



# Innovation and Transit Technology: 2023 Forecast

HRT Smart Cities and Innovation  
Committee

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Statewide Transit Planning Manager

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# Overview of DRPT

Our mission is to connect and improve the quality of life for all Virginians with innovative transportation solutions.

We are the Commonwealth's advocate for promoting transportation options to the general public, businesses, and community decision makers.

Our vision is a connected Commonwealth with an integrated multimodal network that serves every person, every business, and every need.

# Statewide Transit Grant Programs



DRPT's transit and TDM grant programs, branded as "[MERIT](#)," provide financial assistance to support Transit and TDM services.

MERIT consists of the following grant opportunities for transit agencies and partners:

- Transit Operating Assistance
- Transit Capital Assistance
- Technical Assistance
- Demonstration Project Assistance
- Workforce Development Program
- TDM Operating Assistance
- Mobility Programs
- Senior Transportation



# Statewide Rail Funding Programs

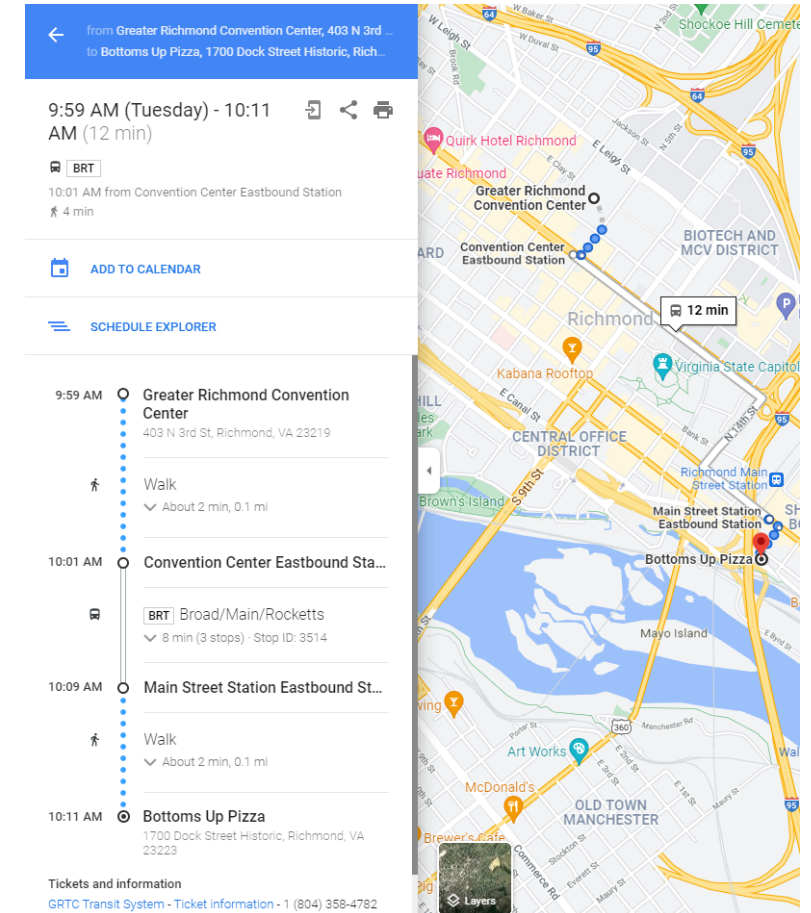
- **Intercity Passenger Rail Operating and Capital Fund (IPROC) - \$55M Annual Revenue**
  - Dedicated funding to Virginia's state-sponsored intercity passenger rail service
- **Rail Enhancement Fund (REF) - \$18M Annual Revenue**
  - Supports highway congestion relief through freight and joint benefit projects
  - Requires cost-benefit analysis and private match
- **Shortline Railway Preservation & Development Fund - \$4M Annual Revenue**
  - Preservation and development of shortline "last mile rail service"
- **Rail Industrial Access Fund - \$1M Annual Revenue**
  - Shares combined revenues of road, rail, and airport access fund
  - Gets trucks off of Virginia highways and supports economic development



# GTFS – Statewide

- **DRPT Leveraging of GTFS**

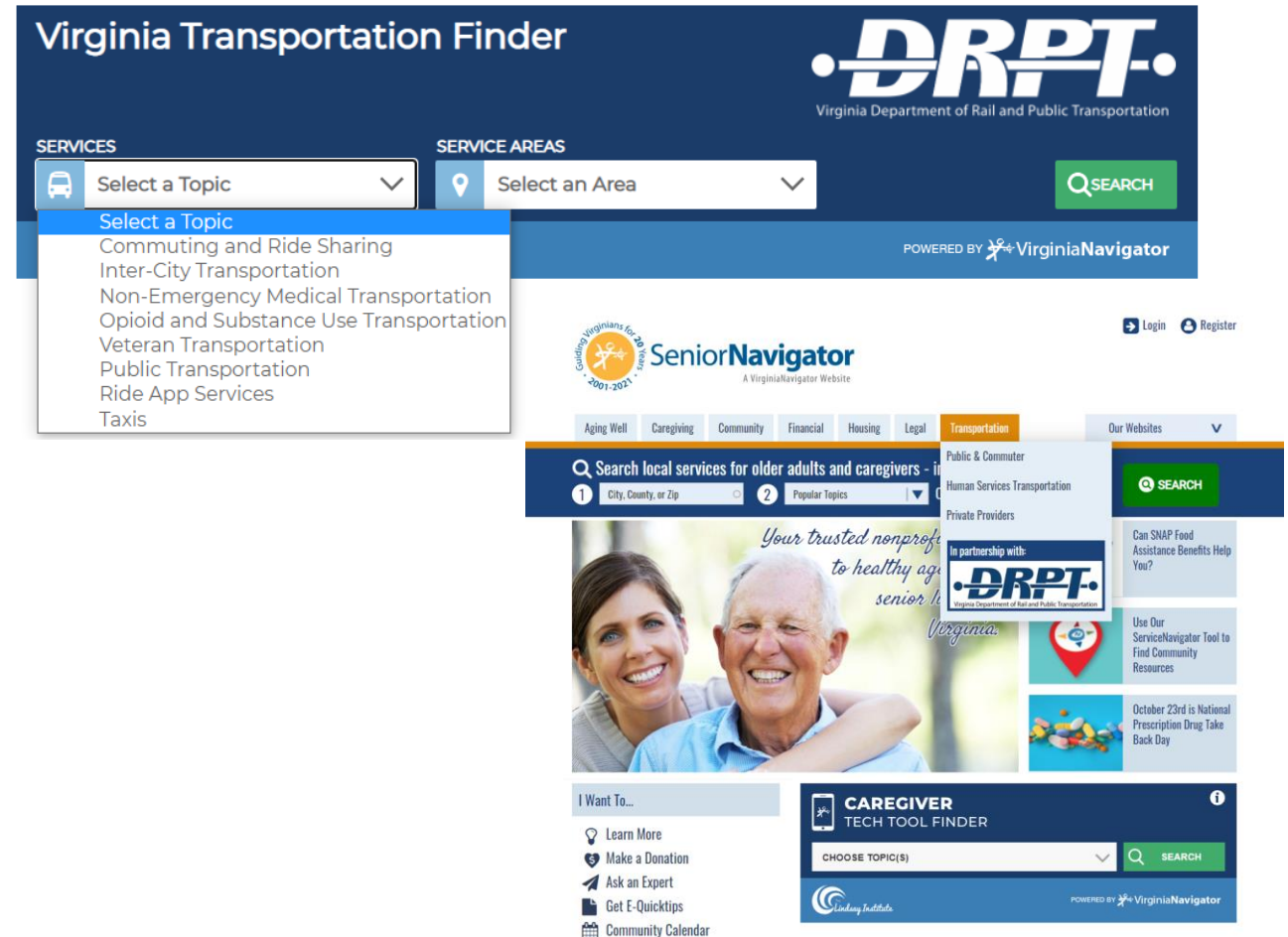
- Currently - 100% coverage of fixed route services with static feeds
- Maintained by or on behalf of all fixed route transit operators
- DRPT provides a technical assistance contract available to rural and some small urban agencies -- Covers development of feed and maintenance
- Many larger agencies have Real-time feeds





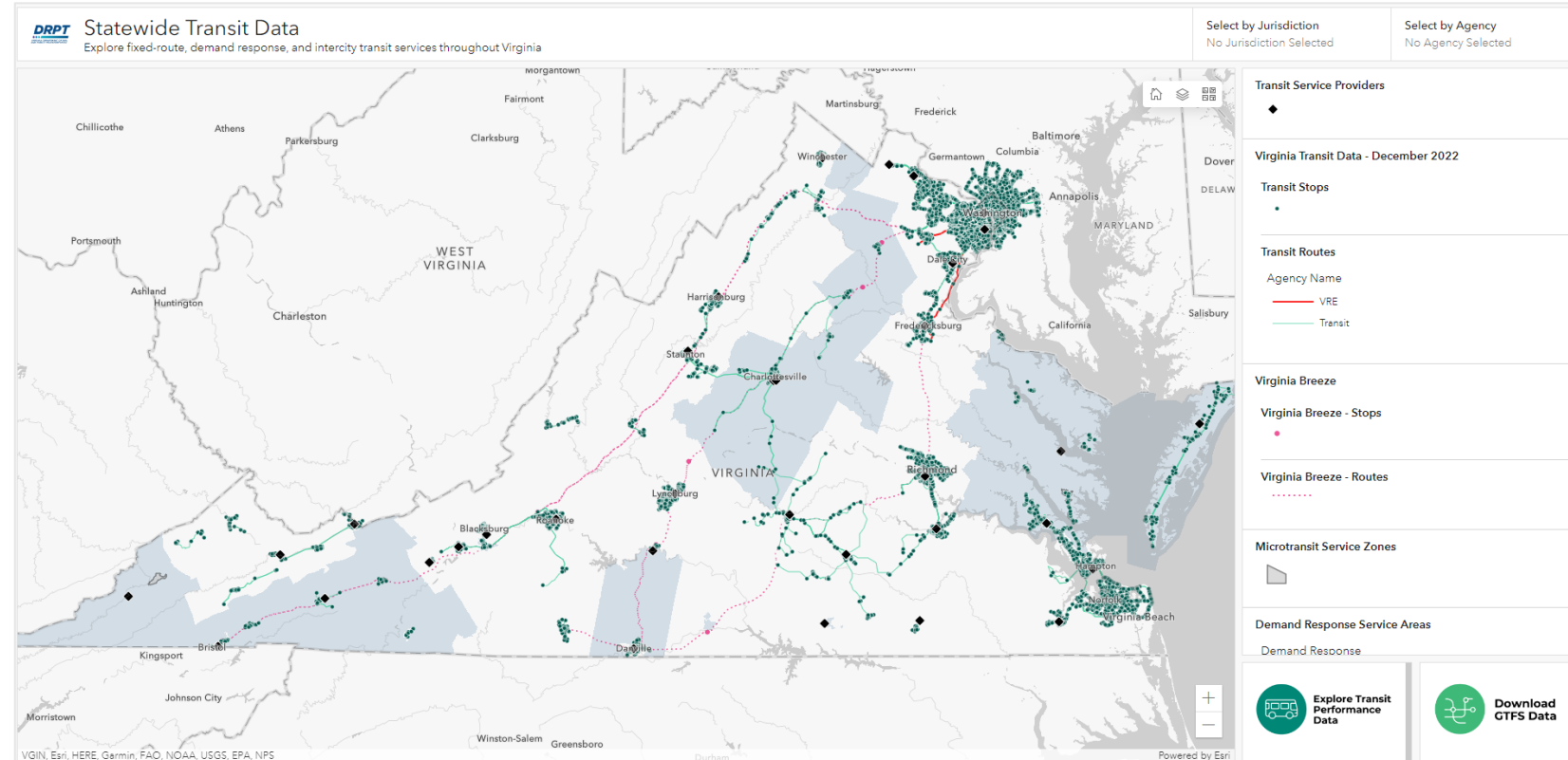
# GTFS – Statewide Use Cases

- **Information Sharing:**
  - Maintaining the Virginia Transportation Navigator Database and transit finder tools
  - Maintain a comprehensive portals for Senior, Disability, and Veterans services



# GTFS – Statewide Use Cases

- **Policy and Planning:**
  - Basis for a transit stop condition inventory
  - Publishing of statewide transit maps and associated GIS data
  - Maintaining a centralized GTFS clearinghouse



# Transportation Navigator

- DRPT updated Virginia's Coordinated Human Services Mobility Plan in 2018-19
- FTA Access and Mobility for All funding announced in 2020
  - *'Utilize innovative coordination strategies to enhance mobility and access to services for older adults, individuals with disabilities, and people of low income'*
- Online listing of all transportation services in VA
- GTFS feeds for existing fixed-route transportation

The screenshot shows the 'Programs & Services' section of the Transportation Navigator website. At the top, there are navigation tabs for 'Programs & Services (257)', 'Articles (7)', 'Books & Guides (2)', and 'Links (10)'. Below these, a dark blue header contains the text 'Programs & Services' and 'Currently showing 247 local programs & services. Enter a City, County or Zip code and filter the results by location.' A search input field with the placeholder 'City, County, or Zip' and a 'FILTER' button are present. The main content area is titled 'LOCAL' and 'Transportation, Public Paratransit & Flexible Schedule'. It includes a description: 'Programs that provide flexibly scheduled transportation for community residents who are unable to use the fixed-route public transportation system. The services may be used by the general public or limited to special populations such as older adults and individuals with a disability.' Below this, two program listings are shown, each with a 'No Wrong Door' logo and the text 'CERTIFIED PARTNER'. The first listing is 'Program Transportation for Older Adults and Adults with Disabilities' by the 'Appalachian Agency for Senior Citizens (AASC)', located at '216 College Ridge Road, Cedar Bluff, VA 24609'. It provides contact information: 'Main: (276) 963-1486', 'Fax: (276) 963-0130', and 'Toll-Free: (888) 656-2272'. The second listing is 'Senior Center Adult Day Transportation (SCAT)' by 'Arlington Aging and Disability Services'.



# Virginia DRPT Open Data Portal

Department of Rail and Public Transportation Data Dashboards are listed below or use the Data Catalog link above to explore all data assets.

<https://data.drpt.virginia.gov/>

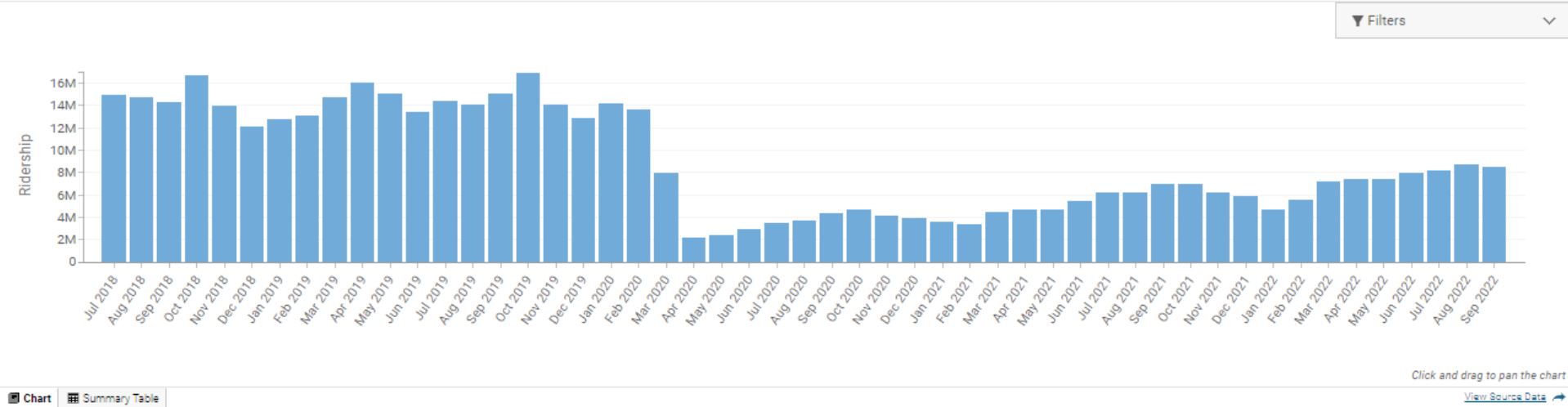
## Data and Visualizations available to the public:

- Statewide Transit Performance Data
- Tier II TAM Plan Data
- Intercity Bus Performance DataVA
- GTFS Data Clearinghouse
- VA Statewide Transit Map – Arc Online

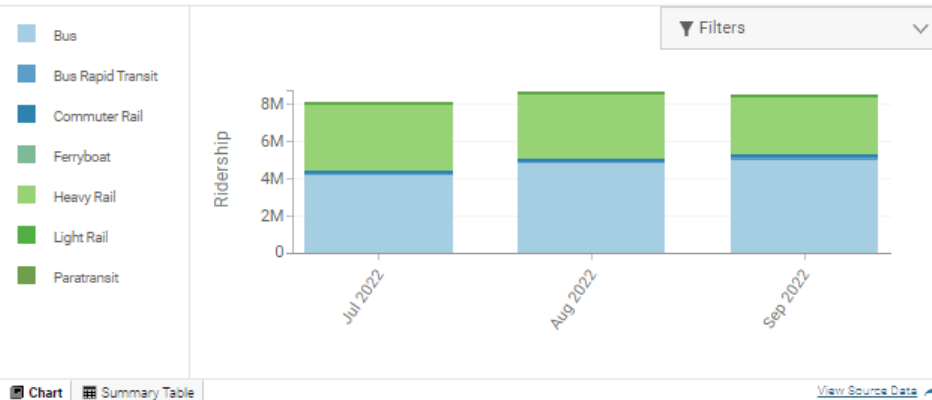
# Transit Performance Data

## Ridership

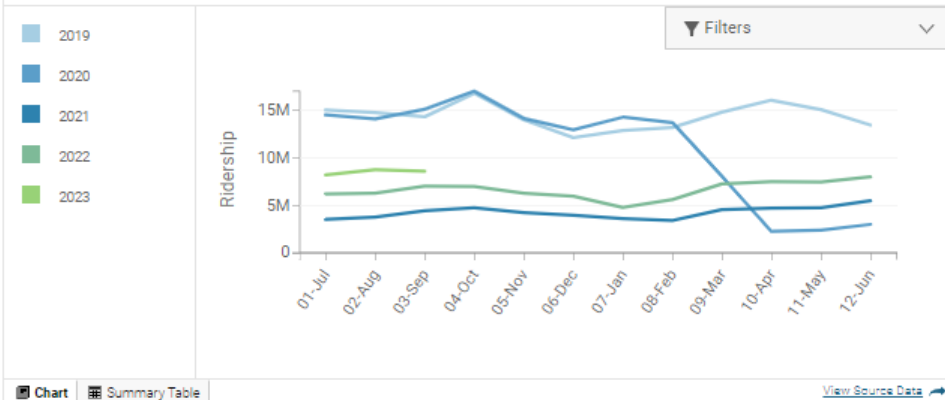
### Ridership Month-to-Month

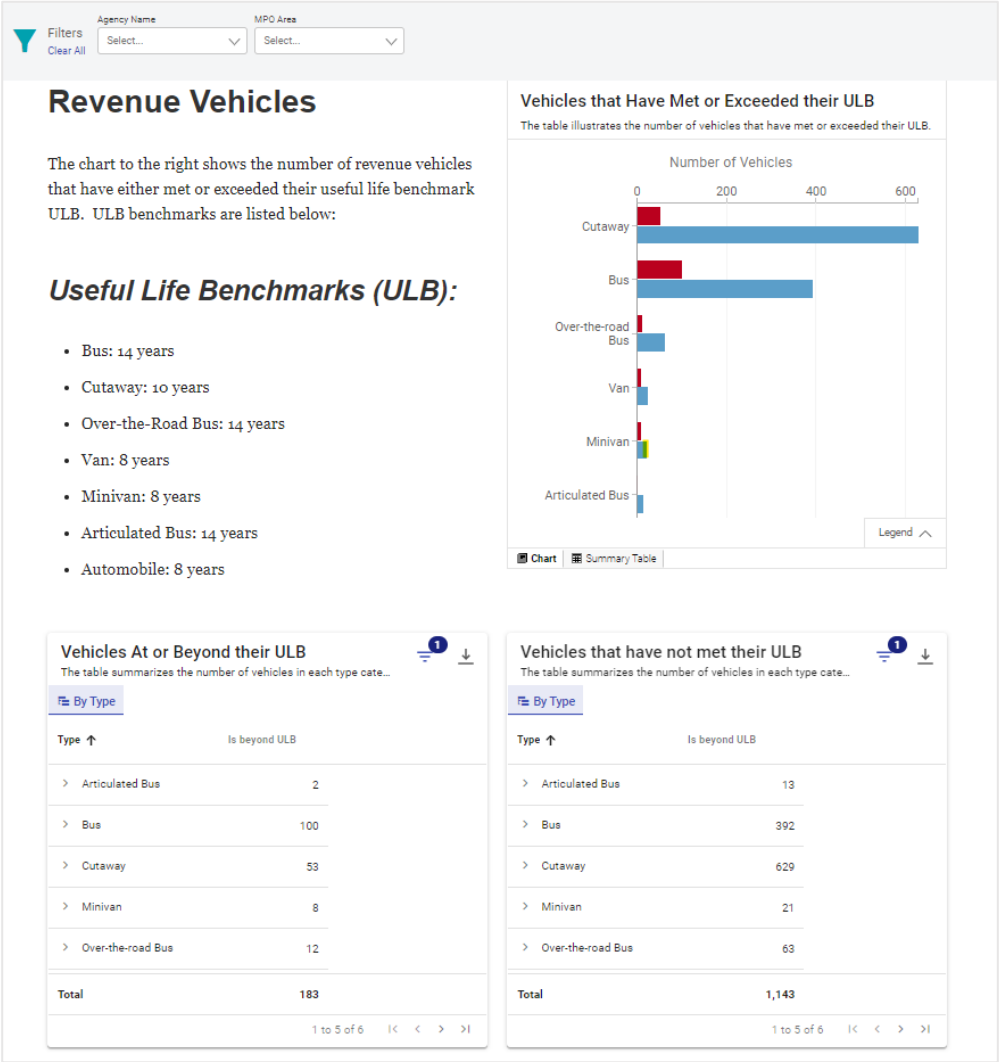


### FY2023 Ridership by month and mode



### Total Monthly Ridership - Year to Year





Filters  
Clear All

Agency Name  
Select...

MPO  
Select...

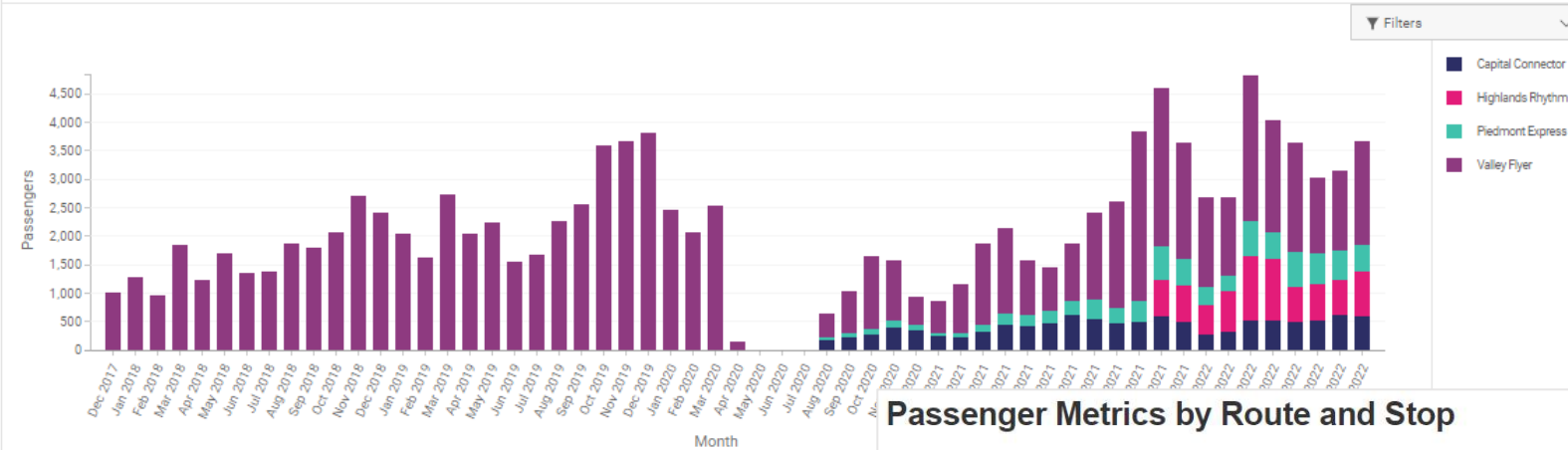


# VA Breeze Dashboard

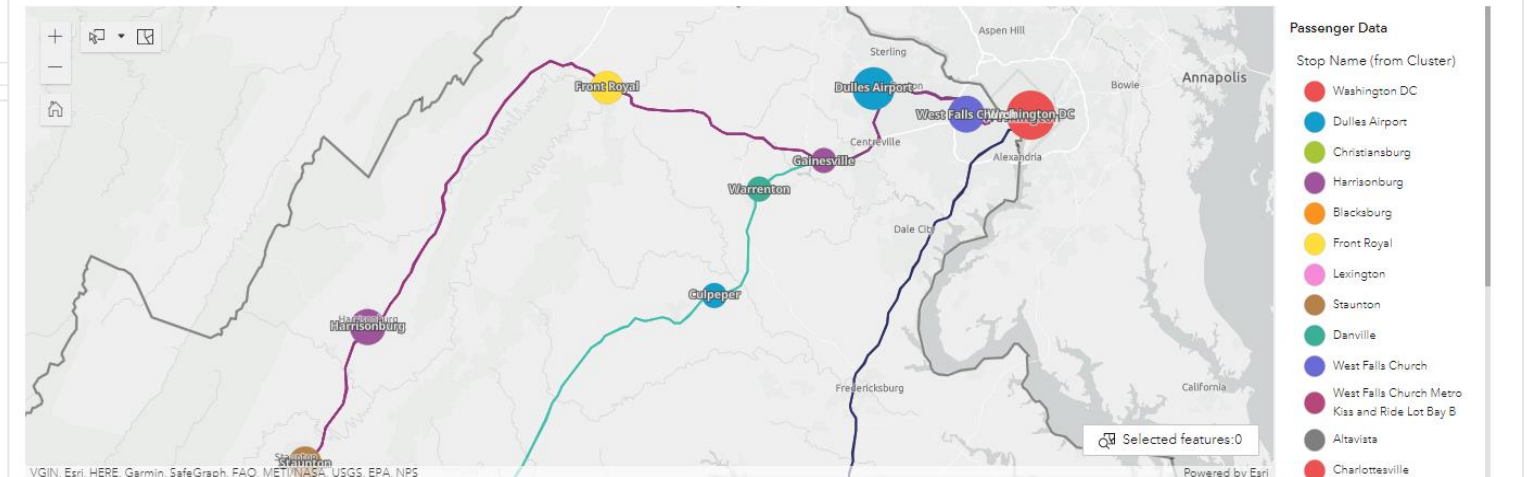
## Overall Program Performance Ridership

### Ridership by Calendar Date and Route

Use the legend on the left hand side and the filter on the top right to expand chart details. Note: the program was not active between April and August of 2020.

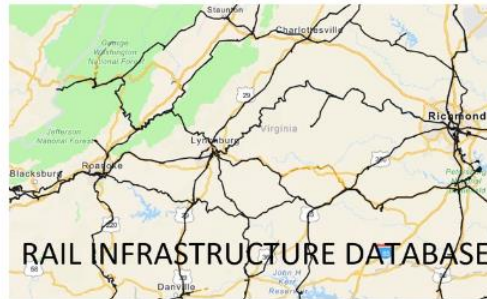
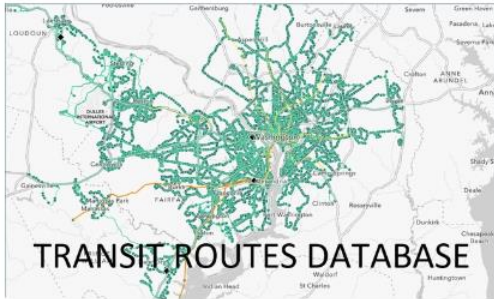


### Passenger Metrics by Route and Stop



# Geospatial Data

The Geospatial Data Portal provides DRPT transit and rail maps hosted on ArcGIS. This portal demonstrates how DRPT manages transit and rail infrastructure for the Commonwealth of Virginia.



## Virginia GTFS Website

General Transit Feed Specification or GTFS defines a common standard for public transportation schedules and associated geographic fare and service calendar information. DRPT supports the creation and maintenance of GTFS for many transit agencies in Virginia. The GTFS website contains download links for GTFS feeds in Virginia.

About this site



What is GTFS?



Mapping with GTFS



Transit service(s) / region	Data feed URL	License agreement
DASH - City of Alexandria	<a href="http://dashbus.com/google_transit.zip">http://dashbus.com/google_transit.zip</a>	Subject to terms and guidelines above.
Altavista Community Transit System	<a href="https://data.trilliumtransit.com/gtfs/altavista-va-us/altavista-va-us.zip">https://data.trilliumtransit.com/gtfs/altavista-va-us/altavista-va-us.zip</a>	Subject to terms and guidelines above.
Arlington Transit	<a href="https://www.arlingtontransit.com/shared/content/gtfs/art/google_transit.zip">https://www.arlingtontransit.com/shared/content/gtfs/art/google_transit.zip</a>	Subject to terms and guidelines above.
Bay Transit	<a href="https://data.trilliumtransit.com/gtfs/baytransit-va-us/baytransit-va-us.zip">https://data.trilliumtransit.com/gtfs/baytransit-va-us/baytransit-va-us.zip</a>	Subject to terms and guidelines above.
Blacksburg Transit	<a href="http://www.bt4uclassic.org/gtfs/google_transit.zip">http://www.bt4uclassic.org/gtfs/google_transit.zip</a>	Subject to terms and guidelines above.
Blackstone Area Bus Service	<a href="https://data.trilliumtransit.com/gtfs/blackstone-va-us/blackstone-va-us.zip">https://data.trilliumtransit.com/gtfs/blackstone-va-us/blackstone-va-us.zip</a>	Subject to terms and guidelines above.



# Driver Assistance System Demonstration Project

- Driver Assistance System technology alerts transit operators of pedestrians, bicyclists, and inanimate objects that enter the path of the vehicle
- DAS includes hardware elements like cameras, sensors, and digital displays and software elements to record and report incidents and note trends



# VIEW OF SMART SENSORS AND DRIVER DISPLAYS

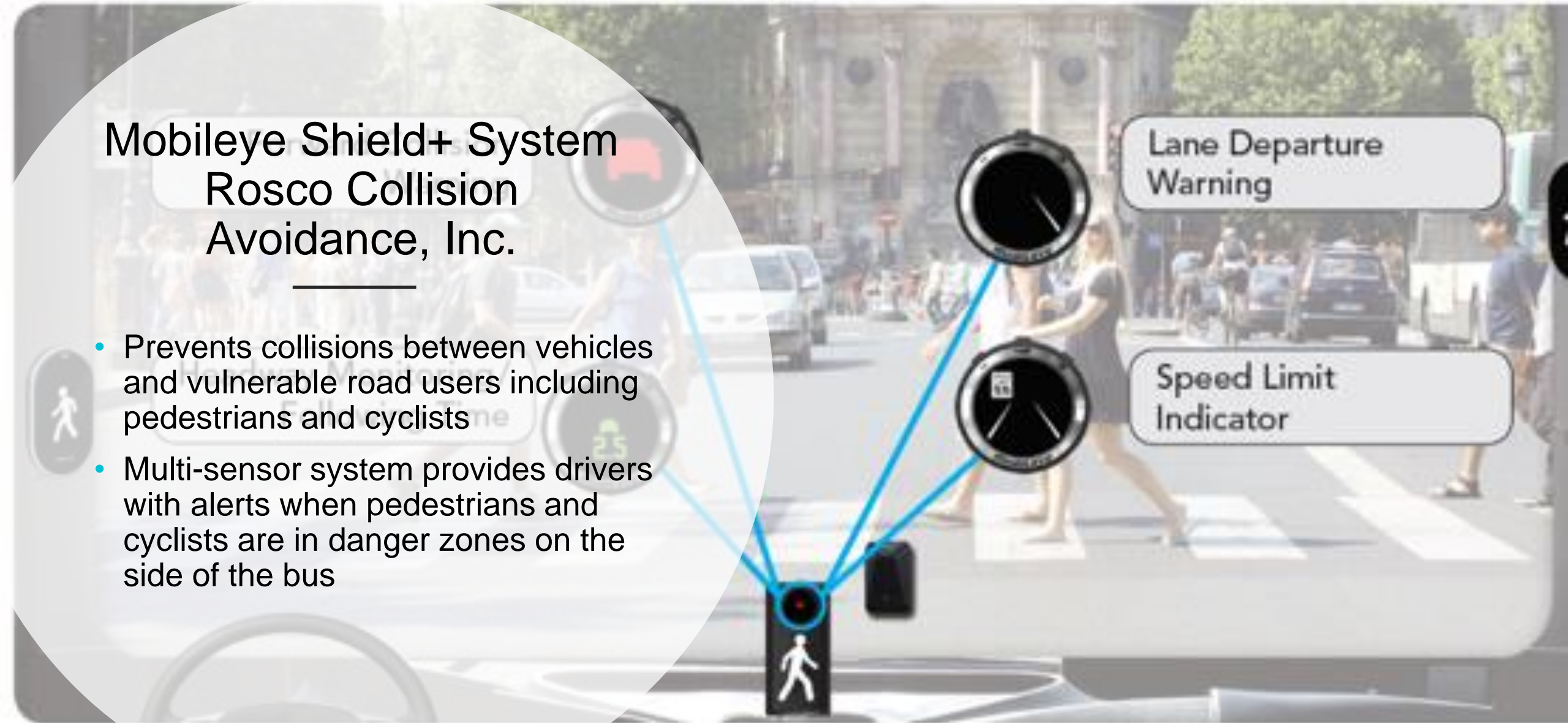
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## Mobileye Shield+ System Rosco Collision Avoidance, Inc.

- Prevents collisions between vehicles and vulnerable road users including pedestrians and cyclists
- Multi-sensor system provides drivers with alerts when pedestrians and cyclists are in danger zones on the side of the bus

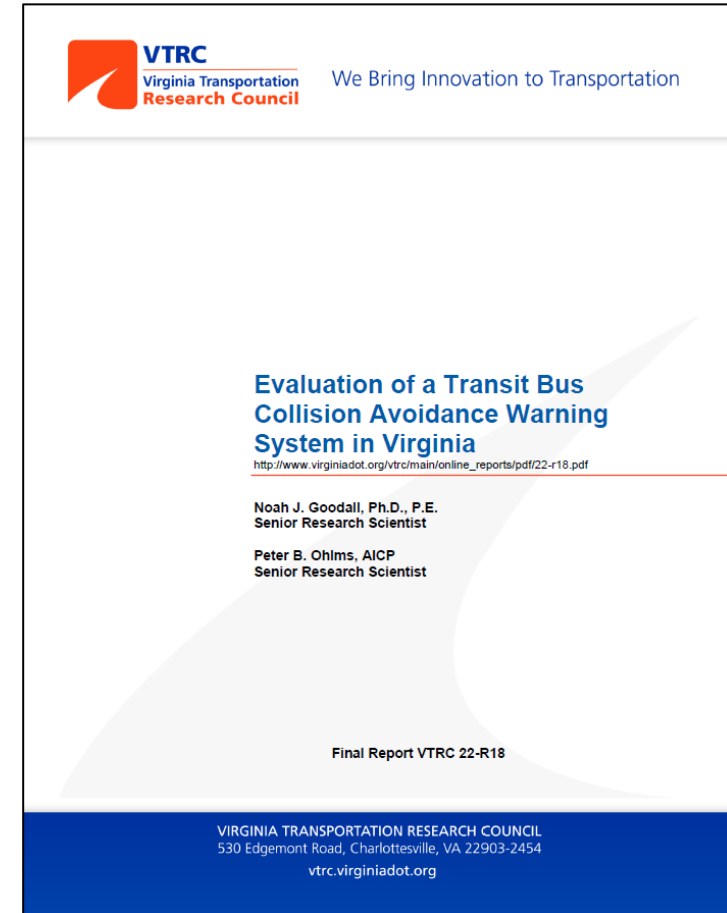
Lane Departure  
Warning

Speed Limit  
Indicator



# Driver Assistance System Demonstration Project

- Statewide cooperative procurement for local public transit agencies
- \$480,000 pilot program provided funding to ten public transit agencies to retrofit up to 50 buses with the DAS
- Virginia Transportation Research Council partnership to monitor the effort and report results of the pilot project
- Funded through Statewide Transit Demonstration Grant and CTB Innovation and Technology Transportation Fund
- Completed in 2021







# Virginia Rural Microtransit Deployment



Test the viability of microtransit in rural areas

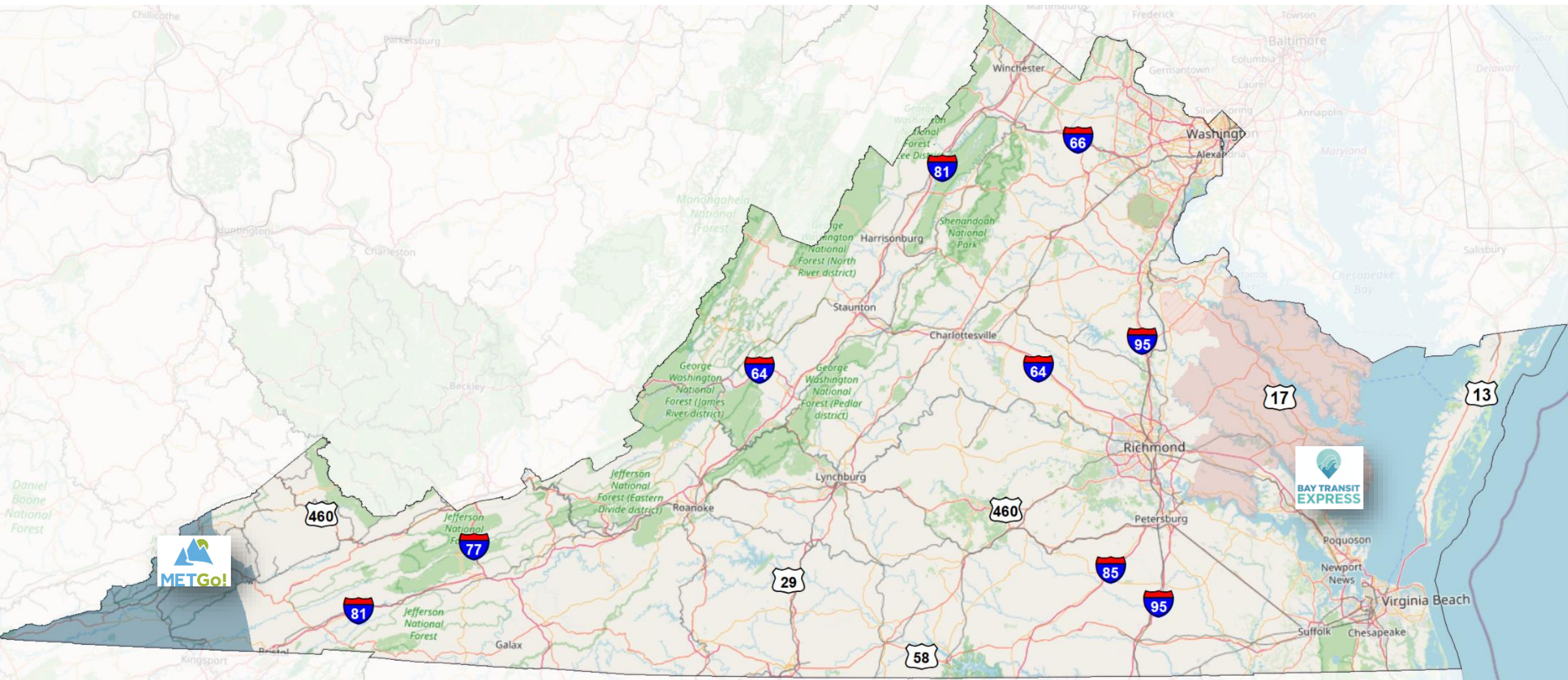


Explore software-as-a-service (SaaS) model for delivering innovative transit technology

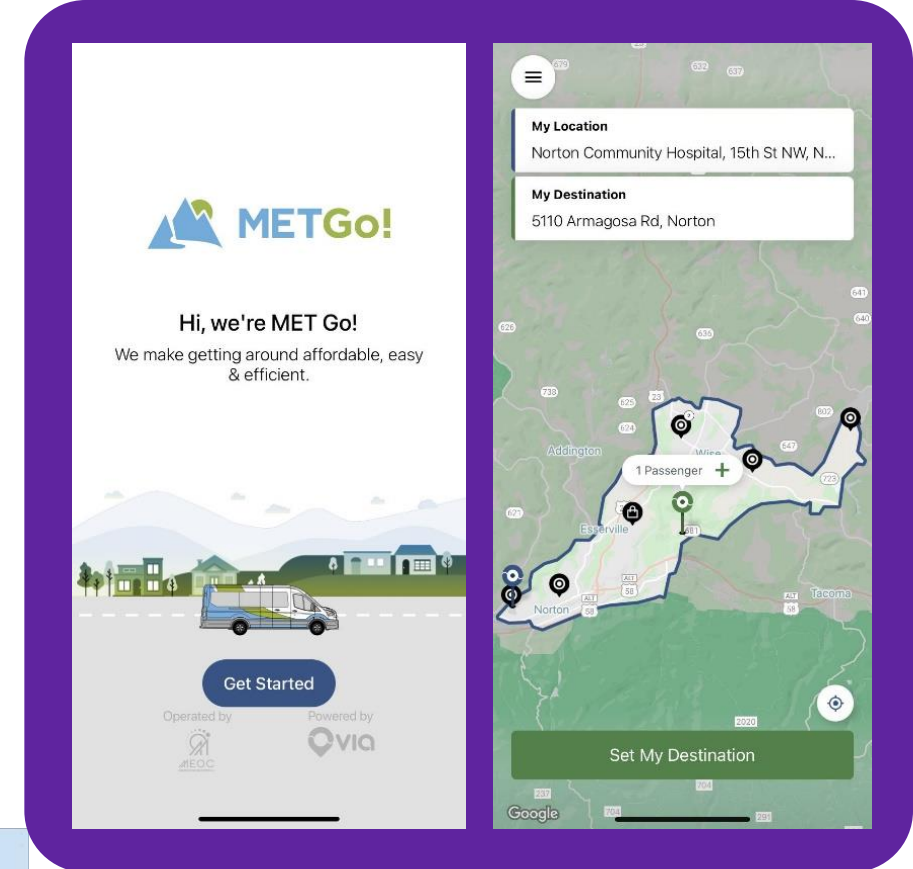
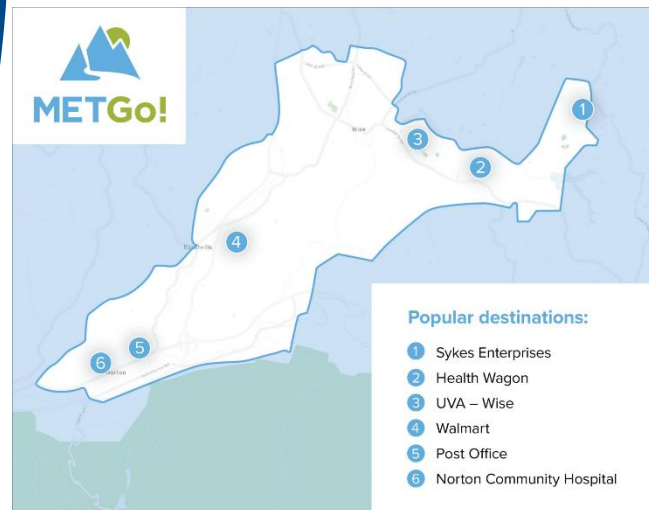


Measure effectiveness and develop a case study for scalability











# METGo! Serving Norton and Wise



20k+

Rides since launch on 6/28

684

Active Riders

4.2

Average trips per rider  
per week



“

If it weren't for  
METGo! my family  
would have gone  
without several  
meals.”

— MetGo Rider



Geography:  
Rural



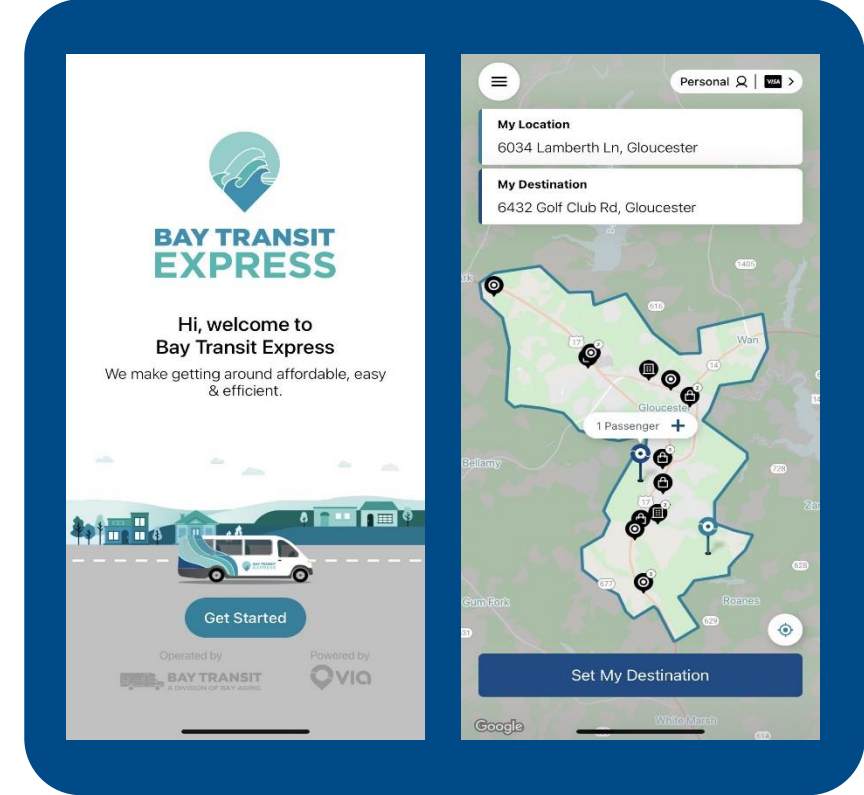
Use case:  
On-demand/Pre-booked  
transit



Fleet:  
4 vehicles









# Bay Transit Express Serving Gloucester



**BAY TRANSIT  
EXPRESS**

**4.9k+**

Rides since launch on 6/28

**4.9/5**

Average Ride Rating

**199**

Total Unique Riders



“

Bay Transit Express  
helps me get to and  
from my job at Wal  
Mart.”

— Bay Transit Express Rider



**Geography:**  
Rural



**Use case:**  
On-demand/Pre-booked  
transit



**Fleet:**  
1 vehicles



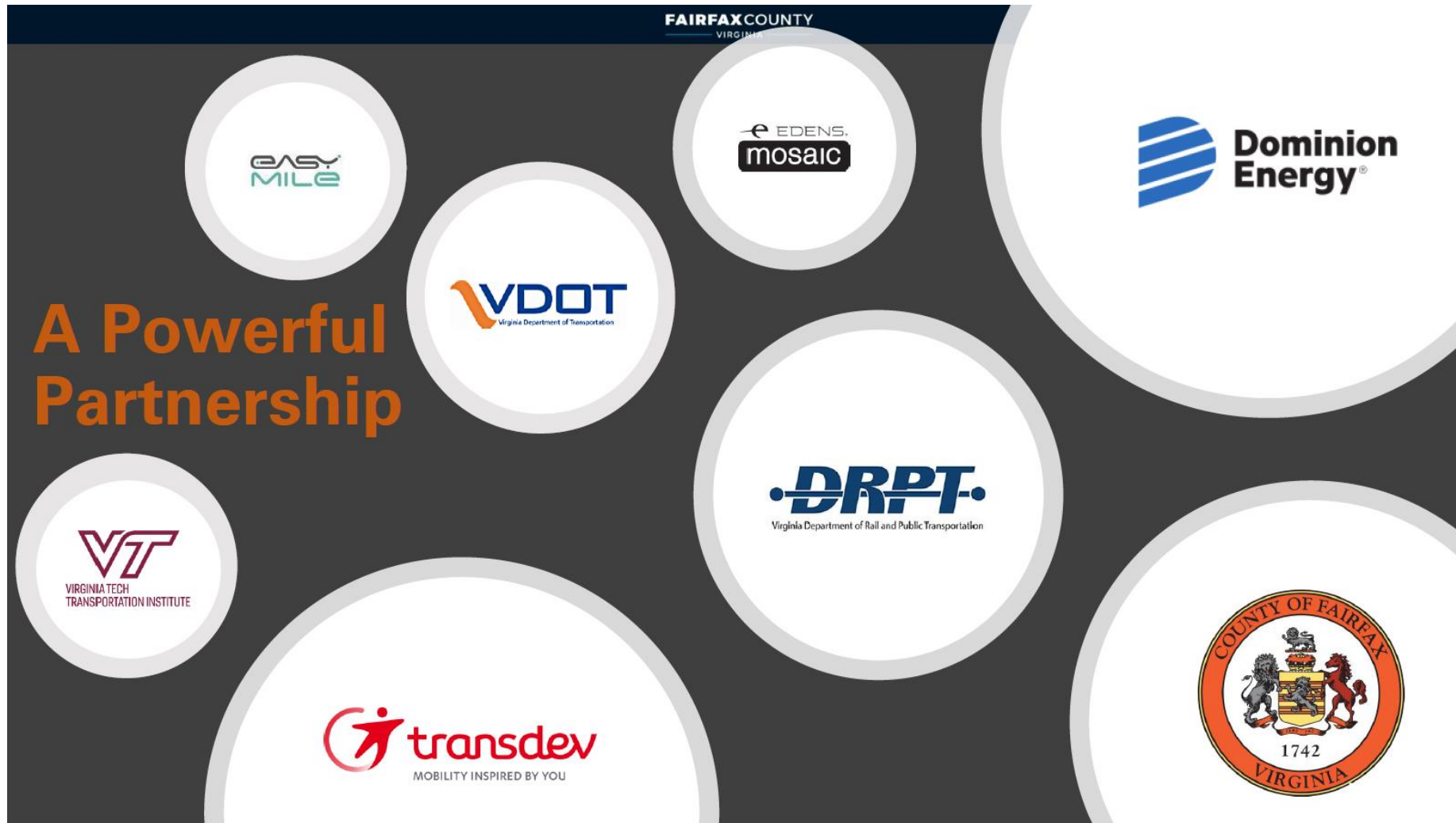


# Fairfax County-Dominion Energy Relay Shuttle





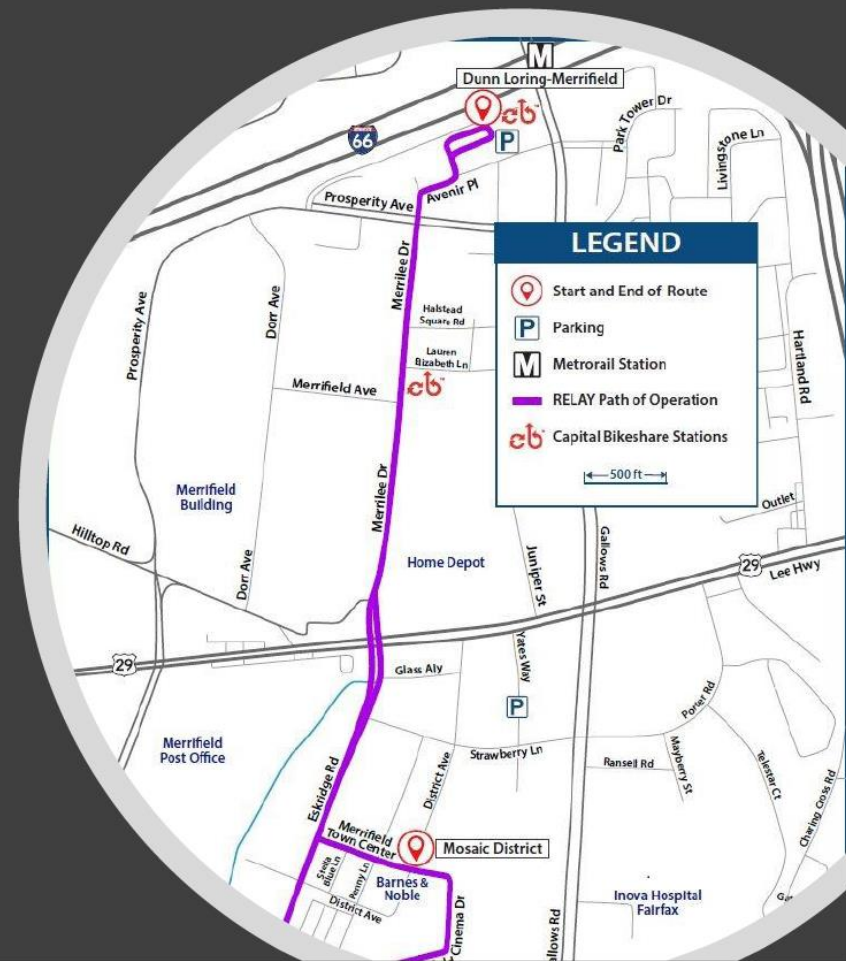
# Fairfax County-Dominion Energy Relay Shuttle



# Fairfax County-Dominion Energy Relay Shuttle

## Details on Relay

- Autonomous vehicle with safety steward onboard
- Zero-emissions Easymile EZ10 Gen3 vehicle
- Route operates between Dunn Loring Metro and Mosaic District
- Runs Monday – Thursday 10 am to 2 pm





# Upcoming Projects

- Statewide Initiatives
  - Microtransit and Transit Technology Procurements
  - Remix Software
  - Modernizing Transit Fleets: A Guide to Low- and Zero-Emission Buses
- Virginia Transportation Navigator 2.0





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