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BUS RAPID TRANSIT IN MONTGOMERY COUNTY

North Bethesda BRT Planning Study

North Bethesda TMD Advisory Committee Meeting

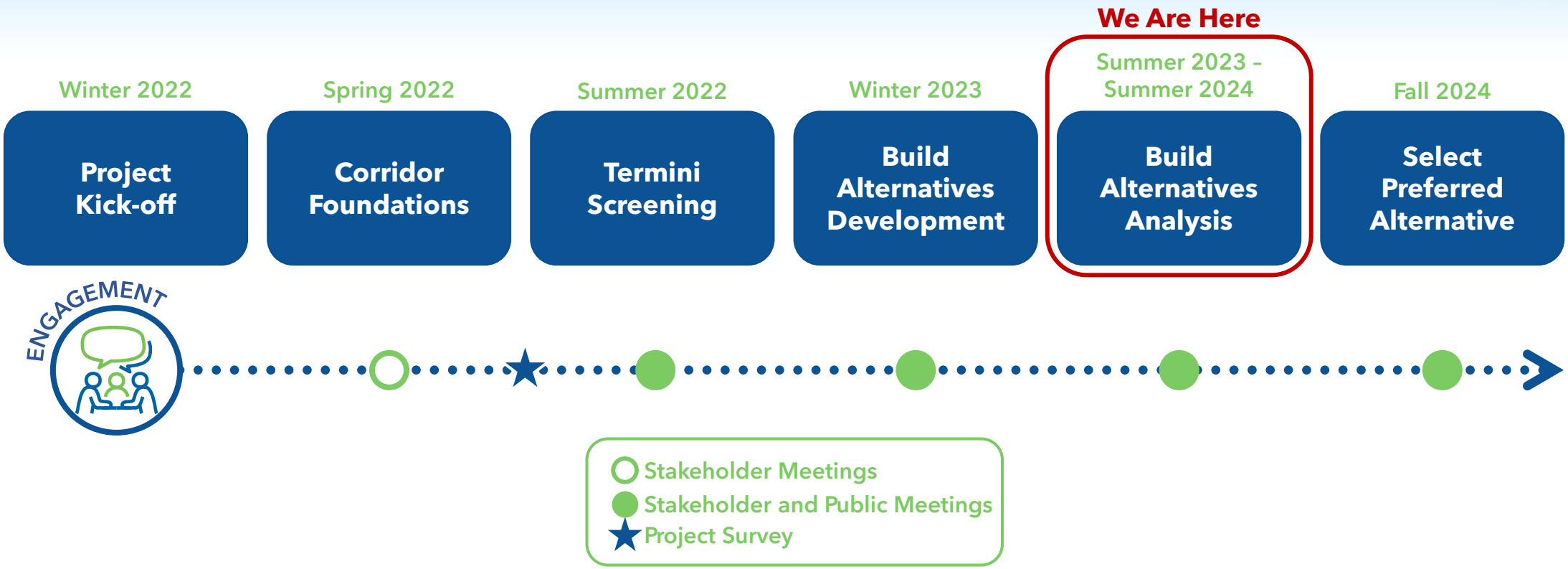
July 31, 2024

MCDOT
Montgomery County
Department of Transportation

Agenda

- Study Overview and Status
  - *Where are we now?*
- Overview of Alternatives
  - *What options are we analyzing?*
- Alternatives Analysis Preliminary Results
  - *How are we measuring performance?*
  - *What are the takeaways from analysis?*
- Next Steps

Study Schedule



Recent and Ongoing Tasks

- Completed
  - Determine Eastern Terminus
  - Develop and confirm alternatives to study
  - Identify evaluation metrics and methods
  - Analyze alternatives (except ridership)
- Ongoing
  - Refining ridership analysis
  - Coordination with nearby BRT projects
  - CAC and community engagement

Alternative Overview

	Transportation System Management (TSM) Alternative*	Build Alternative 1: Maximum Build-Out	Build Alterative 2: Targeted Investment
Runningway	• Mixed flow	• Primarily median running	• Curb running at targeted locations • More mixed flow
Stations	• 2013 master plan stations	• 2013 master plan stations	• Fewer stations to prioritize travel time • Potential route extension (service only) to the west
Intersection Treatments	• Transit Signal Priority (TSP) at key Intersections • Detailed intersection design would come during future phases		

**No Build and TSM alternatives include the newly installed protected bike lanes on Old Georgetown Road*

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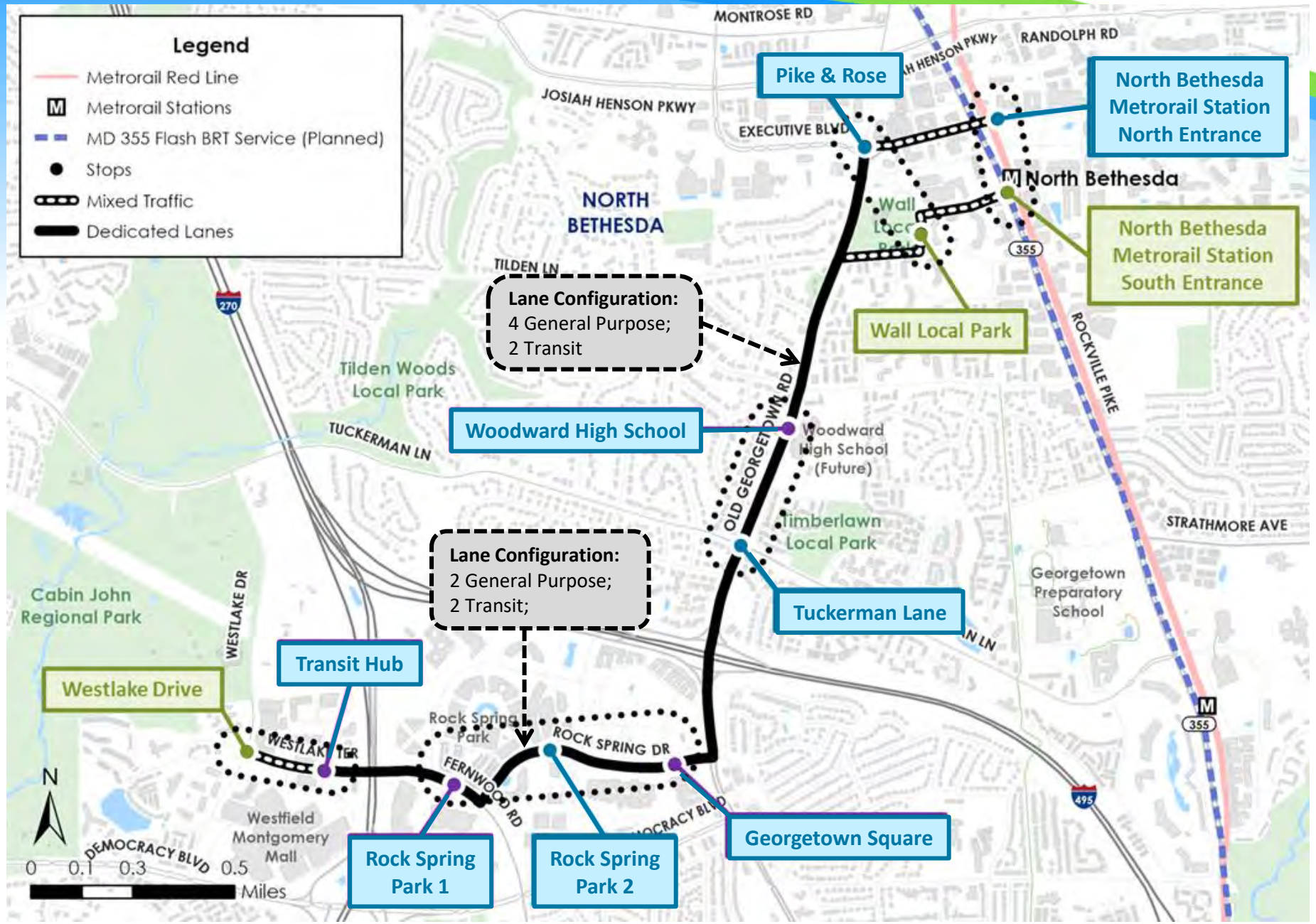

Map Key:

"Like" Stop Pairs

- Alternative 1/TSM
- Alternative 2
- All Alternatives

} Stops

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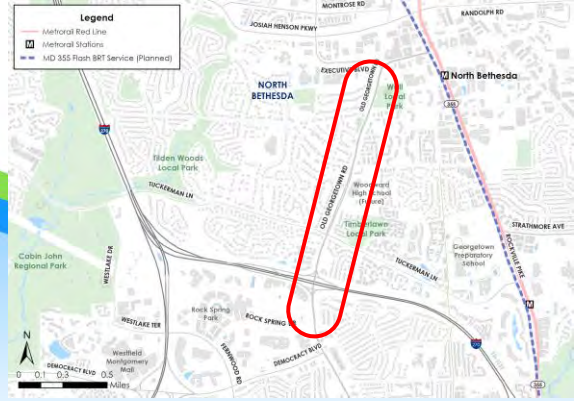
Typical Section – Old Georgetown Road

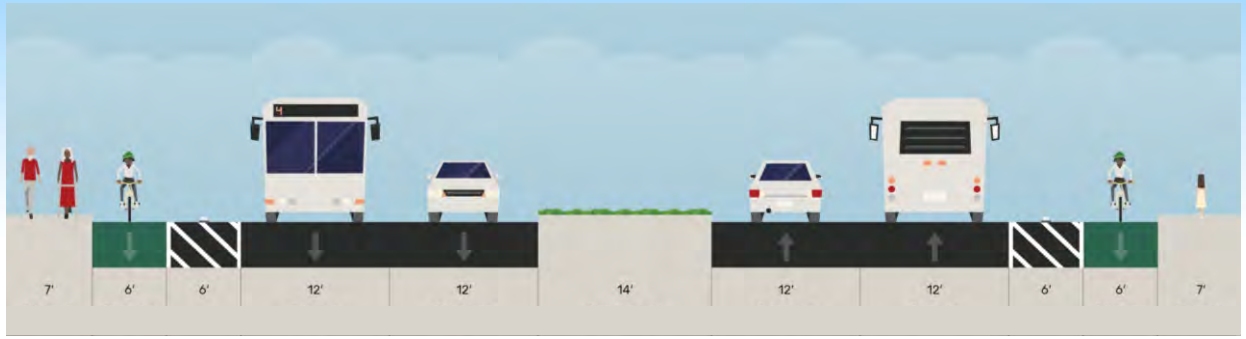
Facing *North*



No Build / TSM

ROW = 100’

4 GP Lanes

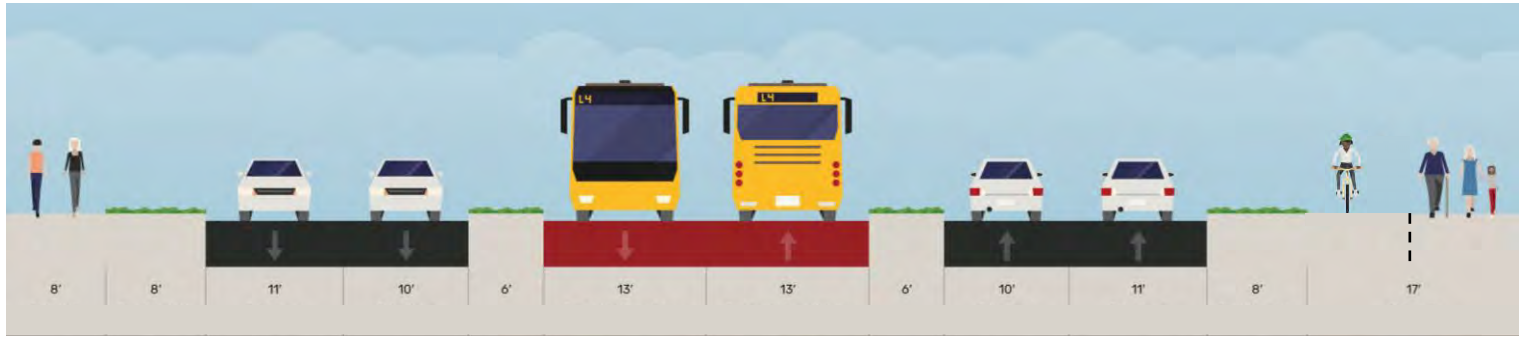


Alternative 1:

Maximum Build-Out

ROW = 121’

4 GP Lanes, 2 Transit

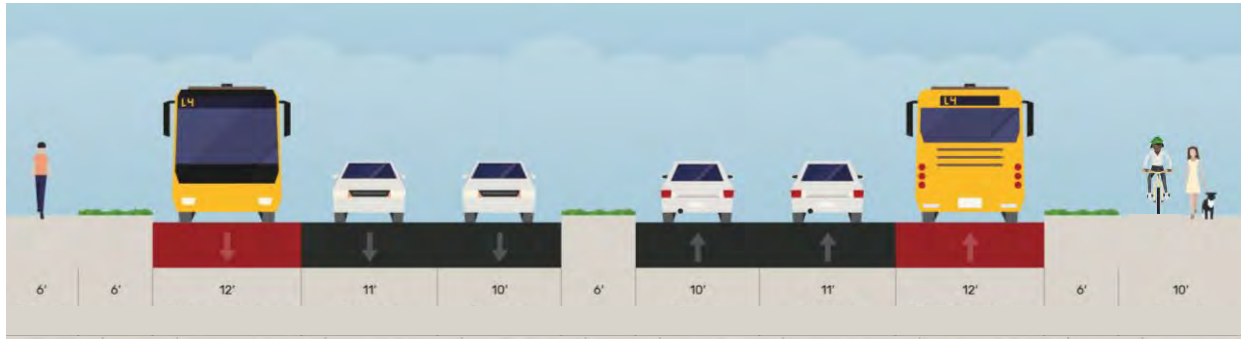


Alternative 2:

Targeted Investment

ROW = 100’

4 GP Lanes, 2 Transit



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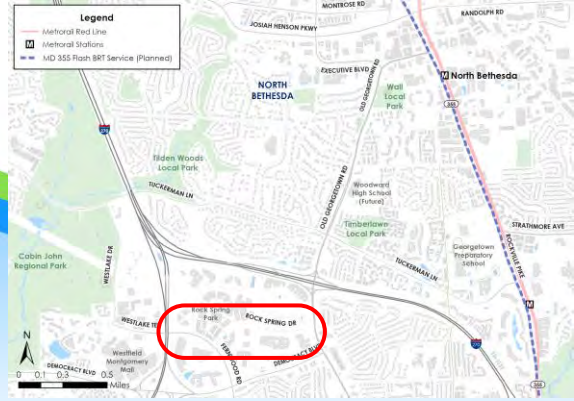
Typical Section – Rock Spring Drive

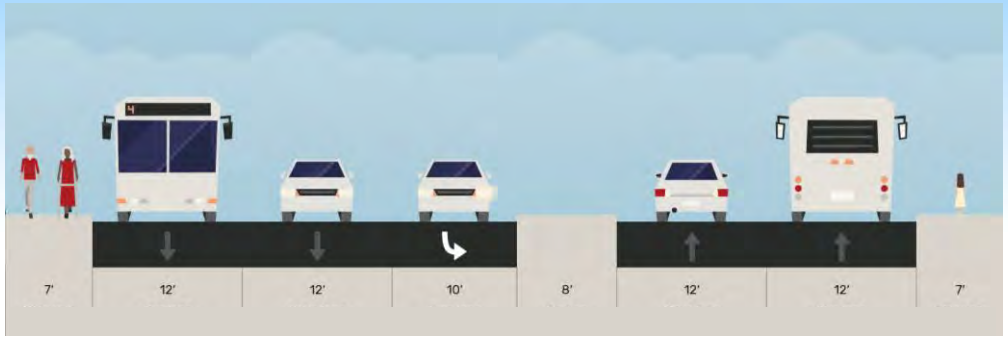
Facing *East*



No Build / TSM

ROW = 80'-90'

4 GP Lanes



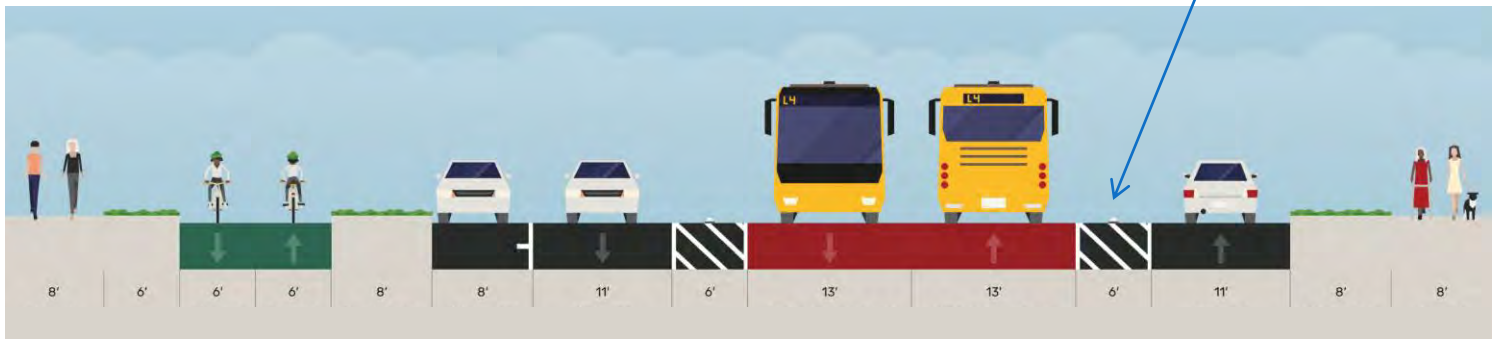
Alternative 1:

Maximum Build-Out

ROW = 118'

2 GP Lanes, 2 Transit

Mountable bollards to accommodate access for emergency vehicles

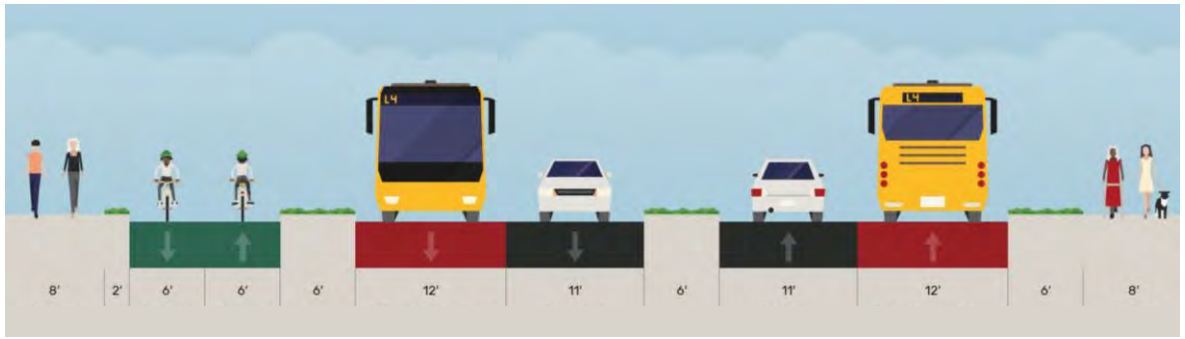


Alternative 2:

Targeted Investment

ROW = 94'

2 GP Lanes, 2 Transit



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Alternatives Analysis Preliminary Results

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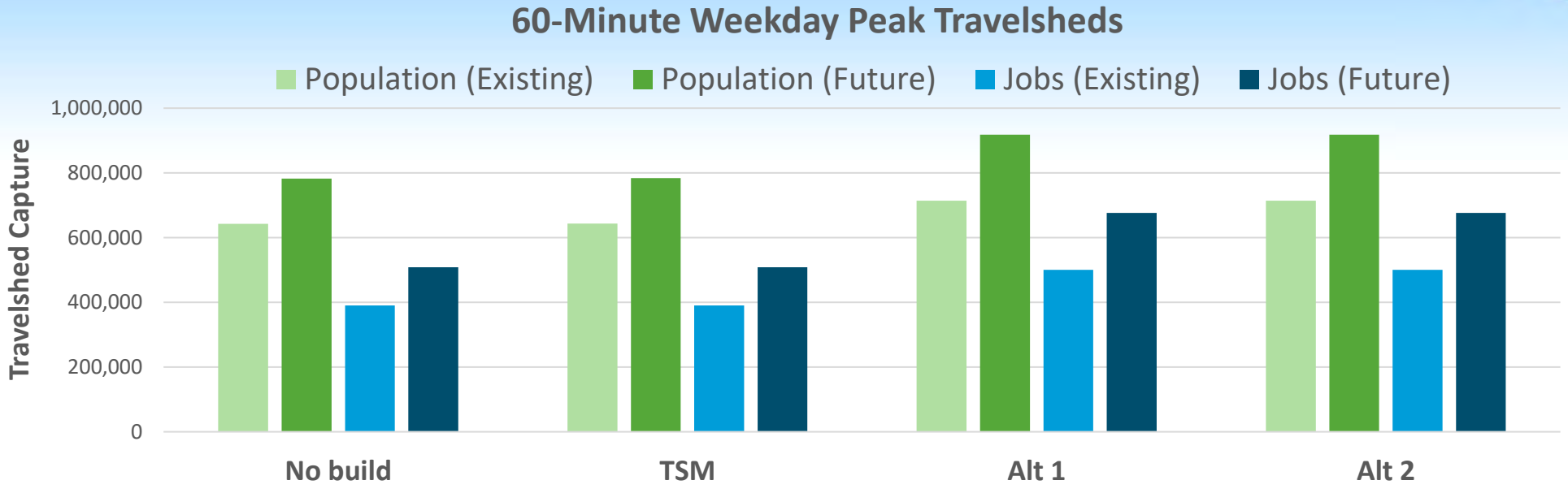
Build Alternatives Analysis

Metrics	Study Goals					
	Quality Service	Mobility Choices	Economic Growth	Community Equity	Sustainable Solutions	Public Safety
Ridership Forecasts - *to be discussed at next CAC*	✓	✓	✓			
Travelsheds	✓	✓	✓	✓		
Access to Frequent Service	✓	✓	✓	✓		✓
Potential Right-of-Way (ROW) Expansion Needed				✓	✓	
Level of Infrastructure Investment					✓	
Operational Cost					✓	
Potential Environmental Impacts					✓	✓
Impacts to Traffic Flow	✓				✓	
Transit Travel Time	✓	✓	✓			
Total	**5**	**4**	**4**	**3**	**5**	**2**

2. Travelsheds



Key Drivers and Takeaways:

- Alternatives 1 and 2 provide access to 204,000+ more people and 175,000+ more jobs by 2045
- Faster travel times and increased frequency for Build alternatives allow greater reach to population and jobs as compared to No Build and TSM

3. Access to Frequent Service

Purpose: Identify tradeoffs between stop location options

Stops in the study corridor:

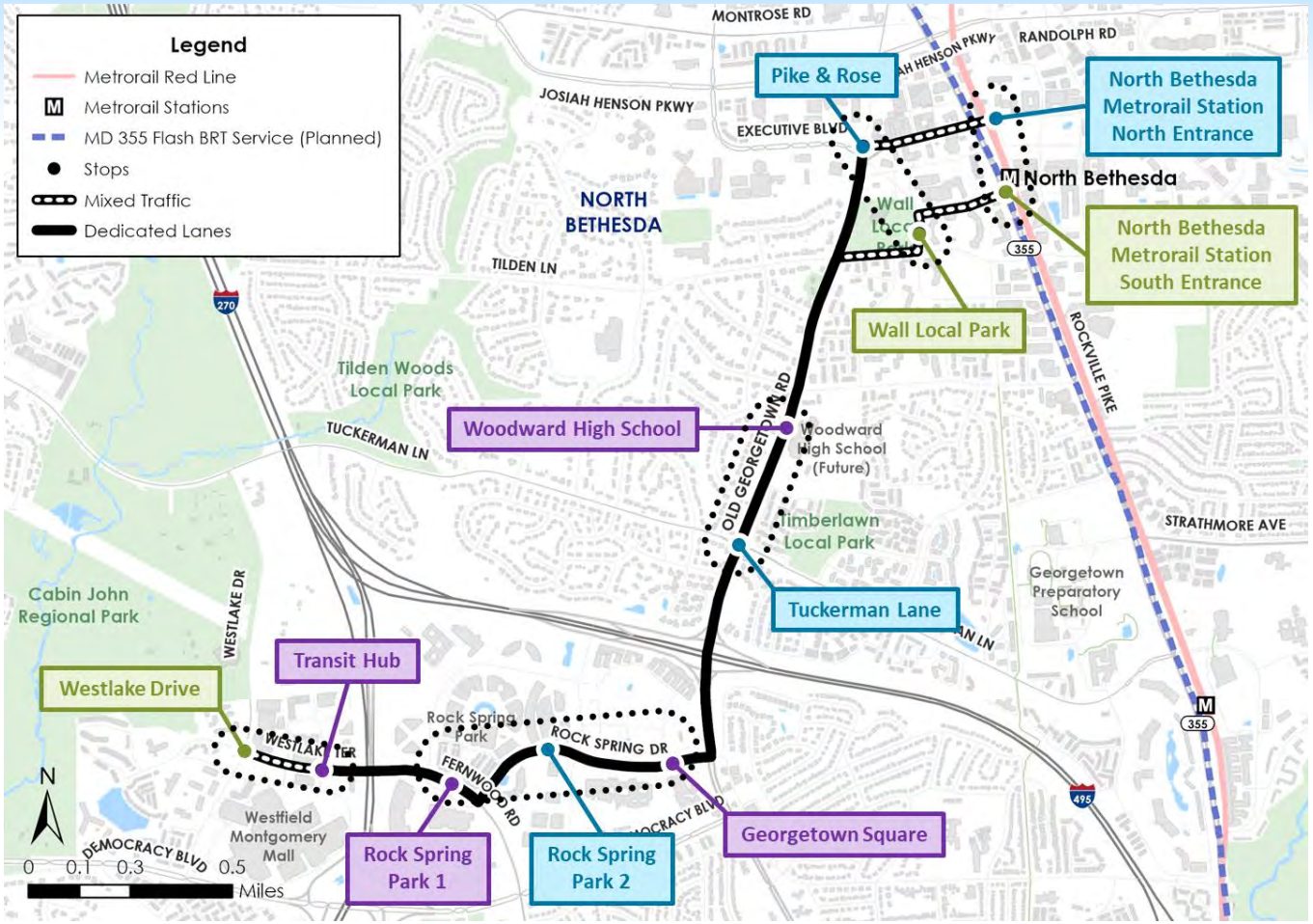
- May be served by <u>one</u> or <u>multiple</u> build alternatives
- Have one or two "like" stop pairs for comparison

Map Key:

"Like" Stop Pairs

- Alternative 1/TSM
- Alternative 2
- All Alternatives

} Stops



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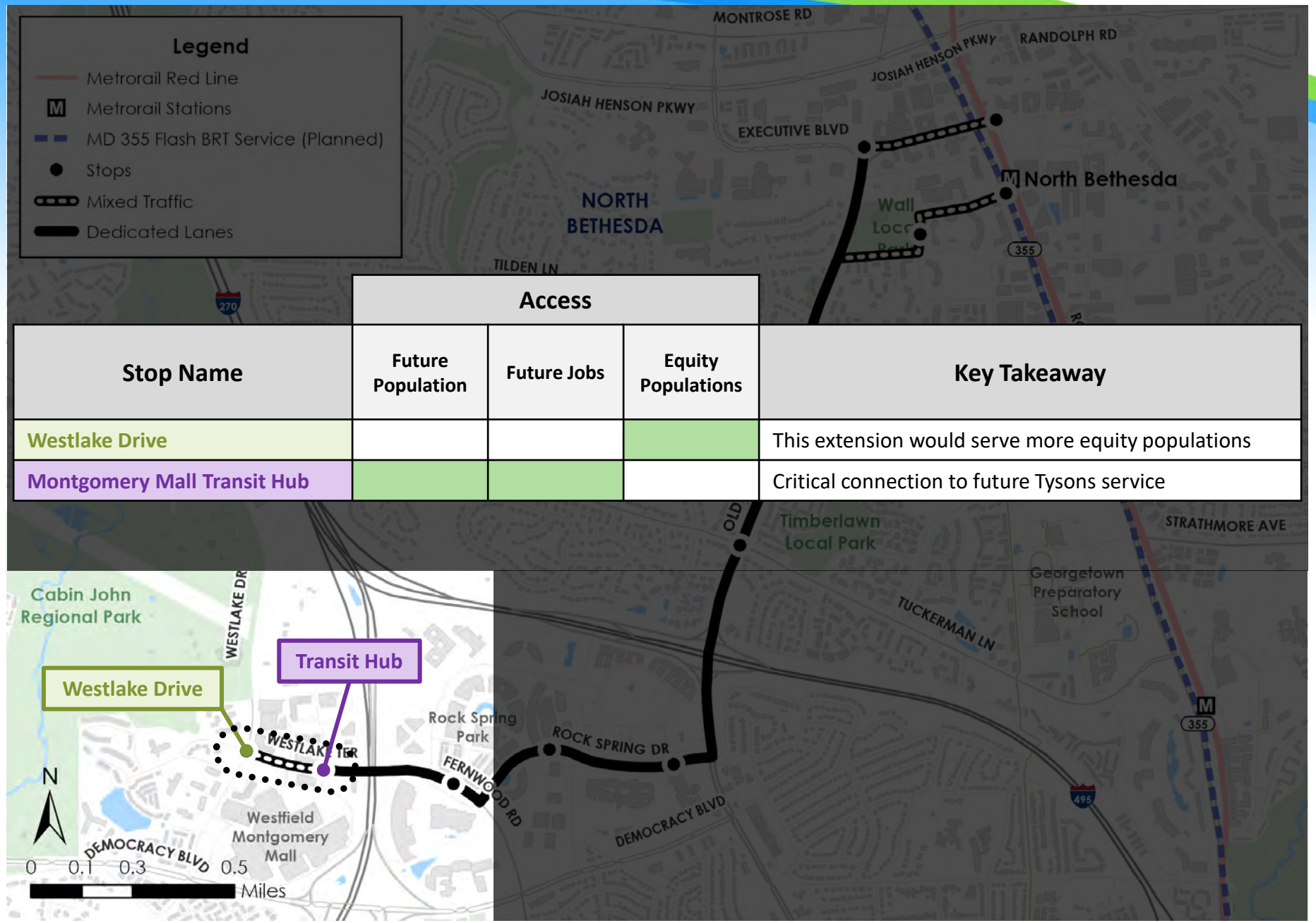
3. Access to Frequent Service



Stop Name	Access			Key Takeaway
	Future Population	Future Jobs	Equity Populations	
Westlake Drive				This extension would serve more equity populations
Montgomery Mall Transit Hub				Critical connection to future Tysons service

"Like" Stop Pairs

- Alternative 1/TSM
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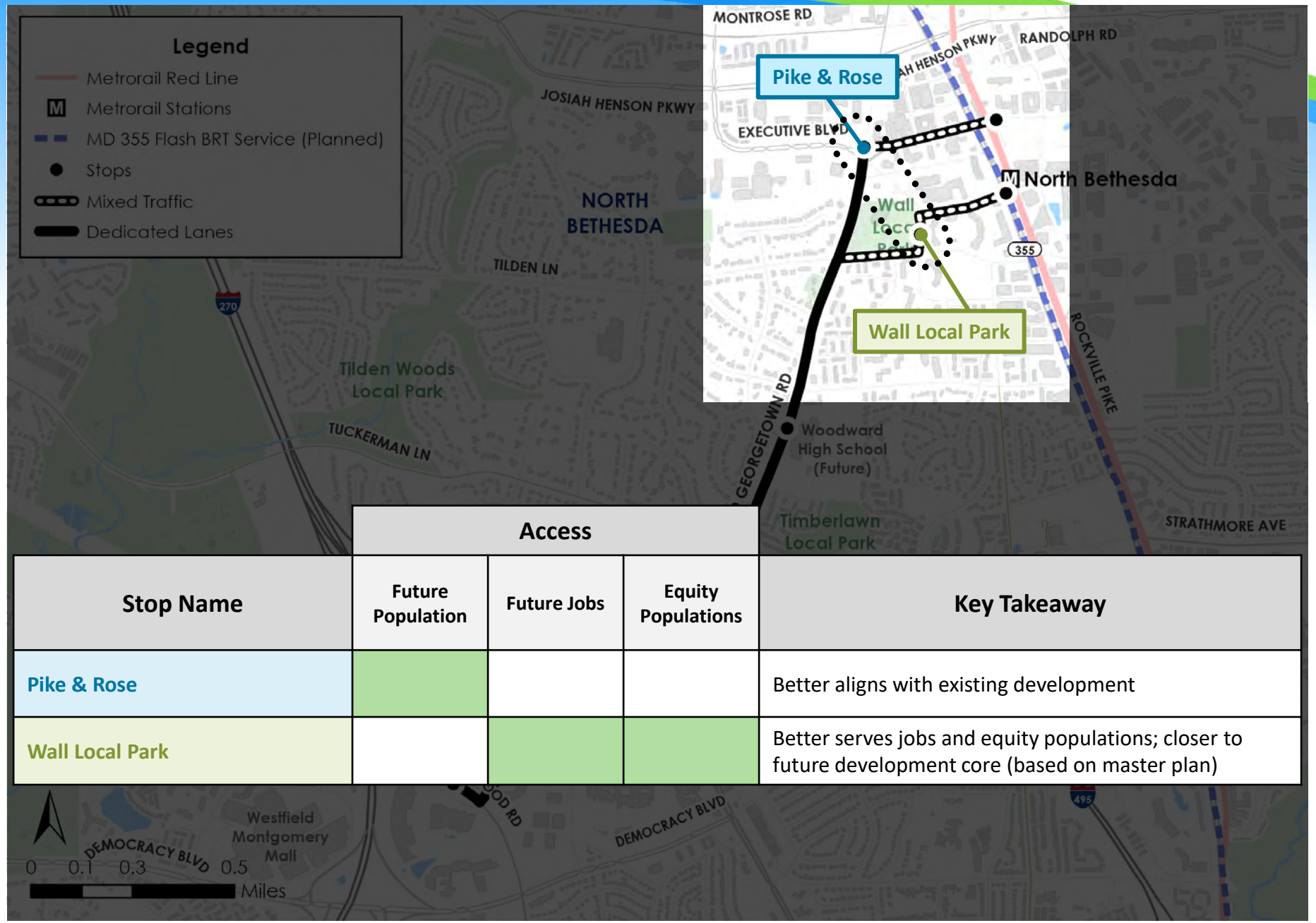
3. Access to Frequent Service



Stop Name	Access			Key Takeaway
	Future Population	Future Jobs	Equity Populations	
Pike & Rose				Better aligns with existing development
Wall Local Park				Better serves jobs and equity populations; closer to future development core (based on master plan)

"Like" Stop Pairs

- Alternative 1/TSM
- Alternative 2
- All Alternatives

} Stops

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4. Potential ROW Expansion Needed

Measure	Alternative 1 Maximum Build-Out	Alternative 2 Targeted Investment
Total Potentially Impacted Area (Acres)	7.8	3.0

Key Drivers and Takeaways:

- The center-running guideway and larger bike/pedestrian facilities in Alternative 1 result in more potential parcel impacts due to the wider cross-section
- Results are based on a planning-level desktop analysis; when it comes to design, MCDOT will strive to reduce property impacts as much as possible

5. Level of Infrastructure Investment

Measure	TSM Mixed-flow; Some TSP	Alternative 1 Maximum Build-Out	Alternative 2 Targeted Investment
Preliminary Opinion of Probable Cost (OPC)*	**$ 14 M**	**$ 141 M**	**$ 91 M**
Vehicle Costs (Included in OPC)	*$ 5.9 M*	*$ 7.9 M*	*$ 7.9 M*

Key Drivers and Takeaways:

- Includes capital costs to build the infrastructure
- Preliminary estimate is based on typical sections for comparison purposes
- Categories that cause a significant increase in the Build Alternative 1 OPC:
  - Potential ROW costs
  - Additional roadway width

*Includes peak vehicle needs; Assumes 60' hydrogen fuel buses for new vehicle needs

6. Operational Cost

Measure	TSM Mixed-flow; Some TSP	Alternative 1 Maximum Build-Out	Alternative 2 Targeted Investment
Estimated Annual Operational Cost	**$ 1.68 M**	**$ 1.80 M**	**$ 1.80 M**
Assumed Peak and Off-Peak Service Frequencies	Peak: 15-min Off-Peak: 15-min	Peak: 7.5-min Off-Peak: 15-min	Peak: 7.5-min Off-Peak: 15-min

Key Drivers and Takeaways:

- Operational costs are annual recurring costs required to run the service
- Lower TSM costs reflects longer peak headways
- Alternatives 1 and 2 have similar operating costs due to the same frequency of service and having similar stop locations and route length

7. Potential Impacts to Environmental Resources

Assumed no impacts from TSM alternative

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Key Takeaways:

- The environmental resources falling within a ¼-mile buffer for both build alternatives are nearly the same
- Alternative 1 had two more resources flagged for further review due to proximity to the corridor than Alternative 2
- Further assessment of environmental impacts should be conducted prior to NEPA

Environmental Resources Reviewed:

- Registered historic places
- Recreational resources
- Libraries
- Places of worship
- Commercial centers
- Neighborhoods/subdivisions
- Schools
- Federally owned properties
- Rivers and streams
- Watersheds and wetlands
- Floodplains
- Soils
- Endangered and threatened species

8. Development Impacts to Traffic Flow

- Without any changes to infrastructure or transit on this corridor, **travel time along the corridor is projected to increase** due to regional growth and planned development

Average Transit Travel Time (in minutes) Montgomery Mall – North Bethesda Metrorail (Out and Back) via Westlake Terrace, Rock Spring Drive, and Old Georgetown Road			
	Existing 2022	**Percent Increase**	**Future No Build 2045**
AM Peak	26 min	20%	31 min
PM Peak	26 min	55%	40 min

9. Transit Travel Time

Measure	No Build	TSM Mixed-flow; Some TSP	Alternative 1 Maximum Build-Out	Alternative 2 Targeted Investment
Transit Travel Time* (Round Trip Between Montgomery Mall and North Bethesda Metrorail Station)	**40** **minutes**	**39** **minutes**	**24** **minutes**	**24** **minutes**

Key Drivers and Takeaways:

- Background traffic growth significantly slows No Build and TSM service compared to existing
- The dedicated lanes on Alternative 1 and 2 provide significant travel time savings over No Build and TSM

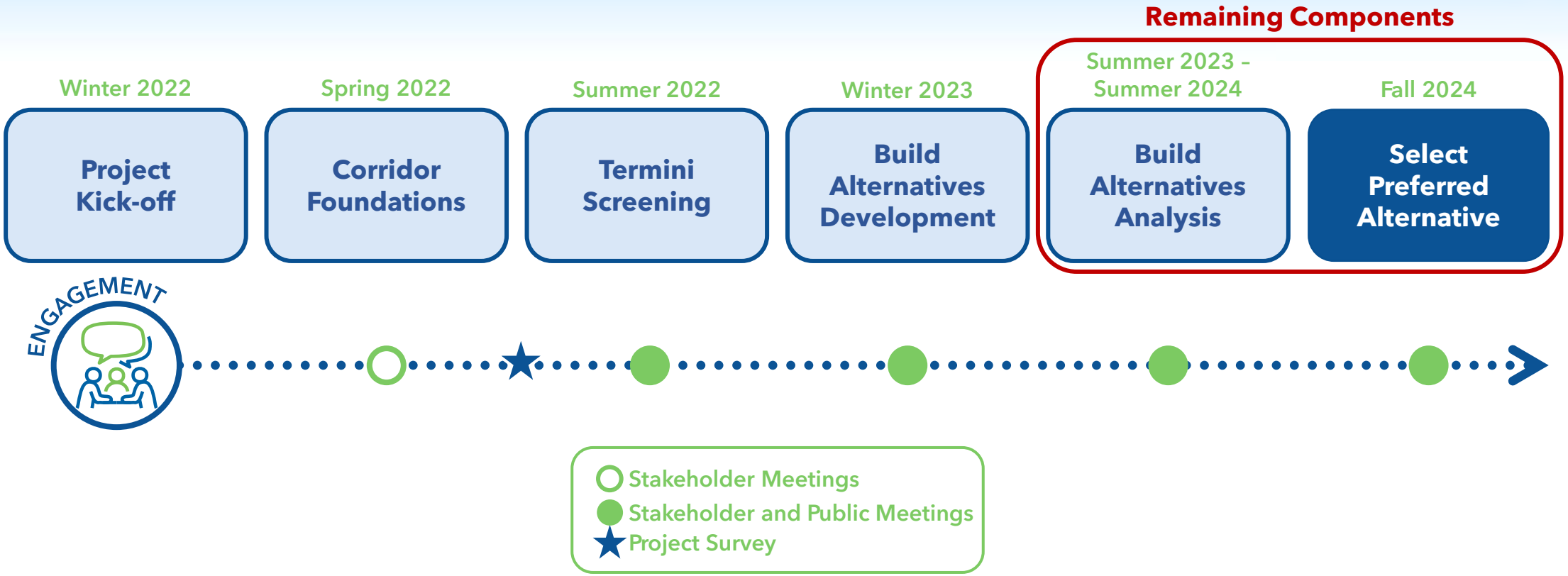
**Representative of Weekday PM Peak Roundtrip Runtime*

8. Impacts to Traffic Flow – Build Alternatives

Number of Intersections with LOS E or Worse:

Segment	No Build	Build Alternative 1	Build Alternative 2
Westlake Terrace	0	2	0
Rock Spring Drive	1	1	1
Old Georgetown Road	6	6	5
Executive Boulevard/Old Georgetown Road	2	2	2
Marinelli Road	1	1	1
Rockville Pike	3	3	3

Next Steps


Remaining Components
Winter 2022
Project Kick-off
Spring 2022
Corridor Foundations
Summer 2022
Termini Screening
Winter 2023
Build Alternatives Development
Summer 2023 – Summer 2024
Build Alternatives Analysis
Fall 2024
Select Preferred Alternative
ENGAGEMENT
Stakeholder Meetings
Stakeholder and Public Meetings
Project Survey

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Thank you!

Questions?

Project Contact Information

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