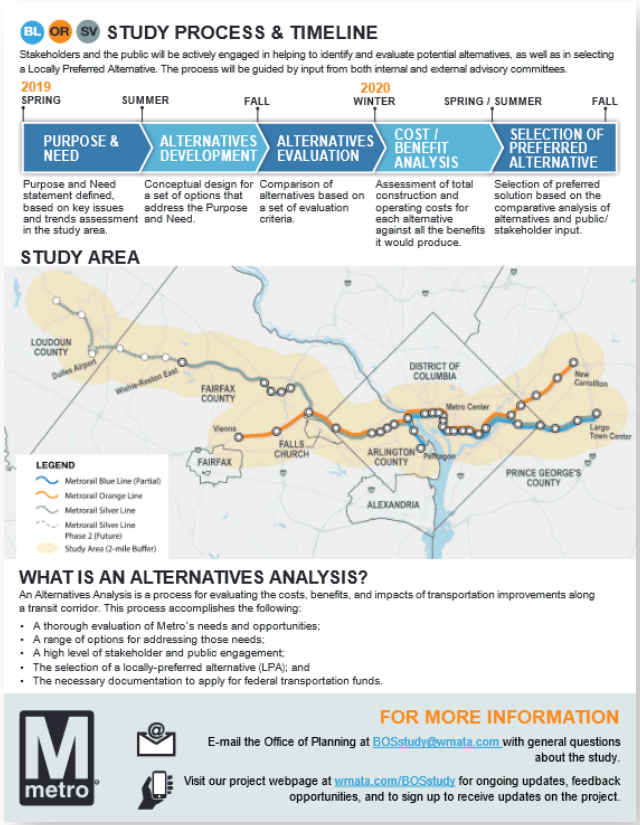
## HIGHLIGHTS

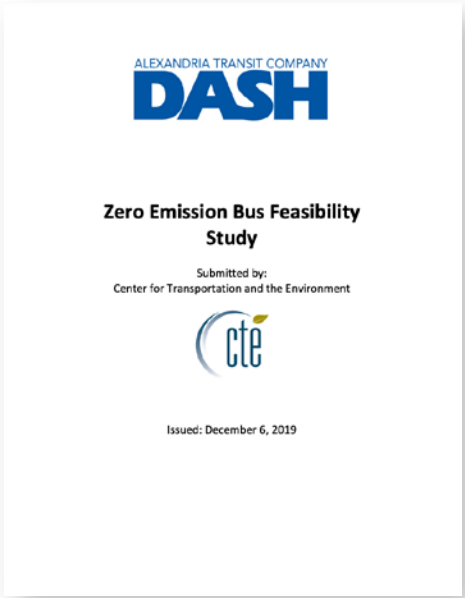
- App / App integration improvements
- New Routes & Service Changes
- Battery Electric Buses (BEBs)

## NCR TRANSIT SERVICE PROVIDERS' FY19 REVENUE SOURCES



# Highlights of Part V – Major Accomplishments



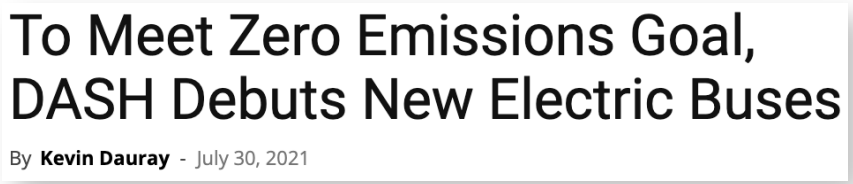





## HIGHLIGHTS OF STUDIES

- Blue/Orange/Silver Line Corridor Reliability and Capacity Study
- DDOT Bus Priority Toolbox
- DASH
  - Zero Emission Feasibility Review
  - Zero Emission Implementation Plan

# Regional Battery Electric Buses in the news



To Meet Zero Emissions Goal, DASH Debuts New Electric Buses

By **Kevin Dauray** - July 30, 2021

Montgomery County Rolls Out First Four Electric Buses on Ride On; Accelerates Efforts to Reduce Transportation Emissions

**For Immediate Release: Thursday, September 3, 2020**

LOCAL NEWS

**After a $2.2 million government grant, electric buses will soon come to PG County**

Rina Torchinsky · September 20, 2019

**Maryland County Shows Off Electric Bus Fleet to Congress**

*Frederick County, Md., local government officials had the opportunity to show off their electric bus fleet and solar array at the county landfill to Congressmen from both coasts late last week.*

BY STEVE BOHNEL, THE FREDERICK NEWS-POST / MARCH 3, 2020

**14 electric vehicles will join D.C. Circulator fleet on May 1**

*D.C. is getting greener*

By Michelle Goldchain | @goldchainam | Apr 20, 2018, 9:45am EDT

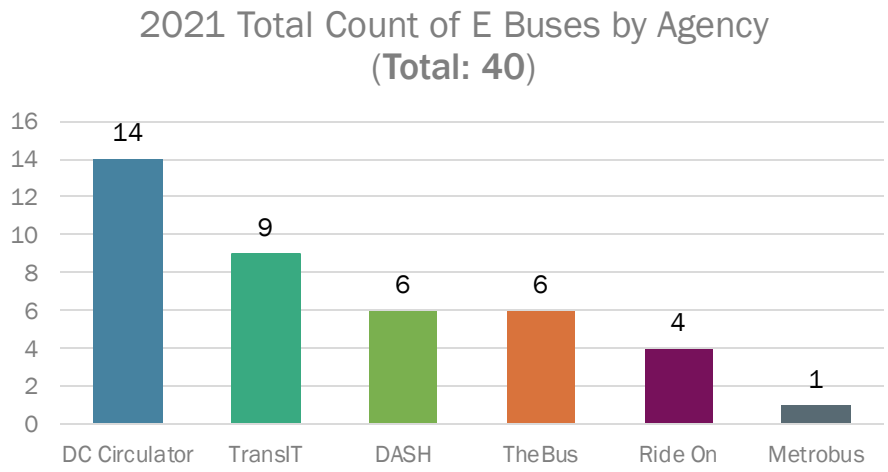
NEWS

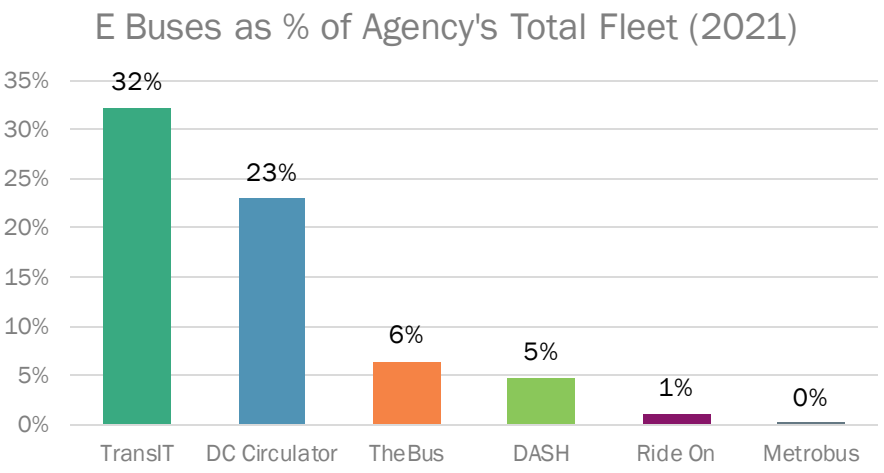
**Fairfax County to begin transition to electric vehicles after landing $4.4M in state funds**

Angela Woolsey May 12, 2021 at 9:30am

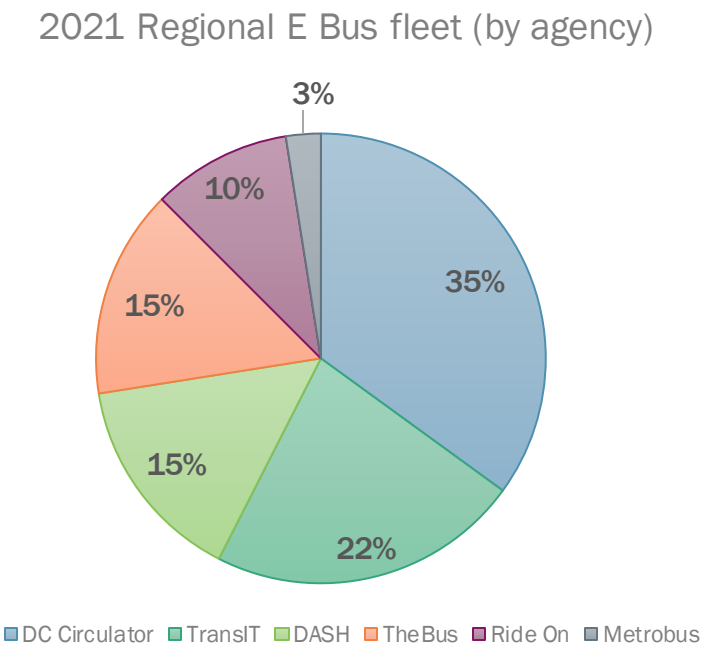
Sources (L>R): The Zebra, Montgomery County MD – press detail, DBK News, Govtech, DC Curbed, Reston Now

# BEB Fleets in the NCR



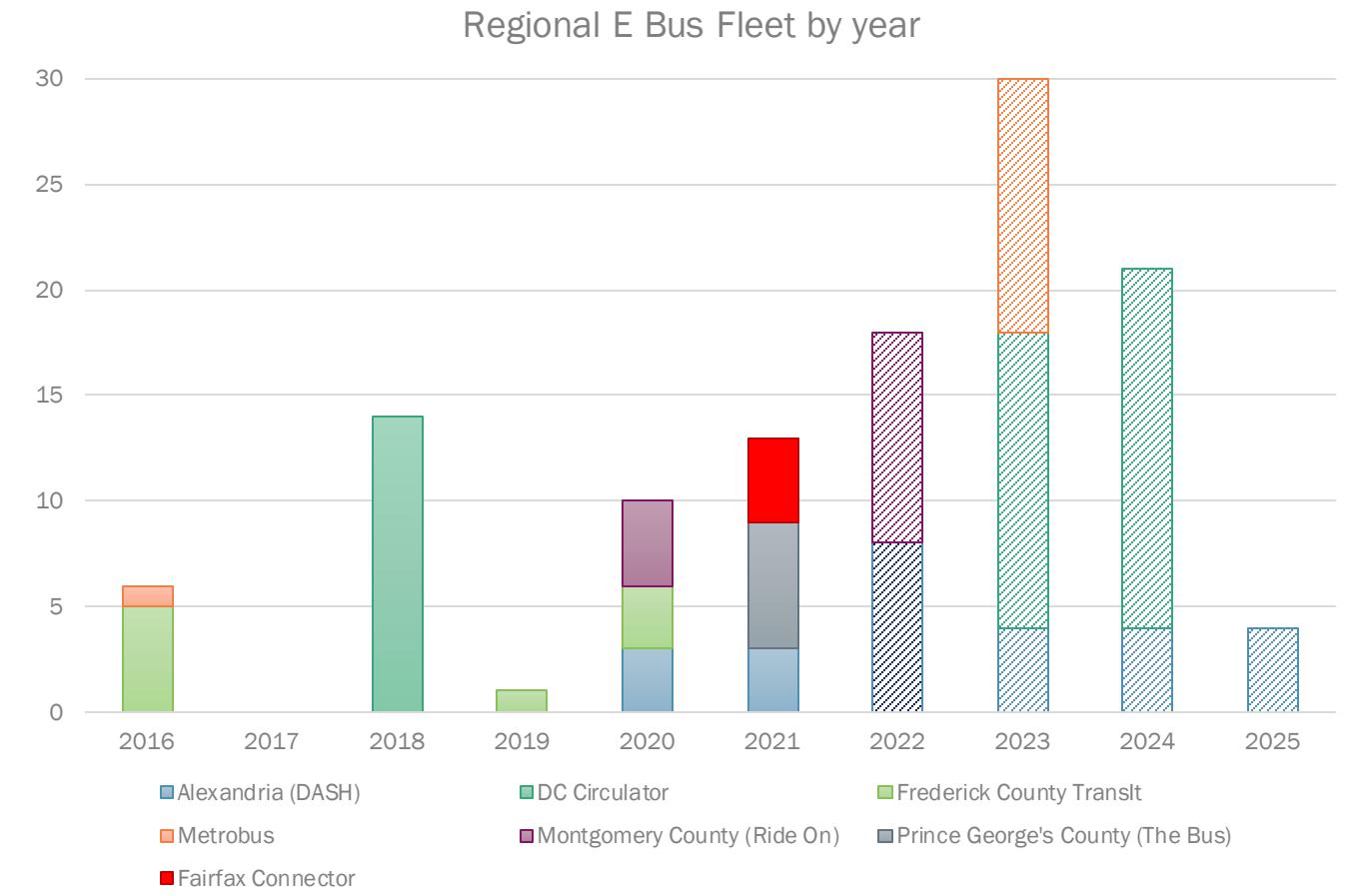

**Source:** Mixed: NTD RVI & review of local reports / articles




NCR Total Local Bus Fleet (2019)

**2,714 buses**

# BEB Procurement in the NCR

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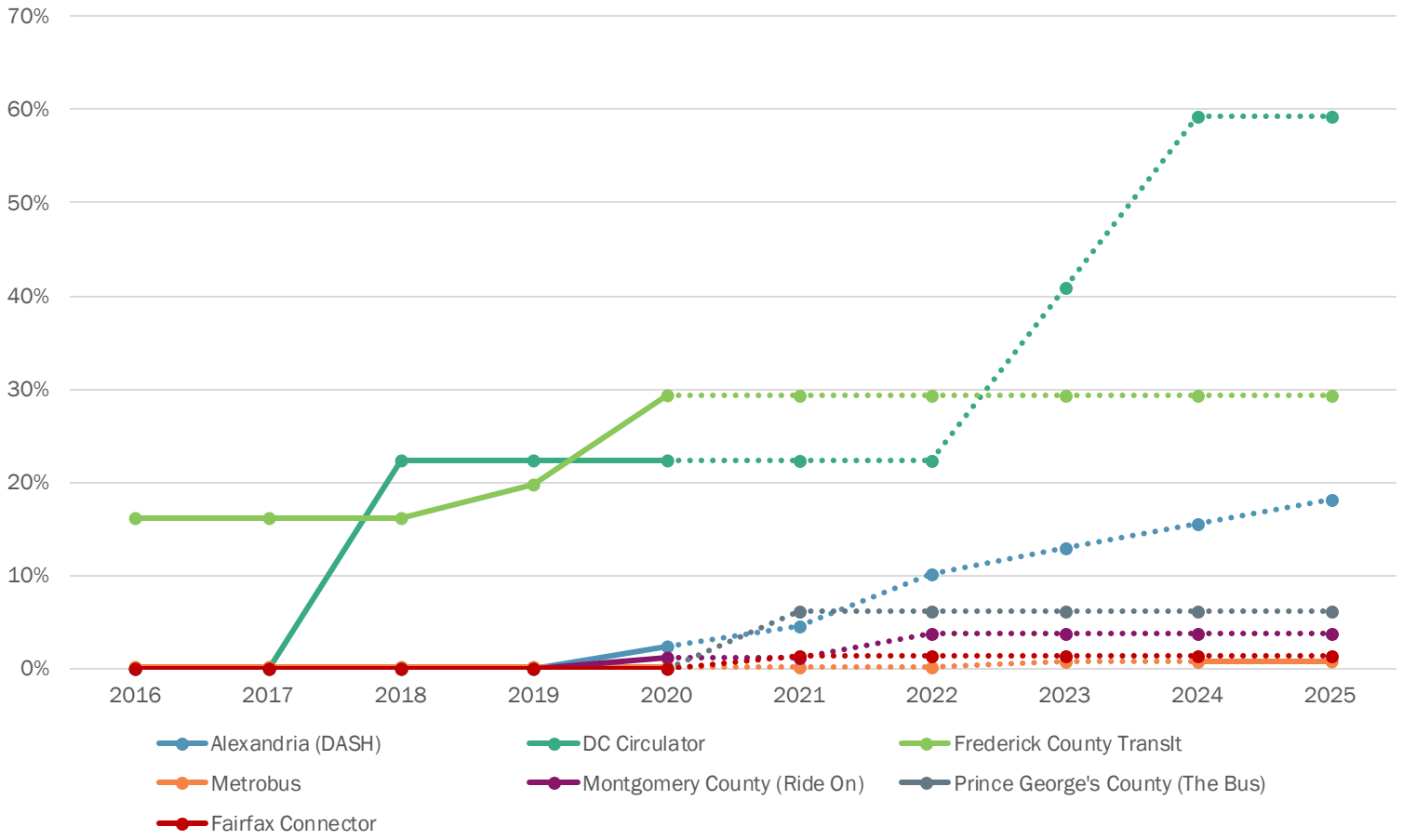
# Fleet Conversion by Agency




**Source:** Mixed: NTD RVI & review of local reports / articles

# Procurement Concerns

## COMMON E-BUS CONCERNS

- Buy America & BEBs
- Performance of BEBs
- Associated costs
- Managing expectations of e-bus deployment and impacts

**Set a goal that all new American-built buses be zero-emissions by 2030,** which will create significant demand for the manufacturing of new, clean American-built buses utilizing American-manufactured inputs – and accelerate the progress by converting all 500,000 school buses in our country – including diesel – to zero emissions. Biden will ensure that the existing – and future – workforce is trained and able to operate and maintain this 21st century infrastructure.

**Source:** President Joe Biden's Build Back Better Plan – Clean Energy

**Table 12: Proposed solutions to e-bus barriers common in all archetypes**

| Barriers | | Solution 1 | Solution 2 | Solution 3 | Solution 4 | Solution 5 |
|---|---|---|---|---|---|---|
| Fleet operations | Uncertain residual value | Guaranteed loans | Regulation on used batteries disposal | Battery lease | Extended manufacturer warranty | Extended lease or loan for the vehicle |
| | Cold weather – higher energy consumption | Renewable biofuel powered generators | Heat pumps | Trial bus in winter to understand additional power needed for heating | | |
| Vehicle | Capital costs | Capital or operational lease | Battery lease | Joint purchase agreements | Extended lease or loan for the vehicle | |
| | Underdeveloped supply chain | Fleet electrification targets can send clear signal to bus manufacturers | | | | |
| Battery | Unclear end-of-life options | Battery lease | Extended manufacturer warranty | Extended lease or loan for the vehicle | Regulation on used battery disposal | |
| | Falling battery prices | Vehicle lease | | | | |
| Charging infrastructure | Capital cost | Standardization | Bundling the price of a charger with the price of a bus during the tendering process | Partnership with utilities | | |
| | Installation costs | Standardization | Partnership with utilities | | | |
| | Public perception and space restrictions | Education | Re-locate bus stops | | | |
| Electricity supply and grid issues | Location of electricity supply | Partnership with utilities | Consider new depot in new location | Solar panels at depot | | |
| | Constrained grid areas | Batteries assisted chargers | Solar panels and depot | | | |
| Financing | Uncertainty for finance companies | Bus manufacturers could take on the role of financing companies | Government guaranteed loans | Involve finance companies in long term strategy | | |
| Government support | Lack of indirect support measures (low emissions zone) | Involve national governments in e-bus deployments | City authorities explore introducing such policies | | | |

**Source:** Bloomberg: Electric Buses in Cities Driving Towards Cleaner Air and Co2

# Next Steps

**Regional Coordination:**

- Energy infrastructure investments
- Training programs / workforce development
- Harmonized policies and utility rate structures
- Additional funding for e-bus and facility conversion
- Fleet lifecycles / replacement timelines

**Source:** Transportation and Climate Initiative

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# Appendix – BEB Procurement / VAMS (by year)

| Year | Alexandria (DASH) | DC Circulator | Frederick County TransIt | Metrobus | Montgomery County (Ride On) | Prince George 's County (The Bus) | Fairfax Connector |
|---|---|---|---|---|---|---|---|
| 2016 | 0 | 0 | 5 | 1 | 0 | 0 | |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2018 | 0 | 14 | 0 | 0 | 0 | 0 | |
| 2019 | 0 | 0 | 1 | 0 | 0 | 0 | |
| 2020 | 3 | 0 | 3 | 0 | 4 | 0 | |
| 2021 | 3 | 0 | 0 | 0 | | 6 | 4 |
| 2022 | 8 | 0 | 0 | 0 | 10 | 0 | |
| 2023 | 4 | 14 | | 12 | | | |
| 2024 | 4 | 17 | | | | | |
| 2025 | 4 | | | | | | |

AGENCY VAMS *assumes 2020-2022 projection growth is only via increase in e-bus procurement and no other buses

| Year | Alexandria (DASH) | DC Circulator | Frederick County TransIt | Metrobus | Montgomery County (Ride On) | Prince George 's County (The Bus) | Fairfax Connector |
|---|---|---|---|---|---|---|---|
| 2016 | 85 | 67 | 31 | 1503 | 338 | 93 | |
| 2017 | 85 | 67 | 31 | 1488 | 344 | 93 | |
| 2018 | 86 | 63 | 25 | 1478 | 369 | 93 | |
| 2019 | 128 | 61 | 28 | 1558 | 369 | 93 | 308 |
| 2020 | 131 | 61 | 31 | 1558 | 373 | 93 | 308 |
| 2021 | 134 | 61 | 31 | 1558 | 373 | 99 | 312 |
| 2022 | 142 | 61 | 31 | 1558 | 383 | 99 | 312 |
| 2023 | 146 | 75 | 31 | 1570 | 383 | 99 | 312 |
| 2024 | 150 | 92 | 31 | 1570 | 383 | 99 | 312 |
| 2025 | 154 | 92 | 31 | 1570 | 383 | 99 | 312 |

**Source:** Mixed: NTD RVI & review of local reports / articles