

Bus Priority Basics

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July 17, 2025



What is Bus Priority?

Targeted improvements to existing roadways prioritize transit riders and buses.

Prioritizing the bus can benefit all roadway users



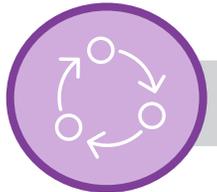
Expanded Access to Opportunity



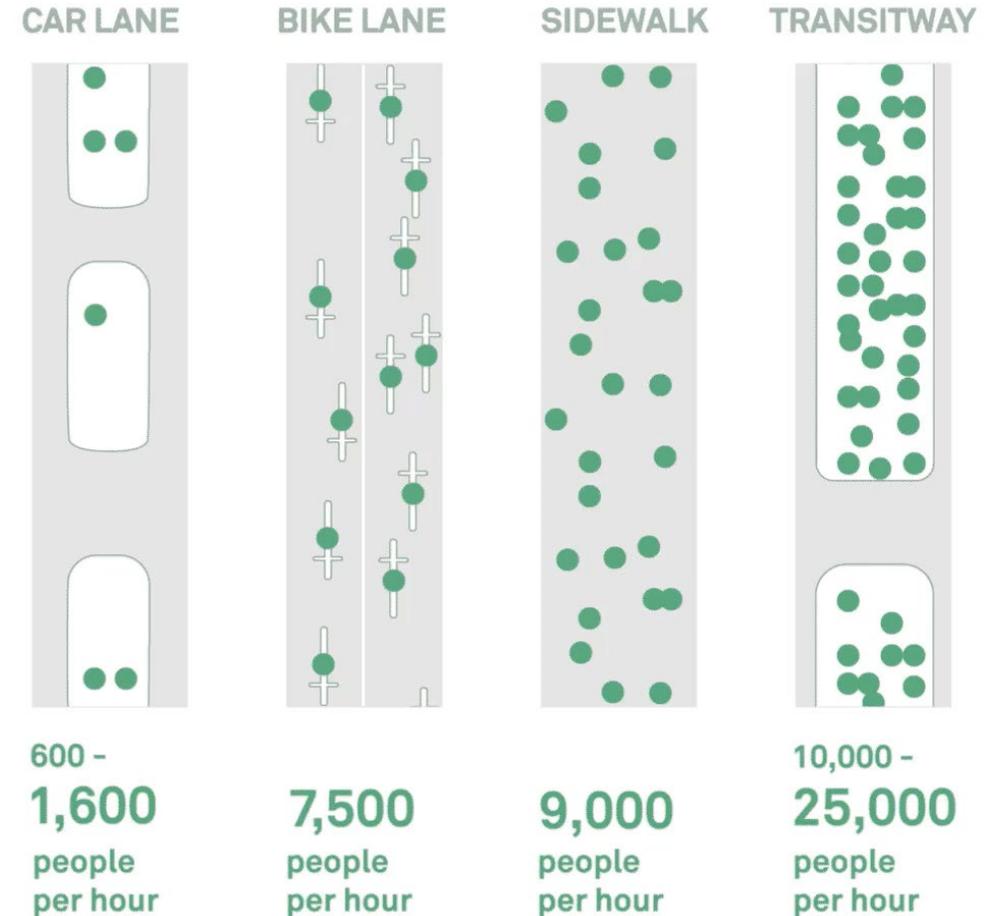
Faster and More Reliable Trips



Reduced Greenhouse Gas Emissions



Improved Mobility



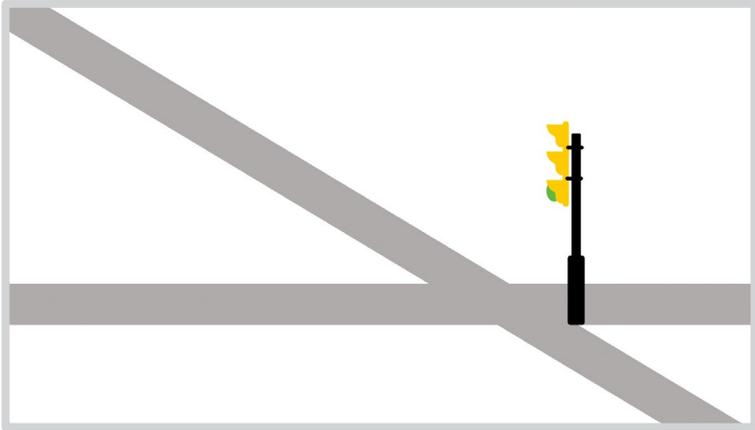
(NACTO)



The Bus Priority Toolbox

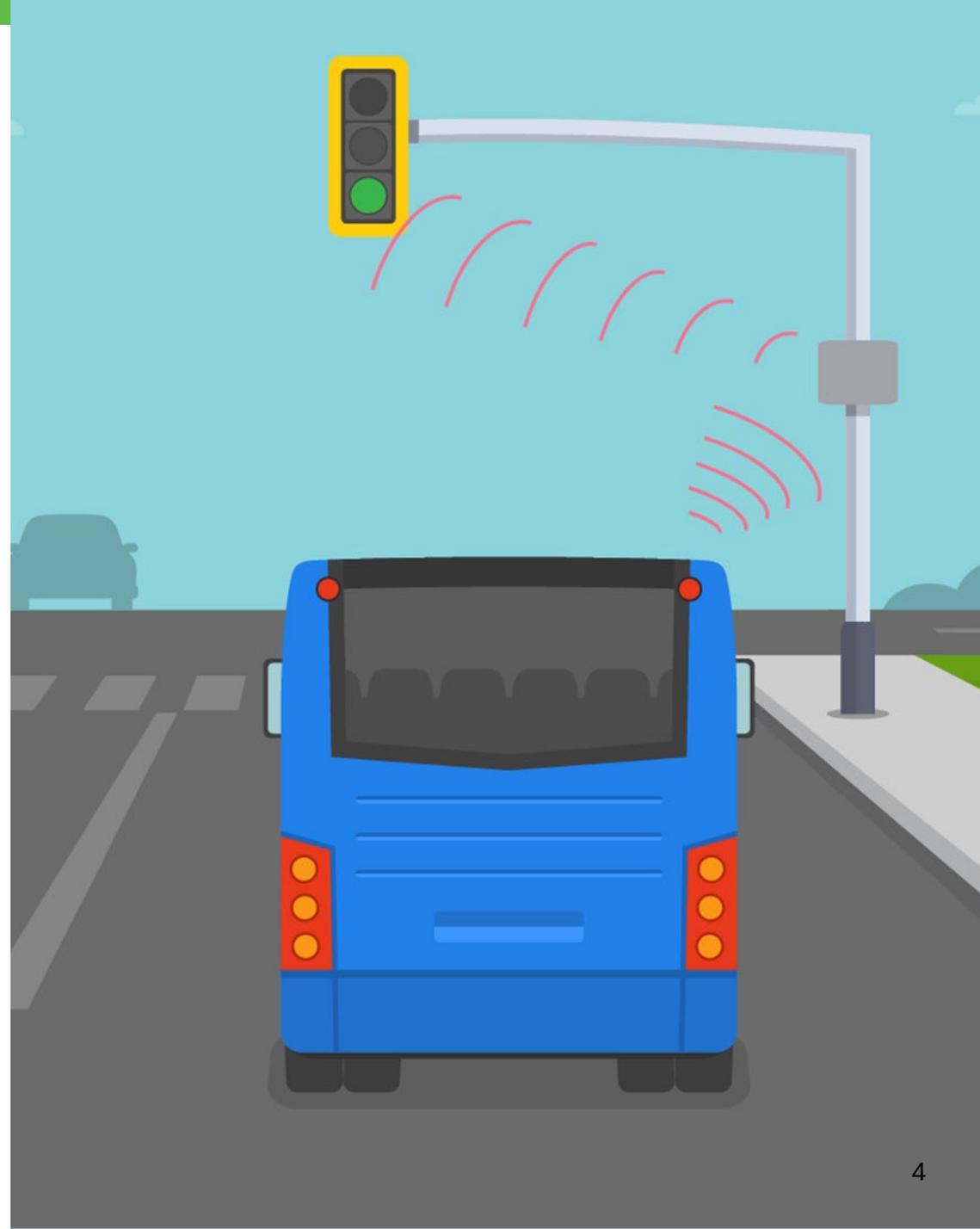
Transit Signal Priority (TSP)

TSP allows a bus to communicate with a traffic light, either delaying or extending the signal in favor of the bus. If no bus is present, no change occurs.



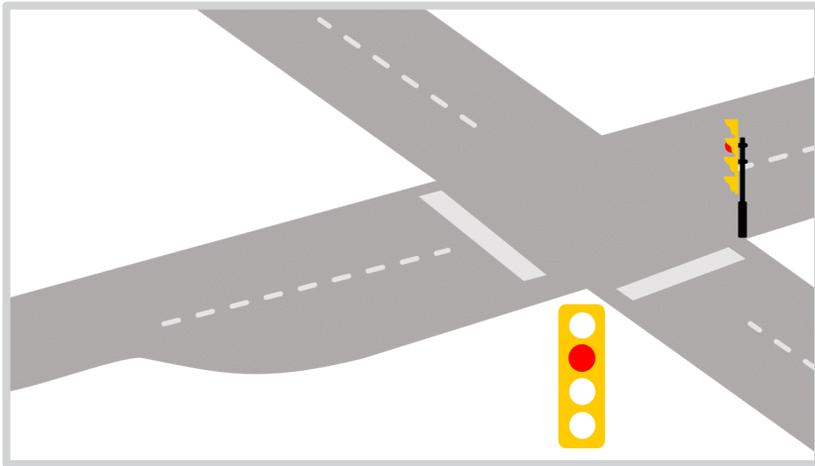
Benefits to the Region

TSP keeps buses on schedule, providing a reliable bus trip that encourages more riders. Increased bus ridership improves the efficiency and capacity of a travel corridor.



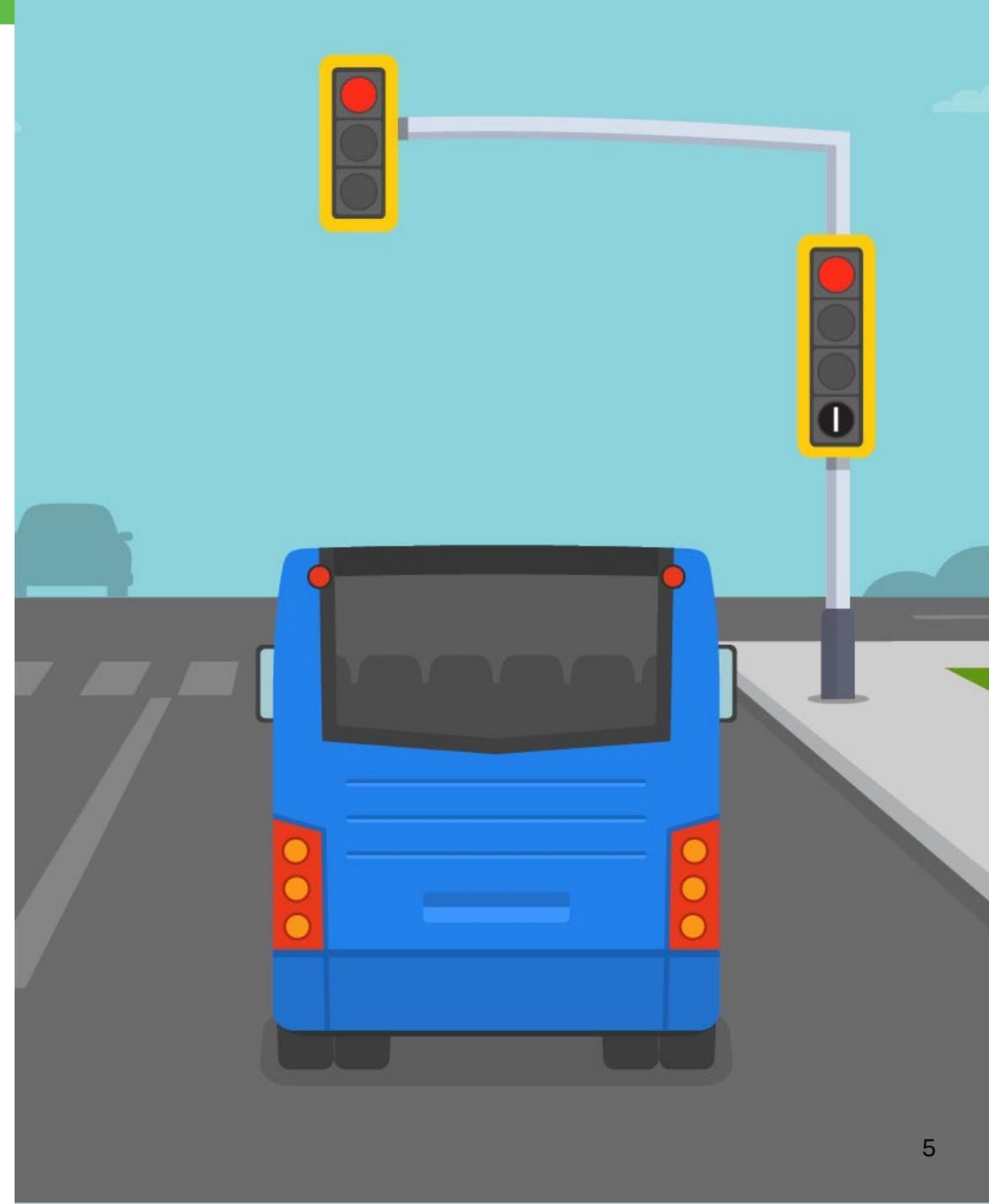
Queue Jumps

Queue jumps provide buses with additional space at a traffic light to bypass vehicles. Using a bus-only signal, the bus receives a 'head-start' over other vehicles.



Benefits to the Region

Queue jumps allow buses to bypass congestion at traffic lights. This keeps buses on schedule and provides a safe way to merge back into the flow of traffic.



Dedicated Bus Lanes

By repurposing a parking or moving lane to a bus-only lane, a road can be better organized. On highly traveled corridors with frequent bus service, these bus lanes provide a smoother, more reliable ride for bus riders. This improves safety and traffic flow around bus stops as well.

Hours of Operation

Bus lanes may operate all day, or during a peak period only.

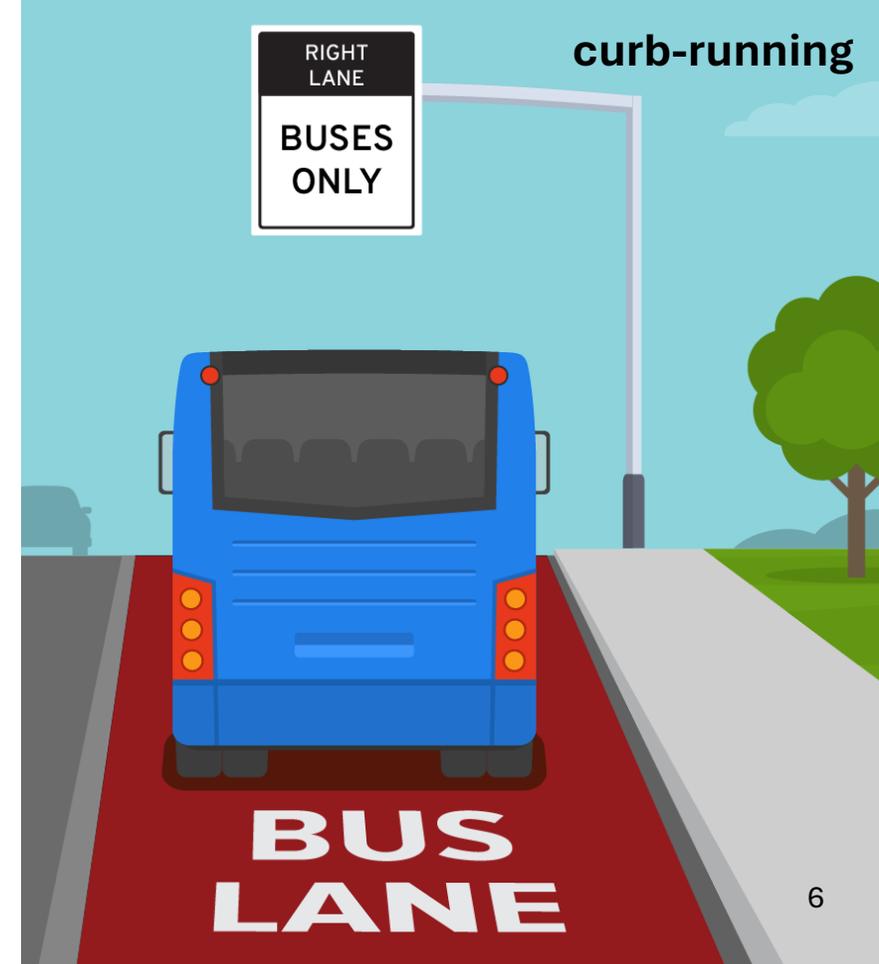
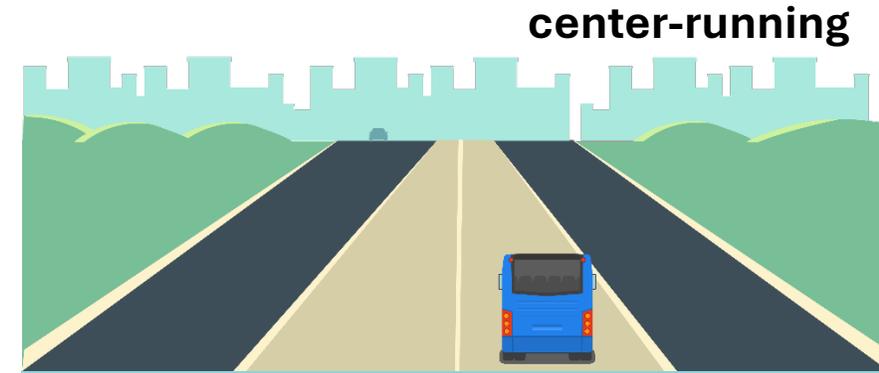
Example from LA
(Marc Caswell)



Benefits to the Region

Bus lanes reduce delays due to traffic congestion and help raise the visibility of the high-quality, frequent service.

Emergency vehicles can also use these lanes to improve response times.



Bus Lane Enforcement

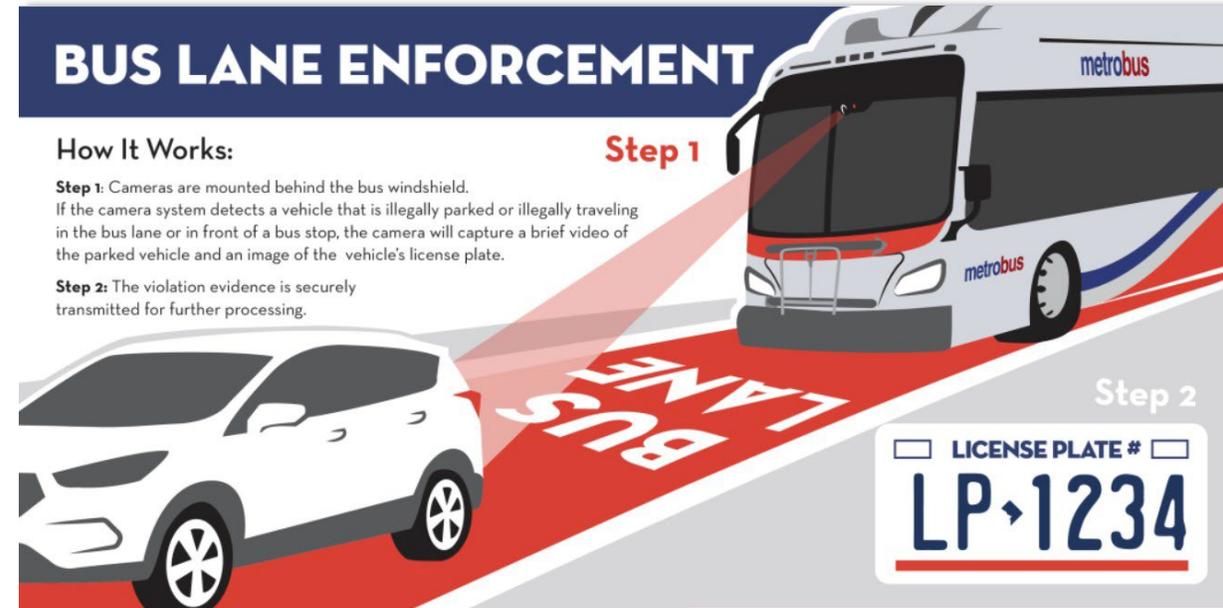
Dedicated bus lanes only work if they are properly enforced.

In Virginia, this can currently be done through infrastructure design or on-the-ground enforcement.

Automated enforcement of bus lanes, which involves a camera mounted to a bus or along the roadway, is not currently permitted in Virginia. There are other examples of automated enforcement in use, such as on school buses.

Benefits to the Region

Bus lane enforcement ensures that the region's dedicated bus lanes can reduce congestion for our region's transit buses and emergency services.



An example from Washington, D.C., that illustrates education and enforcement

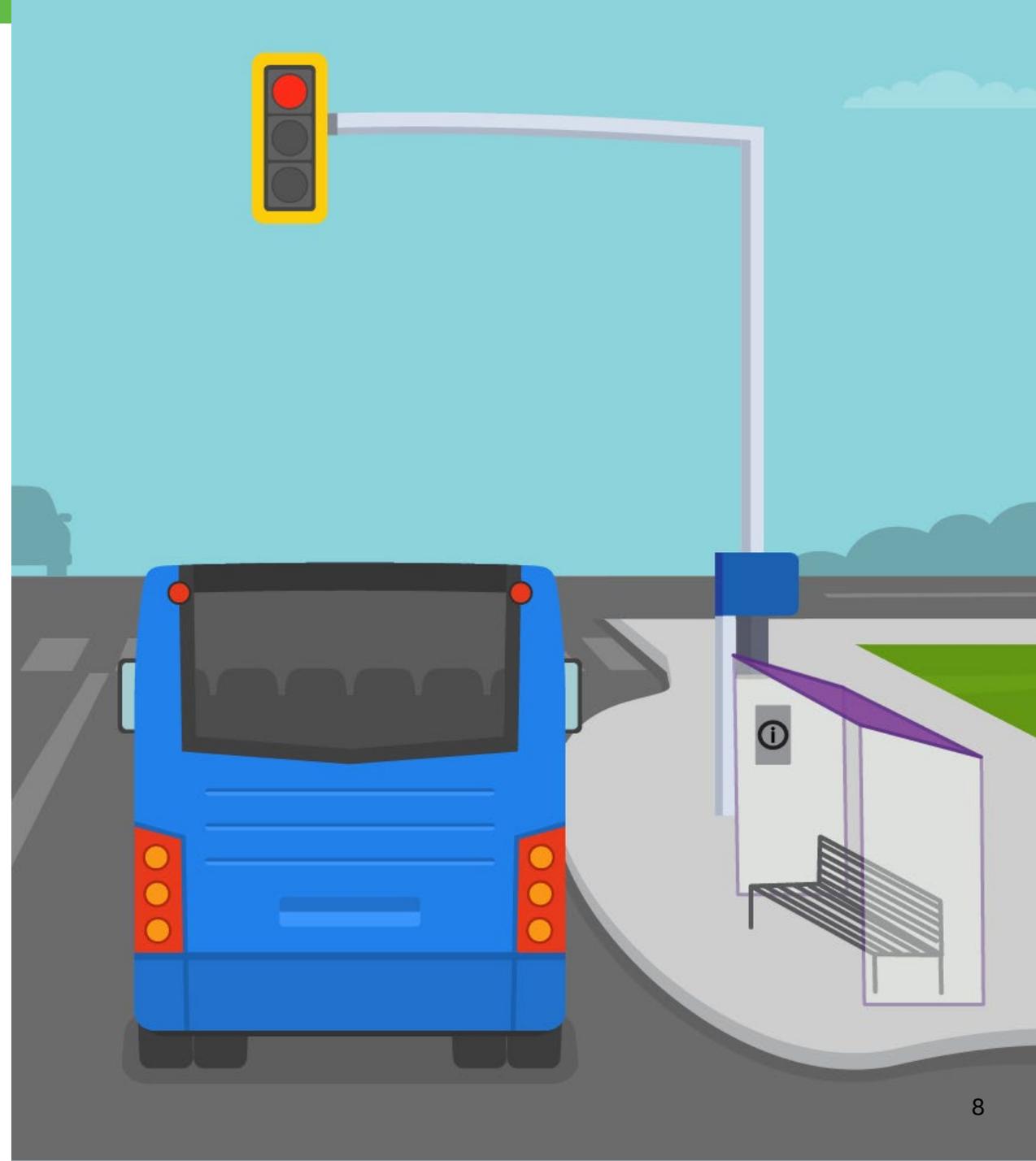
Enhanced Bus Stops

Bus stops are the front door to a transit system. Some stops just have a sign, but for a world-class transit experience you need:

- Sidewalks and pedestrian ramps
- Crosswalks
- Benches
- Lighting
- Shelter (from sun and rain)
- Real-time bus information
- Level boarding and curb extensions or islands
- And more!

Benefits to the Region

Enhanced bus stops are critical to supporting existing ridership and attracting new riders to the bus. It's a quality-of-life issue.



Enhanced Bus Stops: Around the Region



Bus Stop Shelter



Floating Bus Stop



A Sad Bus Stop



Level Boarding



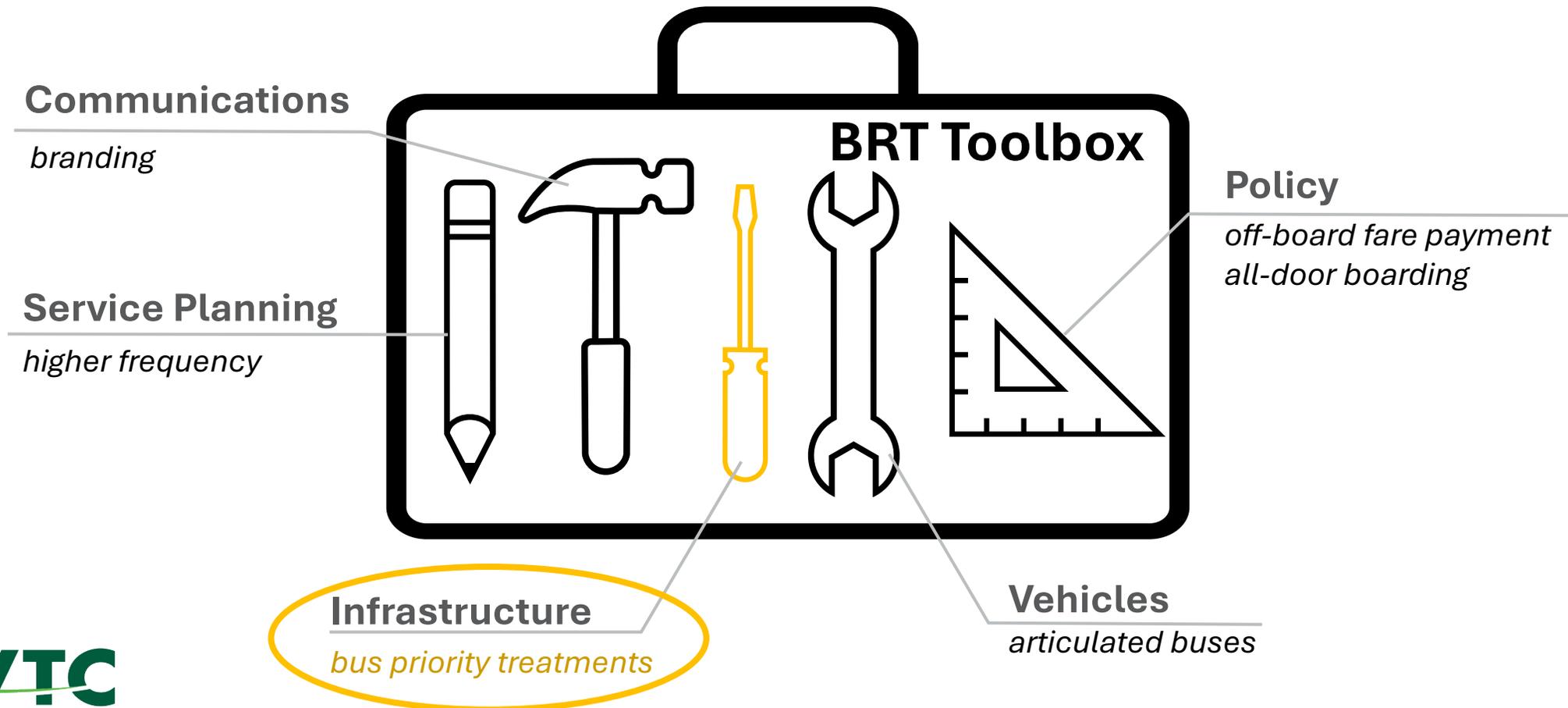
Crystal City Transit Station

What About Bus Rapid Transit (BRT)?

BRT is specialized, high-quality bus transit.

What's the Difference?

Bus priority treatments are just one component of a BRT system.



Examples of BRT in the United States

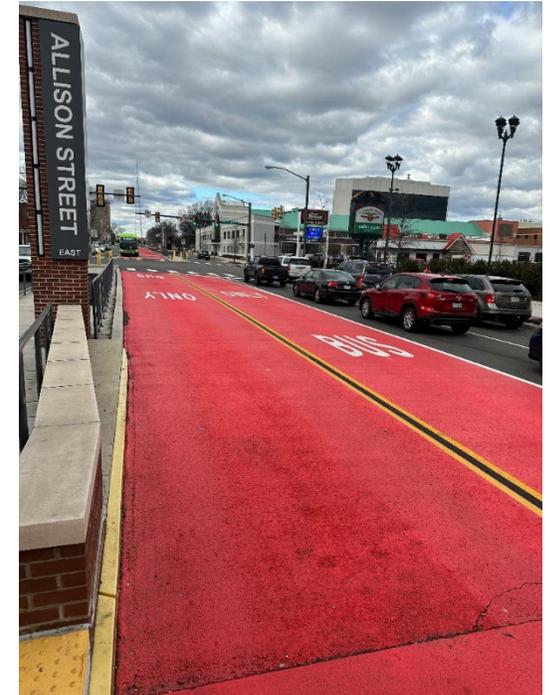
The Institute for Transportation & Development Policy maintains a globally recognized [BRT Standard](#) for assessing whether a bus corridor can be considered BRT. Below are some of their highest scoring examples from the United State.



San Francisco, CA (BRT Silver)
Source: Google Street View,
<https://maps.app.goo.gl/qkbySeW4po6hLUtV8>



Cleveland, OH (BRT Silver)
Source: Google Street View,
<https://maps.app.goo.gl/Y6D8pxc3DFDCM9Vp6>



Richmond, VA (BRT Bronze)

What's Going on in the Region?

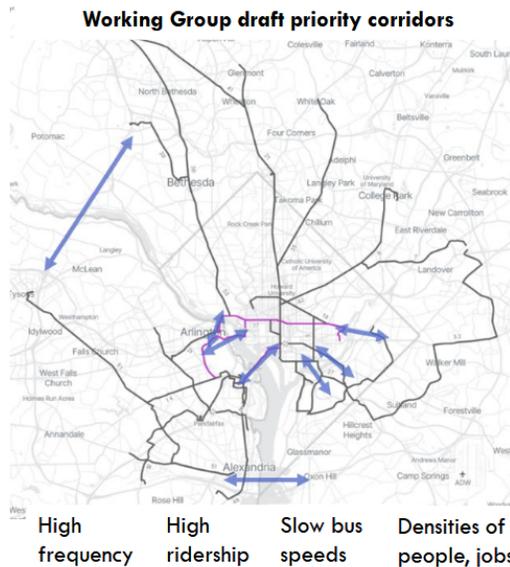
NVTC continues to focus on interjurisdictional projects and coordination that advance bus priority goals, including participating in these two key regional efforts:

DMVMoves Bus Priority Plan

The DMVMoves Task Force wants to coordinate on bus priority infrastructure that leverages capital funding to create operational efficiencies for existing routes within the WMATA compact region.

What a regional approach to bus priority would do:

- ✔ Invests priority treatments in corridors with high demand and frequent service, but slow buses
- ✔ Makes existing service faster and more cost efficient
- ✔ Allows for increased bus frequency through cost savings
- ✔ Ensures regional coordination
- ✔ Better ROI as benefits are maintained over time
- ✔ Faster delivery and benefits realized sooner



NVTA's BRT Action Plan

NVTA is identifying corridors in Northern Virginia that could support a future bus rapid transit network.



Next Steps for NVTC

- Engage on transit signal priority and other transit technologies.
 - Inventory and assess opportunities for joint or cooperative technology procurements.
 - Support updates to and alignment of TSP infrastructure among agencies, jurisdictions and roadway owners across the region.
- Collect regional data on bus priority infrastructure, both existing and planned.
- Coordinate and convene jurisdictional partners and bus operators on bus priority and transit signal priority in Northern Virginia.
- Advance Envision Route 7 planning and outreach efforts.

Envision Route 7 Update

Vikram Sinha
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July 17, 2025



ENVISION
ROUTE 7



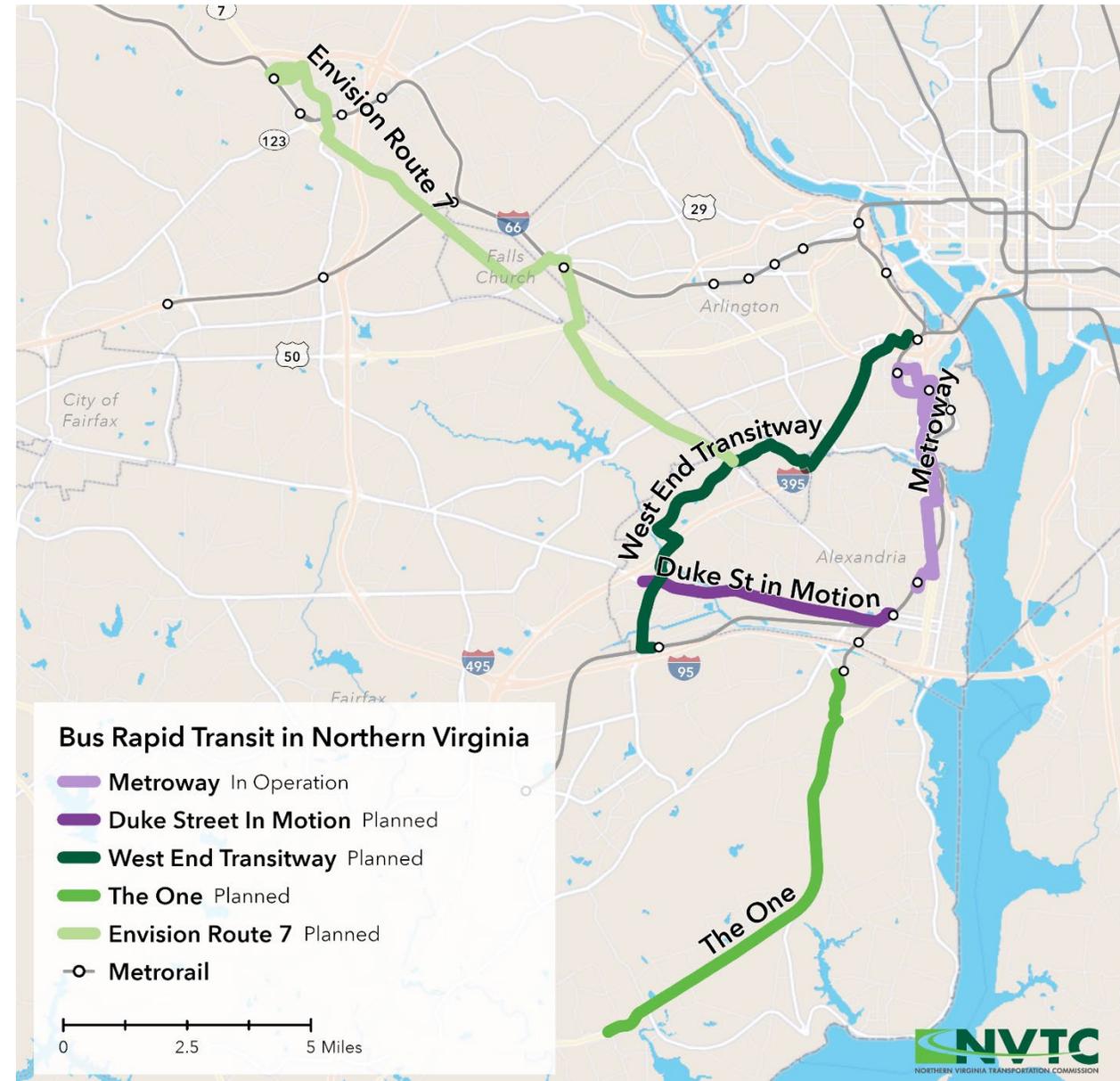
Regional Context: NoVA's Expanding BRT Network

Background:

- 14-mile project corridor in four jurisdictions with varied roadway and urban treatments
- Contains wide-ranging income and transit dependent residents
- \$518M in capital project funding that will support Route 7 BRT and improve bus operations
- Project planning has established route and mode for transit
- Roadway ownership
 - VDOT, Falls Church, Alexandria

Envision Route 7 BRT delivers:

- High-frequency, high-capacity service
- Context sensitive bus priority treatments
- Enhanced bus stops and boarding islands





Route 7 has thriving Metrobus service



How to make a thriving bus route even better?

Metrobus F20 (Formerly 28A) sets the stage for Envision Route 7 BRT

- Frequent Service
 - Metrobus F20 runs every 12-minutes (8 a.m. – 8 p.m.) and 30 minutes (evening)
- Strong Ridership
 - 7,741 daily riders (April 2024)
 - Ridership on the F20 is 67% **above** pre-pandemic levels
 - 9th highest ridership in the Metrobus system (Highest in Virginia)
- Connects to Metrorail Stations
- NVTC and jurisdictional partners advance BRT planning in phased approach



OUR REGIONAL PARTNERS



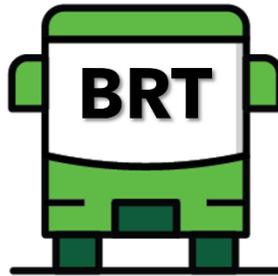
Proposed Approach: Transform the F20 into BRT



In Operation

Layer Bus Improvements & Increase Frequency

We are here



Transit
Strategic
Planning

NEPA

Design

Construction

In Operation

- Short-term, phased enhancements (service and infrastructure) that build toward long-term vision
- Context sensitive, multi-modal treatments that support local needs and expectations
- Increase the efficiency of bus service and enhance passenger experience
- Better bus service can be achieved in advance of a major capital project

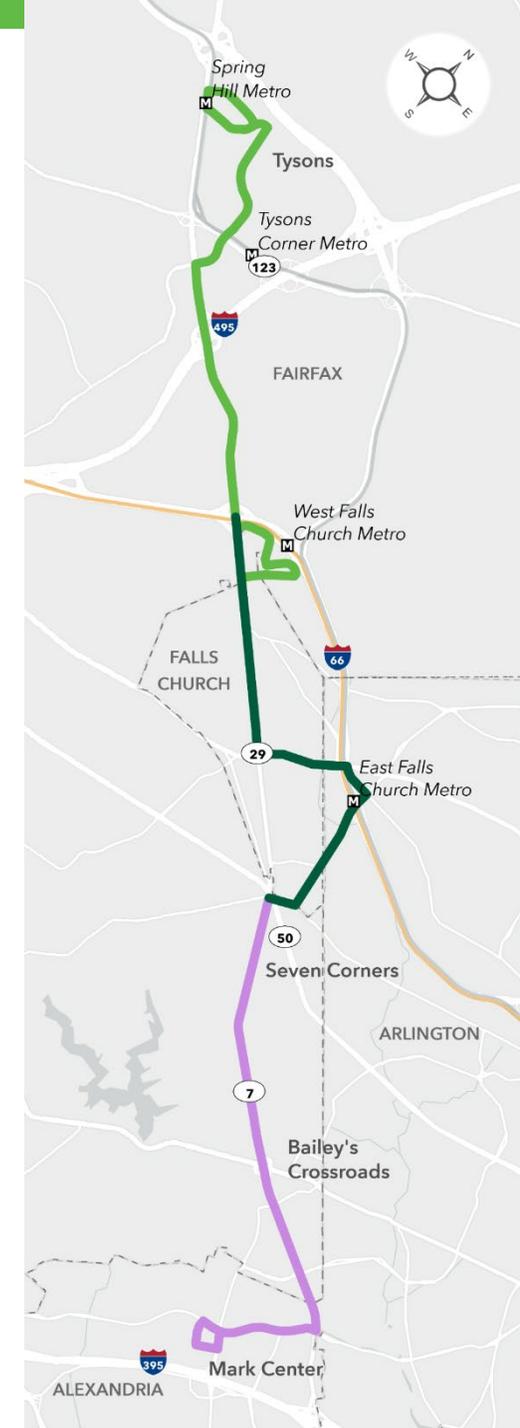
Phase 4-2: Continuing Capital Planning

The Phase 4-2 Mobility Analysis Study examines Rt 7 from Seven Corners in Fairfax County to the Mark Center in Alexandria (Purple segment on map at right).

Additionally, the work will do a deeper dive on operational options in the City of Falls Church, completing the corridor's mobility analysis.

The objectives for Phase 4-2 are:

- Identify trends and examine issues related to traffic congestion by collecting and analyzing data to understand the operational impacts of center running vs. curb running BRT along the study corridor.
- Facilitate community conversations around BRT on the project corridor.
- Conduct analysis in the City of Falls Church regarding Business Access and Transit (BAT) vs. High Occupancy Vehicle (HOV), queue jump layout/cross-section.
- Resolve the southern terminus of the BRT in Alexandria (Southern Towers vs. Mark Center).



External Coordination

 National Capital Region Transportation Planning Board	 VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION	 Federal Transit Administration			 NORTHERN VIRGINIA TRANSPORTATION AUTHORITY
<p>Include Envision Route 7 in regional Transportation Improvement Plan (TIP) in April 2024</p>	<p>Sponsor study efforts in TIP until handoff to jurisdictions to lead their implementation efforts</p>	<p>Continue discussion around funding opportunities and partnership</p>	<p>Review and comment on NVTC and Kimley-Horn project corridor data collection and analysis</p>	<p>Incorporate NVTC BRT alignment into Bus Network Redesign effort.</p>	<p>Collaborate with Northern Virginia Transportation Authority (NVTA) on BRT Action Plan</p>
<p>Key partner to enable use of federal funds for Envision Route 7</p>	<p>Potential funding partner for engineering and construction</p>	<p>Potential funding partner for engineering and construction</p>	<p>Key partner to realize bus priority treatments in roadway</p>	<p>Investigate feasibility of higher frequency bus service</p>	<p>Potential funding partner for engineering and construction</p>
		<p>Support NVTC NEPA and planning scoping efforts</p>	<p>Primary roadway owner in project corridor</p>	<p>Identify solutions for pain points to improve bus service</p>	

Future bus service on Route 7

- Phase 4-2 study will advance jurisdictional decision making on BRT route and bus treatments
- Phase 4-2 study is not making bus operation recommendations and is not looking to remove bus routes.
- In parallel with Phase 4-2 study, NVTC is convening jurisdictional staff, VDOT, and transit agencies to discuss transit service in the corridor:
 - Working with local partners and bus operators to ensure community is served
 - Exploring potential opportunities around local and limited bus service
 - Discussing potential for multi-operator use of BRT treatments



Next Steps: Listen and Incorporate

- Key Takeaways
 - Work has started
 - There will be presentations to boards and commissions
 - Outreach to begin late summer
- Seeking Commissioner Guidance on Opportunities for Community Outreach

Ongoing Engagement

NVTC staff will keep Commissioners updated on study progress at Commission meetings and provide more substantive updates at the Program Advisory Committee meetings.

NVTC staff will brief Commissioners whose districts are located along the project corridor in addition to working with their offices on outreach efforts.

Work on Phase 4-2 has begun!



Traffic camera in place to collect vehicle data near Eden Center



NVTC and Fairfax County staff rode the 28A, soon to be F20, to better understand the project corridor