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Presentation Outline

- Speaker Introductions
- Montgomery County BRT Program Overview
- New Hampshire Avenue BRT Planning Study
 - Planning Analysis
 - Alternatives Development
 - Concept Design
- Questions & Discussion



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Speaker Introductions



Jamie Henson

*BRT Project Implementation Manager
Montgomery County Department of
Transportation (MCDOT)*



Aditya Inamdar, AICP, LEED AP, RSP1

*Associate Urban Planner & Designer
Kittelson & Associates*



Jacob N. Smith, PE

*Senior Project Manager
STV*

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BRT Program Overview

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New Hampshire Avenue BRT Planning Study

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Study Overview

► Corridor Extents:

- **Southern Terminus:** Fort Totten Metrorail Station
- **Northern Terminus:** Colesville Park and Ride

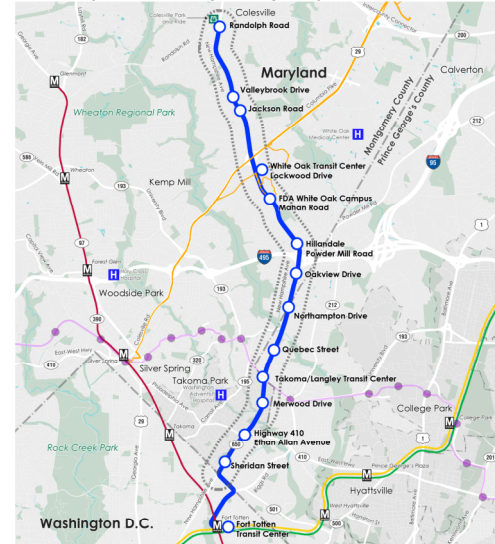
► This Study Has:

- Identified preliminary station locations
- Developed and evaluated alternatives for BRT

► This Study Will:

- Identify a preferred alternative for BRT

New Hampshire Avenue (MD 650) Study Corridor FLASH



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New Hampshire Avenue Today



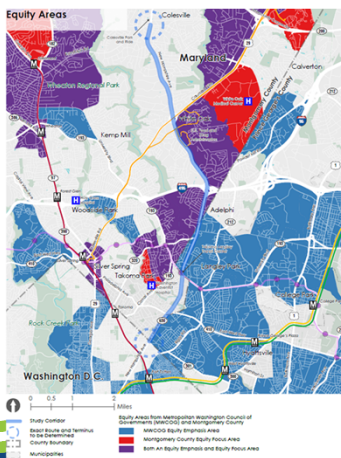
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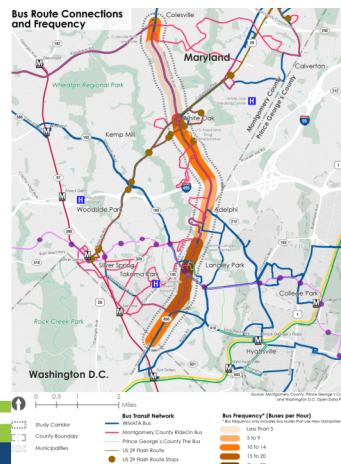
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Key Findings from Existing Conditions

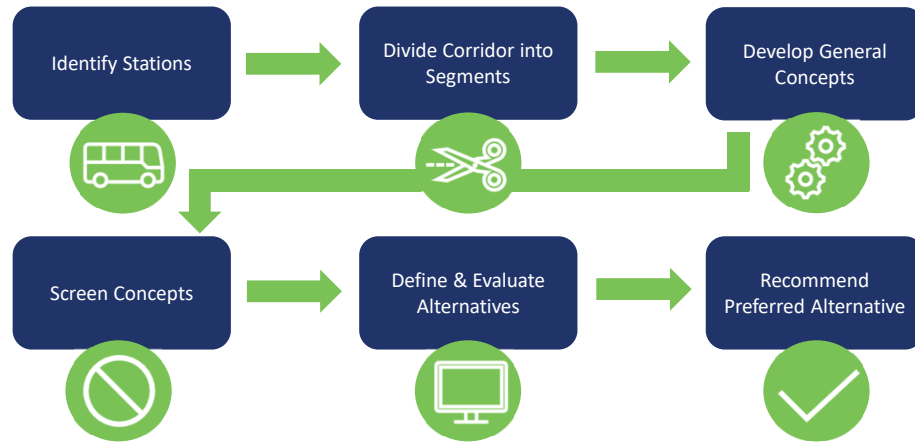
About 70% of the corridor is within $\frac{1}{2}$ mile of an equity area



Multiple bus routes with high bus frequency. Many local bus routes use corridor for short stretches



Approach to Develop & Evaluate Alternatives



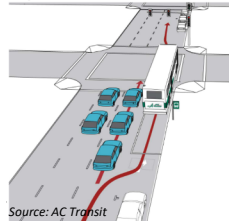
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Potential Treatments

BRT Stations



Mixed Traffic With Queue Jumps (QJ)



Mixed Traffic



Curbside Lanes



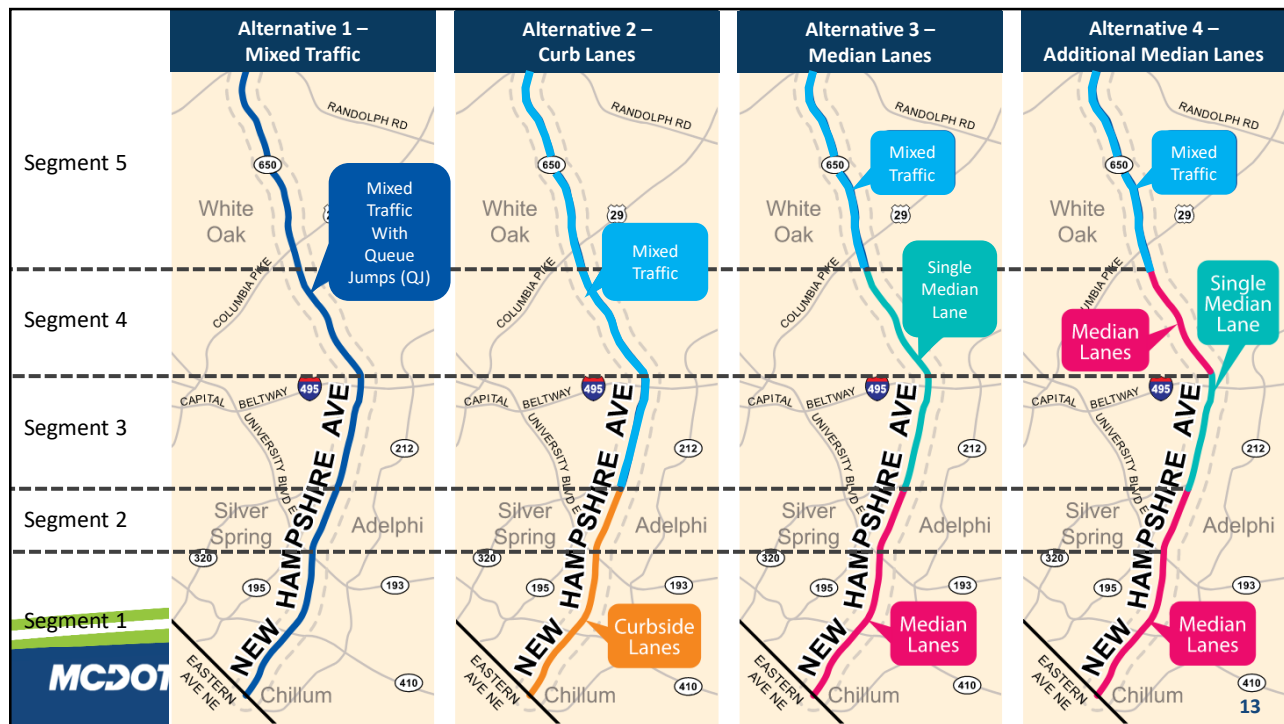
Median Lanes



Single Median Lane



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Evaluation Metrics

- BRT Travel Time
- Local Bus Travel Time
- Vehicle Travel Time
- Right-of-Way Required
- Cost per Mile
- Total Construction Cost
- Construction Duration
- Jobs Accessibility
- Transit Ridership

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Approach to Concept Design in Planning Studies

► Base Information – Aerial & GIS

► Alignments

- Mixed Traffic, Mixed Traffic w/ QJ, & Curbside Lanes
 - *Maintain existing lanes*
 - *Majority of proposed improvements along outside curbline*
- Single Median Lane & Median Lanes
 - *Centered along existing roadway – Refinements anticipated during PE/Final Design*

► Lane Widths

- Maintain existing lane widths
 - *New Hampshire Avenue (MD 650) is a MD SHA Roadway*
 - *Request to narrow lanes and subsequently reduce impacts anticipated during Final Design*
- Maintain existing Pedestrian & Bicycle Accommodations

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Challenges Encountered in early Concept

► Station Locations & Configurations

- Mixed Traffic w/ QJ
 - *Proposed on nearside of intersections*
- Mixed Traffic
 - *Proposed on far-side of intersections*
- Single Median Lanes (Reversible) & Median Lanes
 - *Must be proposed in median regardless of Peak/Off-Peak direction*

► Maintaining Left Turn Lanes at Signalized Intersections

- *Typicals fit within existing curblines except where left turn lanes must be maintained*

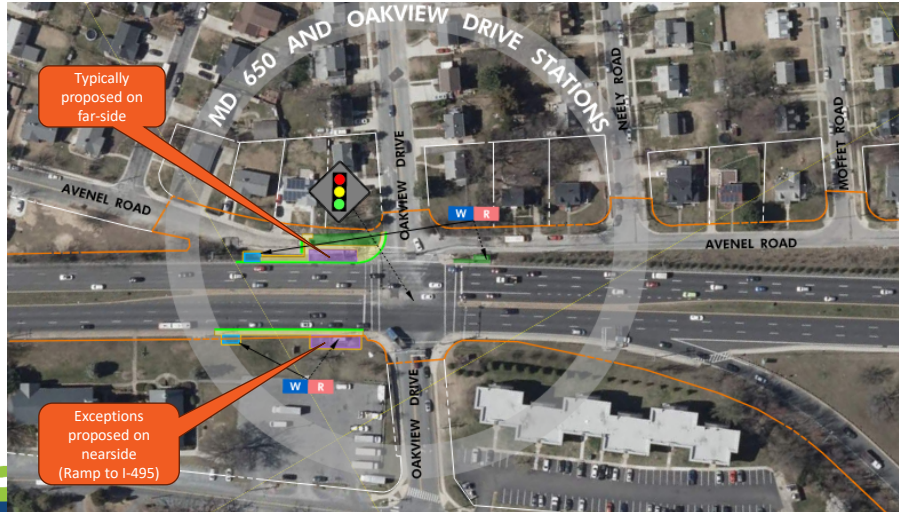
► Access Roads

- *Maintained – Typically narrowed with on-street parking removed*
- *Removed – Where ROW impacts too significant*

► Driveway Entrances

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Station Layouts – Mixed Traffic



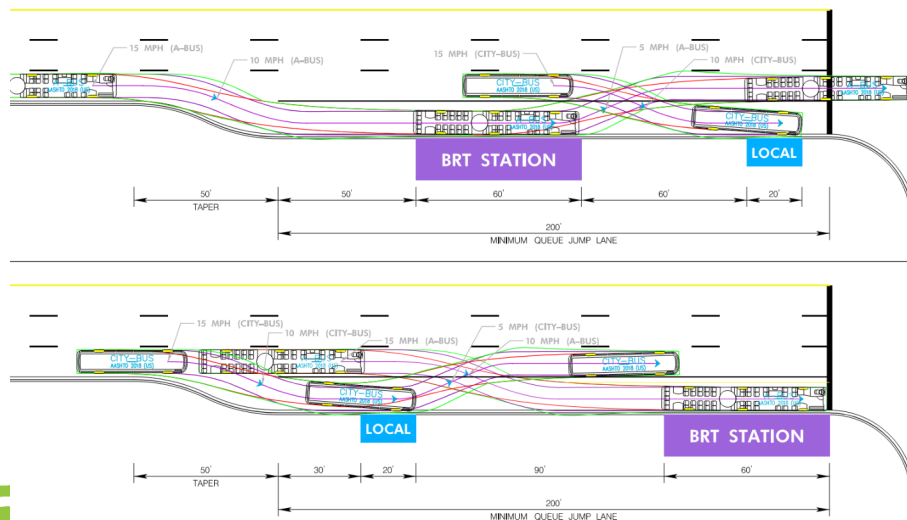
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Station Layouts – Mixed Traffic w/QJ



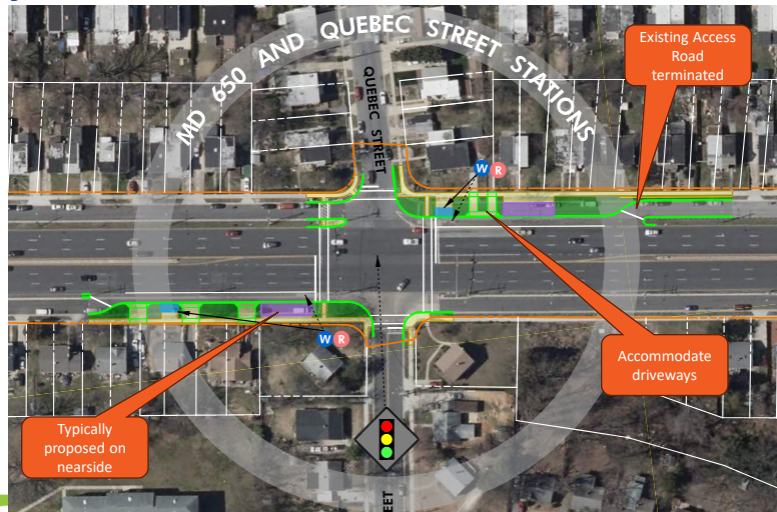
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Station Layouts – Mixed Traffic w/QJ

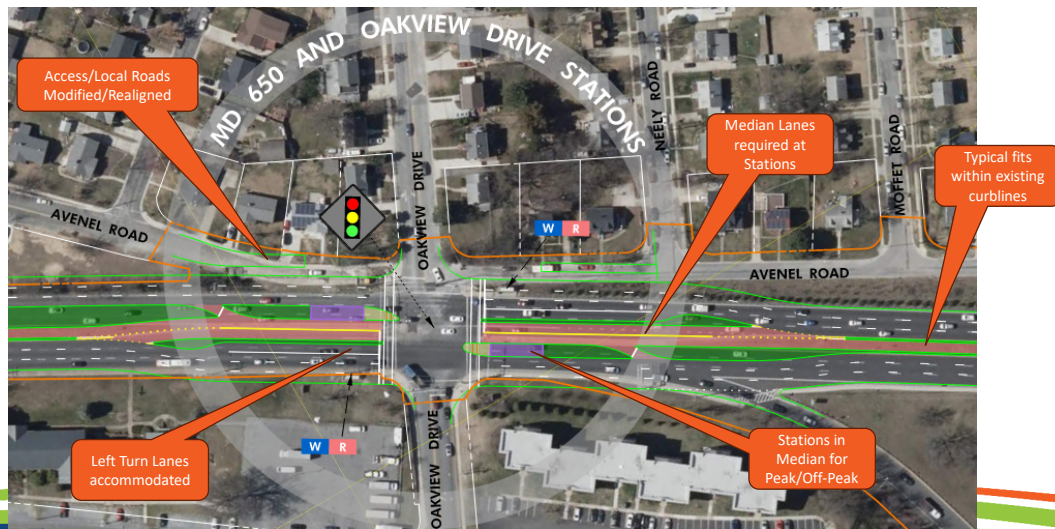


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Station Layouts – Single Median Lane



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Station Layouts – Median Lanes



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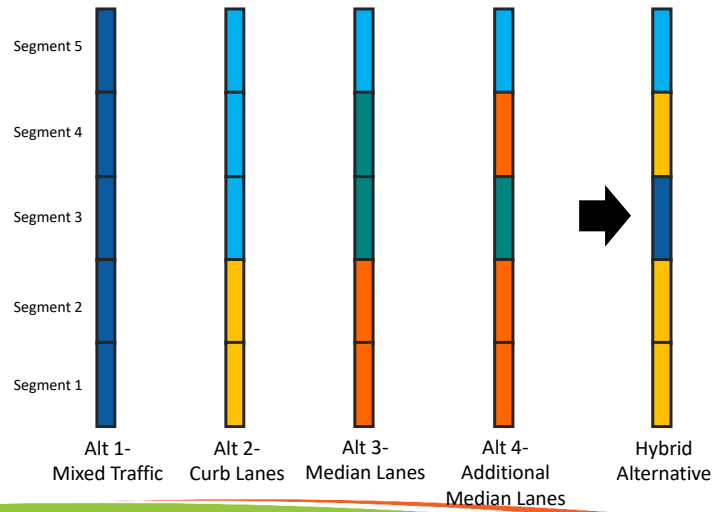
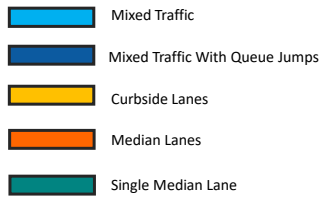
Estimating Costs & Impacts

- ▶ Evaluation Metrics for Alternative Analysis
- ▶ MD SHA Cost Estimating Manual – Major Quantities Estimate
 - Percentages Recommended for MOT, Drainage/E&SC, Landscaping, Utilities
- ▶ Right-of-Way Impacts
 - Existing Right-of-Way – Based on GIS
 - Proposed Right-of-Way – For Roadway Widening & SWM
- ▶ Format based on FTA's Standard Cost Categories for Capital Projects
 - Professional Services (33%) & Contingency (40%)

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Approach to Develop a Hybrid Alternative

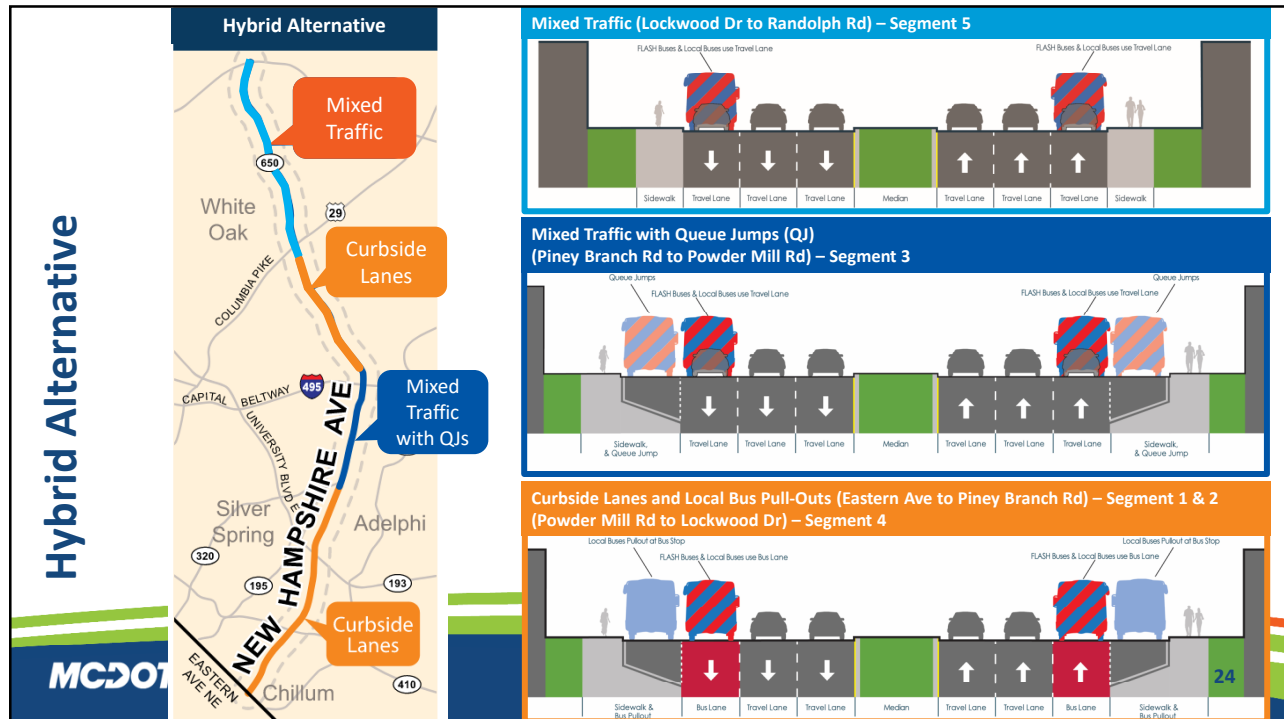
- ▶ None of the four alternatives perform best across evaluation criteria for all segments
- ▶ A Hybrid Alternative has been assembled by mixing and matching best performing segments across alternatives



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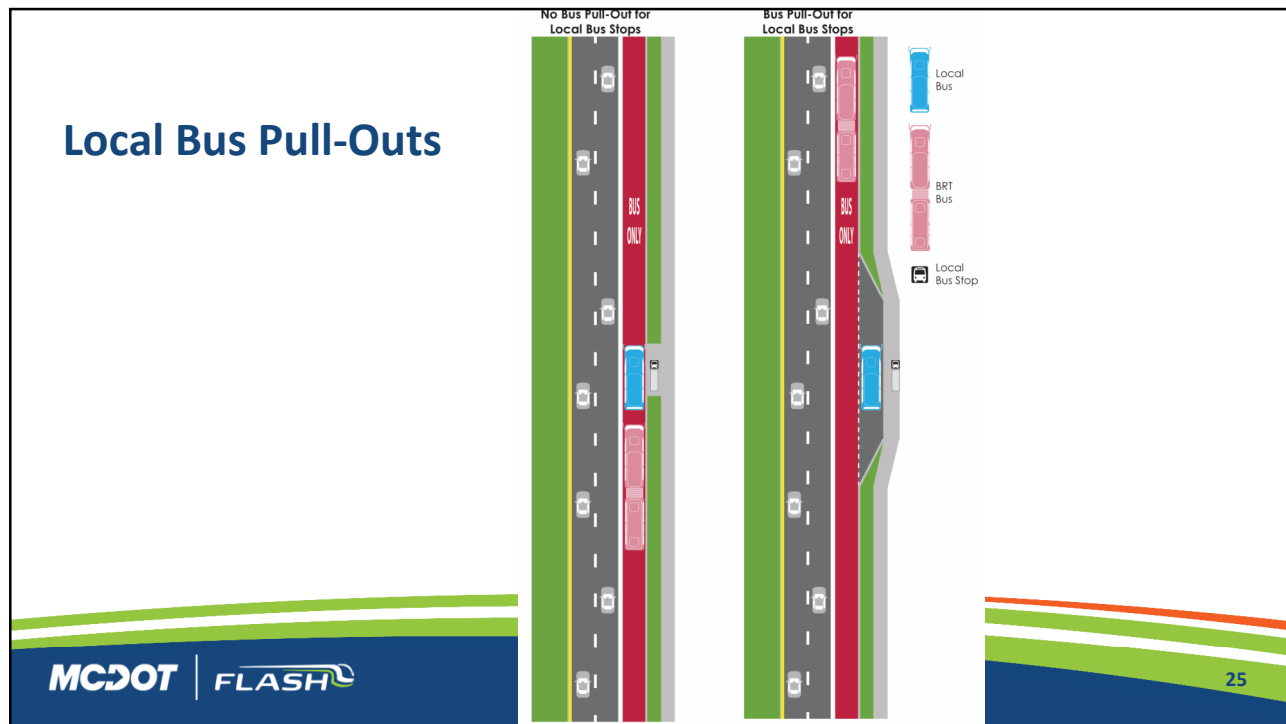
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Local Bus Pull-Outs






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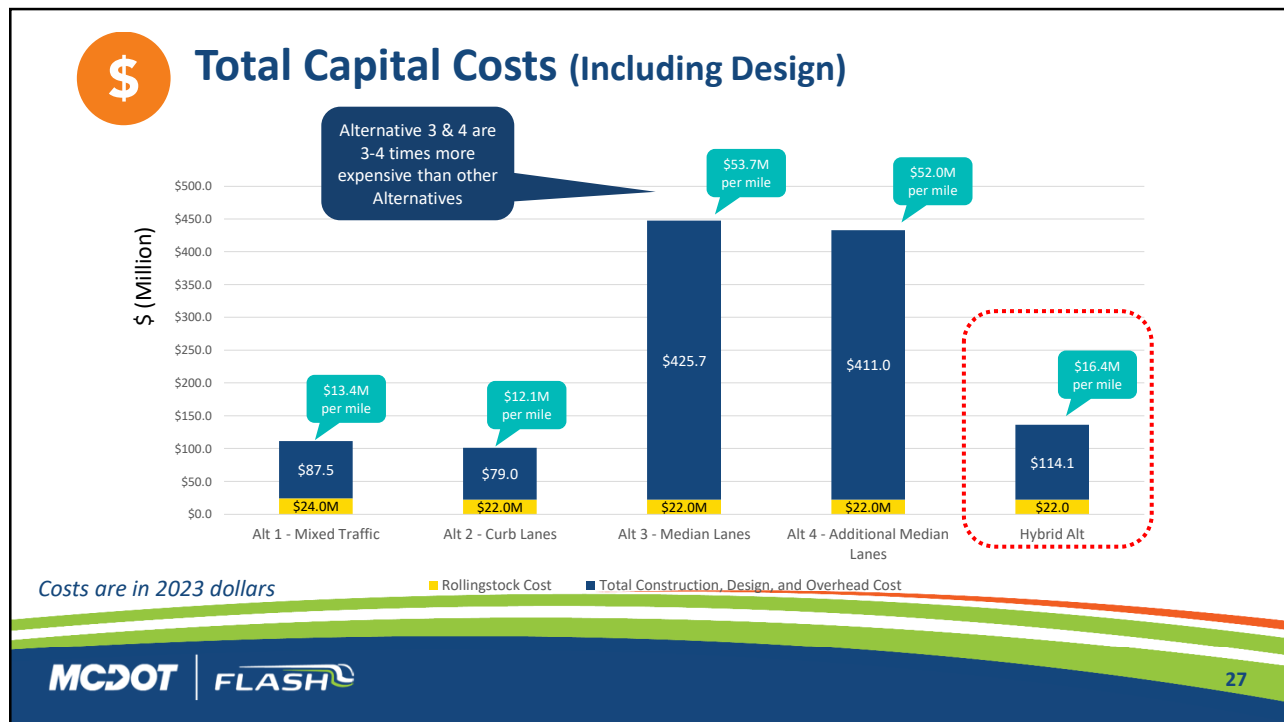
Travel Time Comparisons

**Peak Period Commute Round Trip in Minutes
(AM Southbound + PM Northbound)
Between Sheridan Street and Mahan Road (5 Miles)**

Hybrid Alternative is the
best performing
alternative for BRT and
Local Buses

	Mode	No Build	Alt 1 – Mixed Traffic	Alt 2 – Curb Lanes	Alt 3 – Median Lanes	Alt 4 – Additional Median Lanes	Hybrid Alt
	BRT	N/A	47.3	43.1	36.4	36.3	33.4
	Local Bus	62.6	47.0	43.2	64.7	67.5	38.2
	General Traffic	48.0	31.3	45.7	47.5	50.2	39.9

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Hybrid Alternatives Key Takeaways

- ▶ For BRT, the 13 local bus pull-outs save around 3.6 minutes in the southbound AM and northbound PM peak periods for BRT
- ▶ The 13 local bus pull-outs estimated to be approximately \$1.1M each
- ▶ Specific locations of local bus pull-outs can be revised based on construction and operational feasibility during future design phases

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Thank You

Questions?

Jamie Henson

*BRT Project Implementation Manager
Montgomery County Department of
Transportation (MCDOT)*

Jamie.Henson@montgomerycountymd.gov

Aditya Inamdar, AICP, LEED AP, RSP1

*Associate Urban Planner & Designer
Kittelson & Associates*

ainamdar@kittelson.com

Jacob N. Smith, PE

*Senior Project Manager
STV*

jacob.smith@stvinc.com

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