

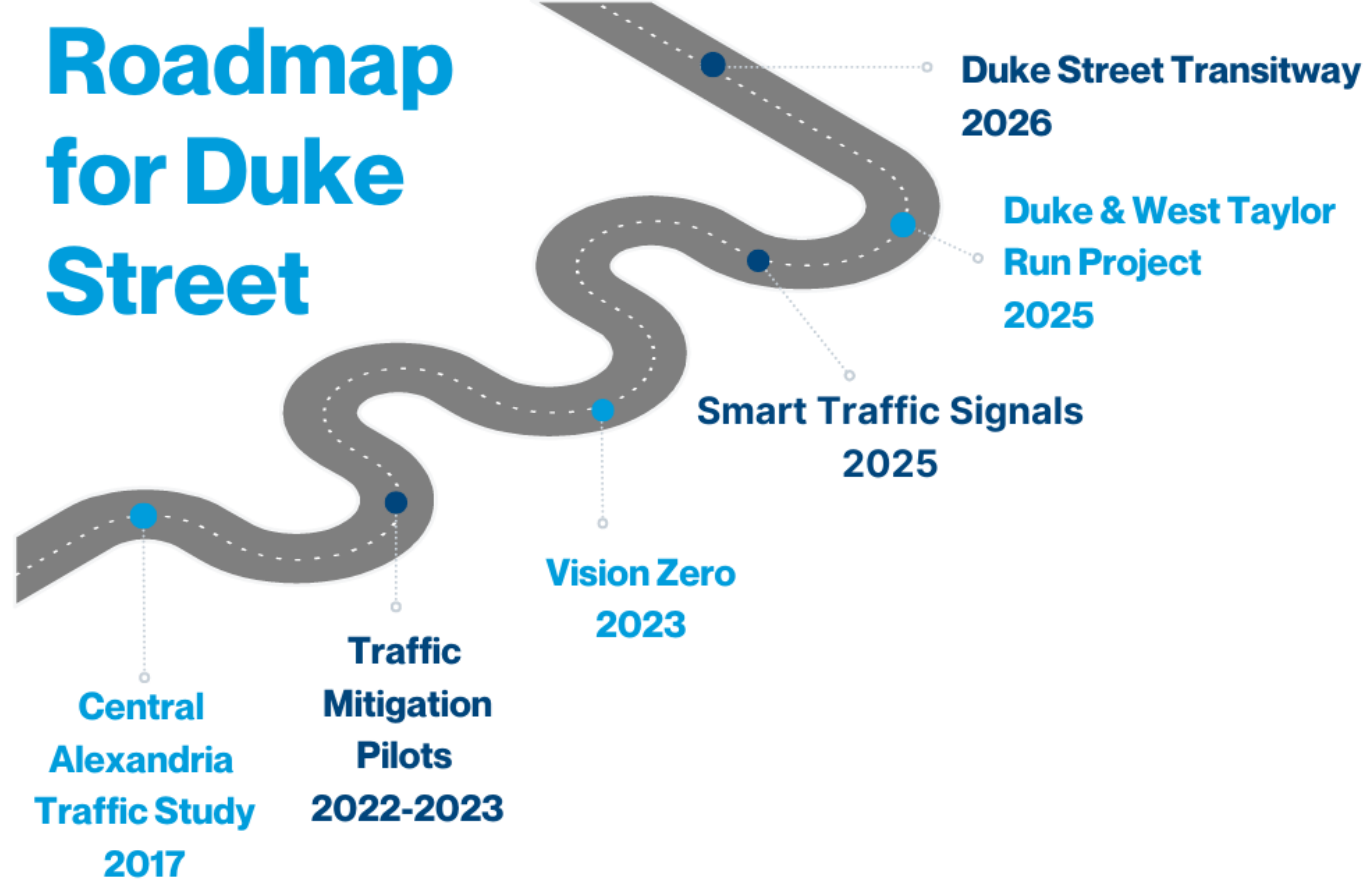


Duke Street Projects

"With multimodal enhancements to the corridor, Duke Street will become a safe, efficient, and desirable community connector for people riding the bus, walking, biking, and driving."

FEBRUARY 2023

The City is advancing a variety of initiatives to improve transit along the Duke Street corridor. Based on community input and ideas received to date, there are a number of projects underway that address community priorities such as reliable transit, improved safety, and keeping Duke Street moving for all users.



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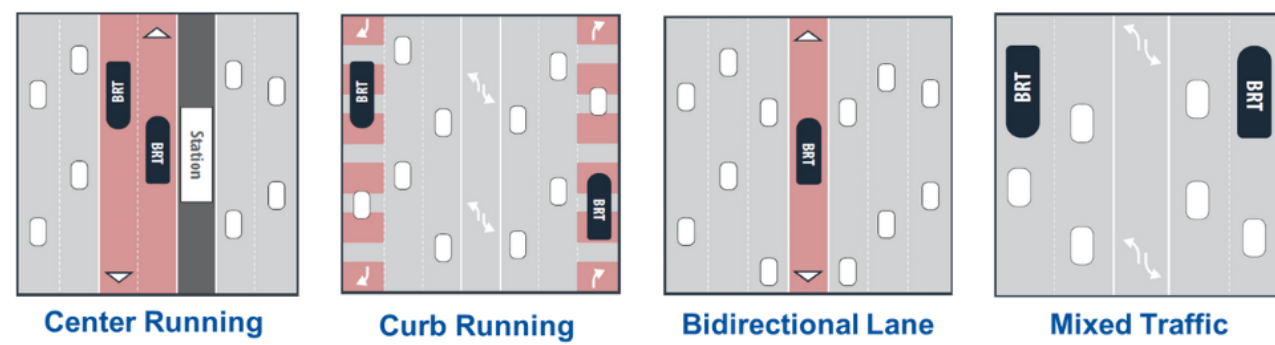
TRAFFIC

Duke Street Transitway

Duke Street is the City's highest ridership transit corridor with almost 3,000 boardings a day. The Duke Street Transitway project will make Duke Street a premier transit corridor with faster and more reliable bus service and improved access to more comfortable bus stops. This project has been in the City's plans since 2008 and the City is currently working to develop updated concept designs that not only improve transit in the corridor, but also make it a safer experience for all users, while enhancing green space. The Project Team is currently evaluating the following concepts and doing targeted outreach before presenting results from the Team's analysis in the Spring:

- Segment 1 (Ripley to Jordan): Center and Curb Running
- Segment 2A (Jordan to Wheeler): Hybrid and Mixed Traffic
- Segment 2B (Wheeler to Roth): Bidirectional and Mixed Traffic
- Segment 3: Center and Curb Running
- Center Running will still be considered in the long-term for Segment 2

Busways can take different forms...



This project is funded with [Northern Virginia Transportation Authority](#) regional revenues and is expected to begin construction in the next few years.

There will be a staff update to City Council on Tuesday, February 14 and the next [Advisory Group meeting](#) will be on Thursday, February 16 at 6:30 p.m. at the DASH Facility and [virtually](#).

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ACCESS

Duke Street at West Taylor Run Intersection Project

The City will be re-evaluating key components of the project at the West Taylor Run and Duke Street intersection. As such, certain materials and graphics may come at later dates than previously anticipated. Based on community feedback, the City will be investigating the following at West Taylor Run and Duke Street intersection:

- Keeping existing access from the service roads onto Duke Street
- The location of the right-turn lane including keeping the right-turn lane in the existing area on Duke Street
- Transitway impacts and implications for all proposed concepts

The City is proceeding with the evaluation of the Telegraph Road access point standard intersection design and compact intersection design options. The concepts will include controlled pedestrian crossings at one or both ramps. The City plans to host a community meeting to discuss the project later this Spring.

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TECHNOLOGY

Smart Traffic Signals

As part of the [City's Smart Mobility Program](#), Alexandria is rolling out intelligent traffic signals that respond and adapt to real-time vehicle location and movement data, optimizing traffic flow, decreasing delays, and reducing stops along the Duke Street corridor. The project is aimed at reducing congestion and making Duke Street work better for everyone. The Adaptive Traffic Signal Control (Adaptive) project will:

- Upgrade traffic signal software
- Implement new traffic signal controllers for consistent infrastructure Citywide and to integrate with future autonomous vehicles
- Deploy vehicle sensors to allow traffic signals to adapt to changing traffic conditions

The existing traffic signal system implements timing plans based on a time of day schedule. Under Phase I, the traffic signal system will be based on actual traffic conditions, not solely on time of day. The traffic signals along two corridors, Van Dorn Street and Duke Street, will be placed under adaptive control. Phase II of the project will expand the number of traffic signals under adaptive control and begin the process of harmonize traffic signal control with navigation apps and autonomous vehicles, possibly deploying artificial intelligence, and predicting short-term traffic.

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SAFETY

Left Turn Safety Improvements

As part of the [Fiscal Year 2023 Vision Zero Work Plan](#), the City plans to implement turn calming measures on Duke Street between North Ripley Street and North Jordan Street. Duke Street was identified as a high-crash corridor in the latest Citywide crash analysis and has had a relatively high frequency of pedestrian crashes, many of which involve drivers making turns. Left turns can be particularly dangerous for people walking for a few reasons:

- In most cases, left turning radii are wide, which can lead to higher vehicle speeds and greater pedestrian exposure when crossing
- The driver's visibility is also limited when turning left; it can be obscured by the A pillar in the car and other obstructions
- Left turns are more complex for drivers as they search for gaps in oncoming traffic and are not always looking for people crossing



Analysis of crash data revealed that vehicles turning left account for 41% of all pedestrian crashes in the City and make up 21% of all fatal or severe pedestrian crashes. Several pedestrian crashes have occurred at multiple intersections along the Duke Street corridor.

Turn calming measures use physical and visual cues to slow traffic and minimize the number and severity of crashes, increasing safety and comfort for all, especially people walking and bicycling. Treatments may include hardened double-yellow centerlines, quick-build curb bulb-outs, No Turn on Red regulations, and signal timing changes to give people walking a head start into an intersection. These treatments are proven to reduce turning speeds and reduce conflicts with pedestrians.

[Learn More](#)

