

DUKE STREET *IN MOTION*

Community Outreach Presentation

Public Meeting
October 12, 2022

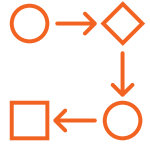


alexandriava.gov/DukeInMotion

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 3



Busway Design Concepts: Focus on Segment 3



Next Steps



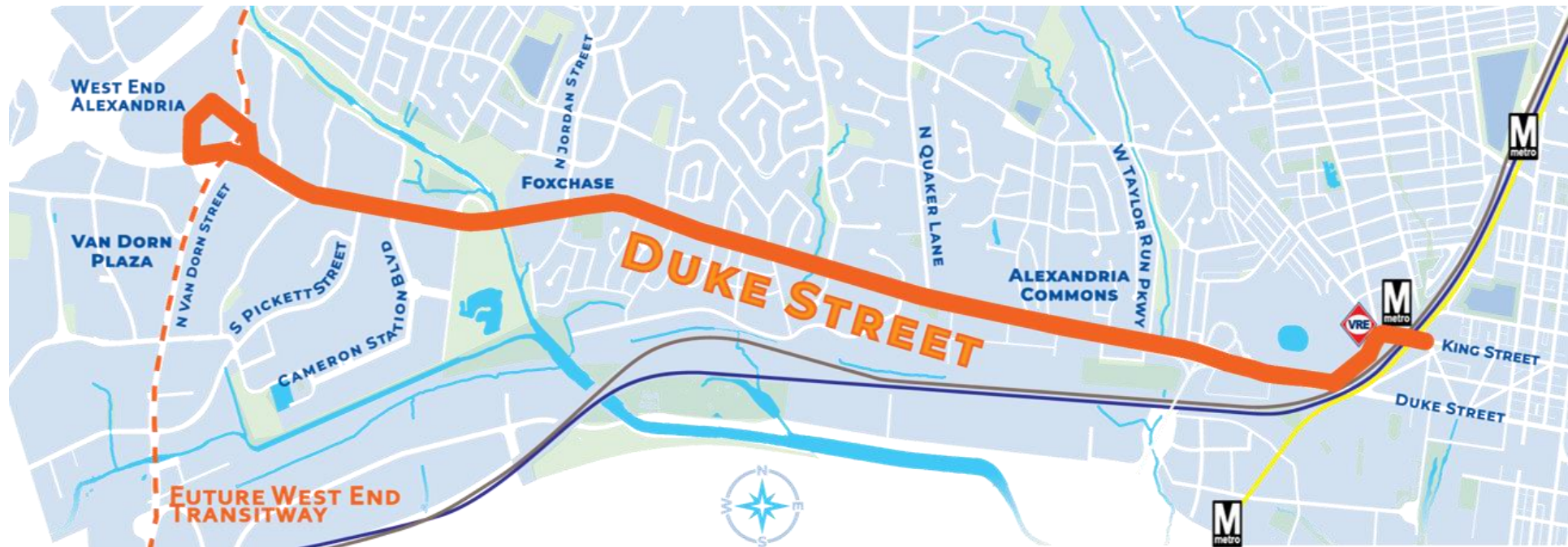
Open House



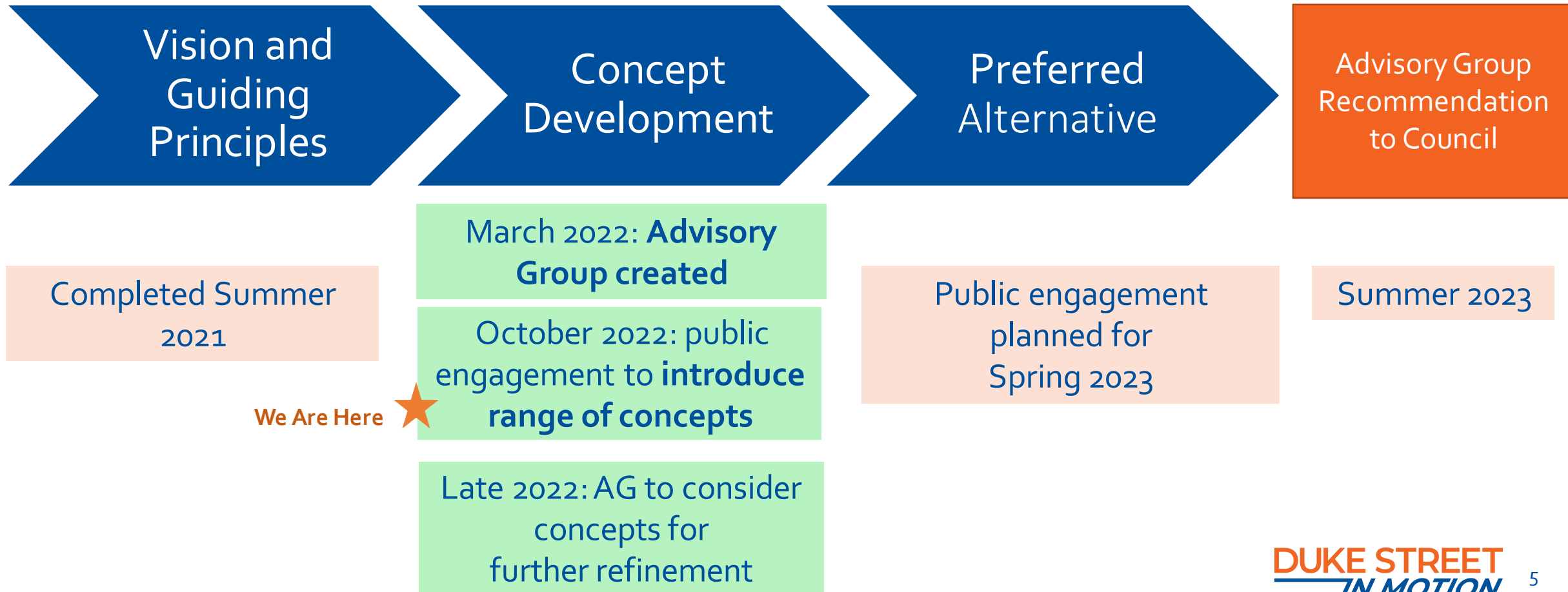
Project Overview

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.

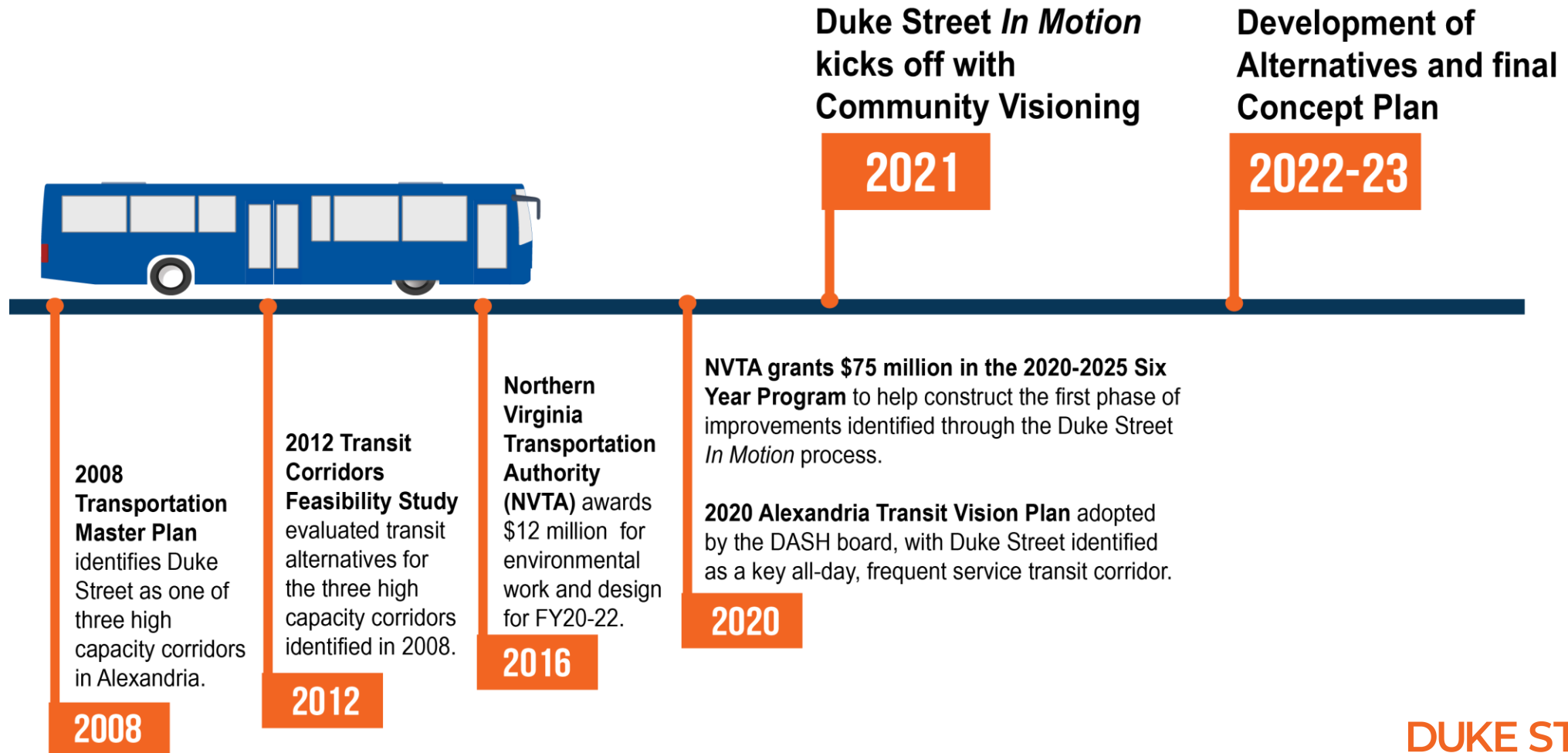


Duke Street in Motion Process



Project Purpose & Background

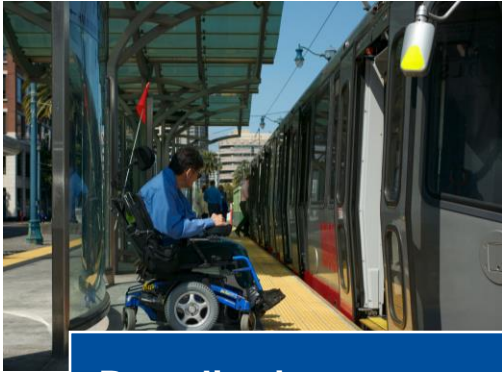
- Pursue high-capacity transit to achieve City sustainability and equity goals
- Reconsider concept plans in context of 2021 community visioning



What is Bus Rapid Transit (BRT)?

Buses that run more like trains

SFMTA (NACTO)

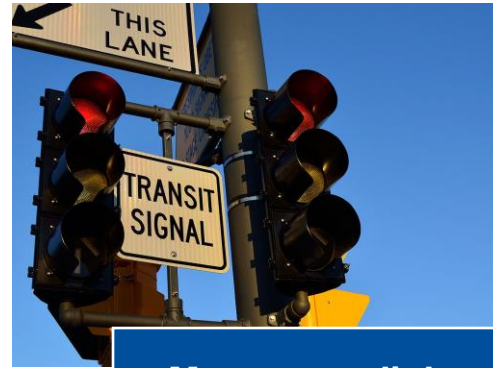


Boarding improvements

The Vine (Steve Morgan, Wikipedia)



Upgraded bus stops



More green lights

NACTO



Queue jump lanes

GRTC Pulse (BeyondDC, Flickr)



Station amenities

I 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?

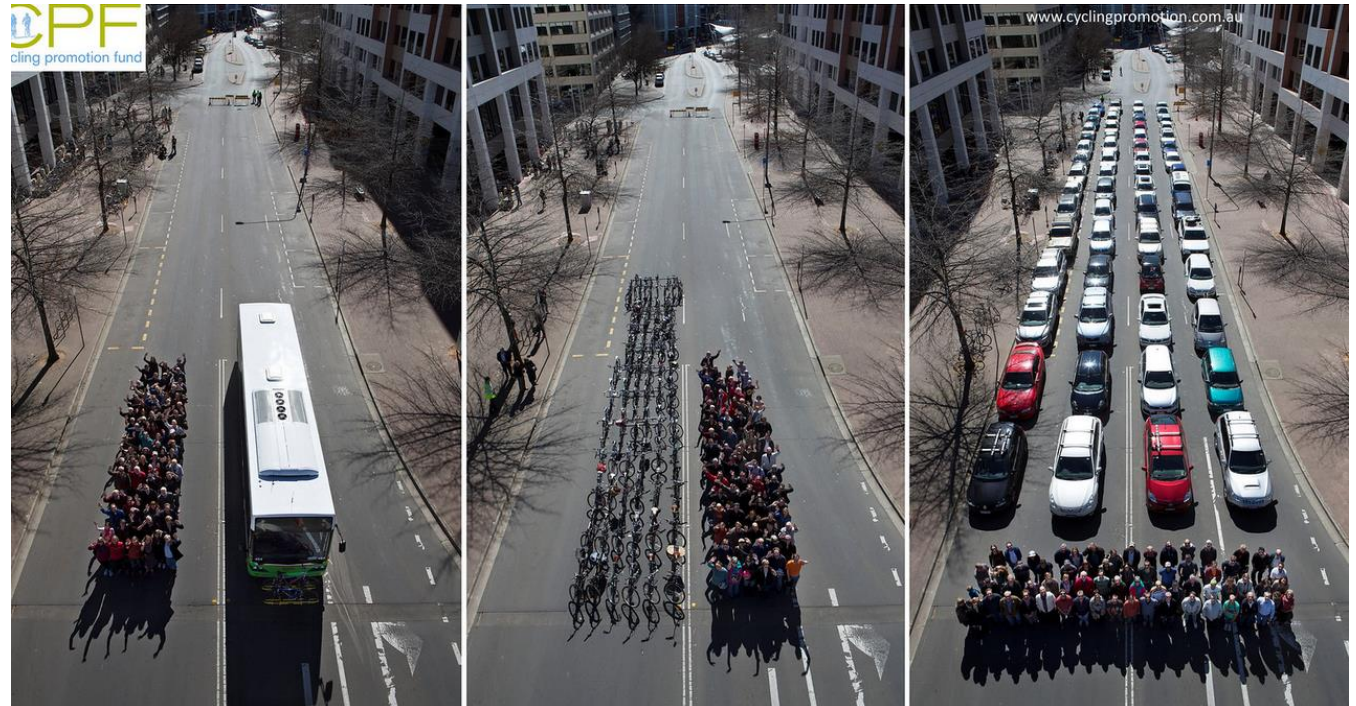
Greenhouse gas emissions

Air quality

Equity

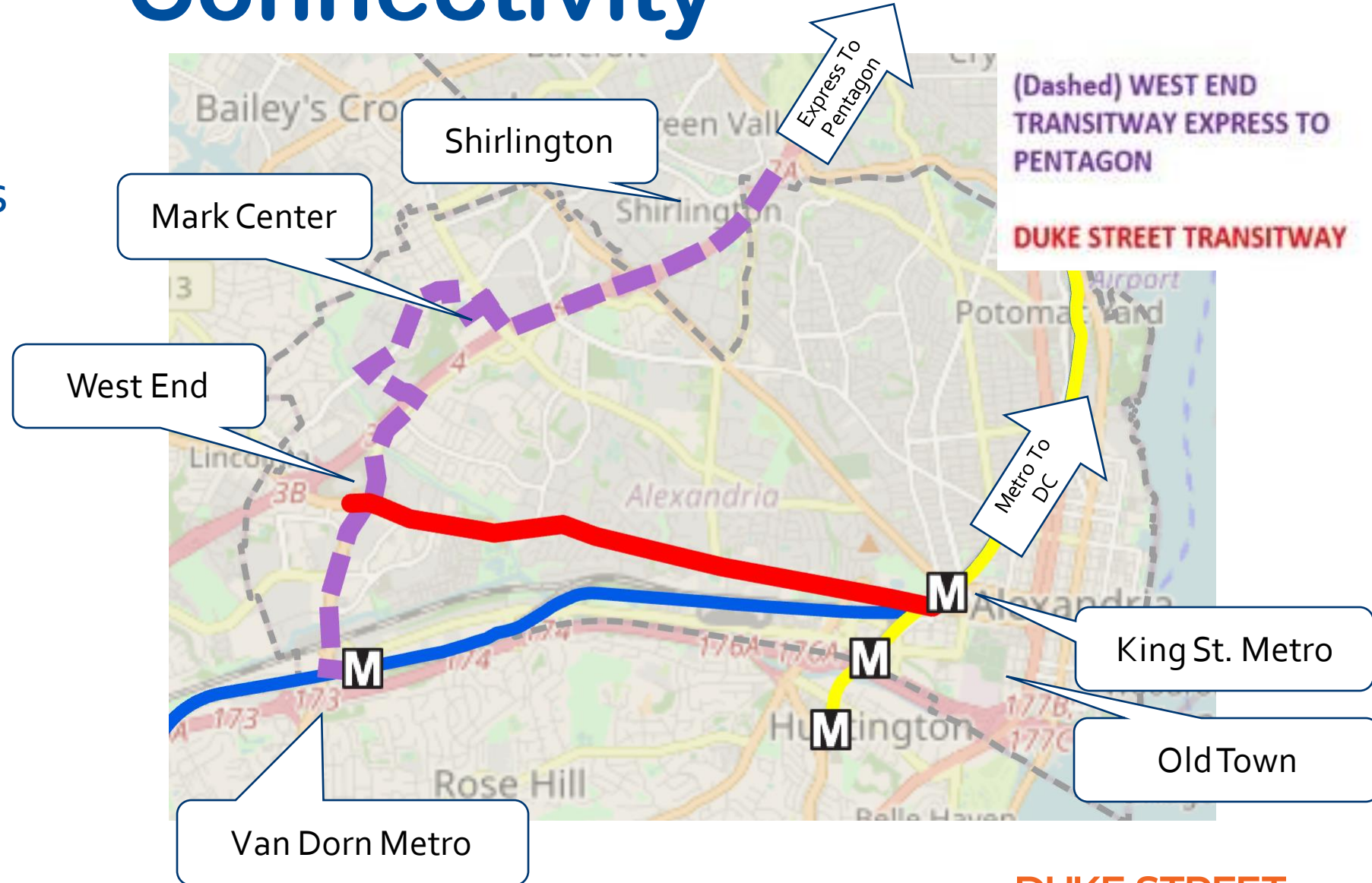
Choices

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

Half the time!

Placemaking and Livability





Segment 3 Overview

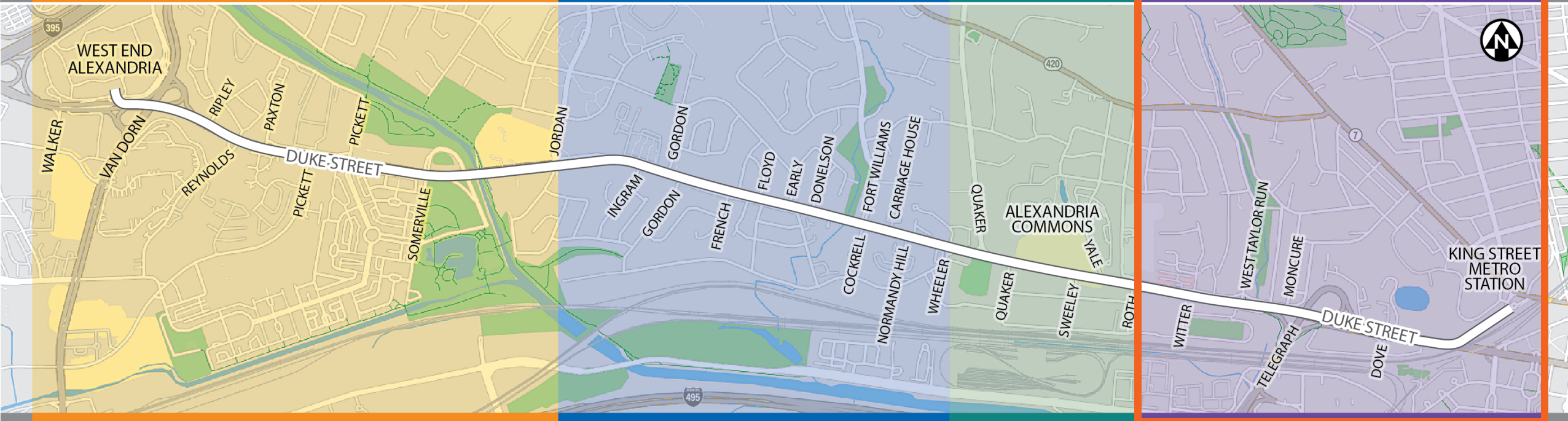
Corridor Segments

SEGMENT 1 - West End Alexandria to Jordan

SEGMENT 2A - Jordan to Wheeler

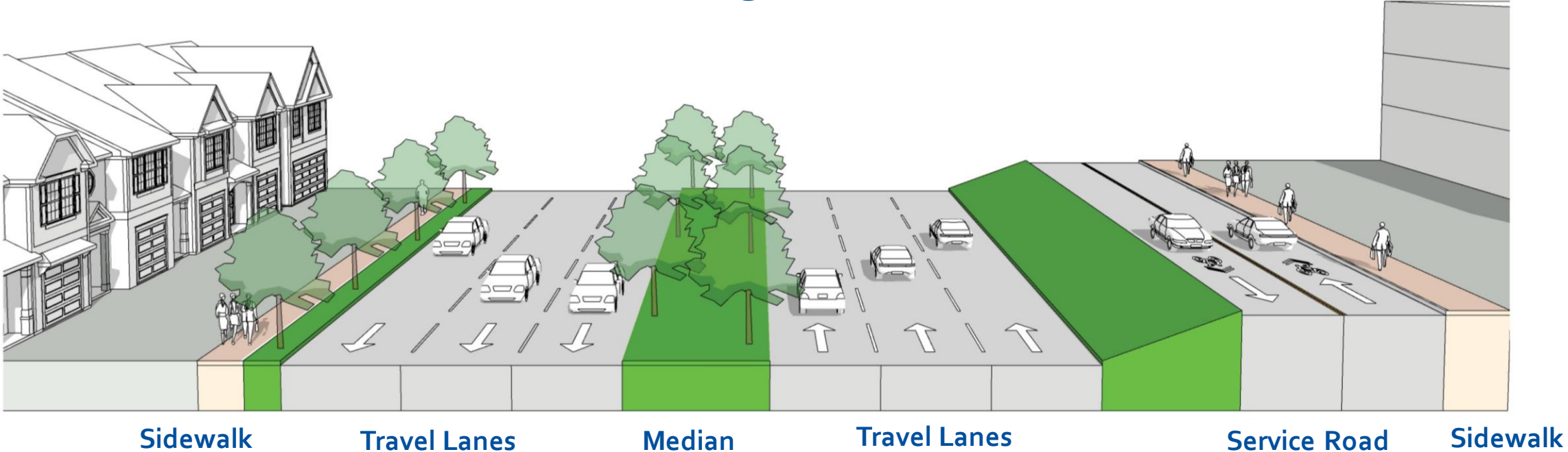
SEGMENT 2B Wheeler to Roth

SEGMENT 3 - Roth to King St Metro Station

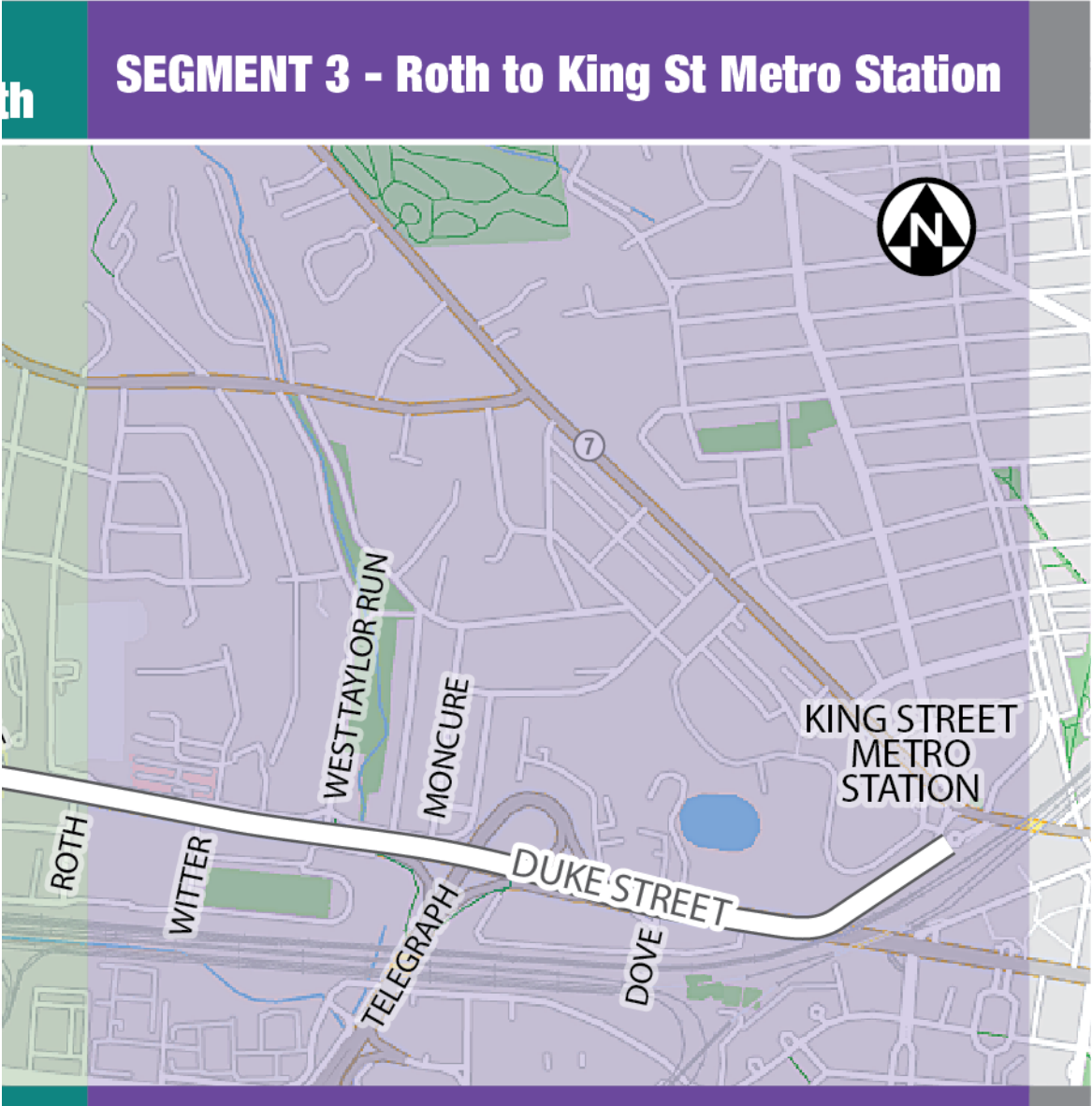


Segment 3: Roth Street to King Street Metro

Duke Street between W. Taylor Run and Witter Drive
(looking west)



Segment 3: Roth Street to King Street Metro



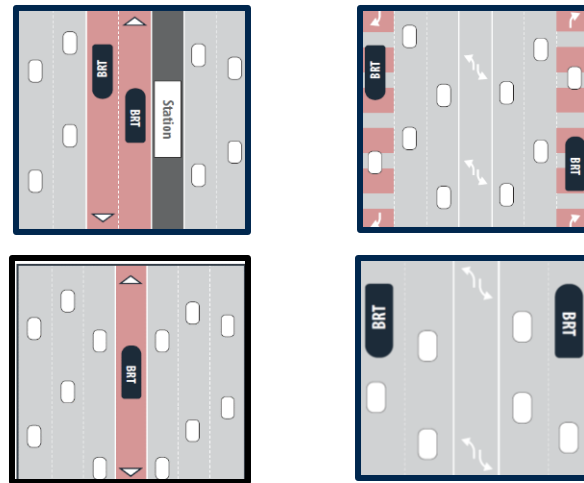


Segment 3 Concepts

Street Design Concepts

Busway *and* Curb Features

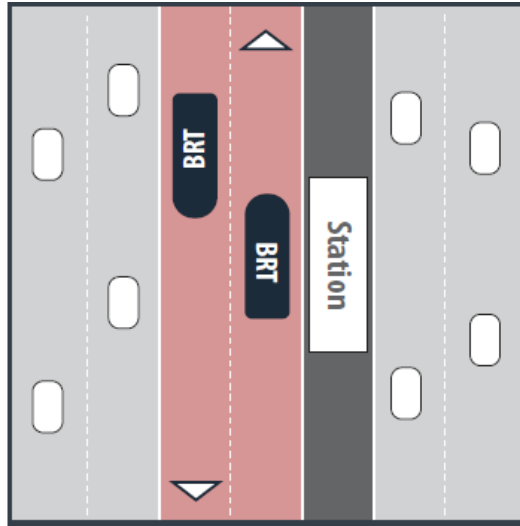
Step 1: Busway



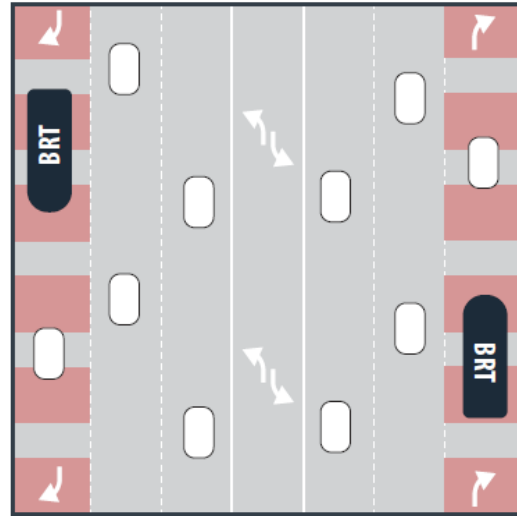
Step 2: Curb features



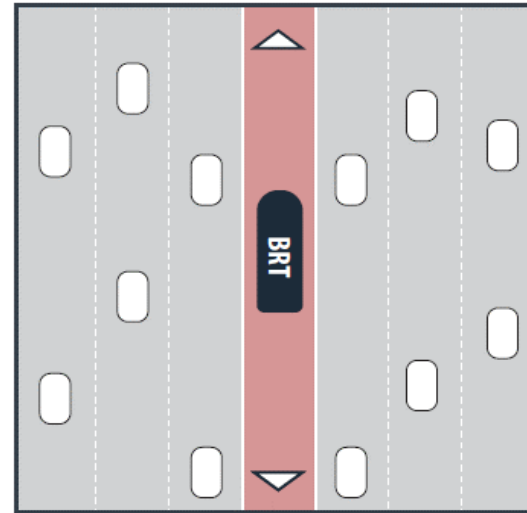
Bus Improvements Can Take Different Forms



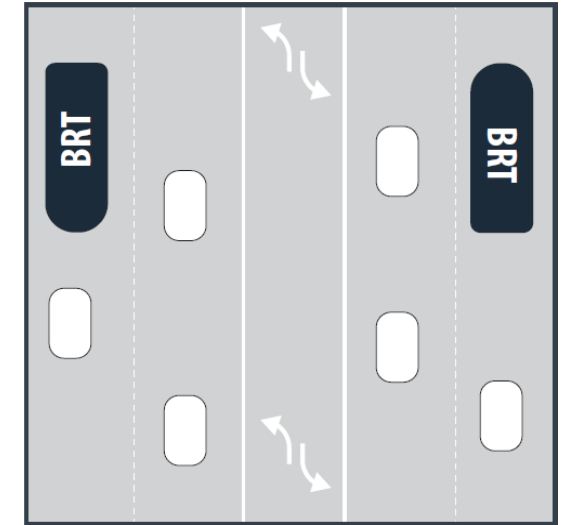
Center Running



Curb Running



Bidirectional Lane



Mixed Traffic

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

Concept Summary

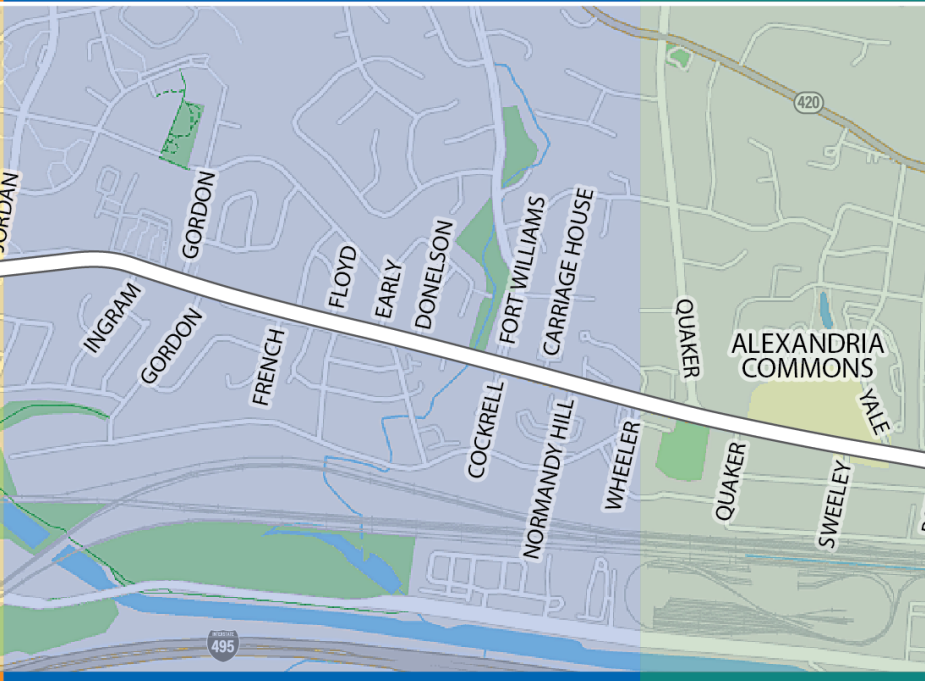
SEGMENT 1 - West End Alexandria to Jordan



Segment 1

- Center running
- Curb running
- Mixed traffic

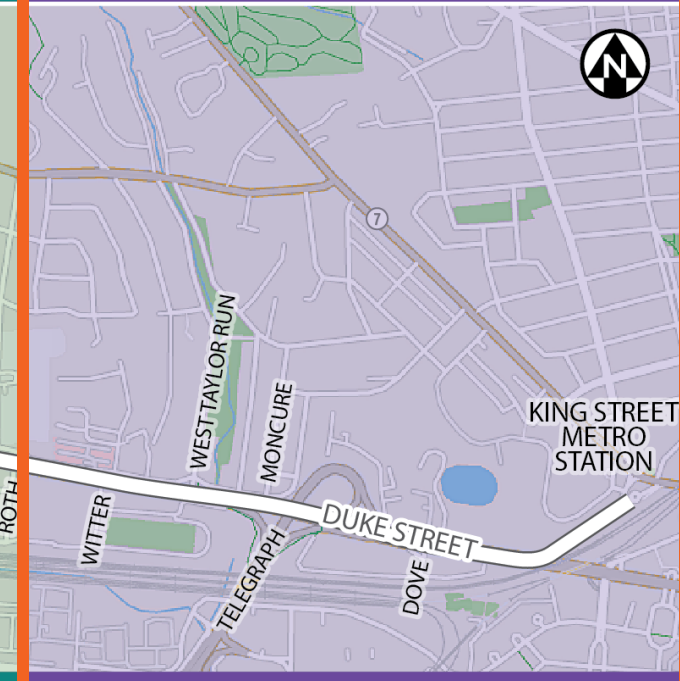
SEGMENT 2A – Jordan to Wheeler



Segment 2A

- Center running
- Hybrid
- Mixed traffic

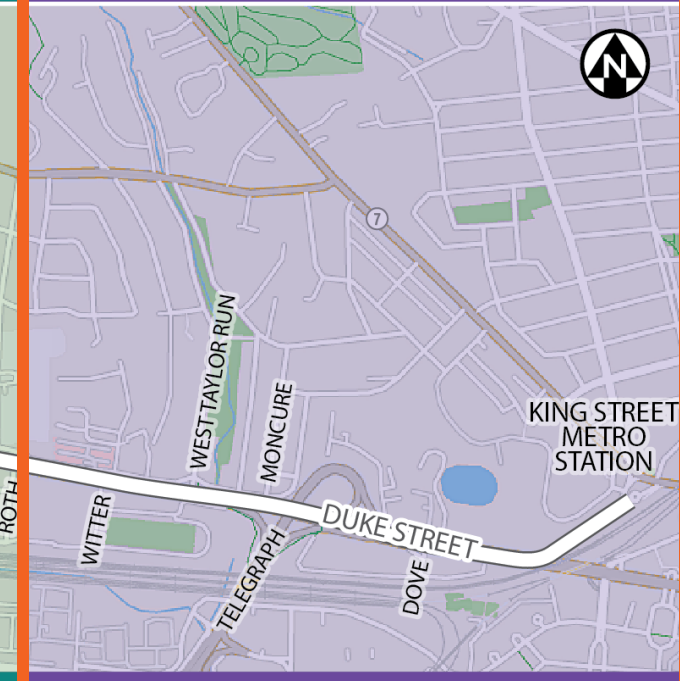
SEGMENT 2B Wheeler to Roth



Segment 2B

- Center running
- Bidirectional
- Mixed traffic

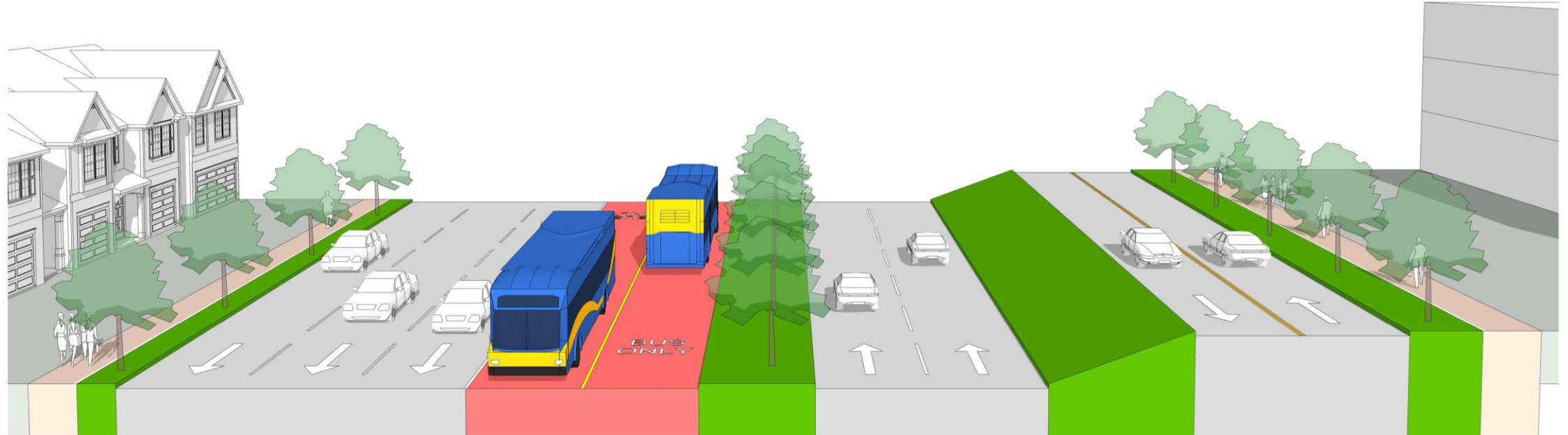
SEGMENT 3 - Roth to King St Metro Station



Segment 3

- Center running
- Curb running
- Mixed traffic

Segment 3: Center Running



*Curb Features

EB Travel Lanes

BRT Lanes

Median

WB Travel Lanes

*Curb Features

Benefits

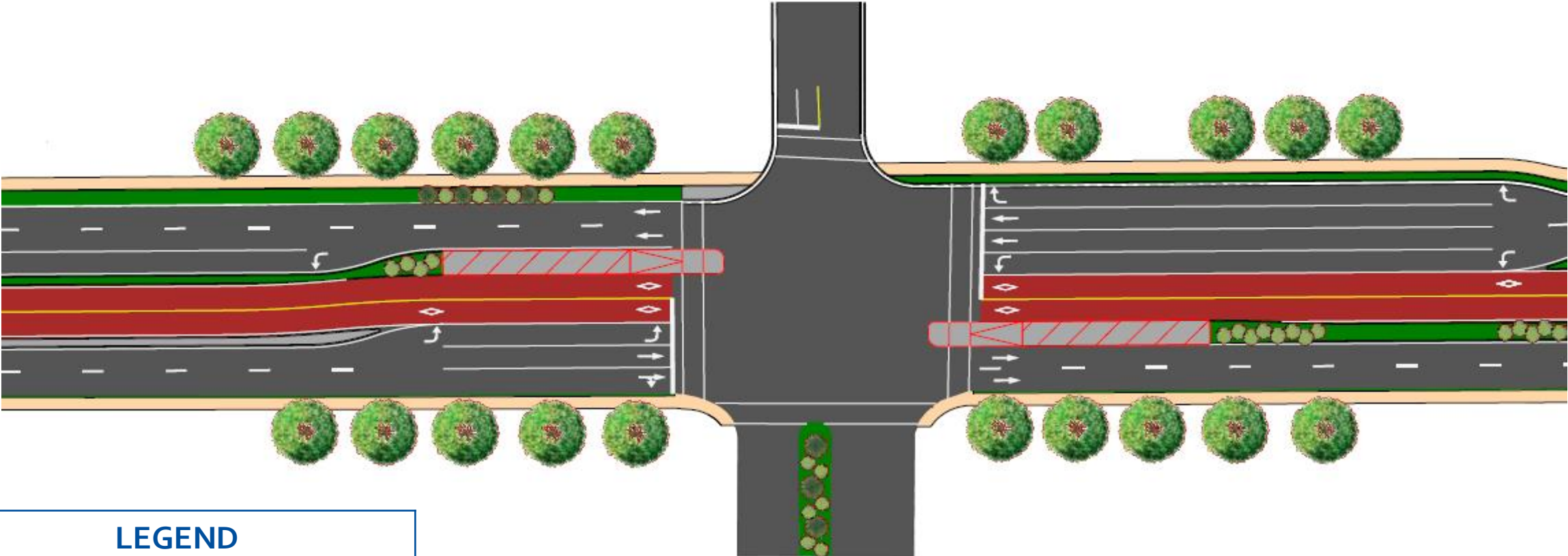
- Best bus reliability, speed, and rider experience
- Separates bus and general traffic
- Shorter crossings to bus

Trade Offs

- Potential increase in vehicle travel time

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

Segment 3: Center Running

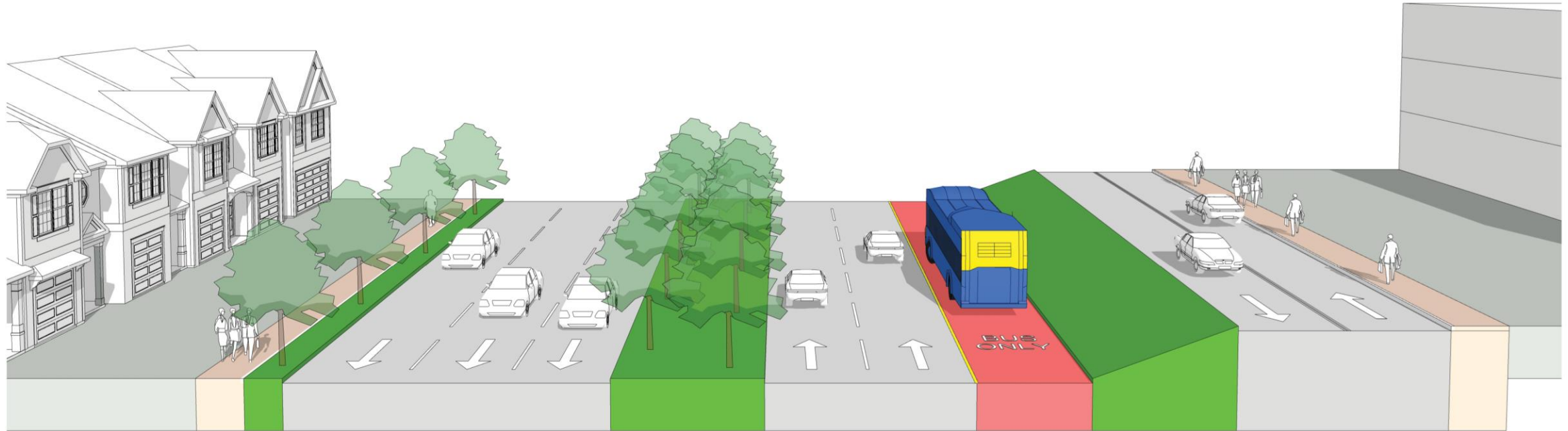


LEGEND

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

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

Segment 3: Curb Running



***Curb Features**

**EB Travel
Lanes**

Median

**WB Travel
Lanes**

**BRT
Lane**

***Curb Features**

Benefits

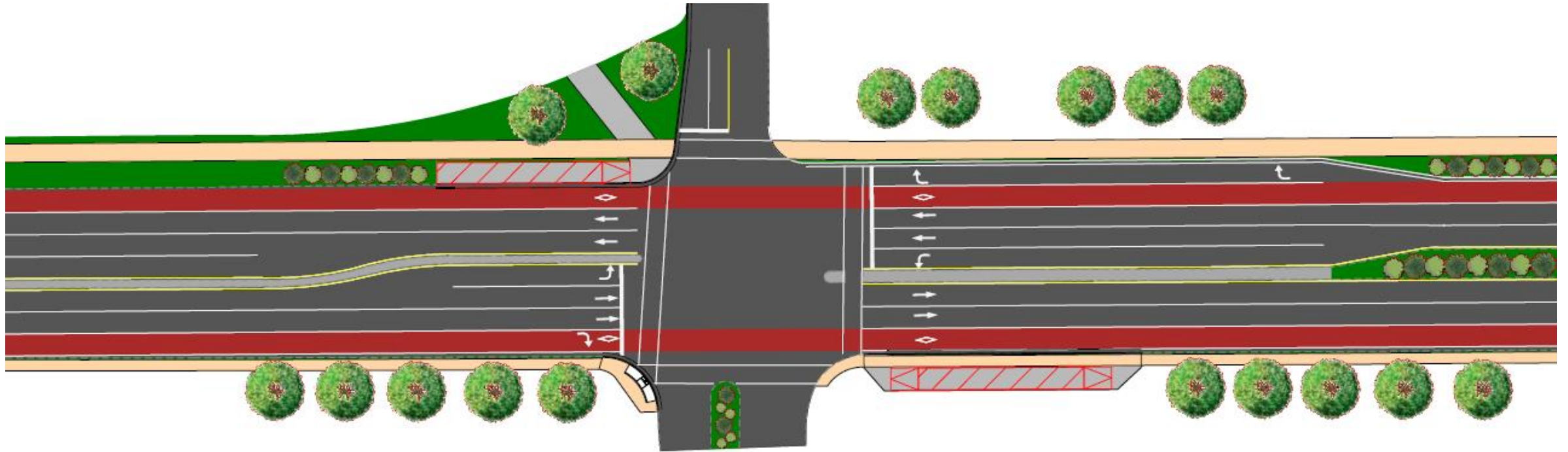
- Improved bus reliability, speed, and rider experience
- Separates bus from most westbound vehicle traffic

Trade Offs





- Potential increase in vehicle travel time (westbound)

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

Segment 3: Curb Running

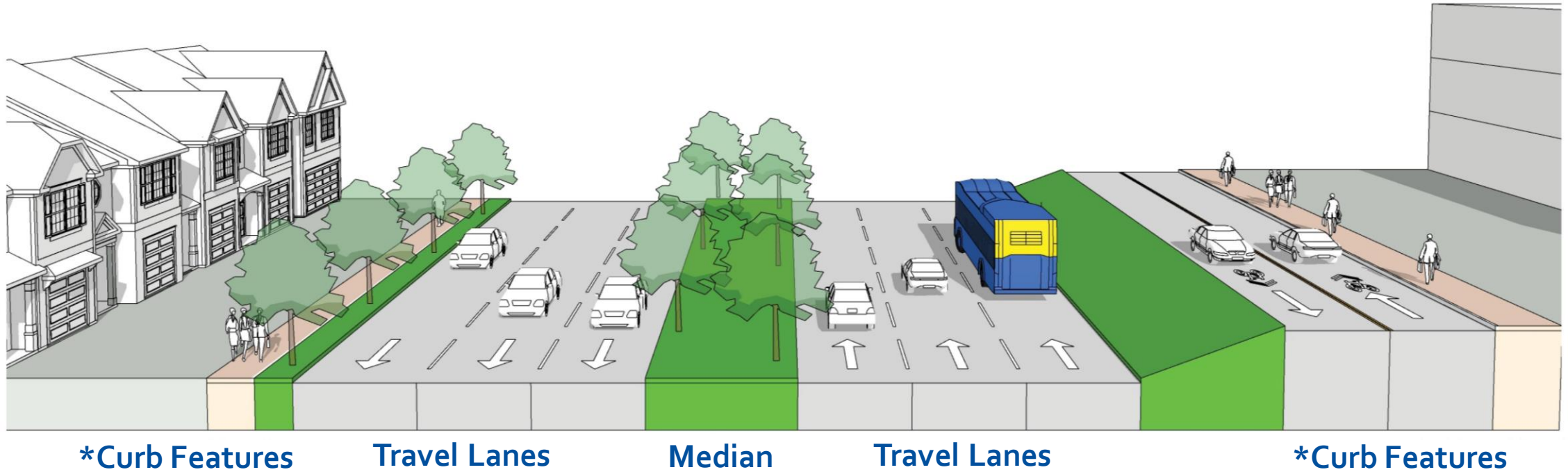


LEGEND

-  BRT Station
-  Bus and Turn Lane
-  Landscaping/Buffer
-  Curb Features*

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

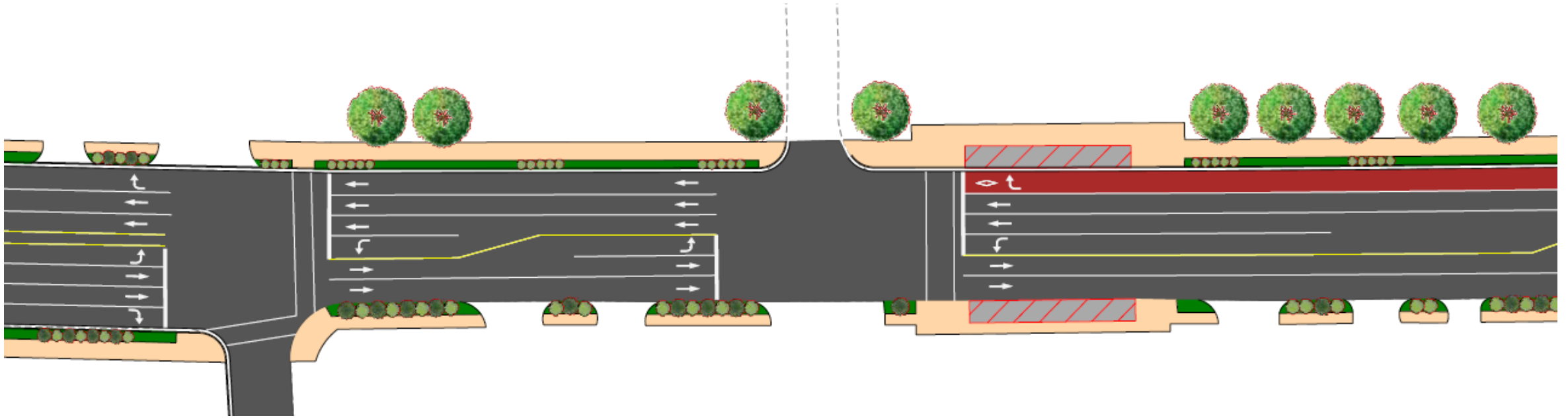
Segment 3: Mixed Traffic



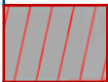



Benefits	Trade Offs
<ul style="list-style-type: none"> • Some improved bus reliability and bus rider experience due to transit signal priority and queue jumps • Spot improvements to vehicle safety 	<ul style="list-style-type: none"> • Limited/reduced improvement to bus operation and reliability • Limited improvements to vehicle safety

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

Segment 3: 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

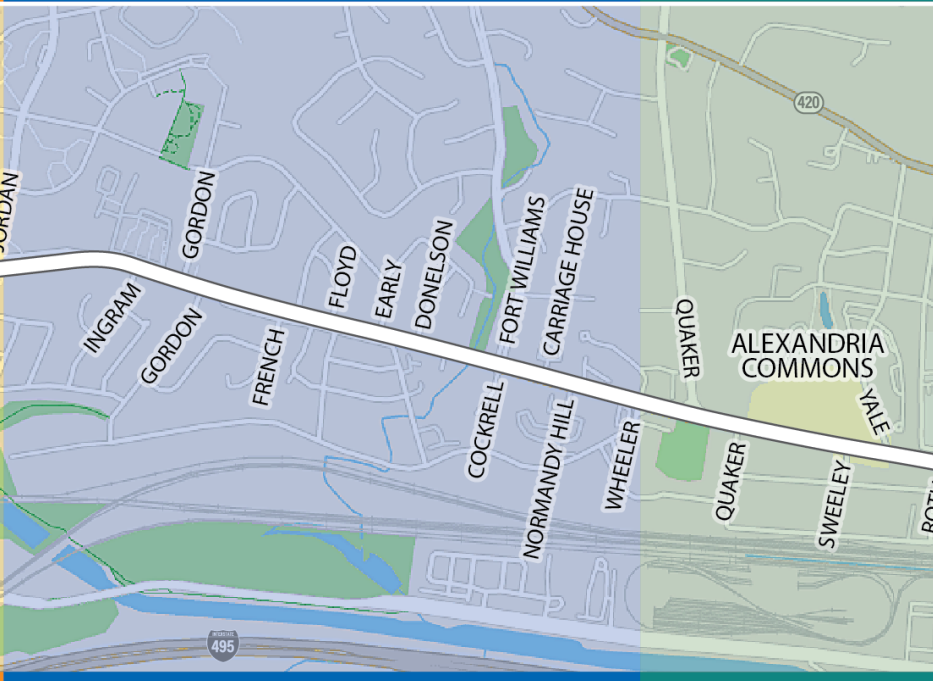
SEGMENT 1 - West End Alexandria to Jordan



Segment 1

- Center running
- Curb running
- Mixed traffic

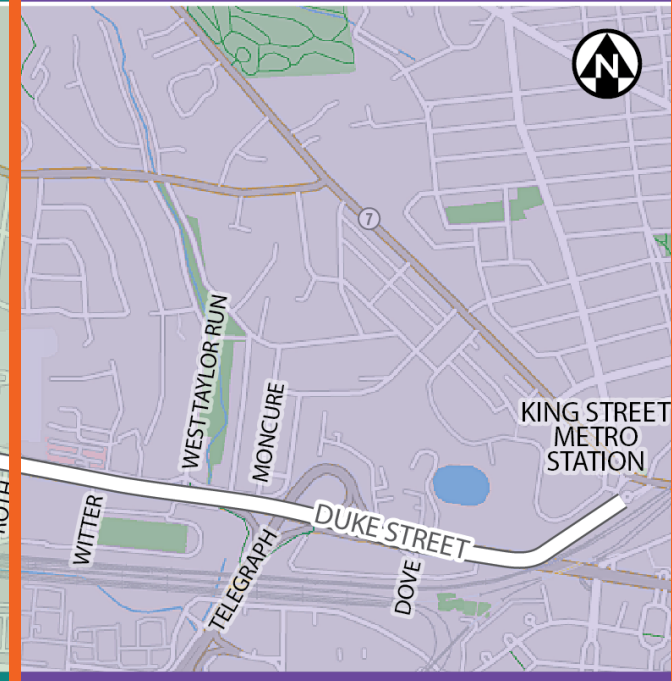
SEGMENT 2A – Jordan to Wheeler



Segment 2A

- Center running
- Hybrid
- Mixed traffic

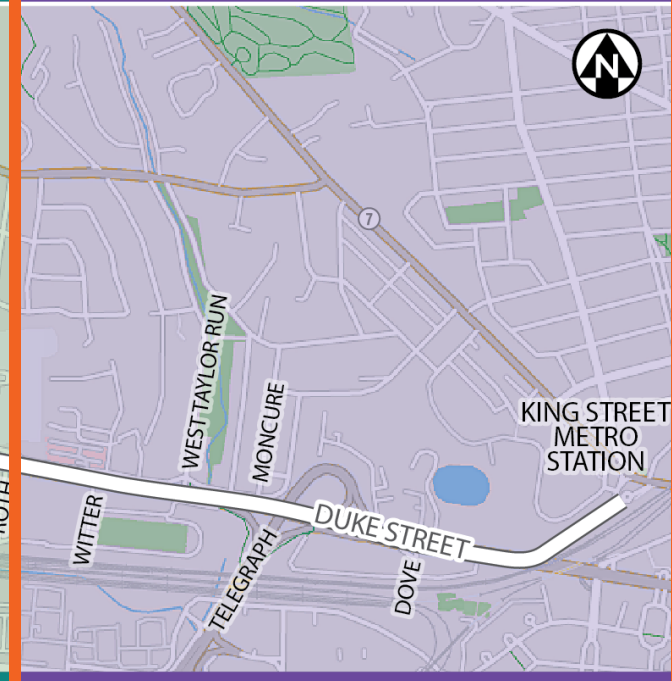
SEGMENT 2B Wheeler to Roth



Segment 2B

- Center running
- Bidirectional
- Mixed traffic

SEGMENT 3 - Roth to King St Metro Station



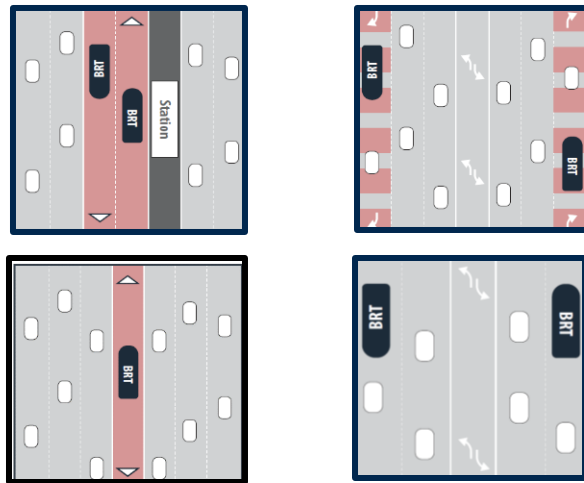
Segment 3

- Center running
- Curb running
- Mixed traffic

Street Design Concepts

Busway and Curb Features

Step 1: Busway



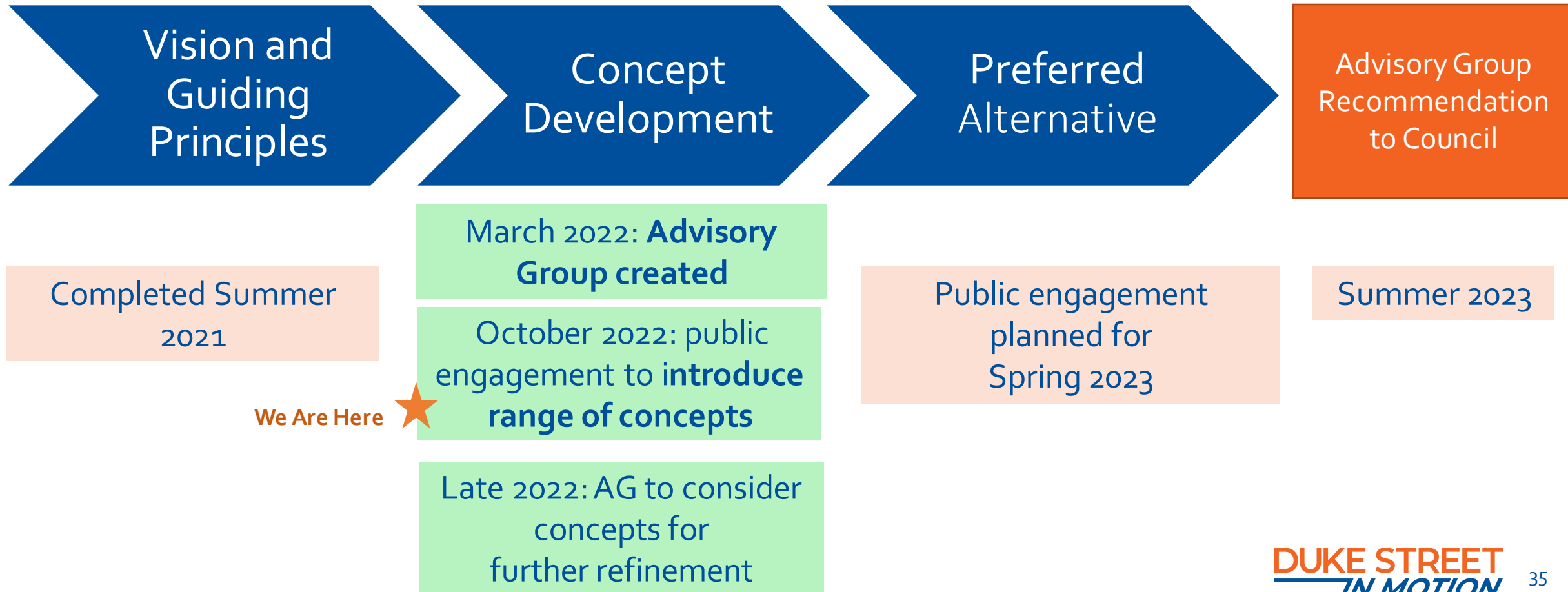
Step 2: Curb features





Next Steps

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