Pennsylvania Avenue SE Corridor Study

Study Overview

PENN AVE SOUTHEAST
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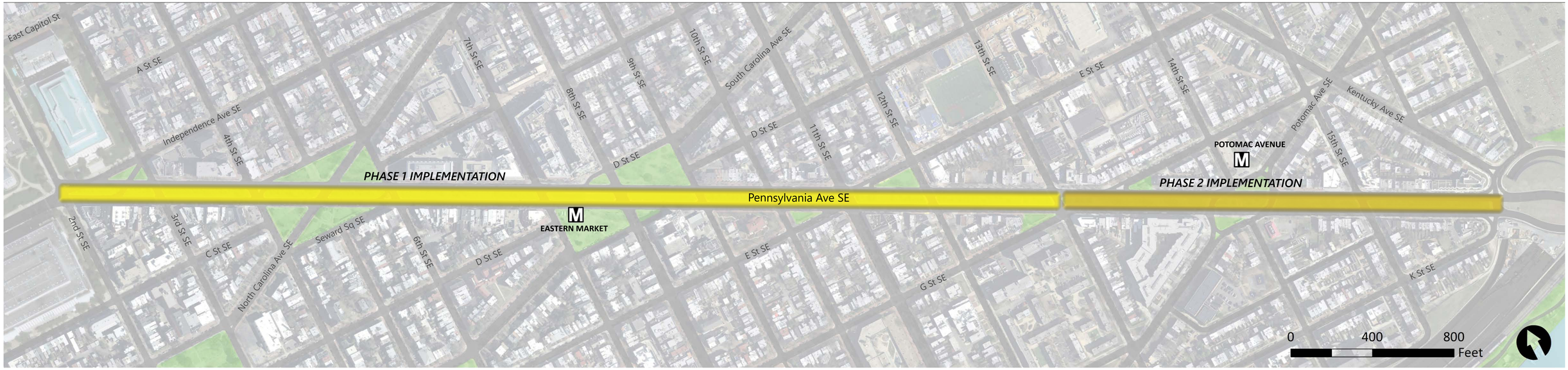

The goal of the Pennsylvania Avenue SE Corridor Study is to redesign the corridor to provide for safer, more accessible multimodal transportation options.

Project Objectives

- Improve mobility, transportation safety, and options for all users
- Provide comfortable, intuitive separated bike lanes
- Evaluate opportunities to prioritize buses
- Equitably reorganize the roadway and curbside for all modes with a cohesive approach to curbside management
- Ensure the project is compatible with planned improvements at Potomac Avenue SE

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Planning Considerations

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Project Schedule

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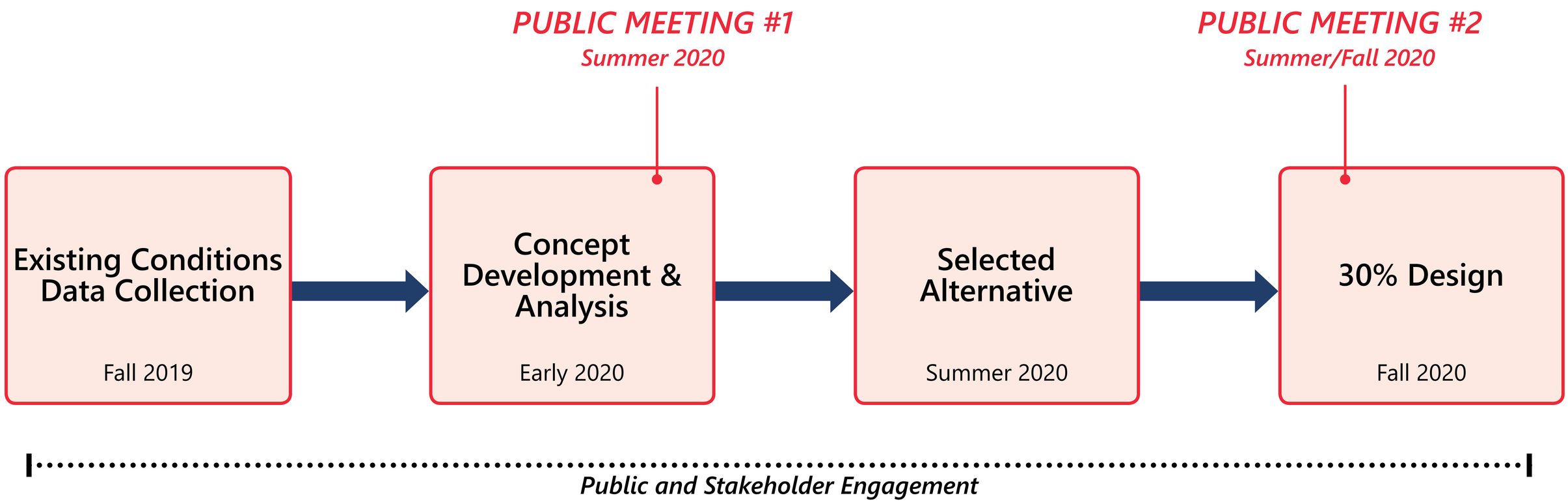

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Existing Bike Network

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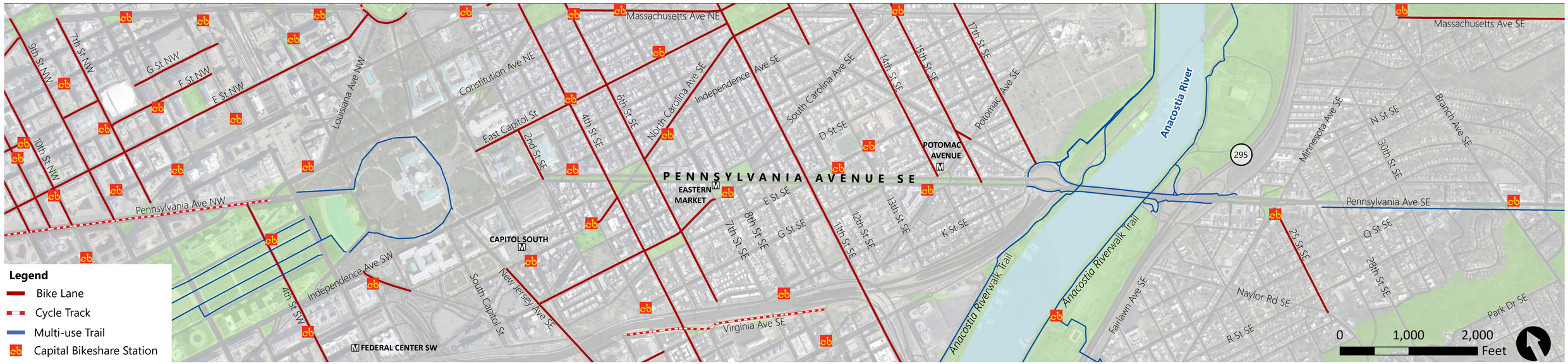

- Identified for a dedicated bike facility in moveDC
- Corridor categorized as very uncomfortable for most cyclists due to lack of dedicated facility on a high-volume roadway
- Missing link in bike network that would provide key connection between DC core and Capitol Hill neighborhood, Wards 7 & 8
- Multiple Capital Bikeshare stations on corridor, high demand for bike parking at Metro stations

Note: Existing Conditions are based on data and observations from 2019 and reflect pre-COVID-19 mobility conditions.

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Existing Bus Service

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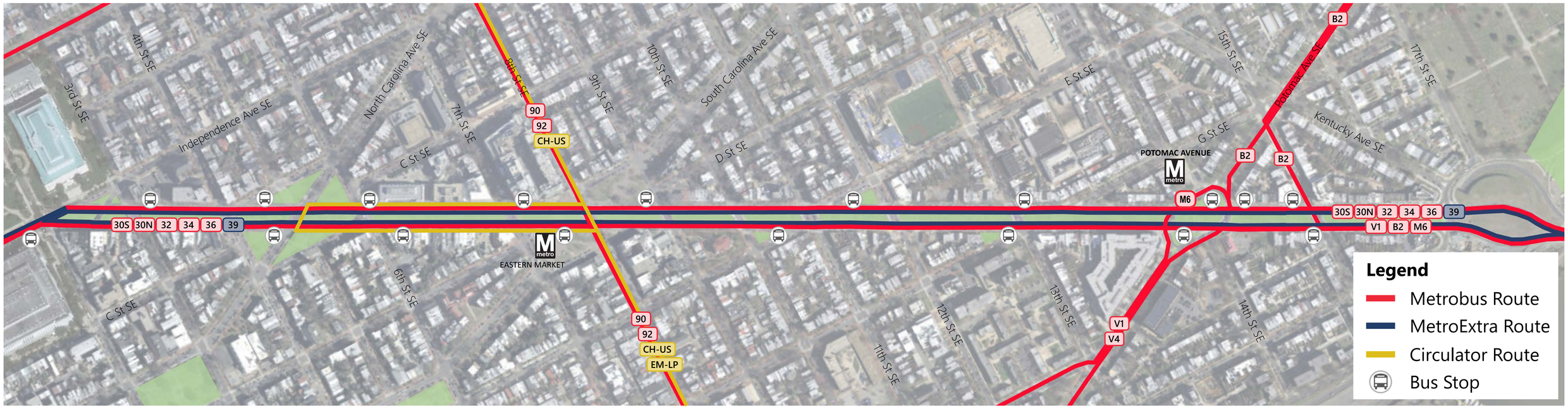

- Identified in moveDC as a high-capacity transit corridor and is in WMATA's Priority Corridor Network
- Important corridor for transit, including the 30s Metrobus line
- Bus routes travelling along Pennsylvania Avenue SE serve almost 22,000 riders each day across the entire route
- Up to 18 buses per hour in the AM peak and 24 buses per hour in the PM peak travel along Pennsylvania Avenue SE

Note: Existing Conditions are based on data and observations from 2019 and reflect pre-COVID-19 mobility conditions.

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Existing Bus Performance

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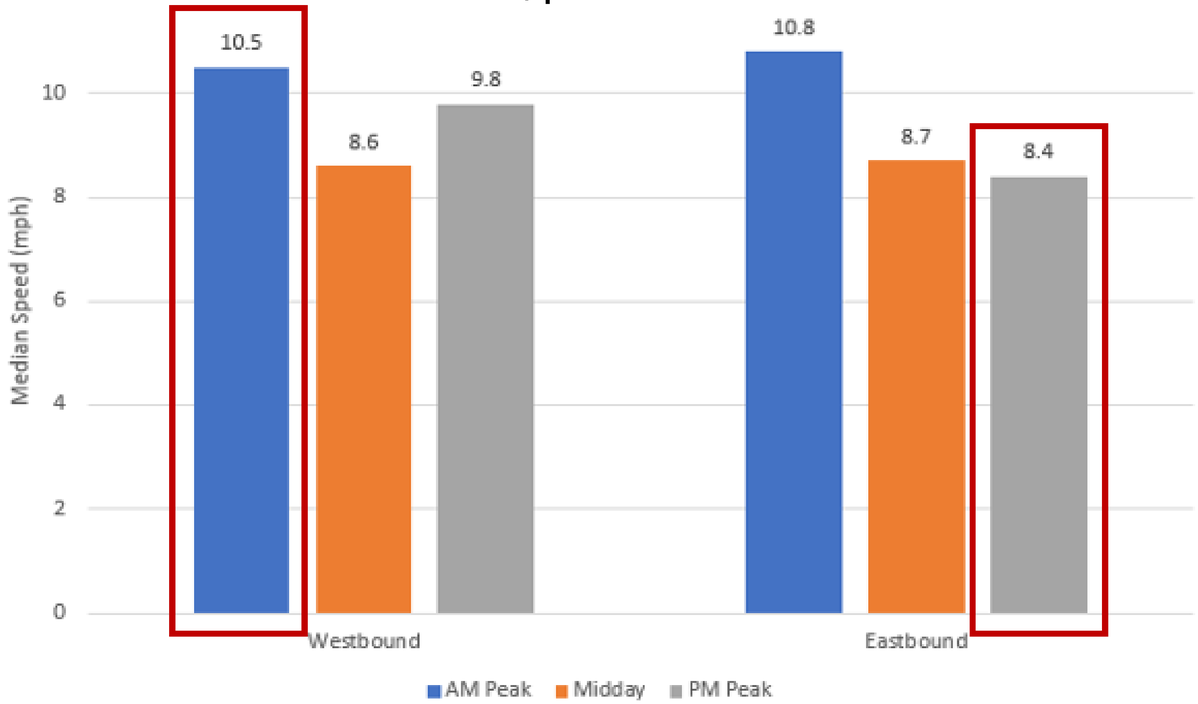
- Bus speeds range from 8 to 11 mph (for comparison, the average bus speed in the District is 10.1 mph)
- Reliability is poor: Metrobus Report Card graded the corridor an "F" for schedule adherence
- This project seeks to explore opportunities to provide bus priority improvements, like bus lanes, to help make transit faster and more reliable.

Median Bus Speed

Peak hour, peak direction outlined in red



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Curbside Management

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Existing Curbside Regulations and Curbside Observations

Curbside Management Opportunities

- Right-sizing bus zones
- Relocating and right-sizing loading zones
- Designating flex-zones for pick-up/drop-off/deliveries

Note: Existing Conditions are based on data and observations from 2019 and reflect pre-COVID-19 mobility conditions.

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Why Separated Bike Lanes?

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Comfort and Safety Perception

Dedicated space and separation provides **greater comfort** and perceived **safety benefits**

Increased Demand

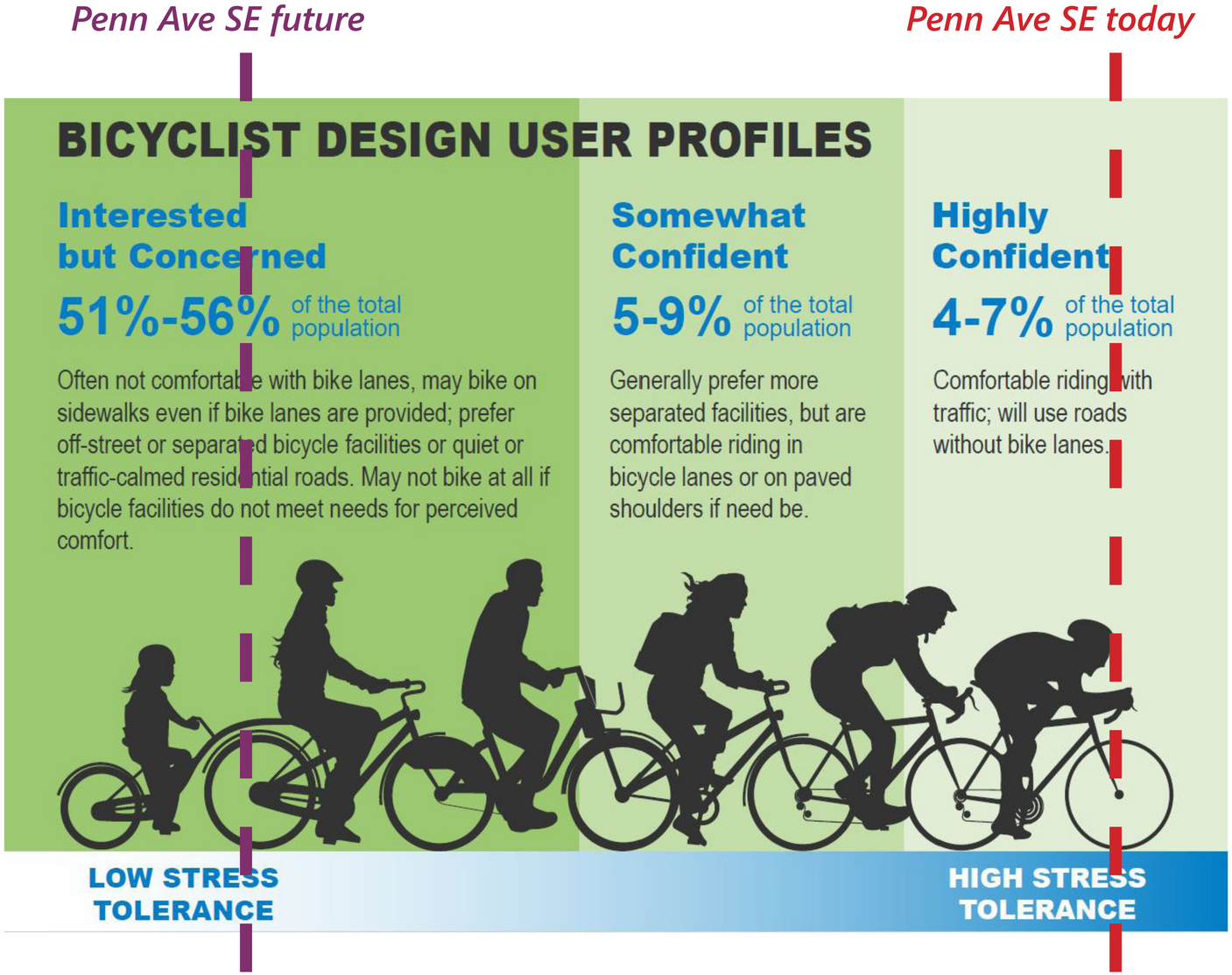
Separated Bike Lanes **attract both new riders and rerouted trips** due to comfort level and direct route

Win-Win

Separated Bike Lanes provide intuitive allocation of roadway space that **benefits all road users**

Livability and Economic Development

Separated Bike Lanes improve neighborhood desirability, **business patronage**



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How Did DDOT Identify the Three Candidate Alternatives?

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Key Design Principles for Penn Ave SE

- Enhance Safety & Multimodal Operations
- Minimize Cost & Implementation Challenges
- Utilize DC Property & Right-of-Way
- Facilitate Curbside Opportunities & Equity

Nine preliminary bike lane options developed based on input from ANC 6B.

Preliminary options evaluated based on key design principles that align with project goals and objectives.

Fails to Meet Key Design Principles

Eliminated from Consideration

Preliminary options that failed to meet one or more key design principles

Buffered Bike Lanes

Median Trail

Separated Bike Lanes on Outside Curb (no on-street parking)

Two-way Cycle Track on Outside Curb

Two-way Cycle Track Adjacent to Median

Raised Curbside Bikeway (Repurposing Portion of Sidewalk)

Meets Key Design Principles

Advanced to Analysis Phase

Preliminary options that met all 4 key design principles

Alternative A: Separated Bike Lanes on Outside Curb (Peak-restricted On-street Parking)

Alternative B: Separated Bike Lanes on Outside Curb (Full-time On-street Parking)

Alternative C: Separated Bike Lanes Adjacent to Median

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Alternatives Matrix

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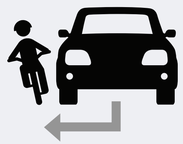
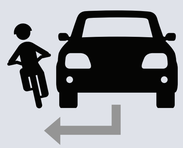
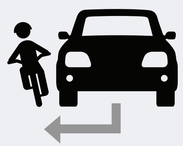
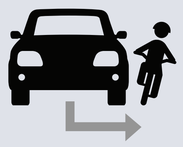
Alternative Description	Continuous Separation of Bike Lane	Cyclist Conflicts with Turning Vehicles at Intersections	Cyclist Experience	Bus Rider Access to Bus Stops	Bus Performance	Parking	Traffic Operations		Curbside Regulations and Infrastructure
No Build No dedicated bike lane	 0% of corridor features separation	 No protection from turning vehicles	 No dedicated bike lane	 Riders board at curbside at existing bus stops	 High-frequency service with poor reliability	 Approximately 280 existing spaces	 Potential for increased delay at 2 intersections during peak hour		 Inconsistent distribution of curbside designations and uses Frequent violation of curbside regulations (e.g., double-parking)
Alternative A Separated Bike Lanes with Peak-Restricted Parking	 100% of corridor features separation	 Protected bike phase at 1 intersection with high volume right-turn conflicts (>150 vph)	 Separated Bike Lane Cyclists must yield to bus riders at bus stops	 Riders may share space with bike lane while boarding bus	 Option for dedicated peak-direction bus lane would improve bus speeds and reliability	 Parking prohibited in one direction during peaks (~140 spaces) Off-peak parking unchanged	 Without Bus Lane Option: Potential for increased delay at 1 intersection during peak hour	 With Bus Lane Option: Potential for increased delay at 9 intersections during peak hour	 Allows for reorganization of curbside Requires some new bus stop configurations
Alternative B Separated Bike Lanes with Full-time Parking	 100% of corridor features separation	 Protected bike phase at 1 intersection with high volume right-turn conflicts (>150 vph)	 Separated Bike Lane	 Riders cross bike lane to reach floating bus platform	 Buses travel in mixed-traffic and likely would get slower and less reliable.	 Minimal or no parking losses	 Potential for increased delay at 12 intersections during peak hour		 Allows for reorganization of curbside Requires some new bus stop configurations
Alternative C Median-adjacent Separated Bike Lanes with Peak-Restricted Parking	 100% of corridor features separation	 Protected bike phase at 5 intersections with high volume left-turn conflicts (>75 vph) Left-turn restriction at 1 intersection	 Separated Bike Lane Traffic turning left and queuing in median may impact cyclists	 Riders board at curbside	 Option for dedicated peak-direction bus lane would improve bus speeds and reliability	 Parking prohibited in one direction during peaks (~140 spaces) Off-peak parking unchanged	 Without Bus Lane Option: Potential for increased delay at 1 intersection during peak hour	 With Bus Lane Option: Potential for increased delay at 9 intersections during peak hour	 Allows for reorganization of curbside

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Bus Stop Treatments

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Alternative A

Raised bus stop landing in bike lane

Alternative B

Floating bus stop

Alternative C

Curbside bus stop

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