

DUKE STREET *IN MOTION*

Community Outreach Presentation

Public Meeting
October 17, 2022

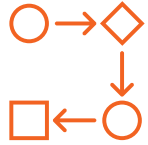


alexandriava.gov/DukeInMotion

This project is funded with Northern Virginia Transportation Authority (NVTA) regional revenues.



Welcome!



Duke Street *in Motion* overview



Why Bus Rapid Transit (BRT)



Current Conditions in Segment 2



Busway Design Concepts: Focus on Segment 2 (2A & 2B)



Next Steps



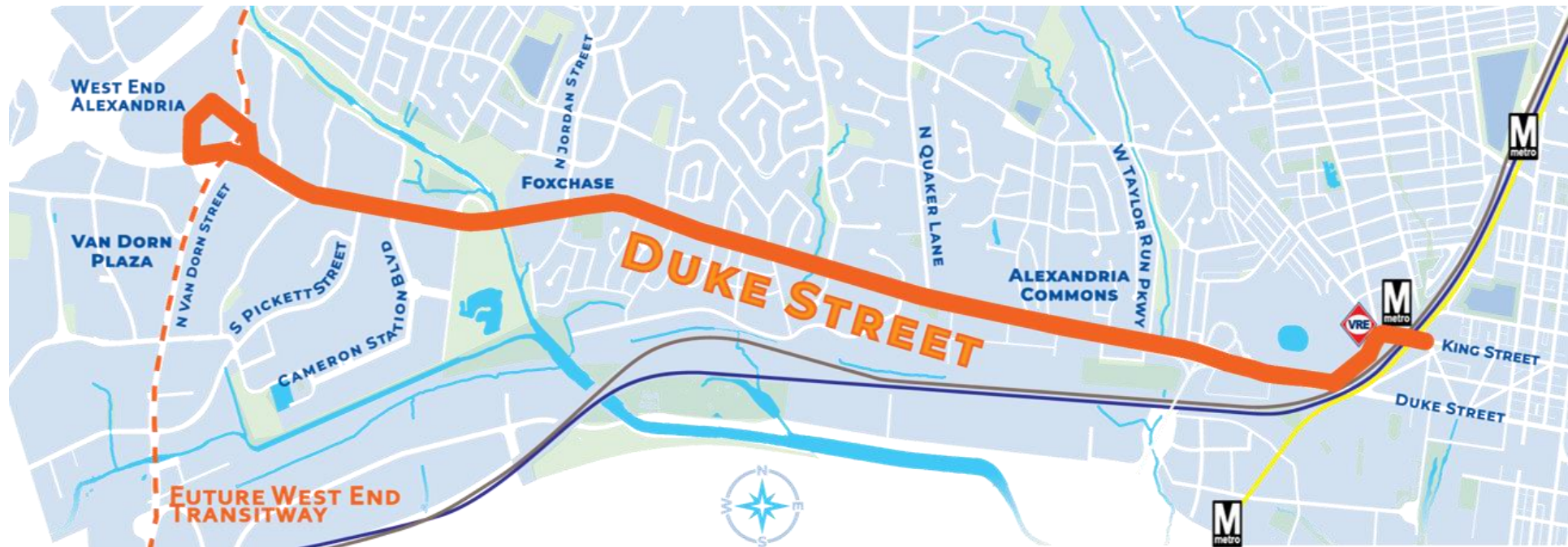
Questions followed by open house

The image shows three buses on a city street, overlaid with a semi-transparent orange filter. The bus in the foreground on the left is a white bus with 'DASH' on its destination sign and the number '21804' on its front. The bus in the middle is a white bus with 'DASH' on its destination sign and '218-9181' on its front. The bus in the background on the right is a white bus with 'DASH' on its destination sign and '510' and '803' on its front. The text 'Project Overview' is centered in a large, bold, blue font.

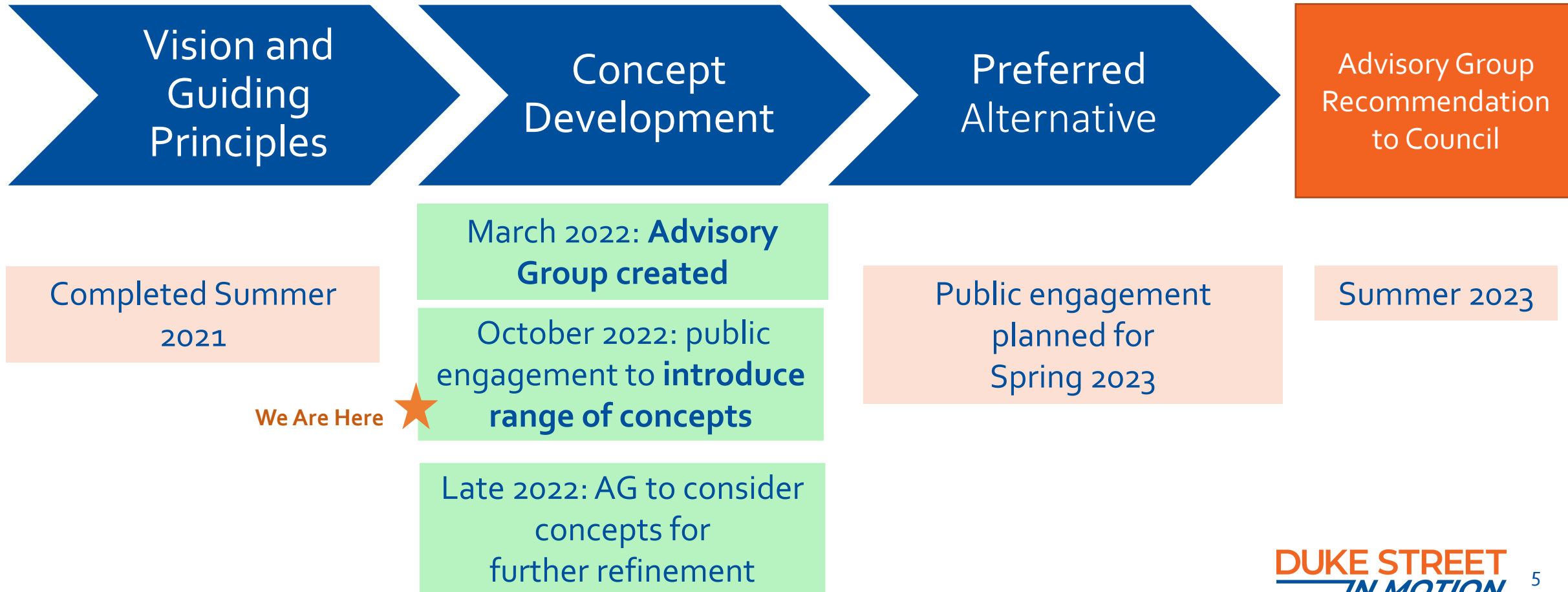
Project Overview

What is “Duke Street *In Motion*”?

Duke Street *IN MOTION* is a project focused on ensuring that **transit improvements** in the Duke Street corridor, from Landmark Mall to the King Street Metro Station, provide efficient transportation options that align with all users’ needs, wants, and expectations.

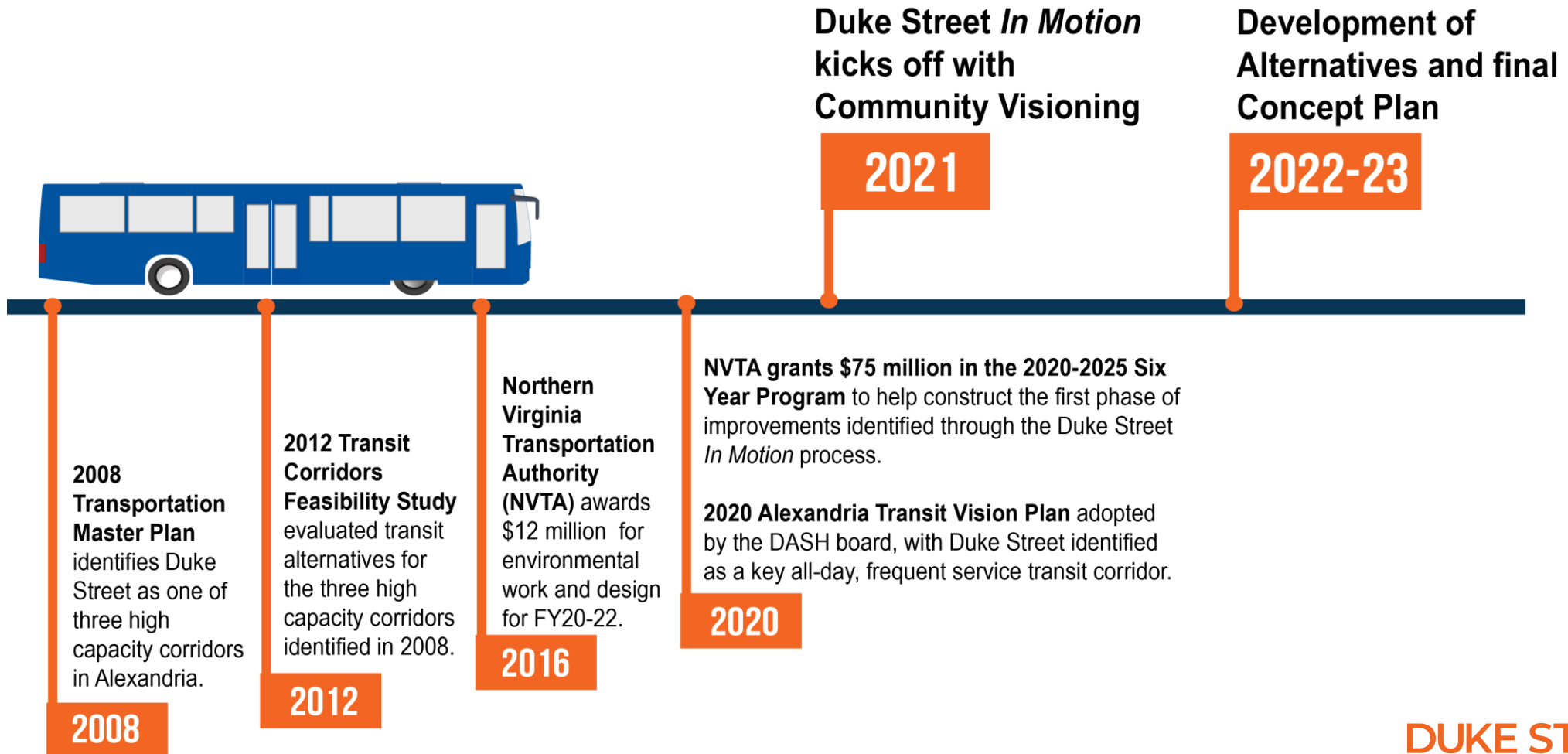


Duke Street in Motion Process



Project Purpose & Background

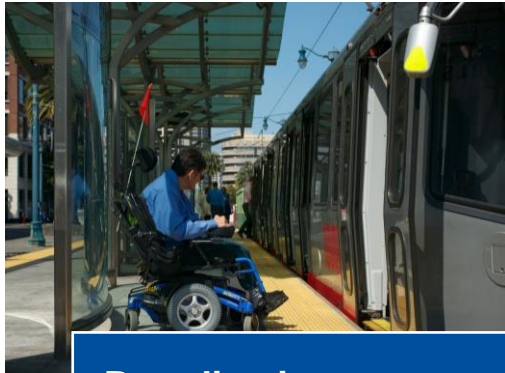
- Pursue high-capacity transit to achieve City sustainability and equity goals
- Reconsider concept plans in context of 2021 community visioning



What is Bus Rapid Transit (BRT)?

Buses that run more like trains

SFMTA (NACTO)

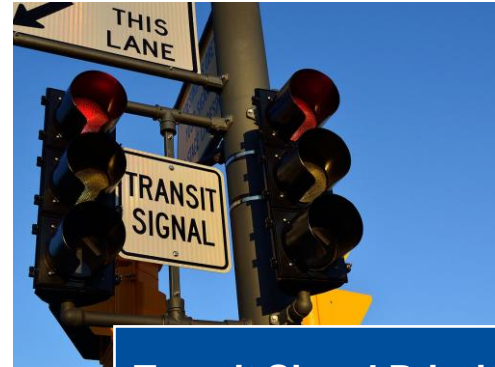


Boarding improvements

The Vine (Steve Morgan, Wikipedia)



Frequent service



Transit Signal Priority

NACTO



Queue jump lanes

GRTC Pulse (BeyondDC, Flickr)



Station amenities

1 Street bus lane (BeyondDC, Flickr)



Bus lanes

Metroway (BeyondDC, Flickr)



Fully separated bus lanes



What do you see in Duke Street's future?
How do you want to get around?

Phase 1 Community Engagement (June 21-July 31, 2021)



1,785 feedback form responses



3,587 project handouts



6,393 received eNews blast



95,889 reached on social media



22 community pop-up events (2,552 people reached)



92 webinar attendees

Community Input in Phase 1



88%

Want to see reduced traffic



47%

Would ride or would consider riding the bus more often with improvements



55%

Want to see improved safety

A full summary is available at alexandriava.gov/DukeInMotion

Project Vision

This project will provide an **efficient and desirable bus rapid transit (BRT) option** along Duke Street **by improving the transit experience** for current and potential riders.

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.**

Project Guiding Principles



Convenient

Make bus travel more predictable, frequent, and comfortable



Efficient

Improve mobility for all Duke Street travelers



Equitable

Use enhanced bus transit to support equitable access for a diversity of people and places



Safe

Ensure safety and accessibility for those connecting to and riding the bus, as well as other travelers



Vibrant

Create and enhance thriving and future corridor destinations that improve resident quality of life and boost the local economy



Sustainable

Contribute positively to the environment, now and in the future

Duke Street Projects

WEST TAYLOR RUN INTERSECTION IMPROVEMENT



ADAPTIVE TRAFFIC SIGNAL CONTROL



DUKE STREET TRAFFIC MITIGATION PILOT



To learn more about all the ways the City is working to make
Duke Street work better, please visit
alexandriava.gov/transportation-planning/duke-street-projects.



Why Bus Rapid Transit on Duke Street?

Why BRT on Duke Street?

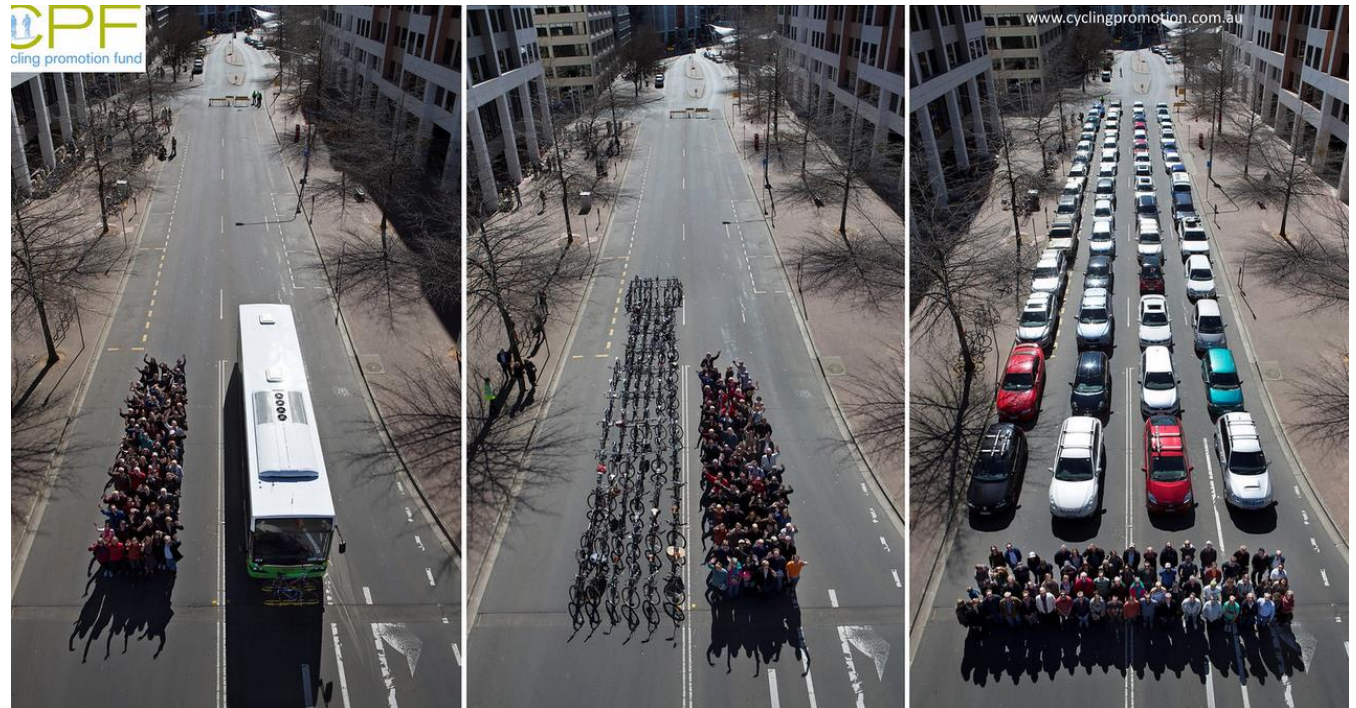
Greenhouse gas emissions

Air quality

Equity

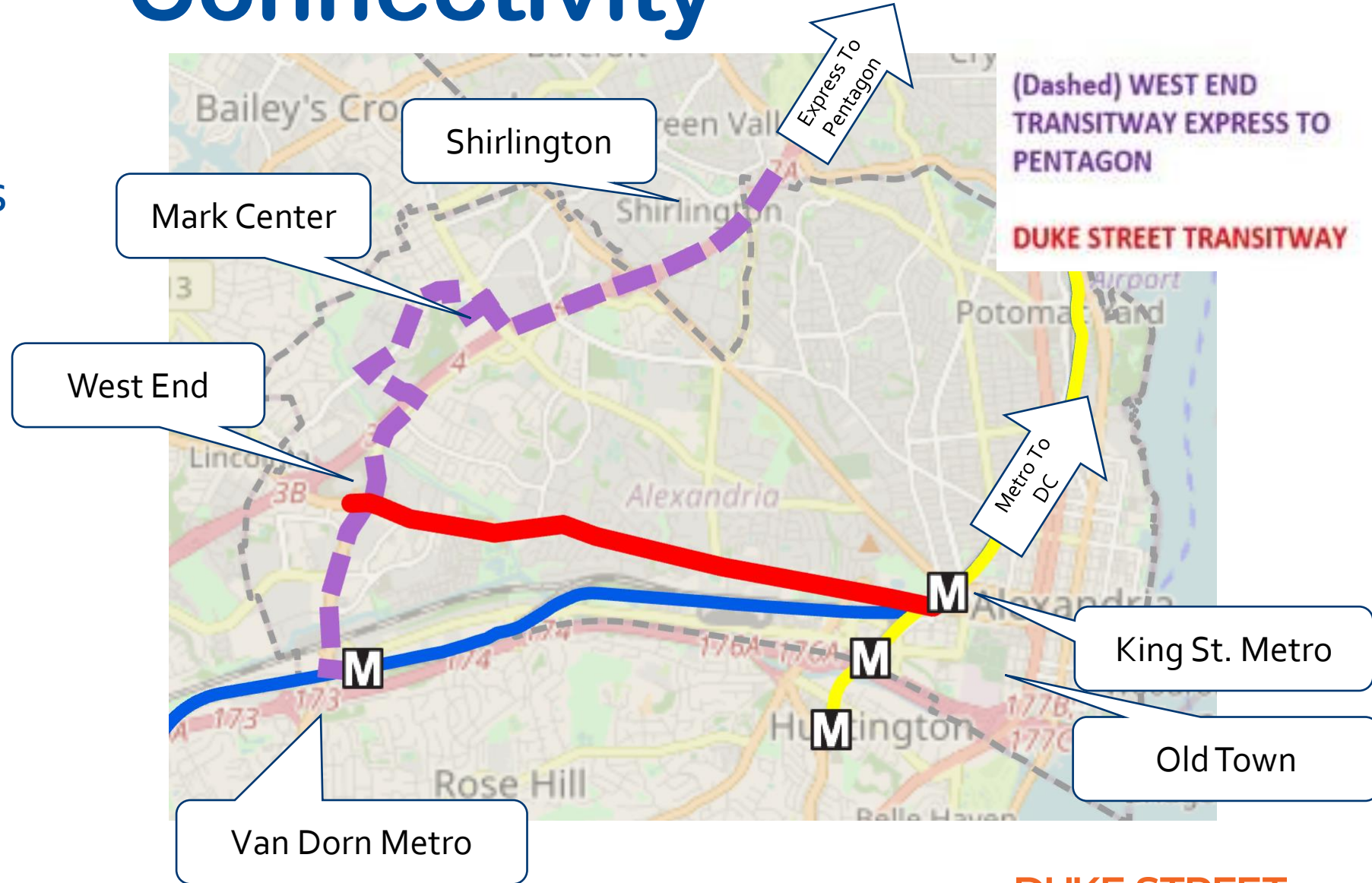
Choices

Congestion management



Connectivity

High frequency transit connections to major activity centers



Bus Travel Time vs. Vehicle Travel Time

West End Alexandria to King Street Metro Station



23-24 minutes in the peak



12-13 minutes in the peak

Placemaking and Livability

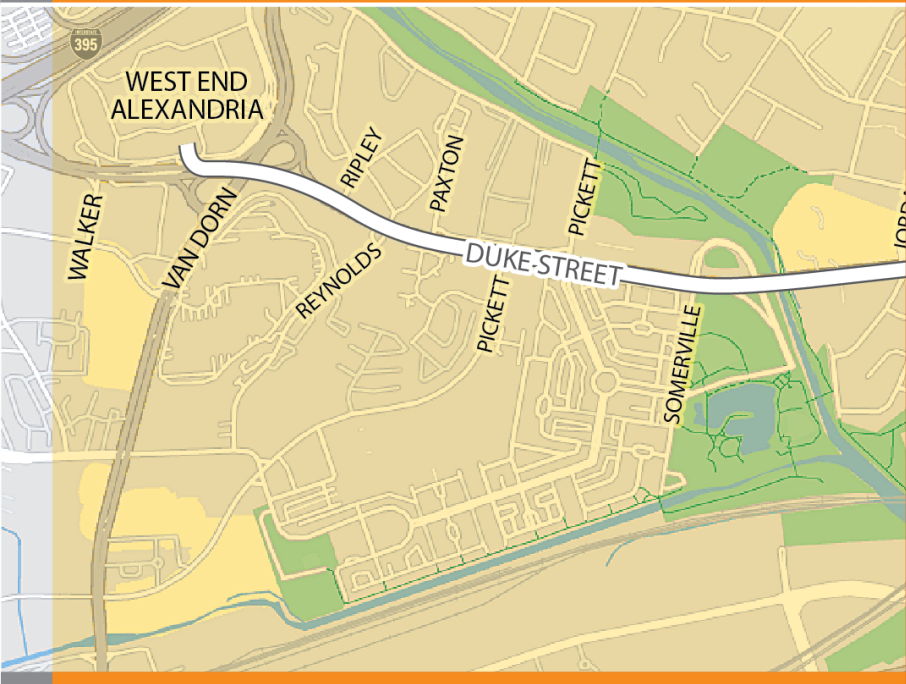




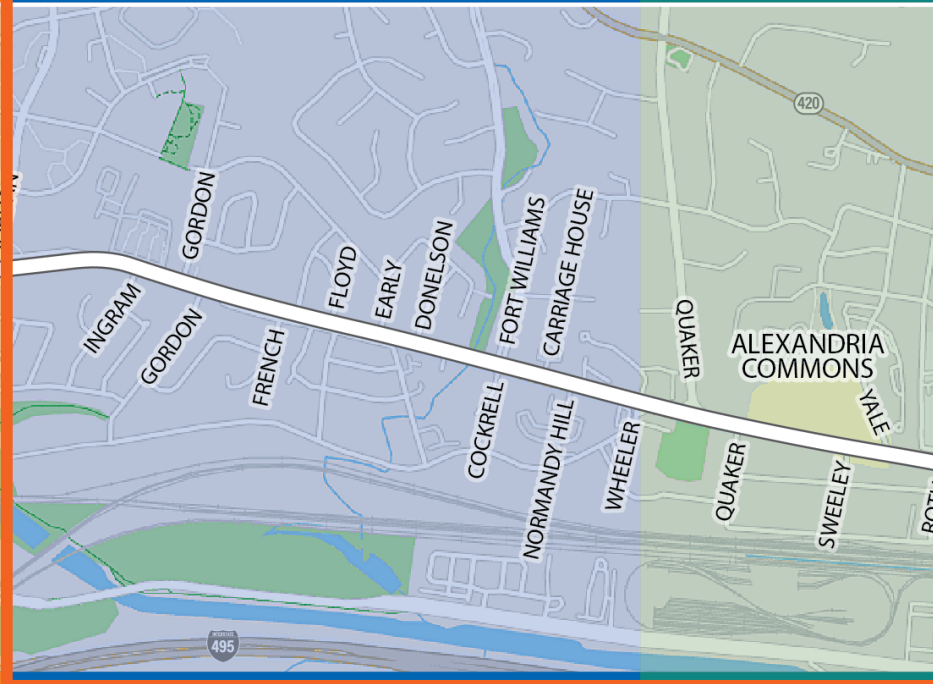
Segment 2 Overview

Corridor Segments

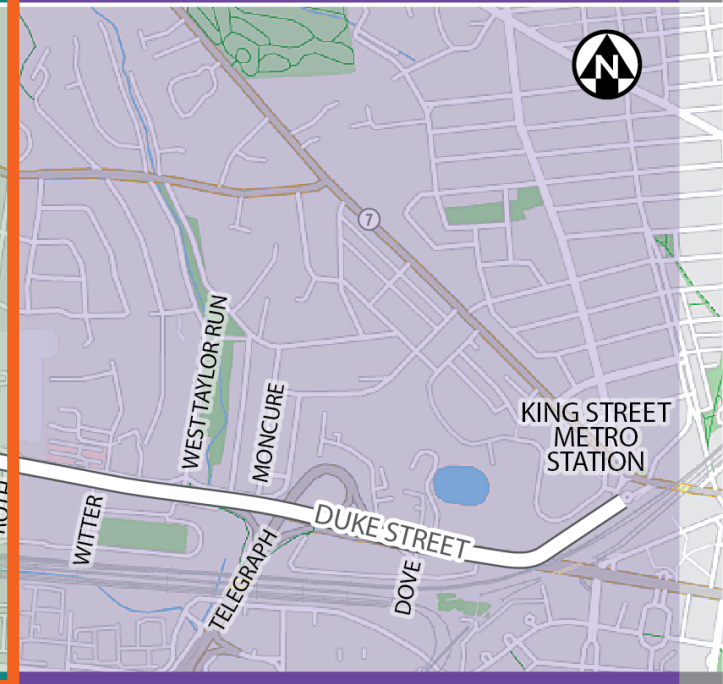
SEGMENT 1 - West End Alexandria to Jordan



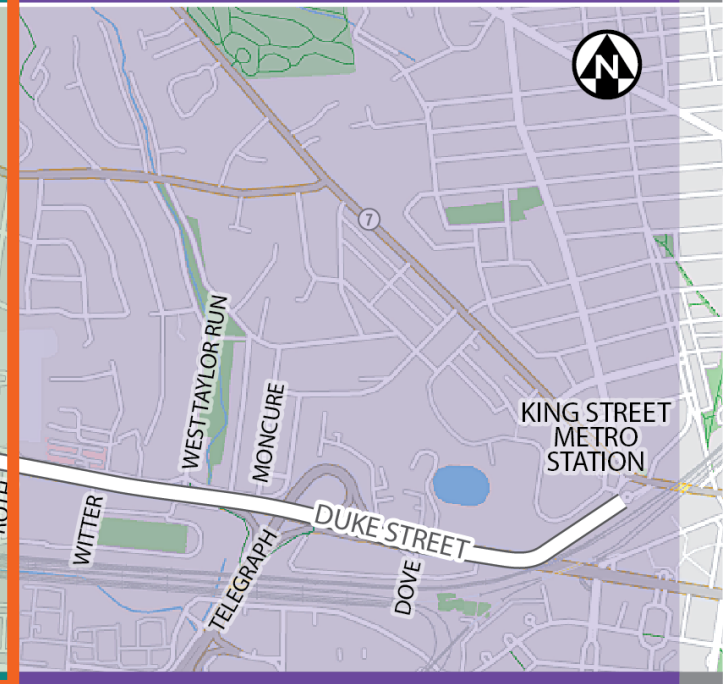
SEGMENT 2A - Jordan to Wheeler



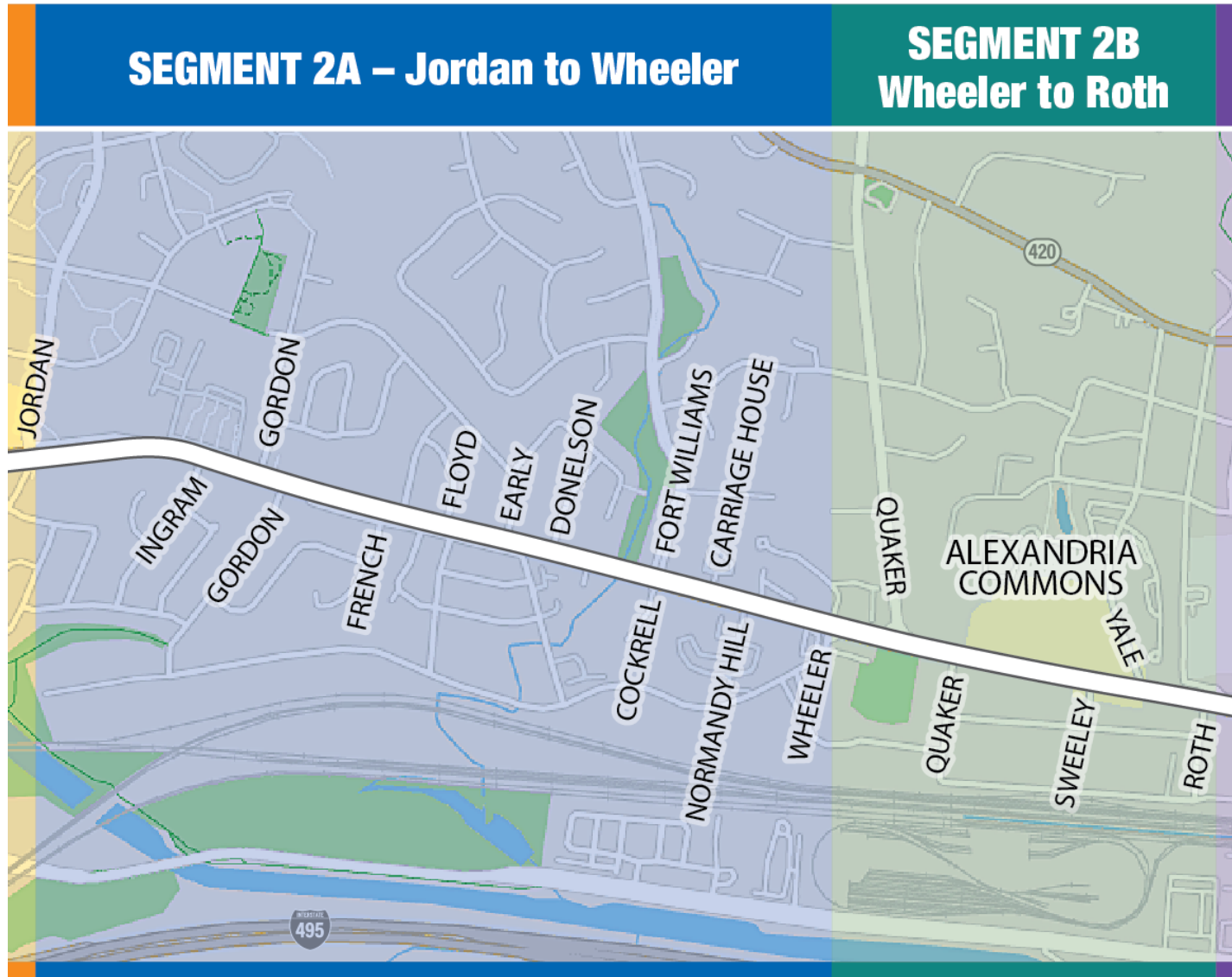
**SEGMENT 2B
Wheeler to Roth**



SEGMENT 3 - Roth to King St Metro Station



Segment 2: Jordan Street to Roth Street

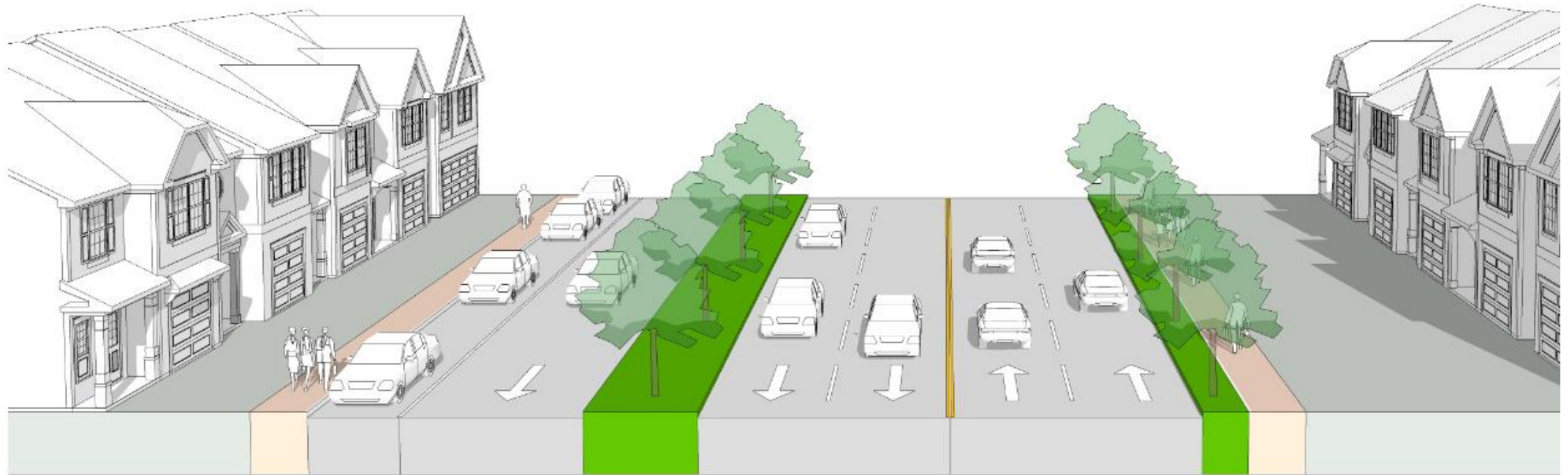


Segment 2A



Segment 2B

Segment 2A: Jordan Street to Wheeler Avenue



Sidewalk

Parking
Lane

Service
Road

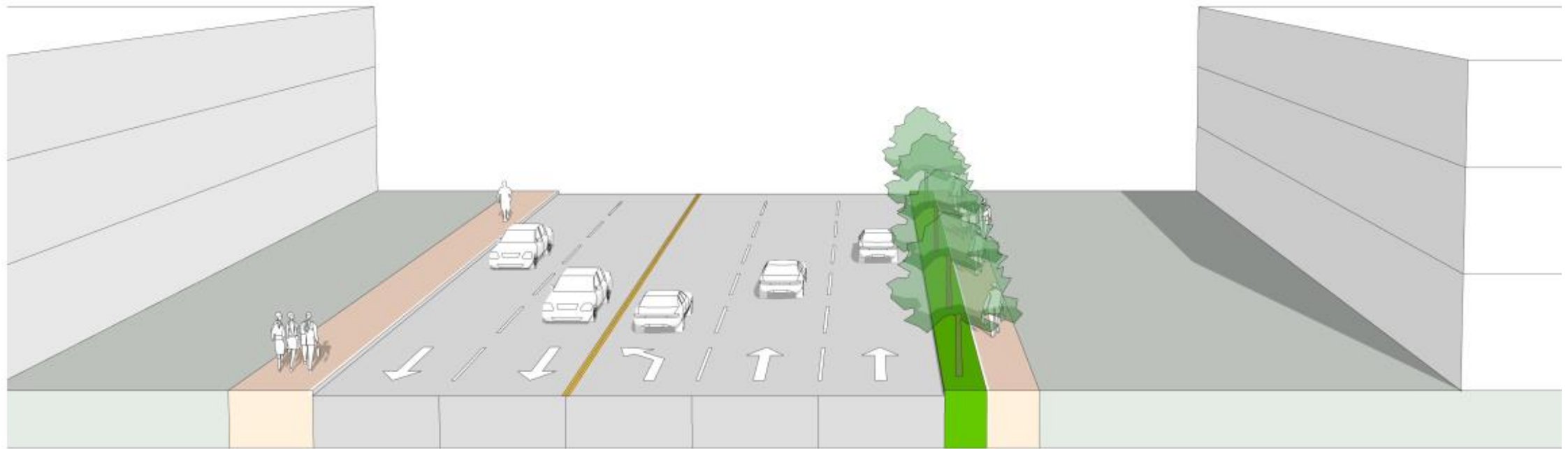
Buffer

Travel Lanes

Travel Lanes

Sidewalk

Segment 2B: Wheeler Avenue to Roth Street



Sidewalk

Travel Lanes

Sidewalk

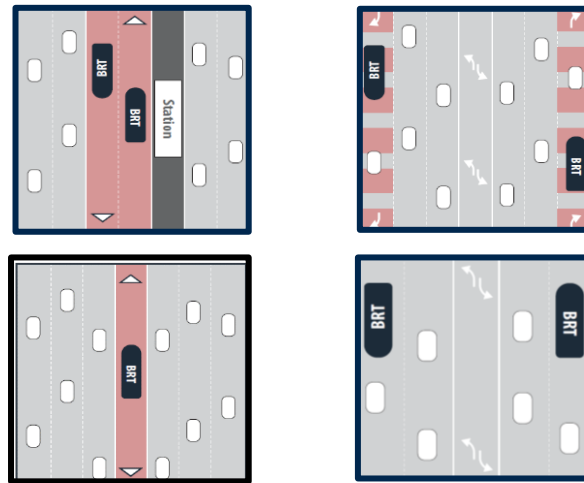


Segment 2 Concepts

Street Design Concepts

Busway *and* Curb Features

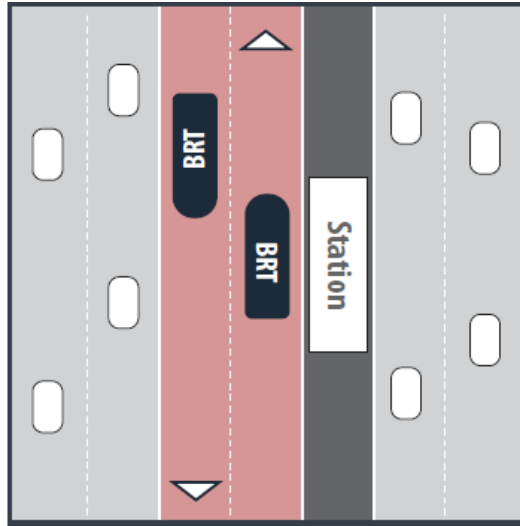
Step 1: Busway



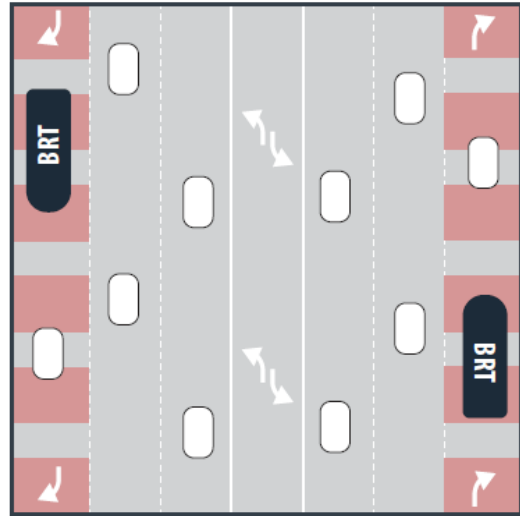
Step 2: Curb features



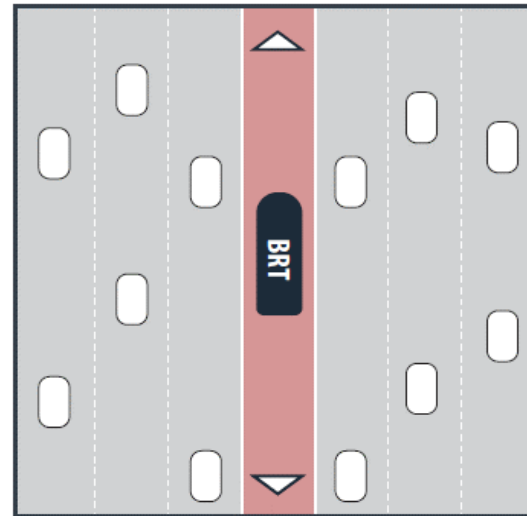
Bus Improvements Can Take Different Forms



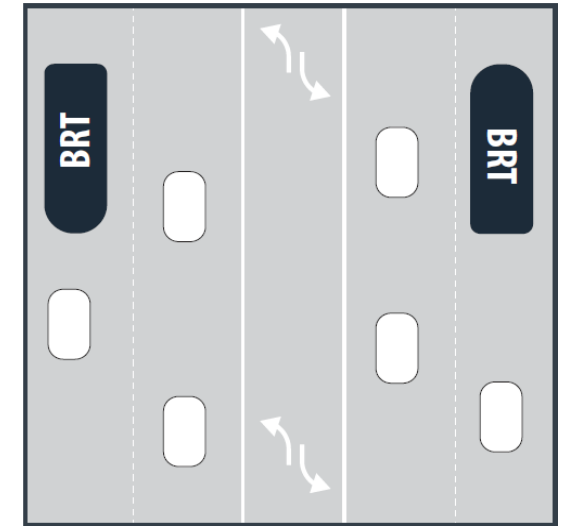
Center Running



Curb Running



Bidirectional Lane

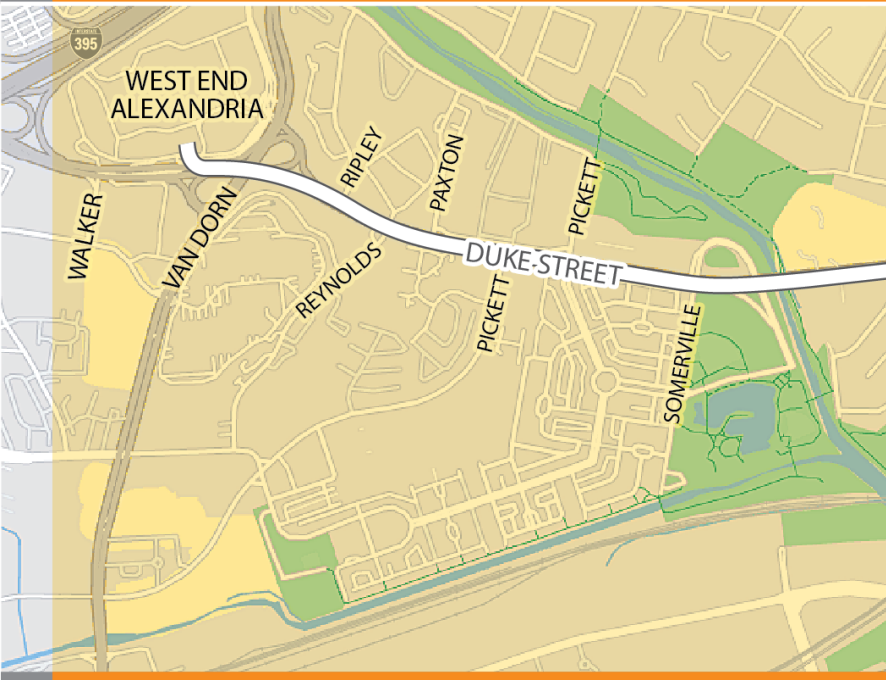


Mixed Traffic

A BRT can mix different treatments to make bus service faster and more reliable

Concept Summary

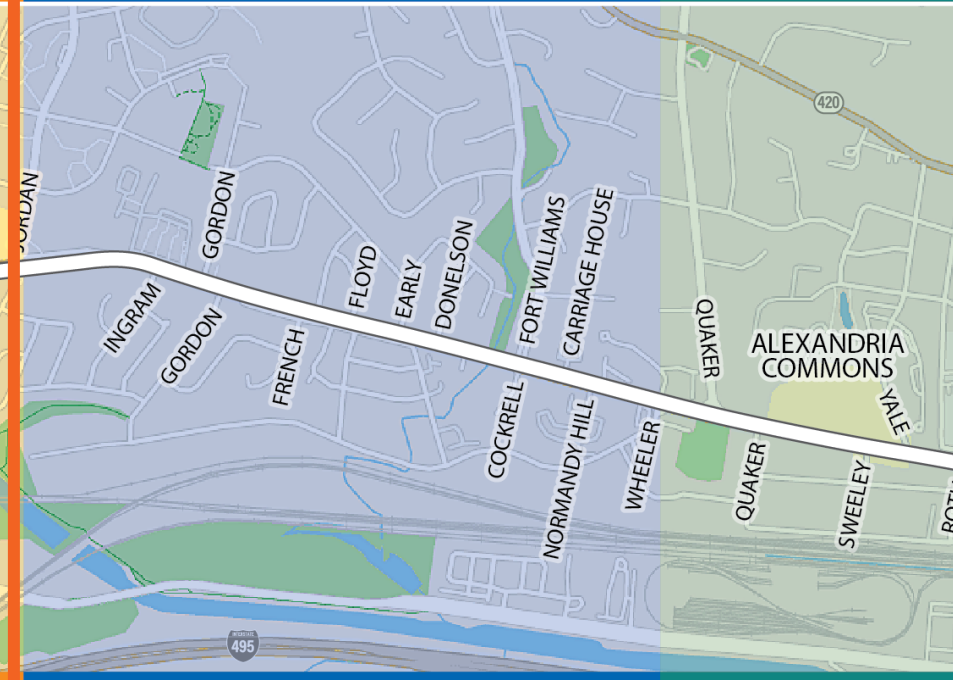
SEGMENT 1 - West End Alexandria to Jordan



Segment 1

- Center running
- Curb running
- Mixed traffic

SEGMENT 2A – Jordan to Wheeler



Segment 2A

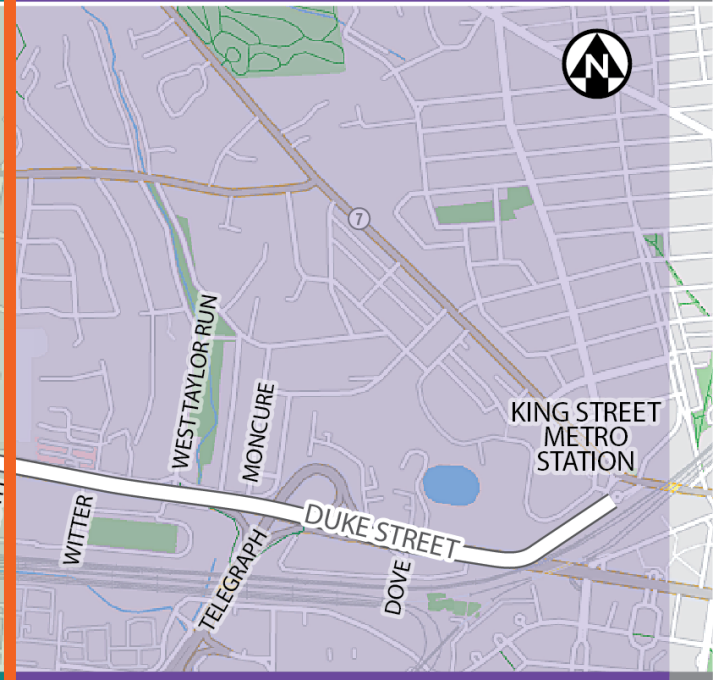
- Center running
- Hybrid
- Mixed traffic

Segment 2B

- Center running
- Bidirectional
- Mixed traffic

SEGMENT 2B Wheeler to Roth

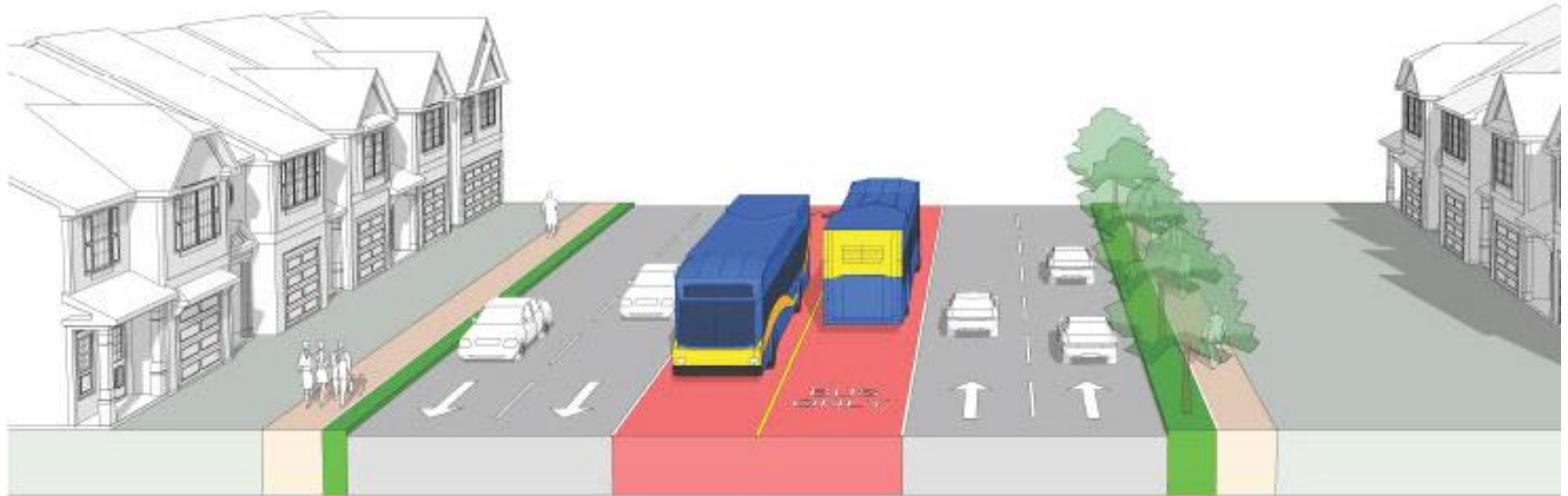
SEGMENT 3 - Roth to King St Metro Station



Segment 3

- Center running
- Curb running
- Mixed traffic

Segment 2A: Center Running



*Curb Features

Travel Lanes

BRT Lanes

Travel Lanes

*Curb Features

Benefits

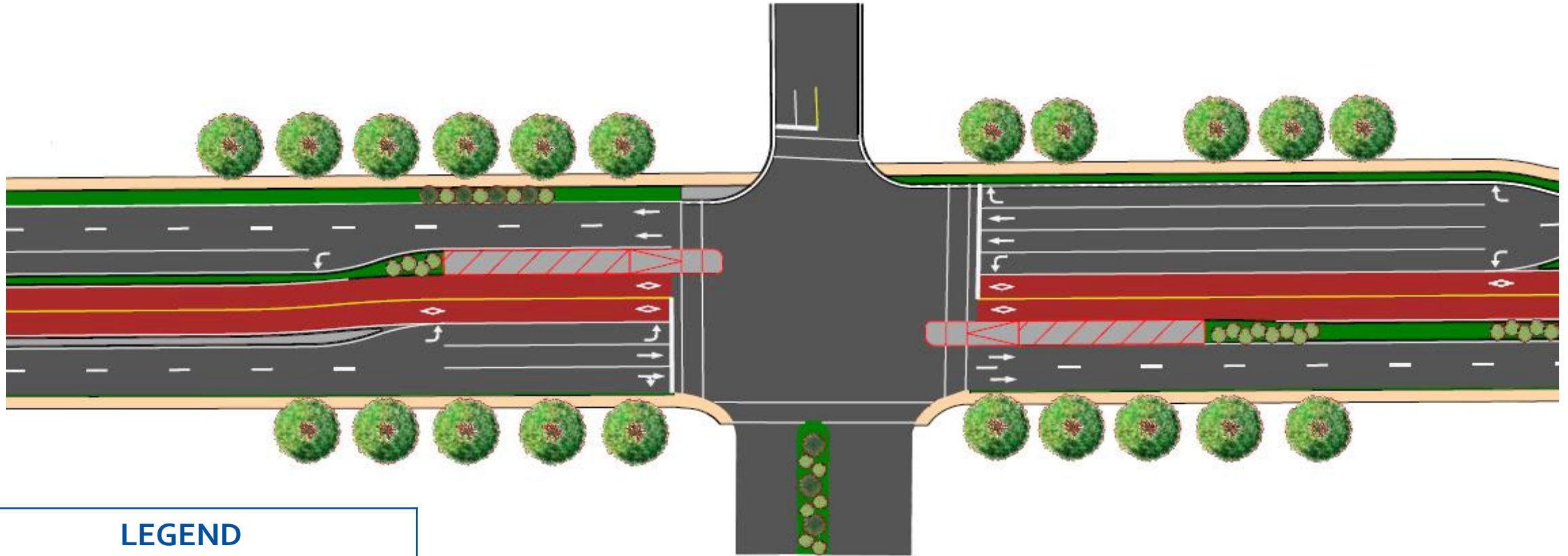
- Best bus reliability, speed, and rider experience
- Separates bus and general traffic
- Shorter crossings to bus

Trade Offs





- Widening impacts service roads and related access/parking
- Potential for partial acquisitions of property
- Left turns only allowed at traffic signals

*Curb features to be determined at a later stage in the project.

Segment 2A: Center Running

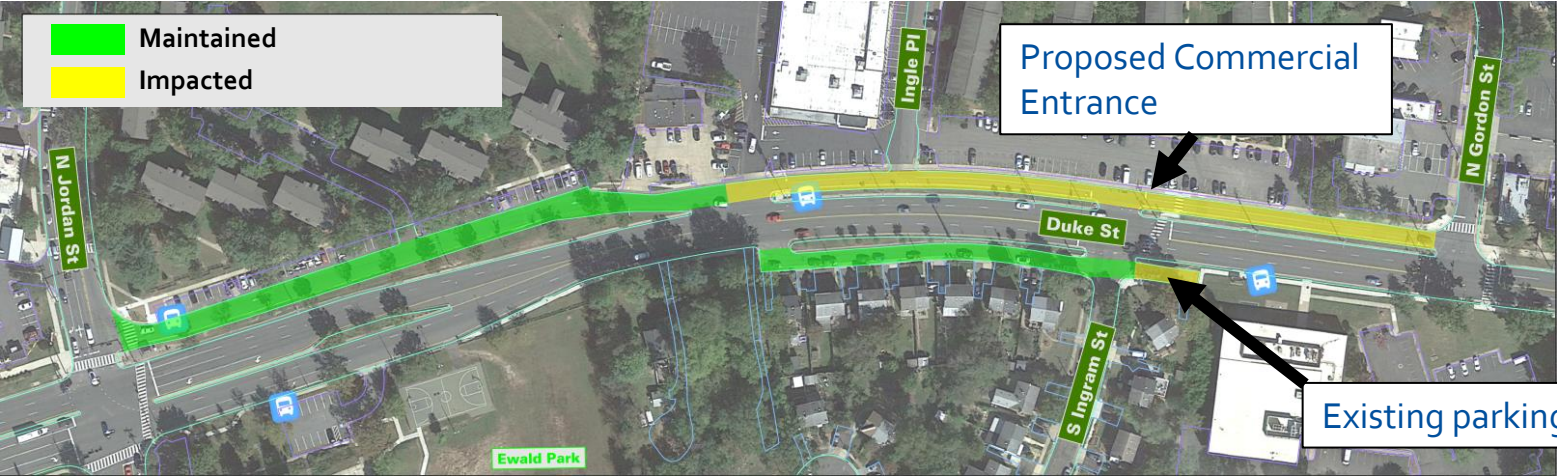


LEGEND

-  BRT Station
-  Bus-only Lanes
-  Landscaping/Buffer
-  Curb Features*

*Curb features to be determined at a later stage in the project.

Segment 2A: Center Running Service Roads

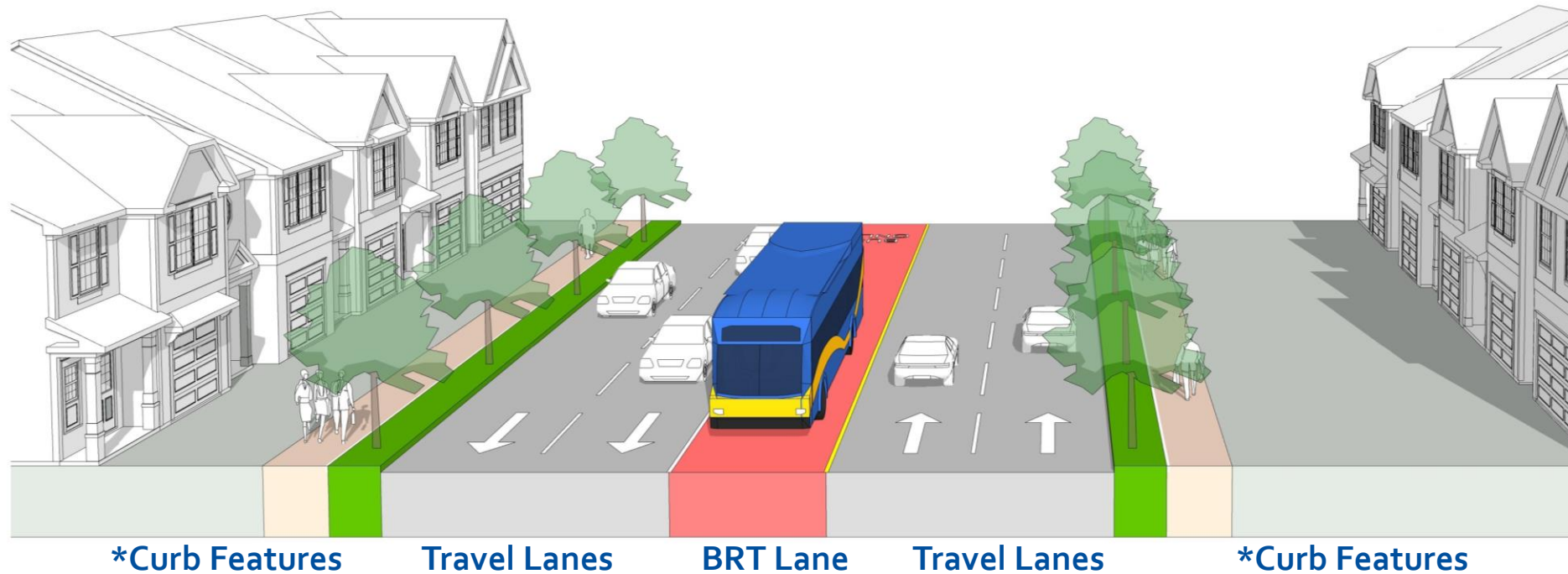


Segment 2A: Hybrid



- Center Running** (Jordan to Gordon)
- Mixed Traffic** (Gordon to Fort Williams)
- Bidirectional** (Fort Williams to Wheeler)

Segment 2A: Hybrid (showing bidirectional concept)



Benefits	Trade Offs
<ul style="list-style-type: none"> Improved bus reliability, speed, and rider experience Separates bus and general traffic Shorter crossings to bus 	<ul style="list-style-type: none"> Widening impacts commercial service roads Some left turn impacts Reduced bus efficiency

*Curb features to be determined at a later stage in the project.

Bidirectional Transit Lanes

Source: ITDP



Rouen, France

Source: ITDP



Eugene, Oregon

Bi-Directional Transit Lanes

Features

- Single transit lane
- Center stations
- Hold points

Benefits

- Corridor safety
- Transit travel time and reliability
- Less space

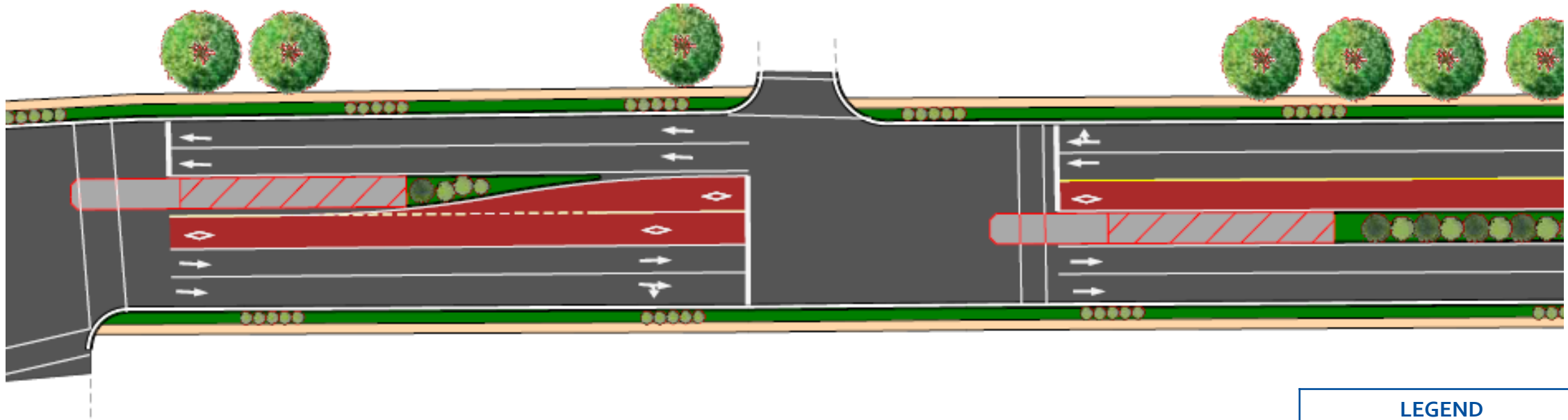
Tradeoffs





- Requires space
- Operational challenges



Indianapolis, IN

Segment 2A: Hybrid



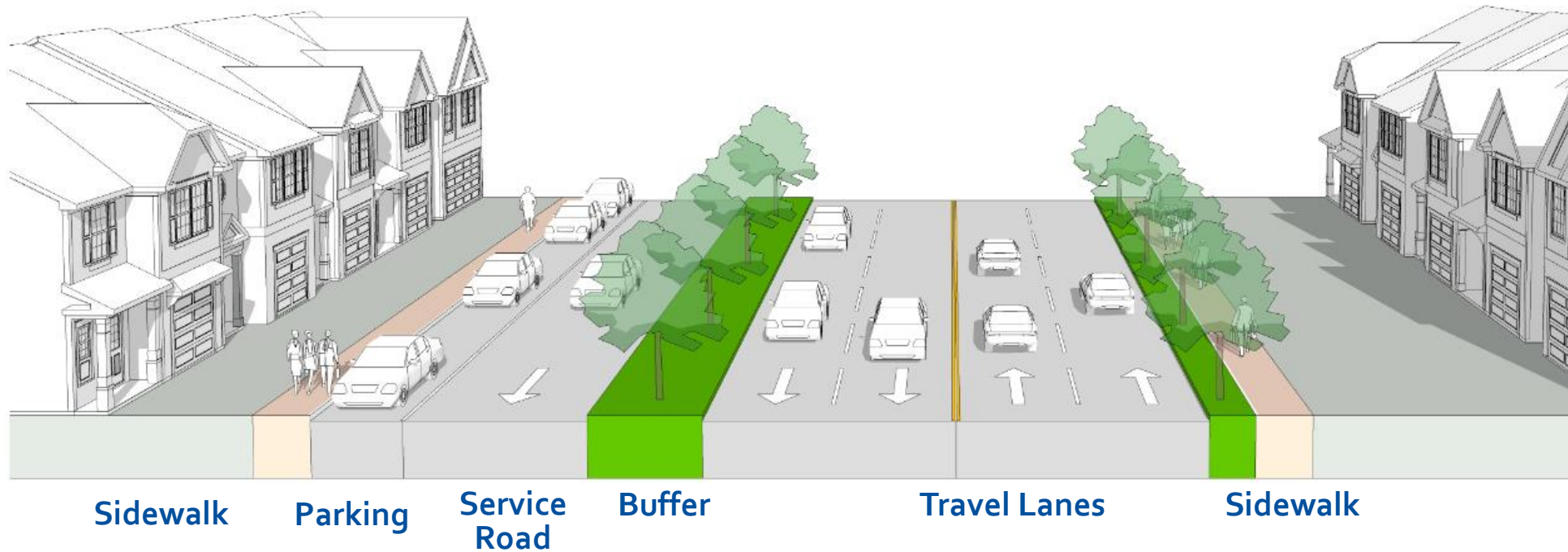
LEGEND	
	BRT Station
	Bus-only Lanes and Holding Area
	Landscaping/Buffer
	Curb Features*

*Curb features to be determined at a later stage in the project.

Segment 2A: Hybrid Service Roads



Segment 2A: Mixed Traffic



Benefits

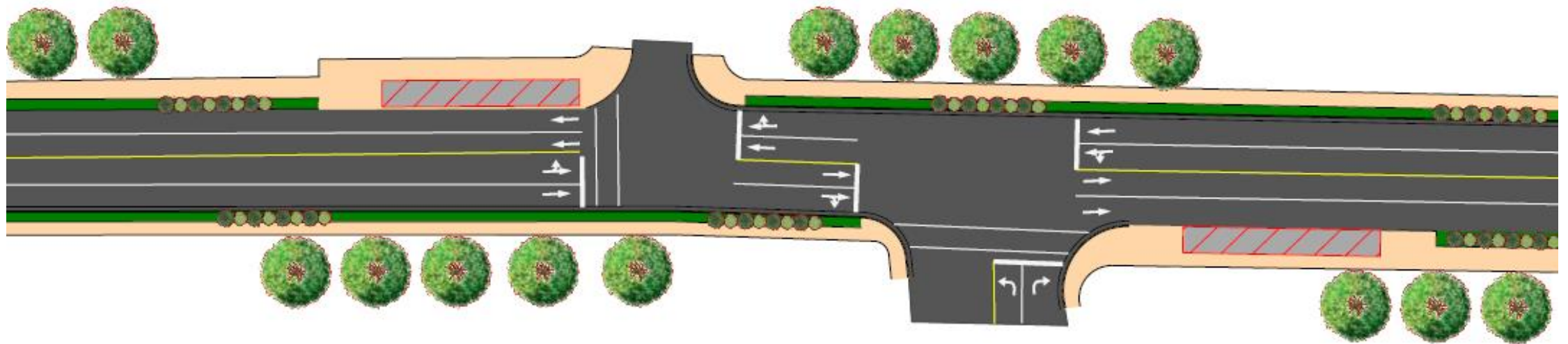
- Some improved bus reliability and bus rider experience due to transit signal priority and queue jumps




Trade Offs

- Limited/reduced improvement to bus operation and reliability
- Limited improvements to corridor safety

*Curb features to be determined at a later stage in the project.

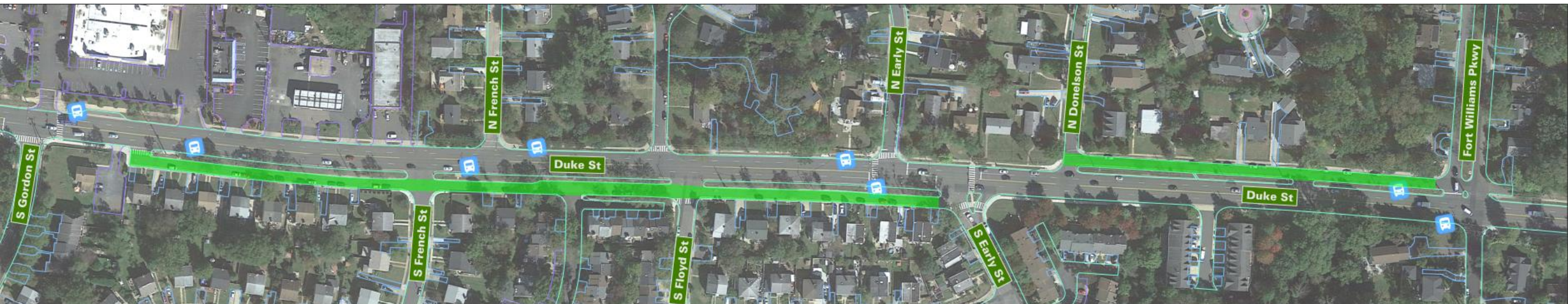
Segment 2A: Mixed Traffic



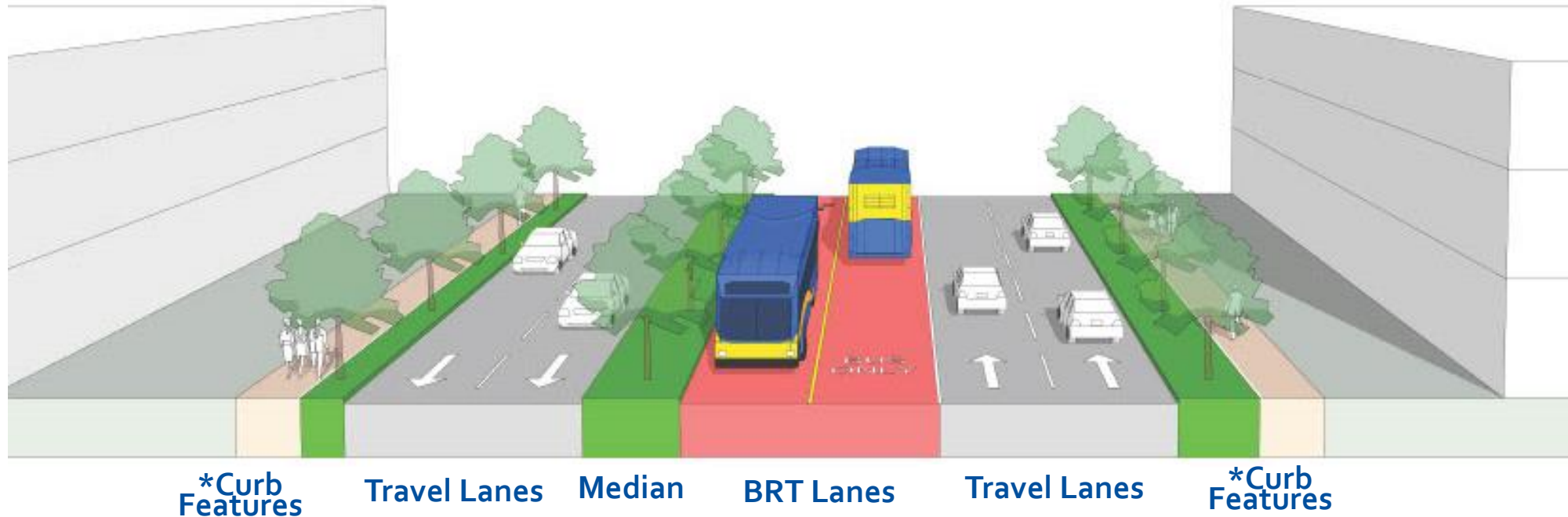
LEGEND	
	BRT Station
	Landscaping/Buffer
	Curb Features*

*Curb features to be determined at a later stage in the project.

Segment 2A: Mixed Traffic Service Roads



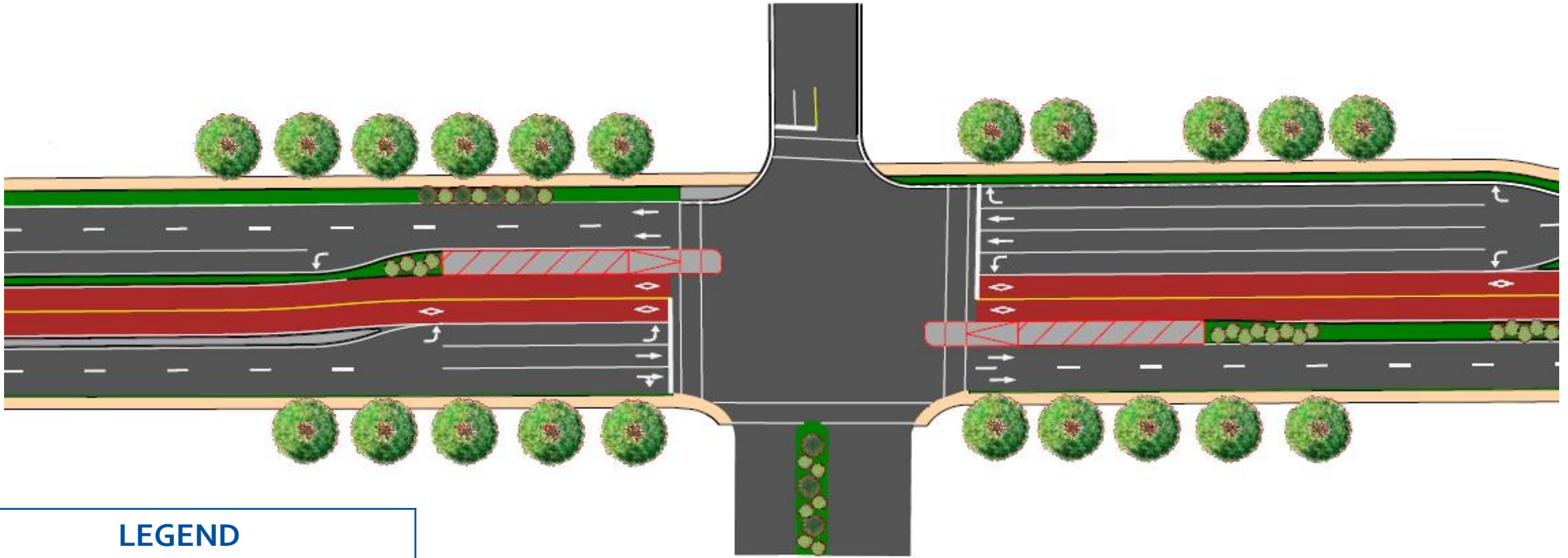
Segment 2B: Center Running







Benefits	Trade Offs
<ul style="list-style-type: none"> • Best bus reliability, speed, and rider experience • Separates bus and general traffic • Shorter crossings to bus • Increased area for trees, streetscaping, stormwater management 	<ul style="list-style-type: none"> • Widening required • Potential for partial acquisitions of property • Left turns only allowed at traffic signals and some are eliminated

*Curb features to be determined at a later stage in the project.

Segment 2B: Center Running

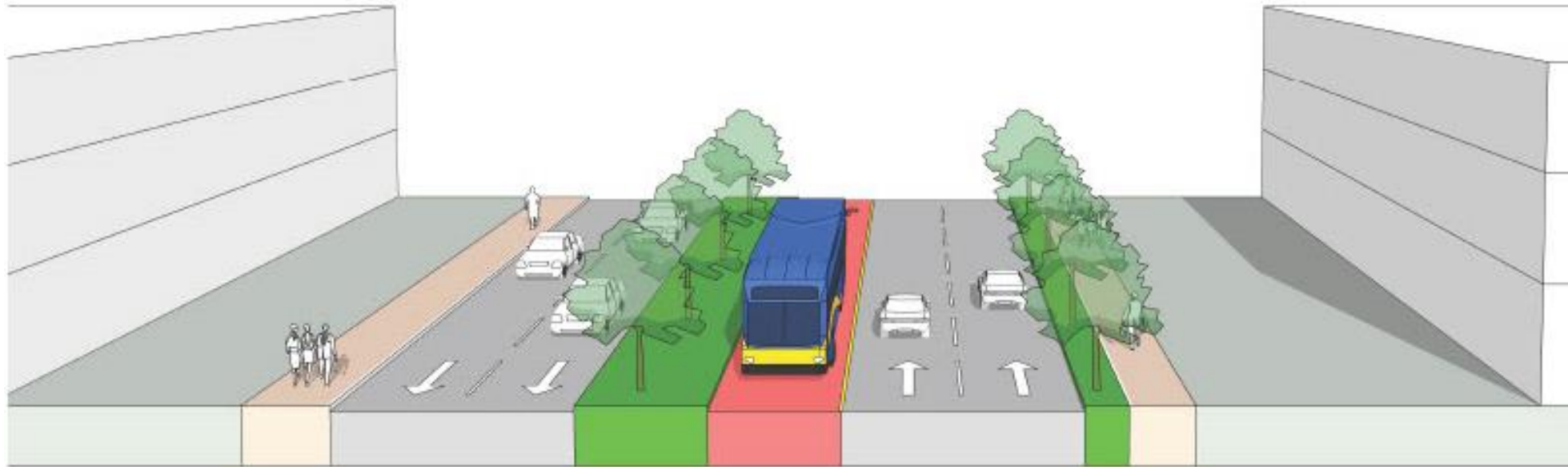


LEGEND

-  BRT Station
-  Bus-only Lanes
-  Landscaping/Buffer
-  Curb Features*

*Curb features to be determined at a later stage in the project.

Segment 2B: Bidirectional

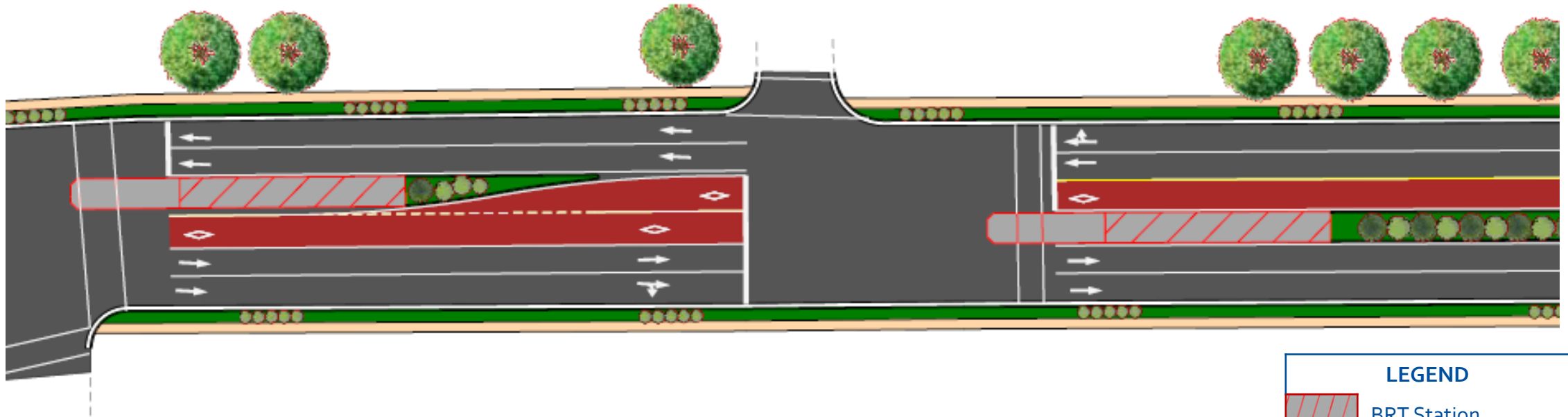






*Curb Features Travel Lanes Median BRT Lane Travel Lanes *Curb Features

Benefits	Trade Offs
<ul style="list-style-type: none"> • Improved bus reliability, speed, and rider experience • Separates bus and general traffic • Shorter crossings to bus • Increased area for trees, streetscaping, stormwater management 	<ul style="list-style-type: none"> • Widening required • Potential for partial acquisitions of property • Left turns only allowed at traffic signals and some are eliminated • Reduced bus efficiency

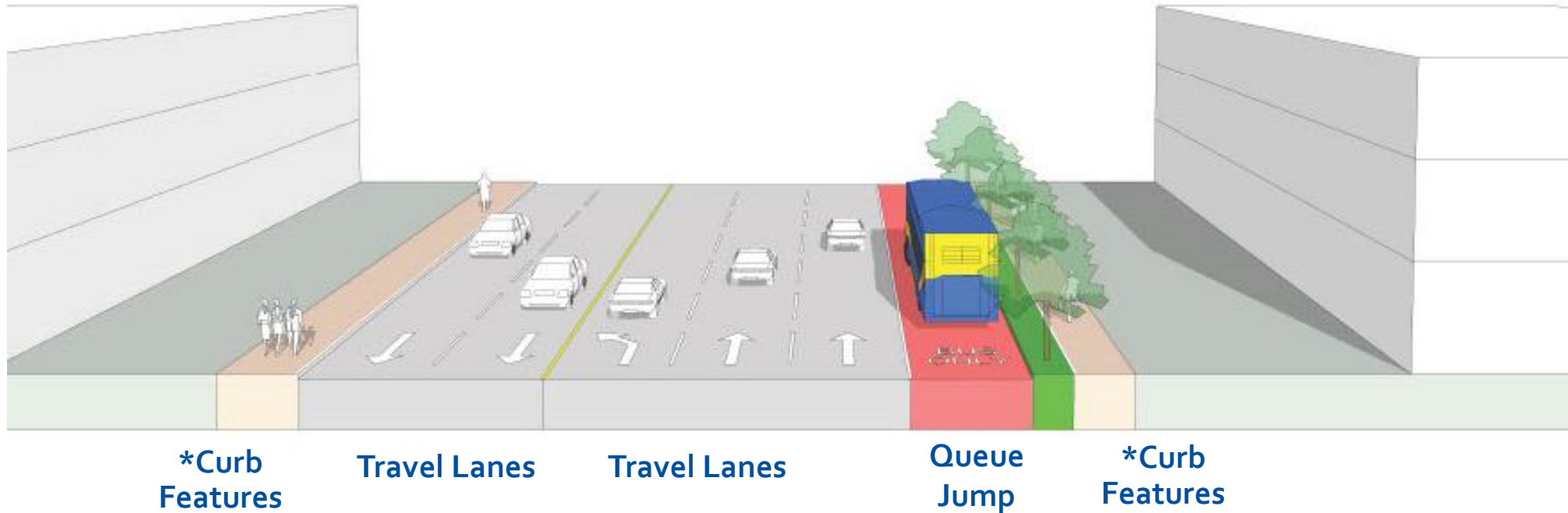
*Curb features to be determined at a later stage in the project.

Segment 2B: Bidirectional



LEGEND	
	BRT Station
	Bus-only Lanes and Holding Area
	Landscaping/Buffer
	Curb Features*

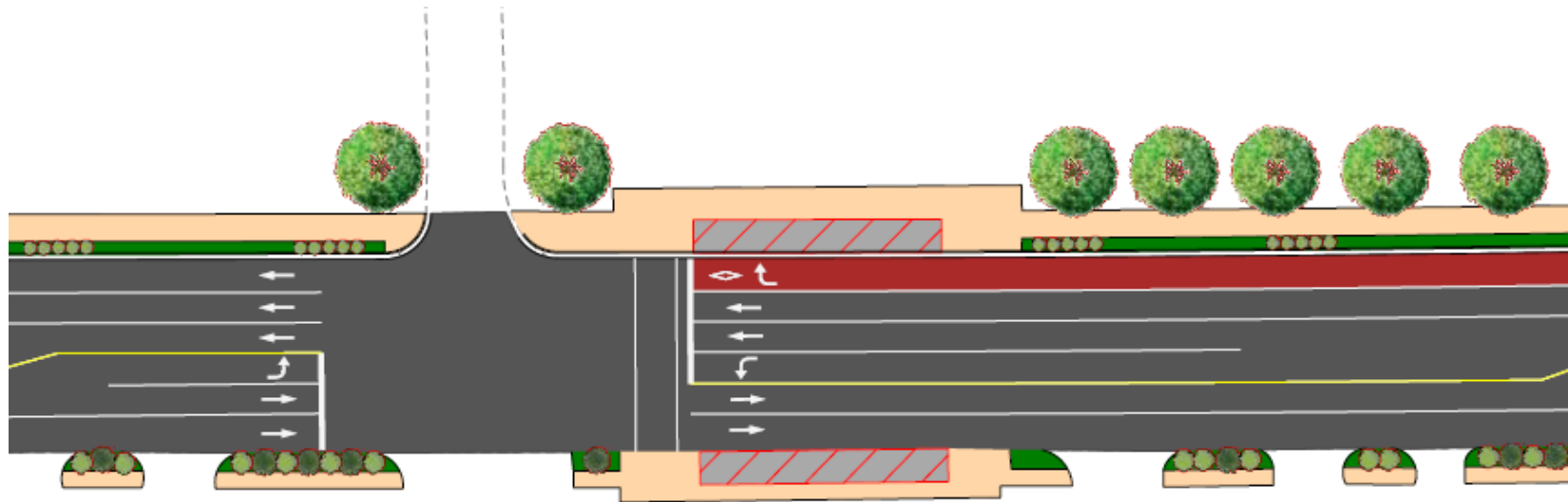
Segment 2B: Mixed Traffic







Benefits	Trade Offs
<ul style="list-style-type: none"> • Some improved bus reliability and bus rider experience due to transit signal priority and queue jumps • Spot improvements to vehicle safety • No impacts to service roads with potential safety implications to address in redesign 	<ul style="list-style-type: none"> • Limited/reduced improvement to bus operation and reliability • Limited improvements to vehicle safety

*Curb features to be determined at a later stage in the project.

Segment 2B: Mixed Traffic

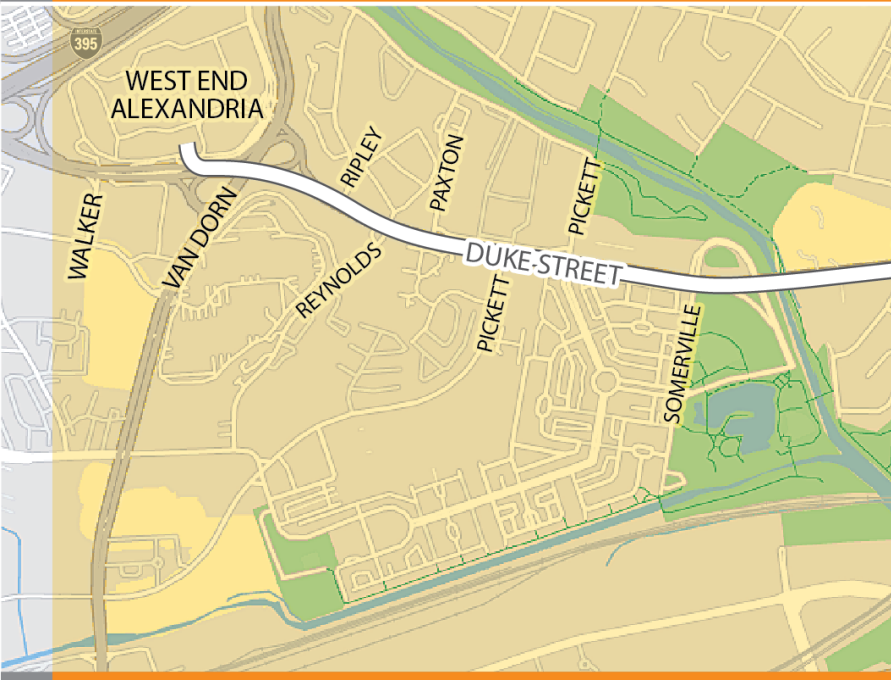


LEGEND	
	BRT Station
	Bus-only Lanes (Queue Jump)
	Landscaping/Buffer
	Curb Features*

*Curb features to be determined at a later stage in the project.

Concept Summary

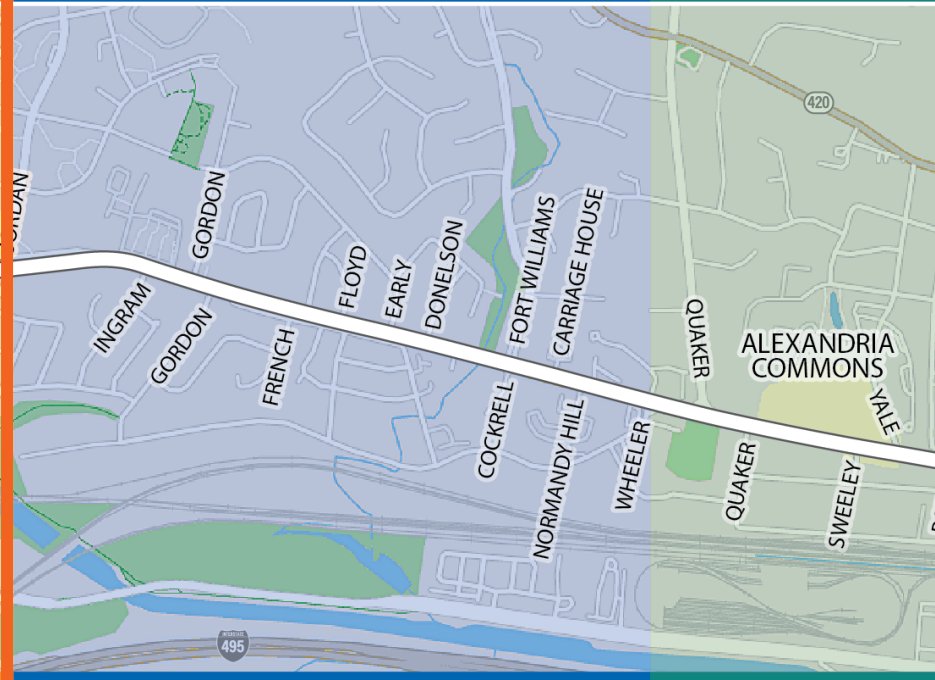
SEGMENT 1 - West End Alexandria to Jordan



Segment 1

- Center running
- Curb running
- Mixed traffic

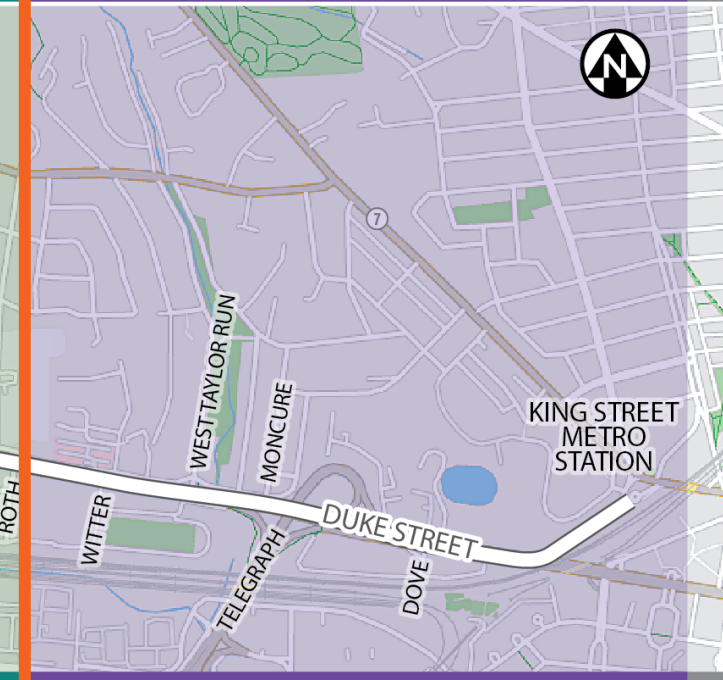
SEGMENT 2A – Jordan to Wheeler



Segment 2A

- Center running
- Hybrid
- Mixed traffic

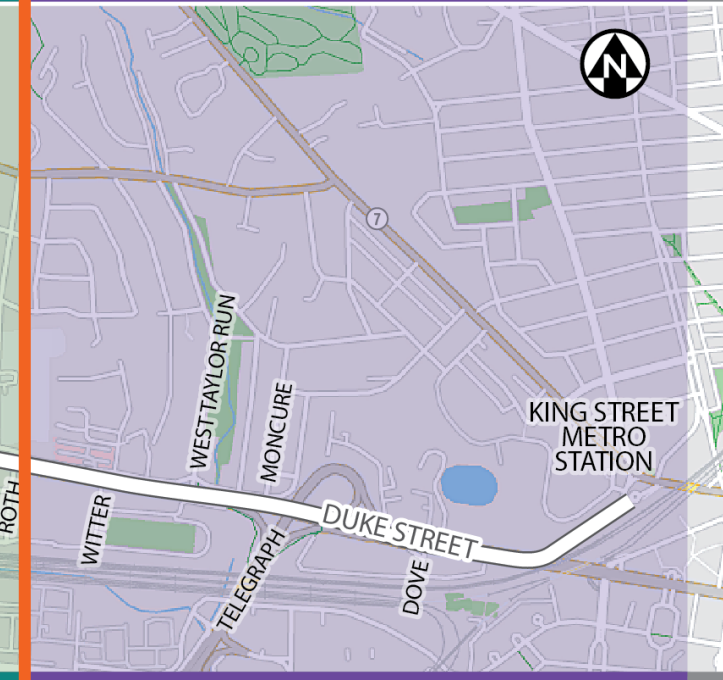
SEGMENT 2B Wheeler to Roth



Segment 2B

- Center running
- Bidirectional
- Mixed traffic

SEGMENT 3 - Roth to King St Metro Station



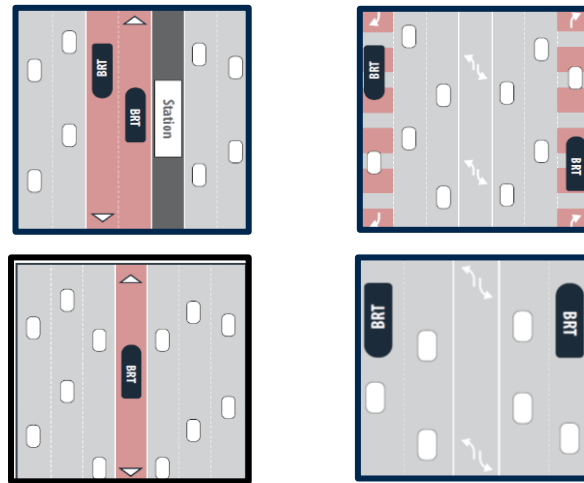
Segment 3

- Center running
- Curb running
- Mixed traffic

Street Design Concepts

Busway and Curb Features

Step 1: Busway



Step 2: Curb features





Next Steps

Upcoming Events



Webinar

- Oct 1
- Project website



Pop-up Events

- Throughout October
- 7-10 events



Focus Groups

- 4+ events to target underrepresented groups
 - Renters
 - Transit riders
 - Youth
 - Spanish speakers
 - Businesses



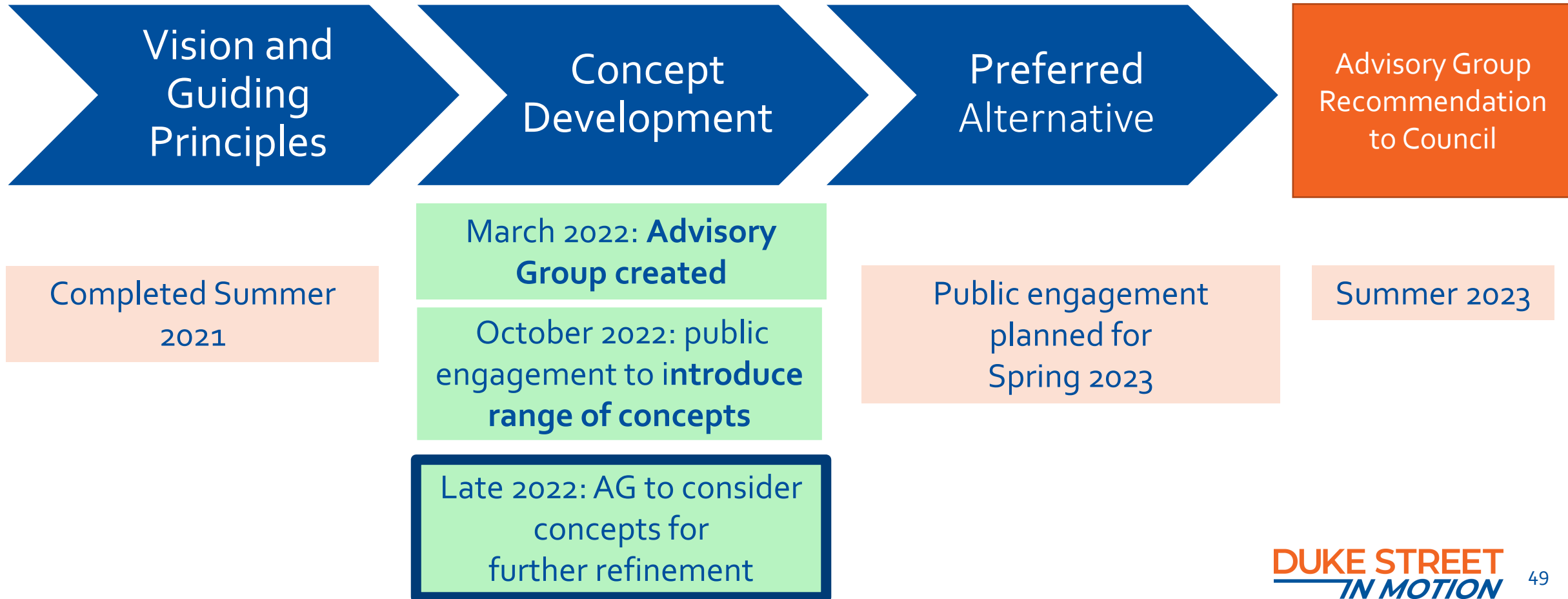
In-Person Meetings

- Throughout October
- 4 in-person events
- Segment focused
- Open house for entire corridor
- Build your own Duke Street

In-Person Meeting Dates/Locations

October 12	Segment 3 Meeting @ Bishop Ireton School	6:30-8:30 PM
October 17	Segment 2 Meeting @ Bishop Ireton School	6:30-8:30 PM
October 20	Segment 1 Meeting @ Patrick Henry Rec Center	6:30-8:30 PM
October 26	Open House @ Patrick Henry Rec Center	5:30-8:30 PM

Duke Street in Motion Process



Thank you!

- Visit boards
- Speak with Project Team
- Complete feedback form

Project
Overview

Existing
Conditions

Concept
Designs

West Taylor Run
Intersection
Project

alexandriava.gov/DukeInMotion

Q&A

- One question per attendee
- The project team will be available afterwards for additional questions
- FAQs will be posted on the website
- Please provide comments using the feedback form