

# STATION 1

## WELCOME



BL

OR

SV

CAPACITY &  
RELIABILITY STUDY

# WELCOME!

## THE FUTURE OF THE **BLUE**, **ORANGE**, AND **SILVER** LINES BEGINS WITH YOU!

To meet the demands of a growing region, Metro is studying ways to improve service on these three lines in order to:

- Better serve our customers
- Improve reliability
- Meet future ridership demand
- Achieve environmental and cost goals

Visit the exhibits at each station to learn more and share your ideas and feedback.

*Share your input at stations  
whenever you see this symbol*



# STATION 2

## NEEDS & PROCESS

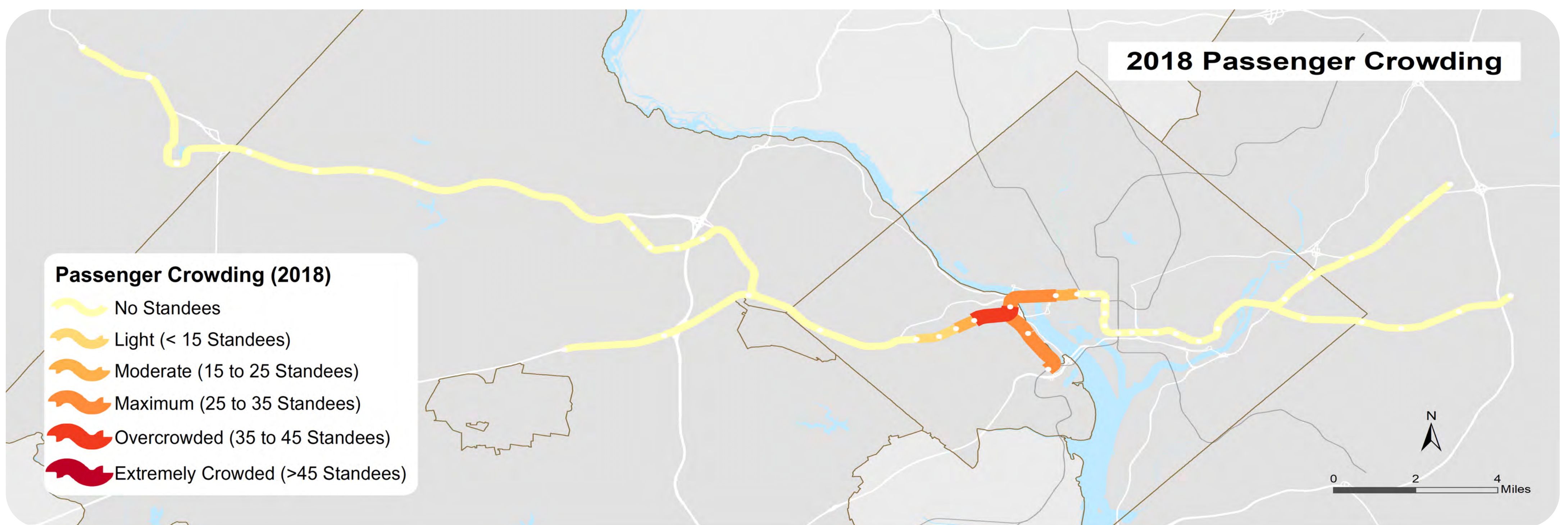


# CURRENT NEEDS

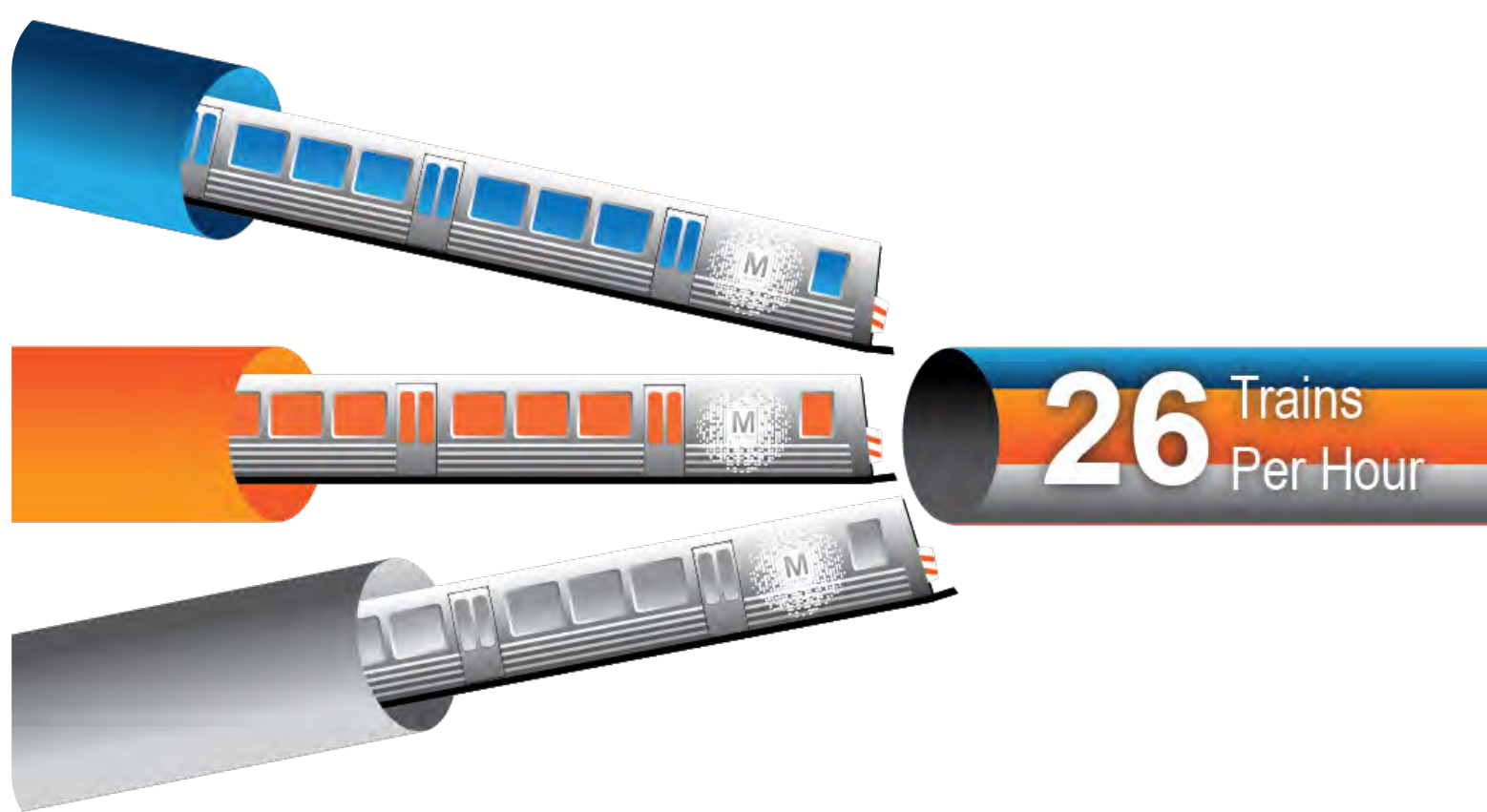
The Blue, Orange, and Silver (BOS) lines share the same tunnel between Rosslyn and Stadium-Armory, and this limits Metro's ability to:

- Run enough trains to meet ridership demand
- Manage construction and recover from disruptions
- Operate different service patterns

We are currently exploring potential solutions to these issues and need your input.

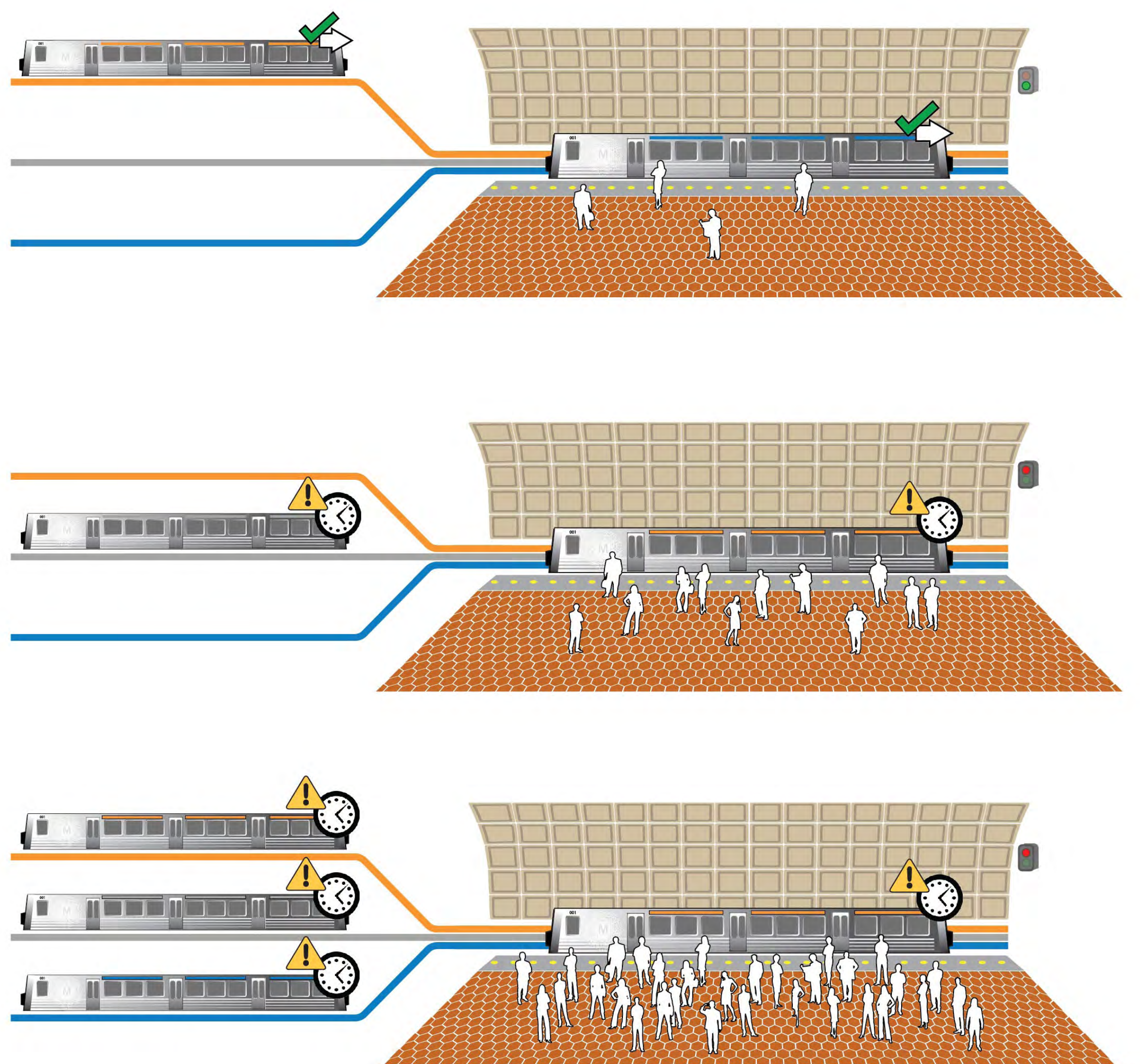


*Peak-hour trains between Court House and Rosslyn are already crowded.*



*Metro can run only 26 trains per hour through the tunnel. This limits our ability to increase service on any line in order to keep pace with ridership.*

*Running three lines through one tunnel means that a delay on one line impacts all three.*

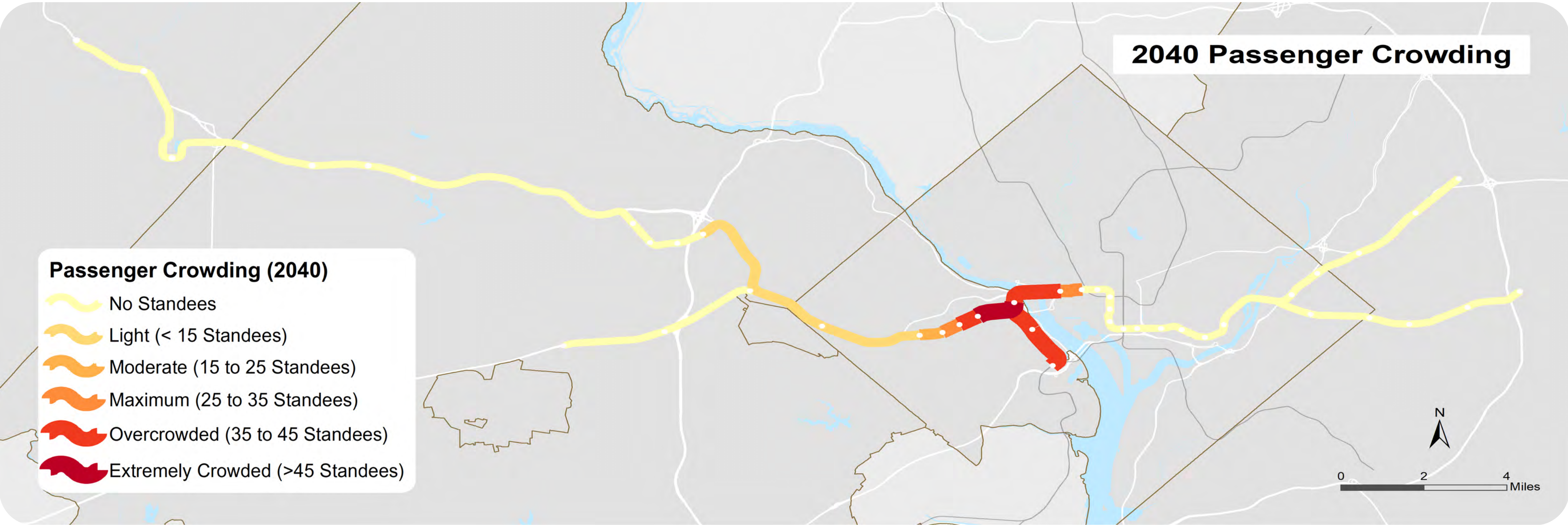




# FUTURE NEEDS

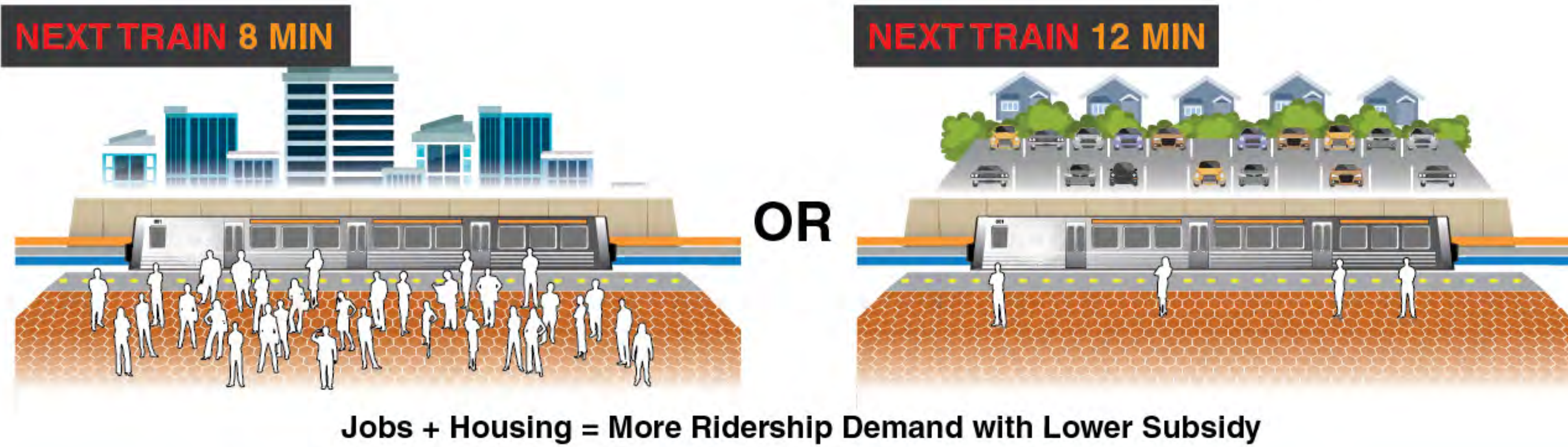
Continued growth in jobs and households will increase ridership, but Metro will not be able to run enough trains to meet that demand.

By 2040, expect an 18% increase in daily ridership on the Blue, Orange, and Silver lines.



That growth will lead to severe crowding on the Blue, Orange, and Silver lines in the system's core. Moving to all 8-car trains and higher frequencies will help, but not enough. We need to be able to operate more than 26 trains per hour to meet future demand.

More flexible transit operating strategies and/or changes in development patterns are needed to make Metro service more cost-effective.





# STUDY GOALS



## GOAL 1: PROVIDE SUFFICIENT RAIL CAPACITY TO SERVE RIDERSHIP DEMAND

- Deliver optimal railcar passenger loads that minimize overcrowding.
- Safely and efficiently accommodate passenger and transfer demand.
- Increase capacity to better serve east-west travel.



## GOAL 2: IMPROVE RELIABILITY AND ON-TIME PERFORMANCE

- Maintain or increase the percentage of trains arriving on-time.
- Maintain or increase percentage of customers completing trips on time.
- Minimize the number of significant trip delays.



## GOAL 3: IMPROVE OPERATIONAL FLEXIBILITY AND COST-EFFICIENCY

- Minimize the travel-time impacts of disruptions.
- Minimize the number of rail cars with very high or very low loads.
- Provide flexibility to match service levels to changes in ridership.



## GOAL 4: PROVIDE TRANSPORTATION OPTIONS THAT REDUCE ENVIRONMENTAL IMPACTS AND STRENGTHEN METRO'S FINANCES

- Increase the number of transit riders.
- Enhance passenger safety and convenience.
- Support Transit-Oriented Development (TOD) and improved transit access.



# PRIORITY OUTCOMES

The study team and our external stakeholders have identified several objectives and outcomes to address capacity, reliability, flexibility and sustainability on the Blue, Orange and Silver lines.



**What are YOUR priorities? Place dots next to the three priorities that are most important to you.**

- Less crowding
- Minimizing the impacts of service disruptions
- Fewer transfers between rail lines
- Better on-time performance
- More frequent service
- Shift more trips from cars to transit
- Encouraging transit-oriented development in the region
- Provide more cost-effective service by matching train frequency to ridership demand
- Expanding the Metro system/workforce connections with new lines and stations



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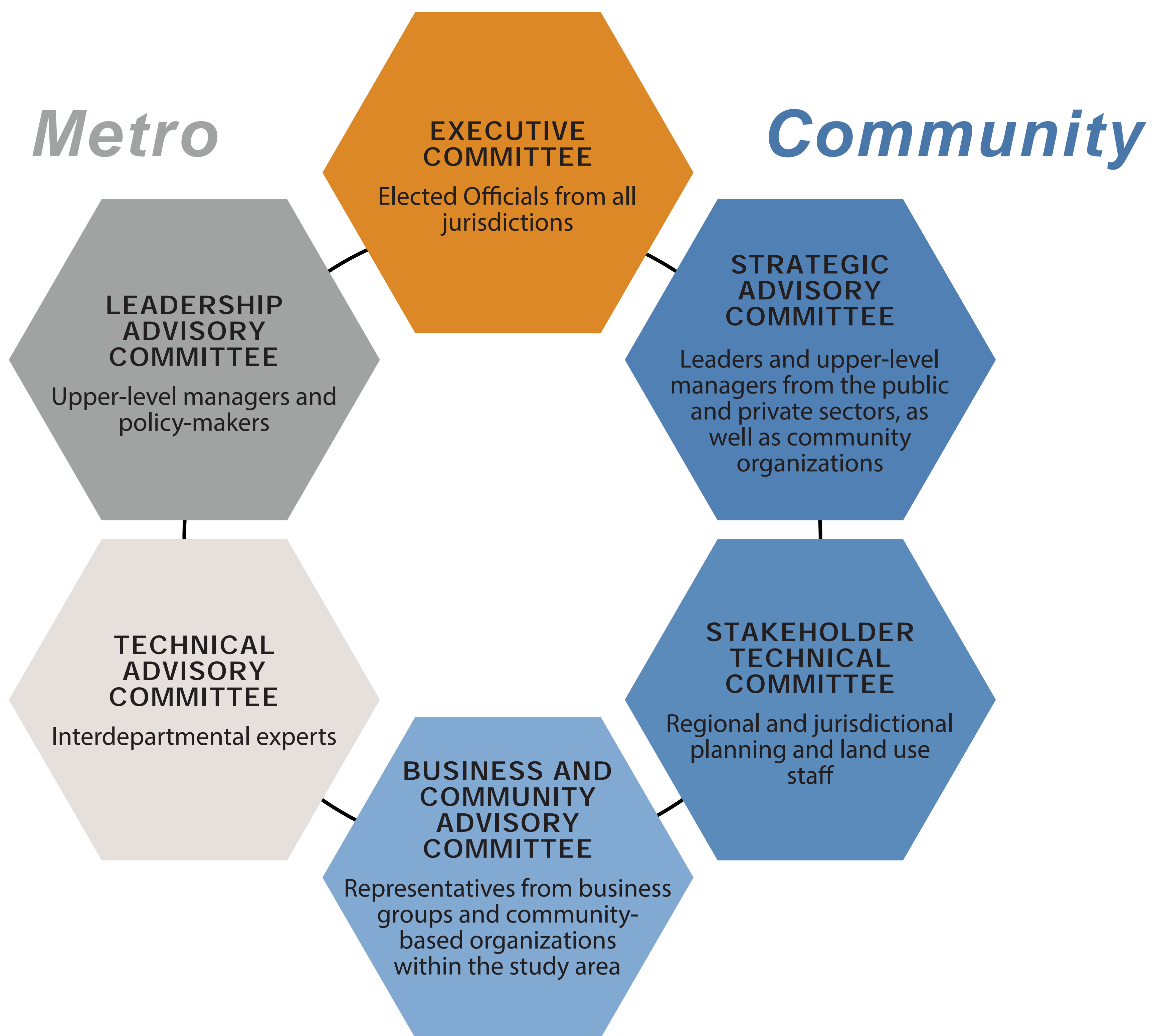
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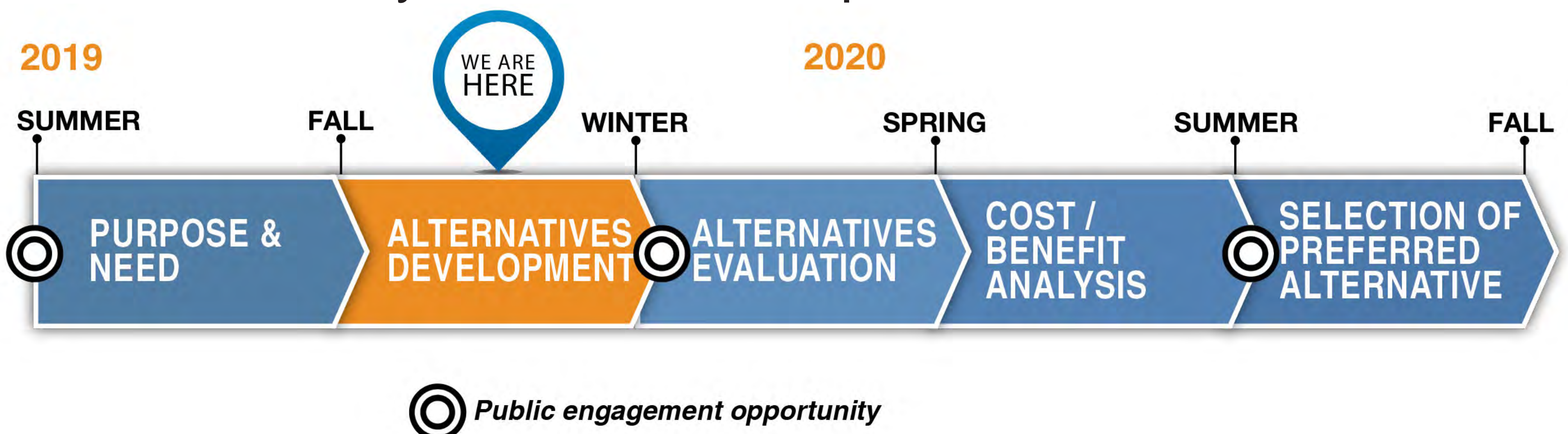
# STUDY PROCESS

## STAKEHOLDER COMMITTEES



## PROJECT SCHEDULE

The BOS Study consists of 5 steps:

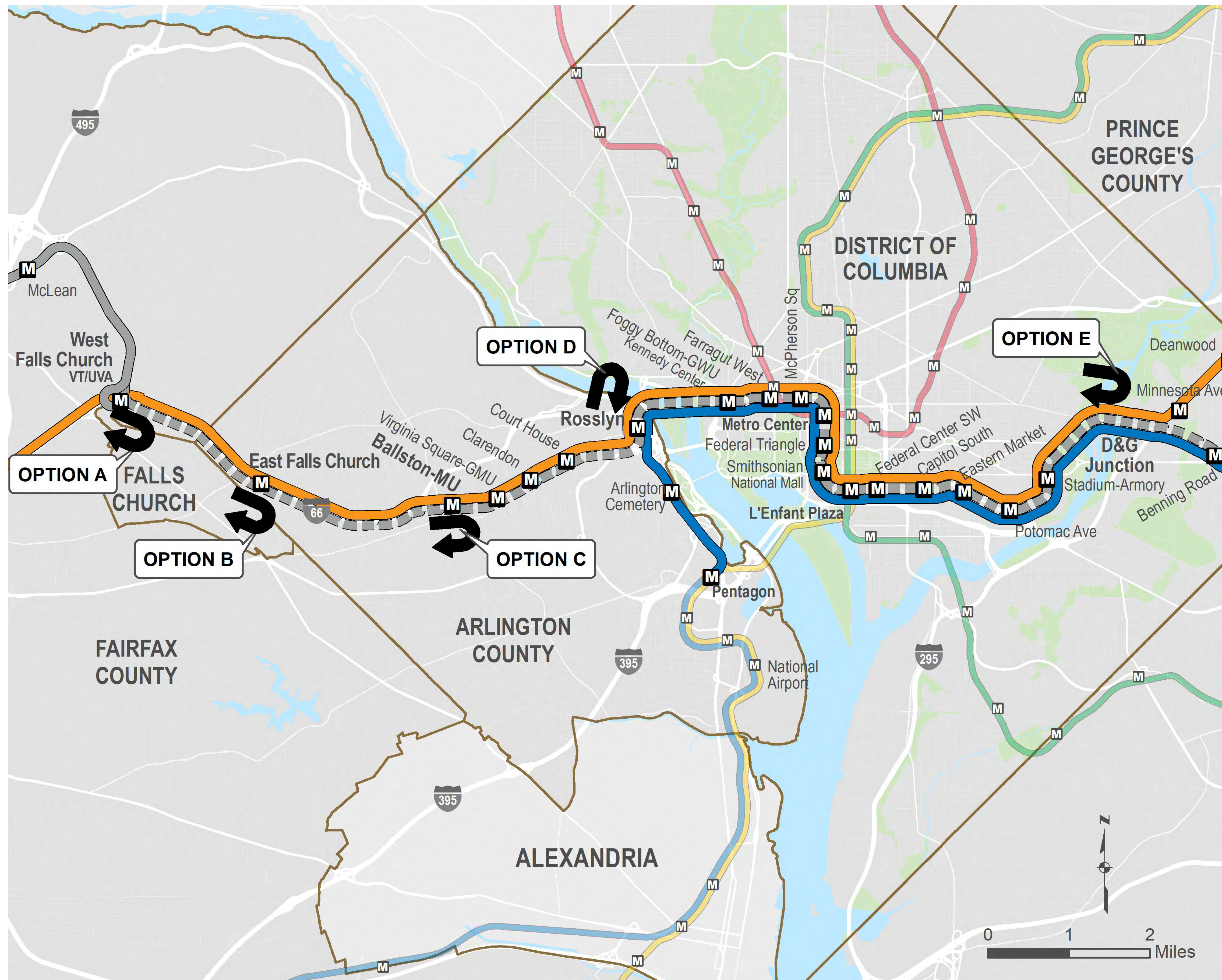


# STATION 3

## CONCEPTS



## CONCEPT #1: OPTIONAL TRAIN “TURNBACKS”



**Concept :** Install the appropriate infrastructure so that trains could “turn back” at different areas along the Orange, Blue or Silver Lines.

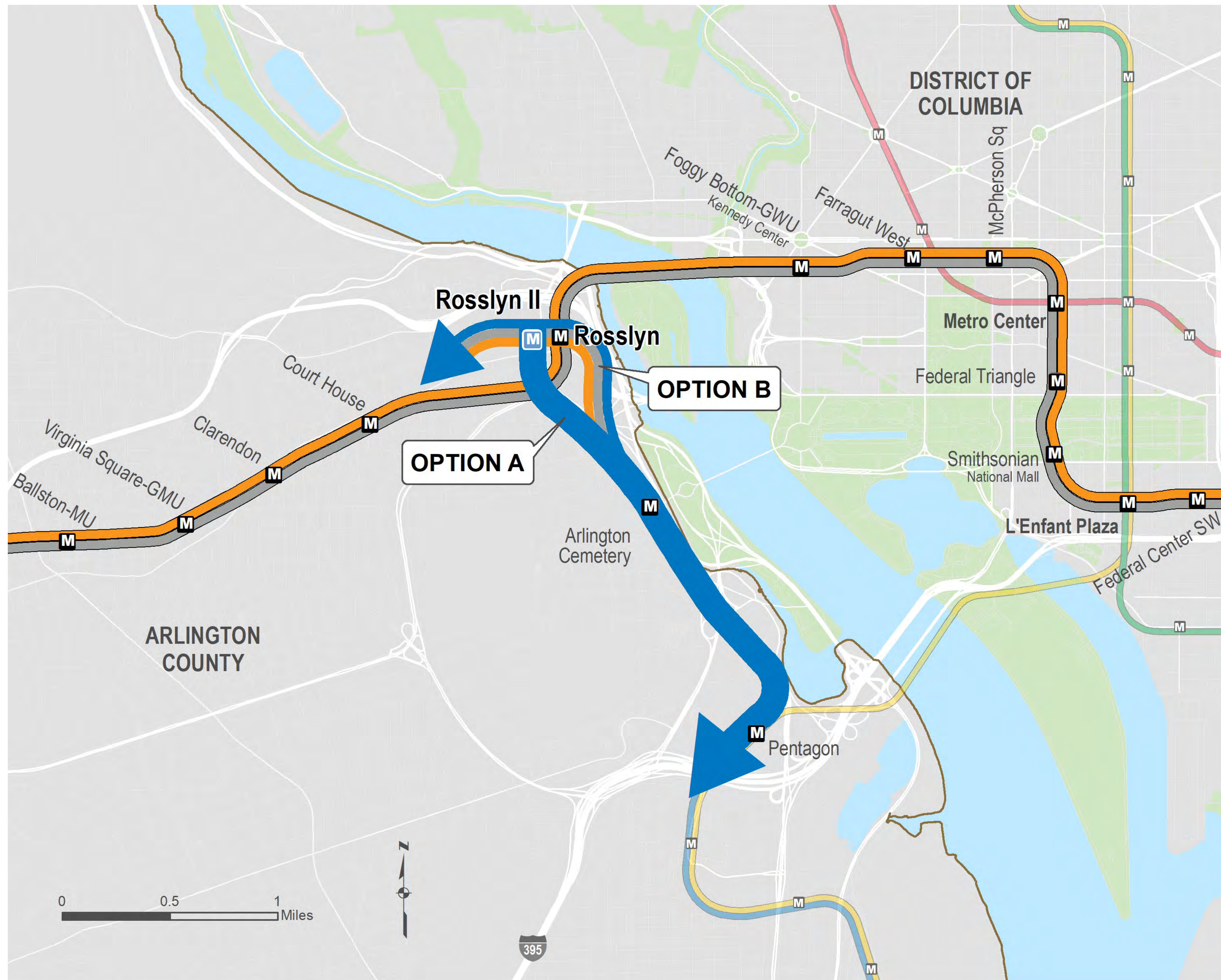
“Turnbacks” could be located at West Falls Church Station (**Option A**), East Falls Church Station (**Option B**), Ballston-MU Station (**Option C**), Rosslyn Station (**Option D**), or outside Stadium-Armory Station (**Option E**).

### Benefits and Trade-offs

- Requires new crossovers, pocket tracks, and platforms
- Crossovers and pocket tracks *minimize service impacts* from construction and maintenance
- Allows for new and *more cost-effective service* patterns
- May allows Metro to run *more Silver Line Trains* between Dulles and Tysons



## CONCEPT #2: NOVA CIRCULATOR



**Concept :** Build a new “Rosslyn II” Station and realign rail service around Rosslyn Station to better support travel demand within Northern Virginia.

A new “Rosslyn II” Station with direct pedestrian links to the adjoining station would allow for different service patterns:

**Option A** - Run the Blue Line between Franconia-Springfield to the new “Rosslyn II” Station only.

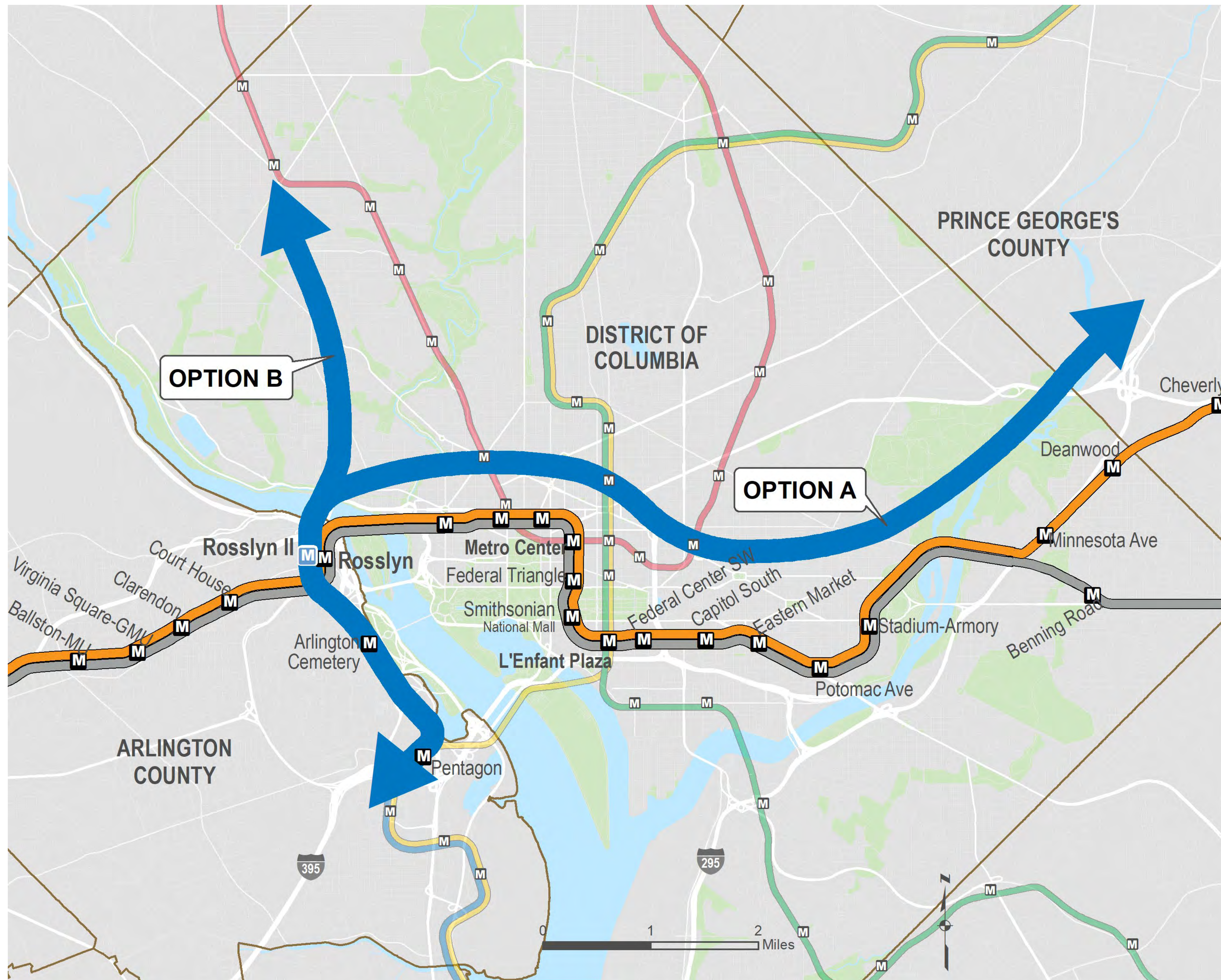
**Option B** - Build a new track connection between Arlington Cemetery, “Rosslyn II,” and Court House stations. This would permit some trains to offer one-seat rides between Tysons, Rosslyn-Ballston, Pentagon, Crystal City, National Airport, and Franconia-Springfield.

### Benefits and Trade-offs

- Separates BL/OR/SV Lines *reducing potential for delays* on Blue Line to impact Orange/Silver Lines and vice-versa
- Allows Metro to *run more trains* west of Rosslyn but not any more trains across the Potomac River
- Blue Line riders to DC or Maryland would have to transfer to Orange/Silver Lines



## CONCEPT #3: NEW BLUE LINE REGIONAL CONNECTIONS



**Concept :** Build a new “Rosslyn II” Station with a direct pedestrian link to the existing Rosslyn Station. Extend the Blue Line service through a new tunnel under the Potomac River into DC and Maryland.

A new, adjoining station with a new tunnel under the Potomac River would separate the three lines at Rosslyn, provide new capacity across the Potomac, and allow for different service patterns.

**Option A** - Blue Line service would run from “Rosslyn II” to Georgetown, Mid-City DC, and Union Station, then continue through Northeast DC into Prince George’s County.

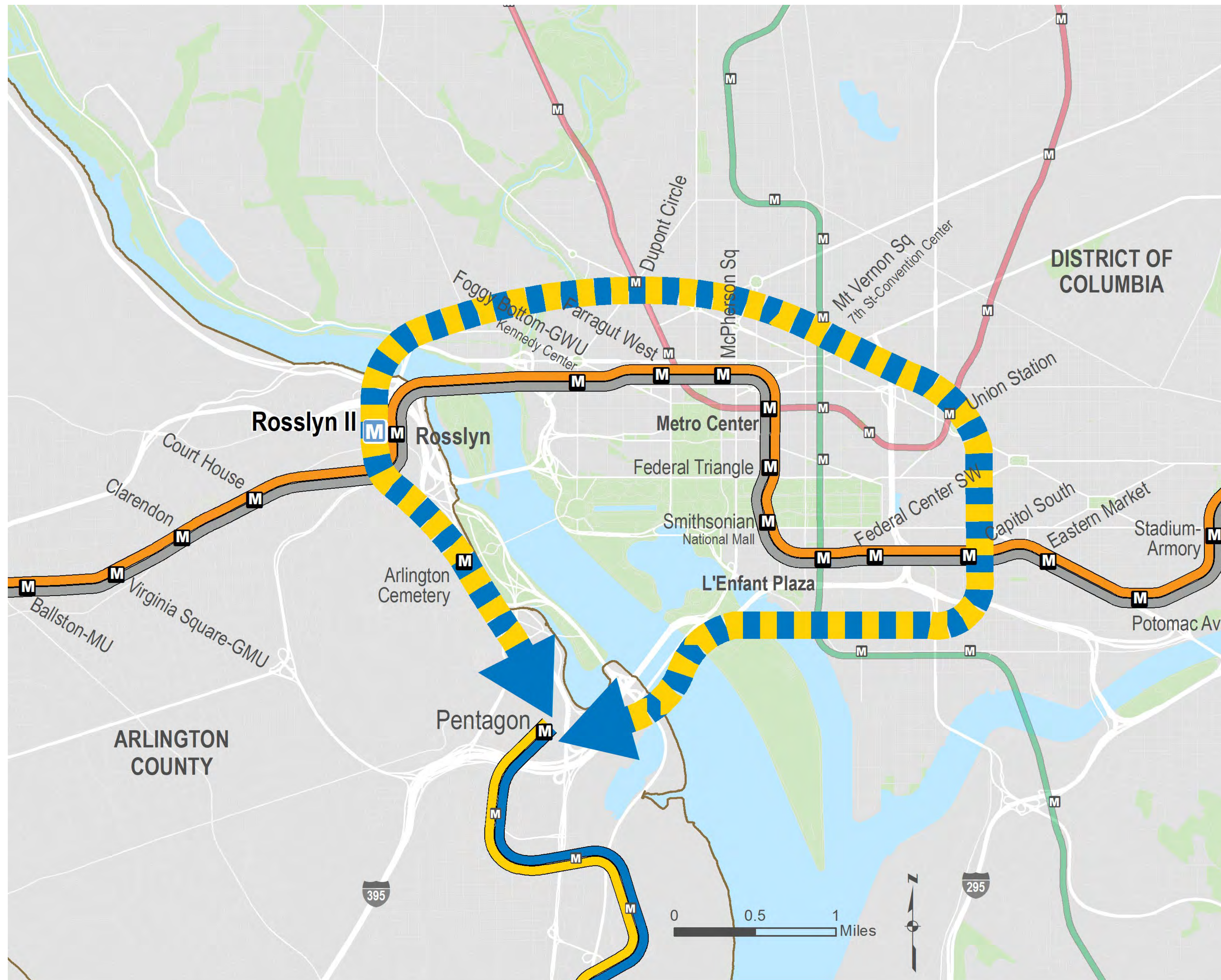
**Option B** - Blue Line service would run from the “Rosslyn II” Station through Georgetown and along or near Wisconsin Avenue to connect with the Red Line at Friendship Heights or Bethesda.

### Benefits and Trade-offs

- *New/increased service* on Blue Line connecting VA, DC, and MD and increased service on Orange/Silver Lines
- Option A connects to other services at Union Station
- Option B connects to MD but *may not address BL/OR/SV travel demand*
- Separates BL/OR/SV Lines reducing potential for delays on Blue Line to impact Orange/Silver Lines and vice-versa



## CONCEPT #4: NEW CORE LOOP



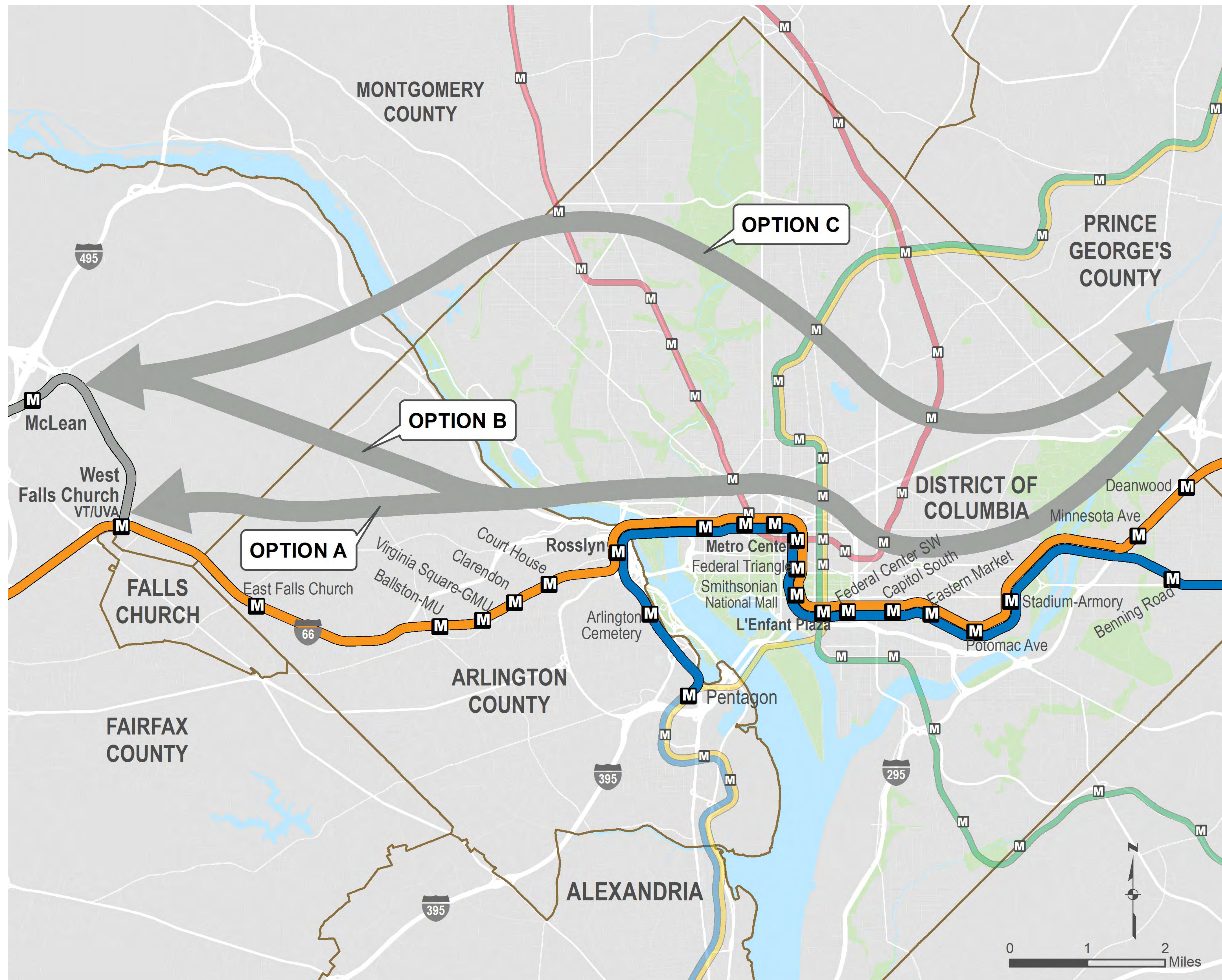
**Concept :** Build a new “Rosslyn II” Station and a new tunnel under the Potomac River in order to create a new Metrorail Loop connecting Pentagon, Rosslyn, Georgetown, the Dupont Circle and Shaw neighborhoods, and the Navy Yard/Waterfront area.

### Benefits and Trade-offs

- *New/increased service* on Blue/Yellow Lines connecting VA and DC but not MD
- Separates BL/OR/SV Lines *reducing potential for delays* on Blue Line to impact Orange/Silver Lines and vice-versa
- Separates Yellow/Green Lines *allowing more service* on Green, Silver, and Orange Lines
- Provides direct connection to other services at Union Station
- Supports transit-oriented development in growing areas of DC



## CONCEPT #5: NEW SILVER LINE CONNECTIONS, NORTH OF I-66



**Concept :** Provide new Silver Line service through a new tunnel under the Potomac River into DC and Maryland, north of I-66.

A new tunnel under the Potomac River would provide a new Silver Line “corridor” north of I-66 that could operate as local service, express service or a mix, with different service options:

**Option A** - Operate new Silver Line service between West Falls Church, Mid-City DC, Union Station, Northeast DC and Prince George’s County.

**Option B** - Similar to Option A, but Silver Line service would operate from McLean instead of West Falls Church.

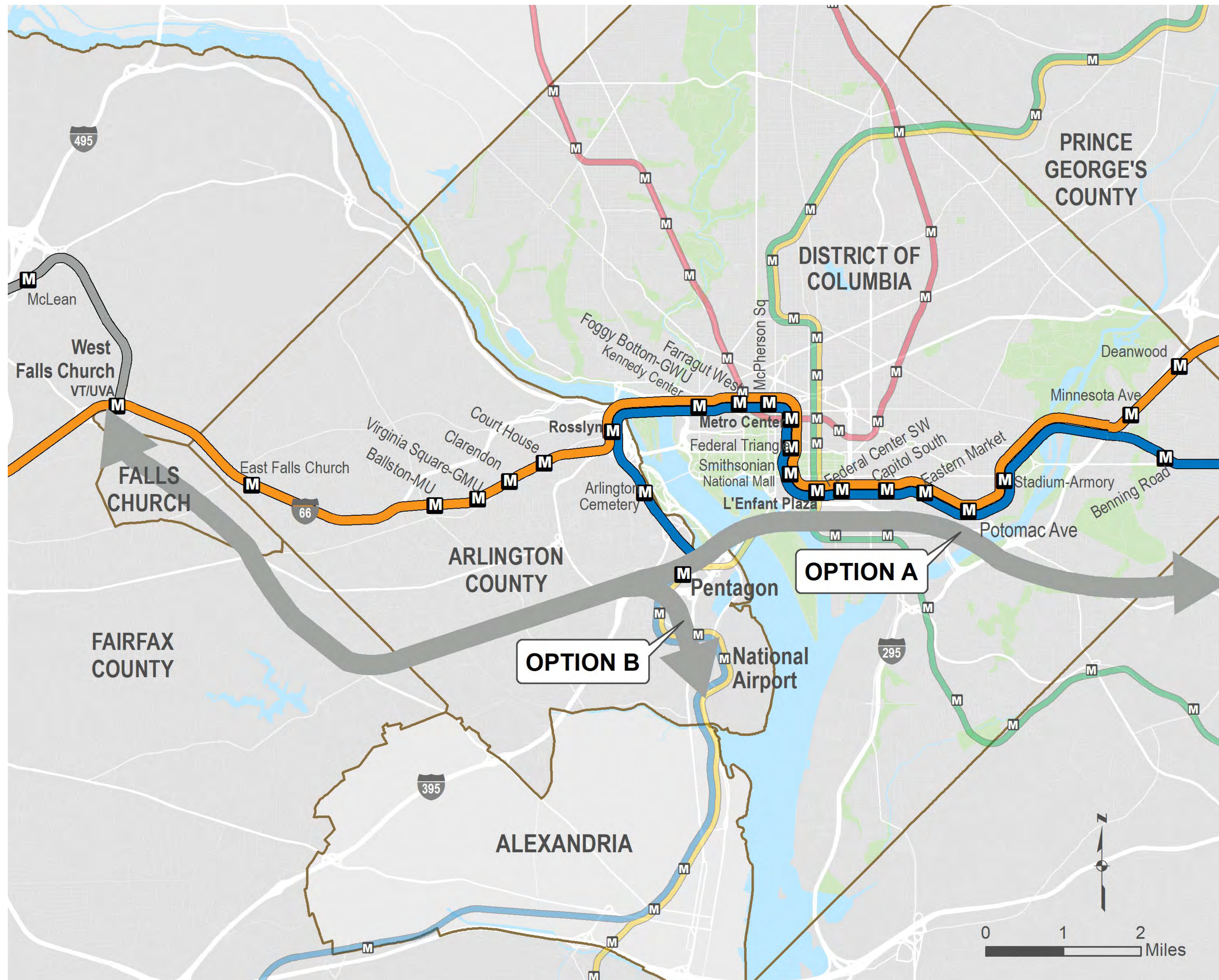
**Option C** - Operate new Silver Line service between Tysons, Bethesda or Friendship Heights, northern DC and Prince George’s County.

### Benefits and Trade-offs

- *New/increased service* on Silver Line connecting VA, DC, and MD
- Separates BL/OR/SV Lines *reduce potential for delays* on Silver Line to impact Orange/Blue Lines and vice-versa
- Options A & B provide direct service from Tysons to DC and MD
- Option C reduces crowding on Orange/Silver Lines but *may be too far north to address BL/OR/SV travel needs*



## CONCEPT #6: NEW SILVER LINE CONNECTIONS, SOUTH OF I-66



**Concept :** Provide new Silver Line service through a new tunnel under the Potomac River into DC and Maryland, south of I-66.

A new tunnel under the Potomac River would provide a new Silver Line “corridor” south of I-66 that could operate as local service, express service or a mix, with different service options:

**Option A** - Operate new Silver Line service from West Falls Church along Route 7 and Columbia Pike, then across the Yellow Line Bridge to Southeast DC and Prince George’s County.











**Option B** - Similar to Option A, but the Silver Line would turn southward to Crystal City and National Airport rather than heading to DC.

### Benefits and Trade-offs

- Both options separates BL/OR/SV Lines *reducing potential for delays* on Silver Line to impact Orange/Blue Lines and vice-versa
- Both options allow *increased service* on Blue/Orange/Silver Lines
- Both options *serve new areas* with strong transit markets
- Option A connects VA, DC, and MD while Option B connects Tysons, Crystal City, and National Airport



The following table shows how each alternative concept addresses BL/OR/SV Study Goals, estimated implementation timeframe, and construction cost.

GOALS	CONCEPT #1: OPTIONAL TRAIN “TURNBACKS”	CONCEPT #2: NOVA CIRCULATOR	CONCEPT #3: NEW BLUE LINE REGIONAL CONNECTIONS	CONCEPT #4: NEW CORE LOOP	CONCEPT #5: NEW SILVER LINE CONNECTIONS, NORTH OF I-66	CONCEPT #6: NEW SILVER LINE CONNECTIONS, SOUTH OF I-66
						
 <b>Capacity</b>	X	✓ Adds capacity within Northern Virginia	✓ Adds a new Potomac River tunnel and Metrorail service between VA, DC, and MD	✓ Creates new capacity/service across the Potomac; permits more service on OR/SV/GR Lines	✓ Creates new capacity/service across the Potomac River, through DC, MD, and VA	✓ Creates new capacity/service across the Potomac River, through DC, MD, and VA
 <b>Reliability</b>	✓ Improves Metro's ability to manage and minimize service incidents, delays, and construction	✓ Separates Blue Line from Orange/Silver Lines, so that incidents on one line won't impact all three	✓ Separates Blue Line from Orange/Silver Lines, so that incidents on one line won't impact all three	✓ Separates Blue Line from Orange/Silver Lines, and the Yellow Line from Green Line; greatly reduces impacts of disruptions and construction	✓ Removes one Metrorail line from the existing Rosslyn Tunnel so incidents on one line won't impact all three	✓ Removes one Metrorail line from the existing Rosslyn Tunnel so incidents on one line won't impact all three
 <b>Flexibility</b>	✓ Allows variable service patterns to better match service levels to demand	✓ Option A allows Blue Line turnbacks at Rosslyn, and Option B allows trains to move between Rosslyn-Ballston and Pentagon/National Airport	X	X	X	X
 <b>Sustainability</b>	✓ Enhances cost-effectiveness of service provided	X	✓ Encourages use of transit; expands access to transit service and economic opportunity; supports transit-oriented development	✓ Encourages use of transit; expands access to transit service and economic opportunity; supports transit-oriented development	✓ Provides a competitive travel option for congested highways; expands access to transit service and economic opportunity; supports transit-oriented development	✓ Provides a competitive travel option for congested highways; expands access to transit service and economic opportunity; supports transit-oriented development
<b>Estimated Implementation Timeframe</b>	5 Years	5 - 10 Years	20 - 25 Years	20 - 25 Years	20 - 25 Years	20 - 25 Years
<b>Construction Cost</b>	Low	Medium	High	High	High	High



## ADDITIONAL OPERATIONAL AND SYSTEMWIDE IMPROVEMENTS

Operational strategies and general, systemwide improvements are identified that may increase capacity, reliability, flexibility, and sustainability on the Blue, Orange, and Silver Lines.



### Pocket tracks and crossovers

Install more pocket tracks and crossovers to allow Metro to better recover from incidents and minimize extent of single-tracking.

*Implementation\*: 5-10 years*



### Expand core stations

Create new entrances and pedestrian connections in the highest-traffic Blue, Orange, and Silver stations, to reduce crowding and move people faster.

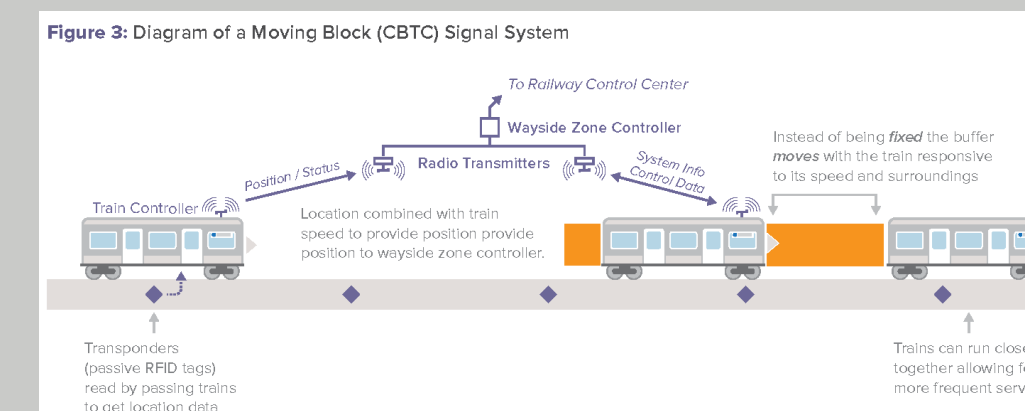
*Implementation\*: 5 years*



### Reconfigure train seats

Reduce number of train seats or reconfigure seating arrangements to provide more space.

*Implementation: Depends on train overhaul schedule*



### Enhanced train control

Explore the potential costs and benefits of implementing new train control technology. Note: this would be a very large and expensive capital project.

*Implementation\*: 10-20 years*



### Enhance connections to stations

Build or improve bike and pedestrian connections to stations. This will grow ridership by expanding the neighborhoods in easy walking and biking distance from stations, and support transit-oriented development.

*Implementation\*: 1-5 years, ongoing*



### Enhancing parallel bus service

Reduce crowding on rail by transferring some ridership demand to higher-frequency bus routes.

*Implementation\*: 1-2 years*

# **STATION 4**

## **MAPPING EXERCISE**



# SHARE YOUR IDEAS

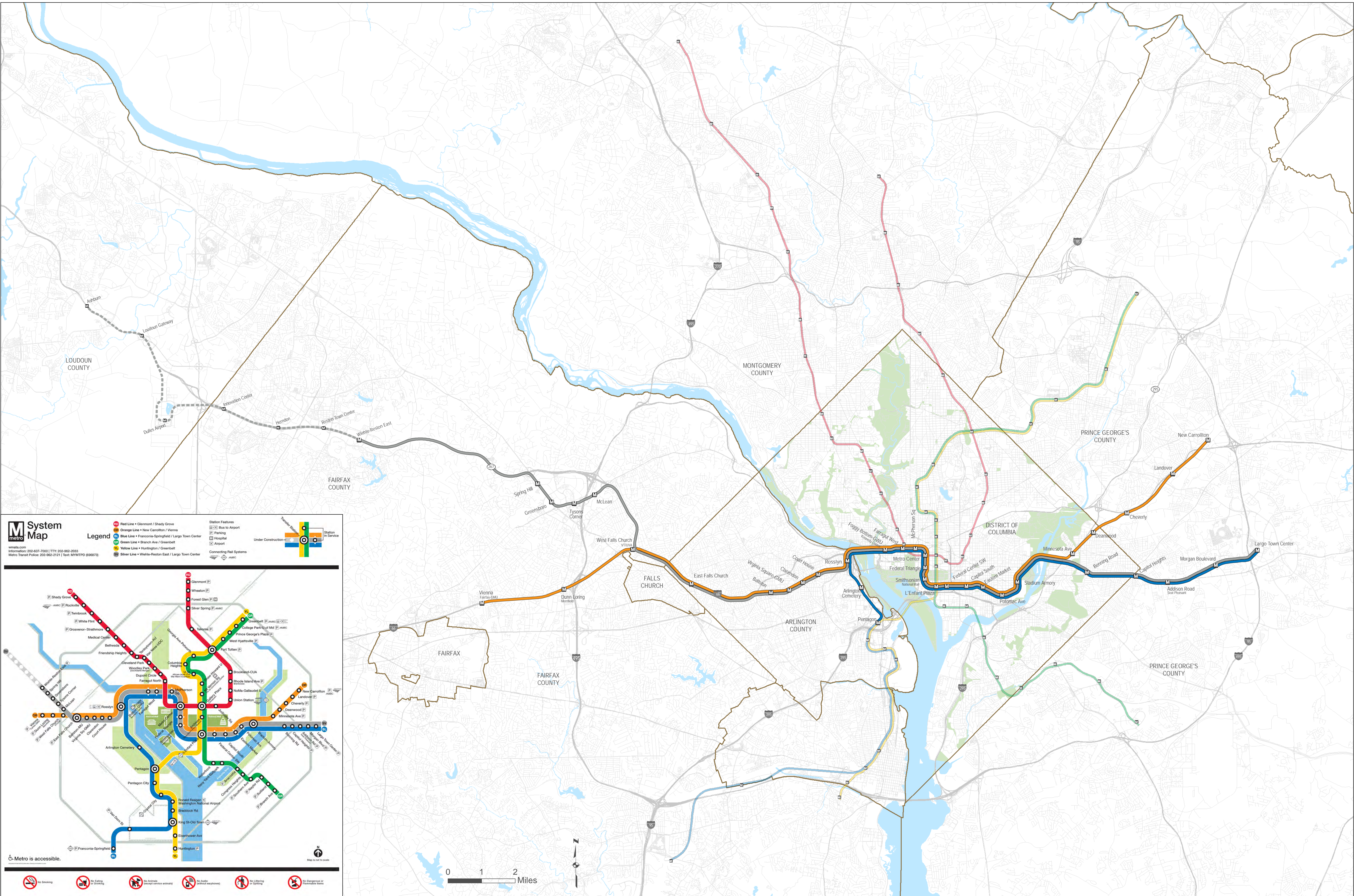
**Using this map of the Blue, Orange and Silver lines, are there any additional concepts that you think should be considered?**



**Draw your ideas on the map and / or write your thoughts on sticky notes and place them on the map.**



**Share any additional comments on your worksheet.**



# STATION 5

## SURVEY



# HAVE YOU COMPLETED THE SURVEY YET?

You could win a \$50  
SmarTrip<sup>®</sup> card!



- Take it now (it will just take a few minutes!)
- Complete the survey here or on your phone at [BOSstudy.questionpro.com](https://BOSstudy.questionpro.com) or scan the QR code pictured below

**SCAN ME!**

