US 29 Mobility and Reliability Study Continuation

Corridor Advisory Committee Presentation
November 16, 2021

Welcome!

Welcome to this virtual community meeting!

- We're going to go over some basic controls to help you use the Zoom meeting format before we start the presentation.
- Please note this meeting is being recorded.
  - It is being recorded on video and audio and will be posted on our website.
  - If you do not wish to have your voice or likeness recorded, please turn your video camera off, and refrain from asking questions using the audio option. Instead, you can send your questions via the chat.

Using Zoom

Welcome to the virtual community meeting!

Let's get you oriented to the Zoom meeting.

- Muting
  - Everyone is on mute. This helps us keep background noise down so that everyone can hear the speaker. Please keep yourself on mute.
  - To request to speak, we ask that you use the **raise hand** feature (instructions in just a minute). Once we acknowledge you, you may unmute yourself to speak.
  - If you have called in by telephone, you can unmute yourself by dialing ***6** once we acknowledge you.

Using Zoom

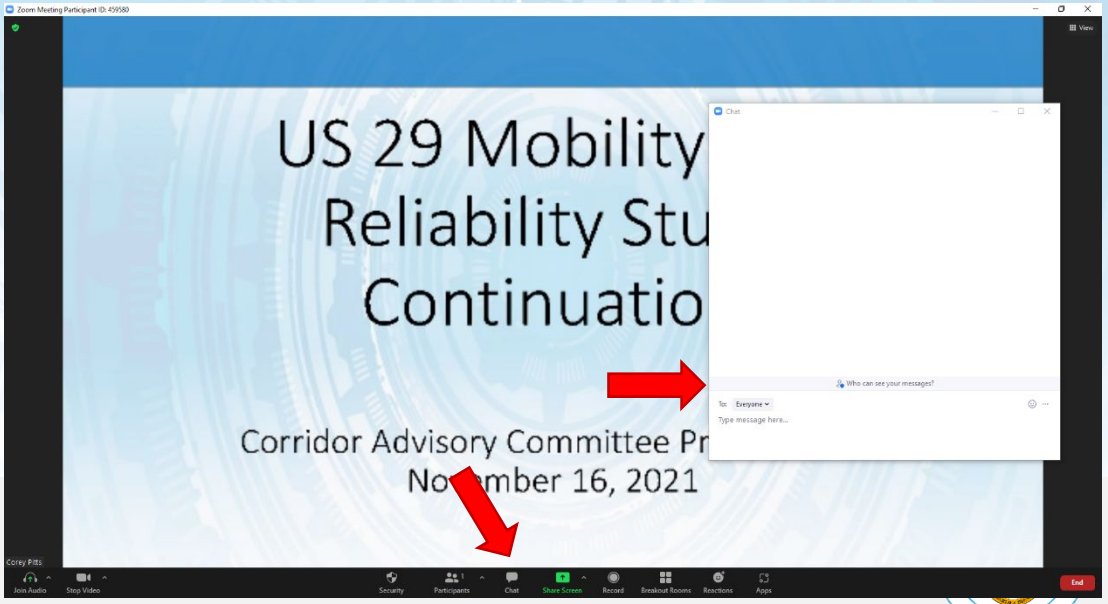
Welcome to the virtual community meeting!

Let's get you oriented to the Zoom meeting.

- Ask a question (Text)
  - If you have a question during the presentation, send it via **chat**.

To send a chat:

- Click "chat" in the bottom menu
- A new window will appear.
- Type your question and send it.



Using Zoom

Welcome to the virtual community meeting!

Let's get you oriented to the Zoom meeting.

- Raise your hand
  - If you'd like to speak to ask a question or make a comment, please **raise your hand**

To raise your hand

- Click "Reactions" in the bottom menu
- A new window will appear. Click the "raise hand button" at the bottom.
- If you've dialed in by phone, dial ***9**.

Agenda

- Introductions/ CAC Roles
- Previous Study Summary
- Follow-on Study Goals & Objectives
- Additional Alternatives (Proposed)
- Project Schedule
- Breakout Rooms by Committee
- Summary/ Open Questions and Comments

Purpose of the US 29 Mobility and Reliability Study

To identify improvement(s) on US 29 that complement the investment in US 29 Flash from Burtonsville to the Silver Spring Transit Center.

- Improve corridor travel time and reliability for all modes
- Increase pedestrian and bicycle access and safety

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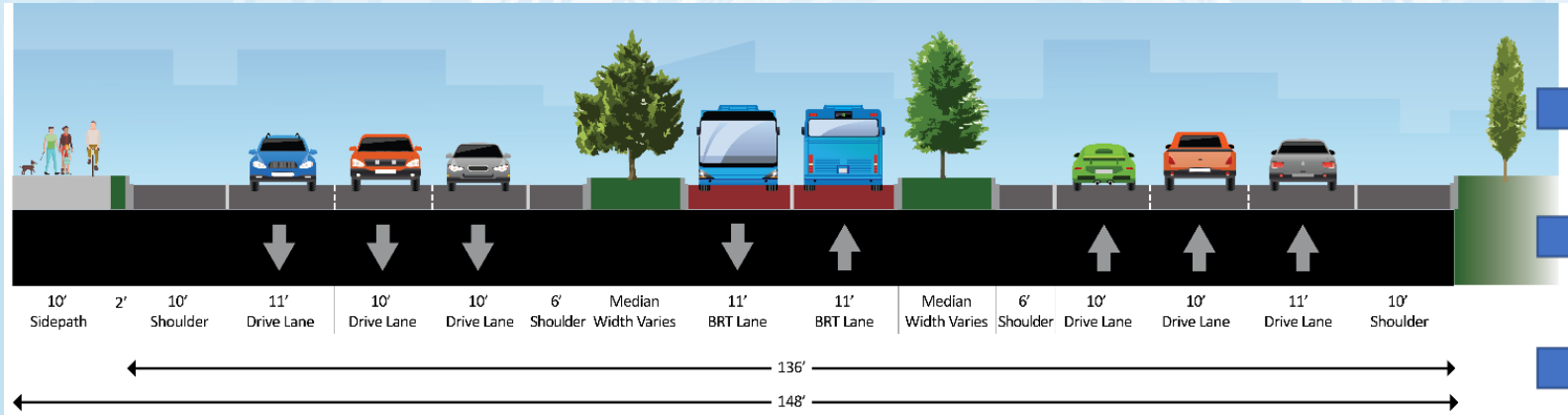
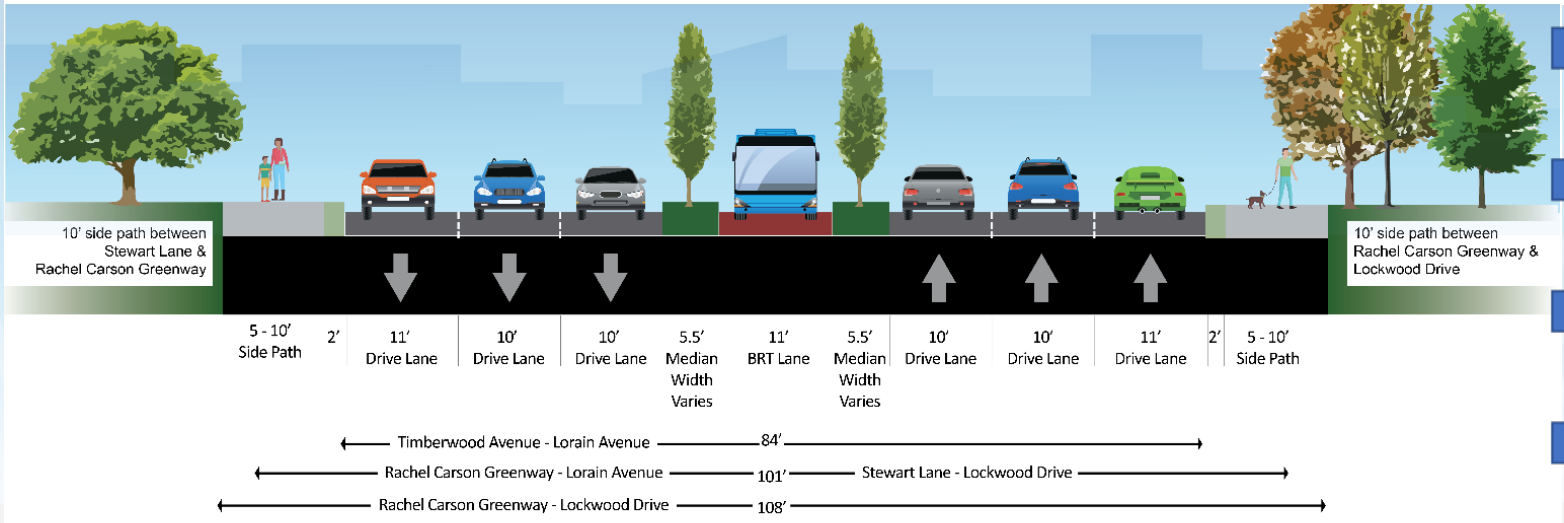
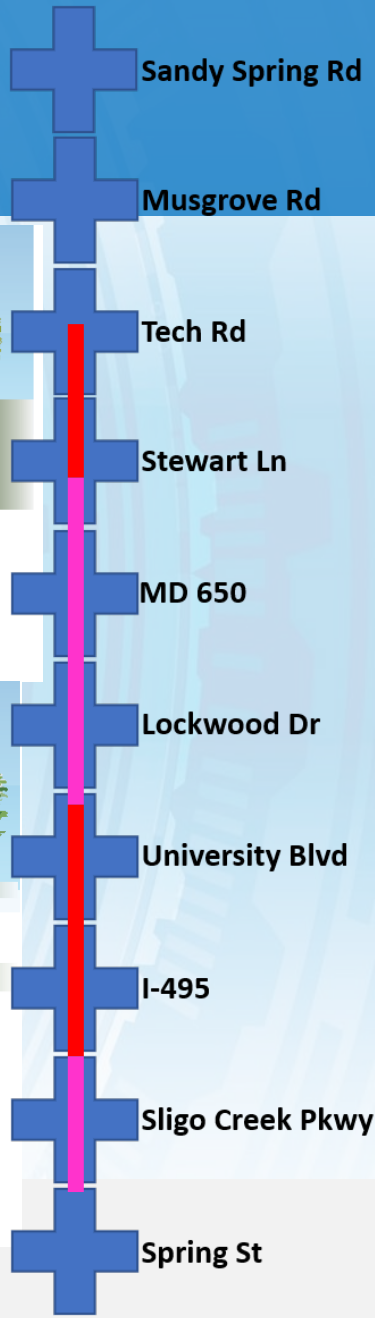
Options Evaluated

- **Full-time Dedicated Median Bus Lane**: Tech Road to Sligo Creek Parkway
- **Rush-hour Bus/ HOV Lanes**: Musgrove Road to Spring Street and **Bus on shoulder** north of Musgrove Road
- **Intersection Improvements** at select locations
- **System/ Demand Management** measures to reduce non-recurring congestion and encourage carpooling
- **Pedestrian and Bicycle** improvements for better access (Silver Spring to Tech Road)

Median Bus Lane Concept ($100-$110M)



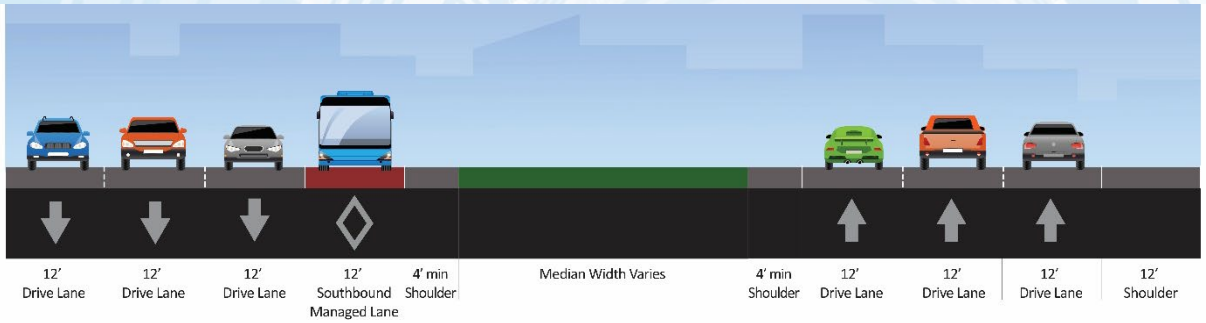


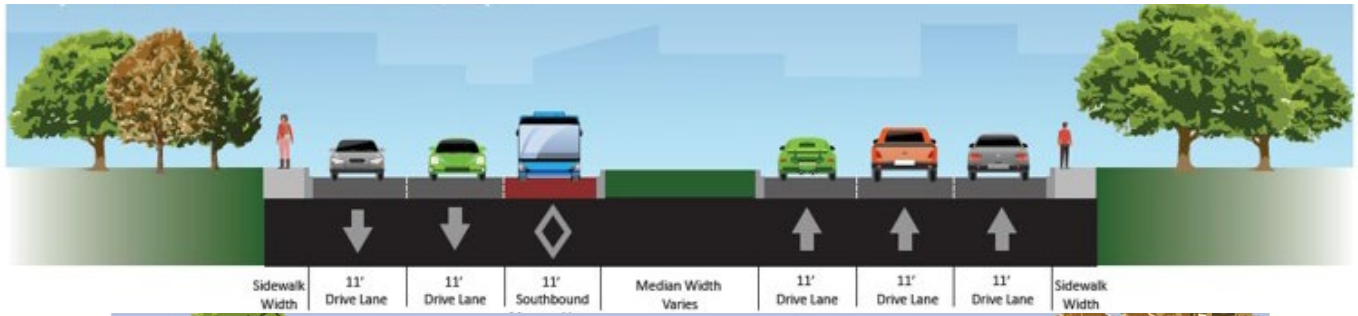


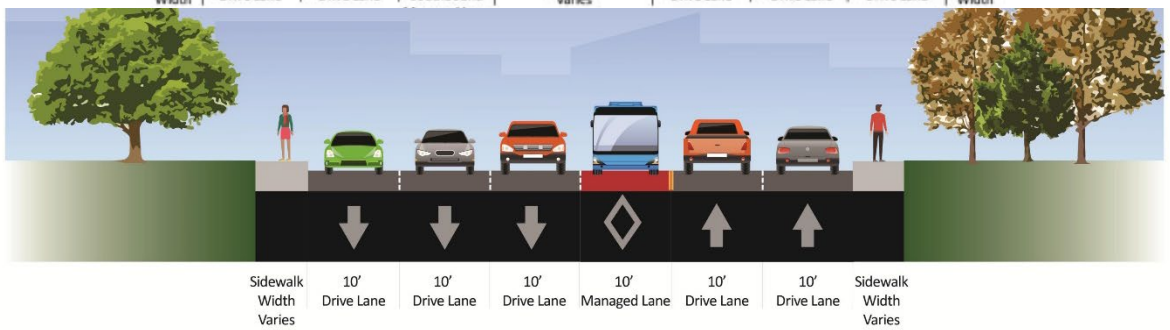
Dual median busway (new lanes)

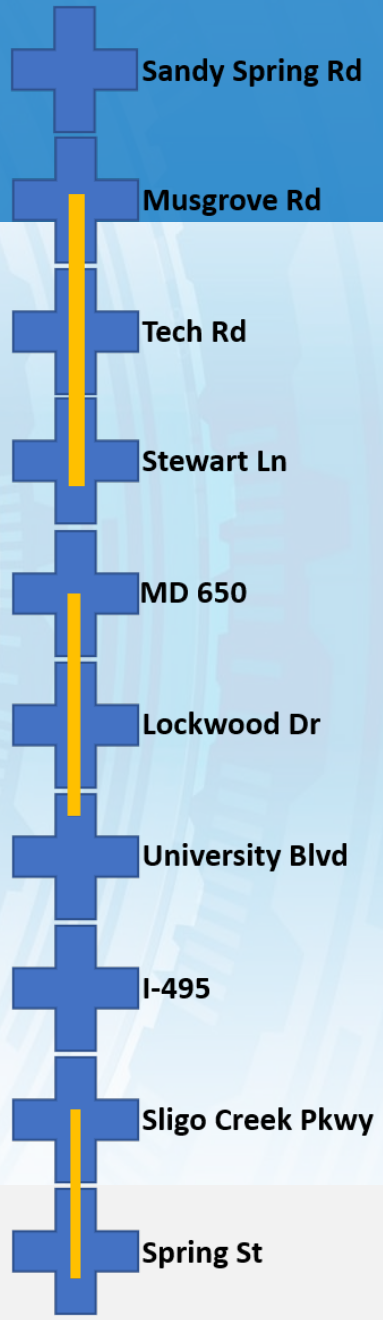
Single median busway (new lanes)

Bus/HOV Lane Concept ($40-$50M) AM Rush Period

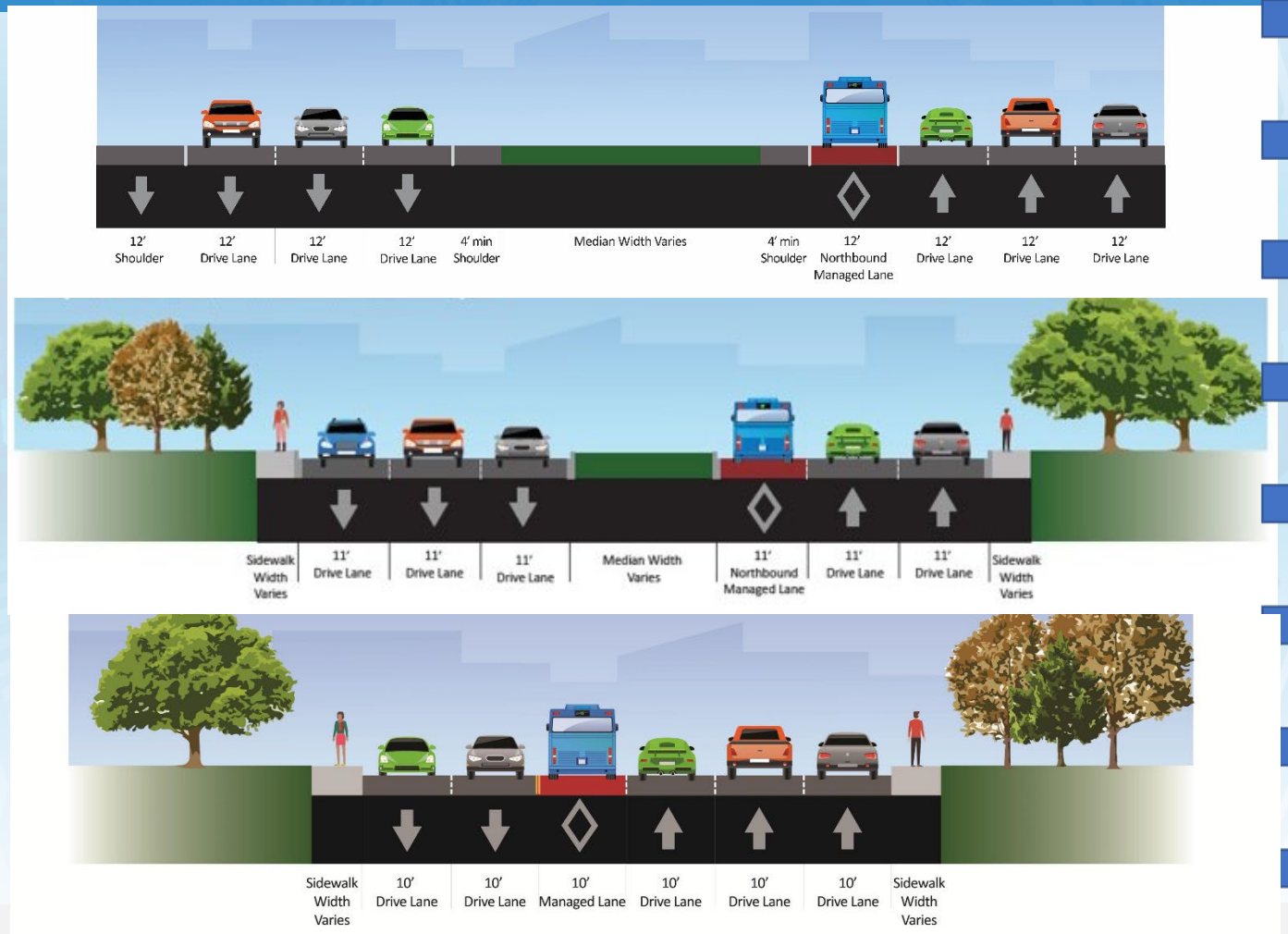


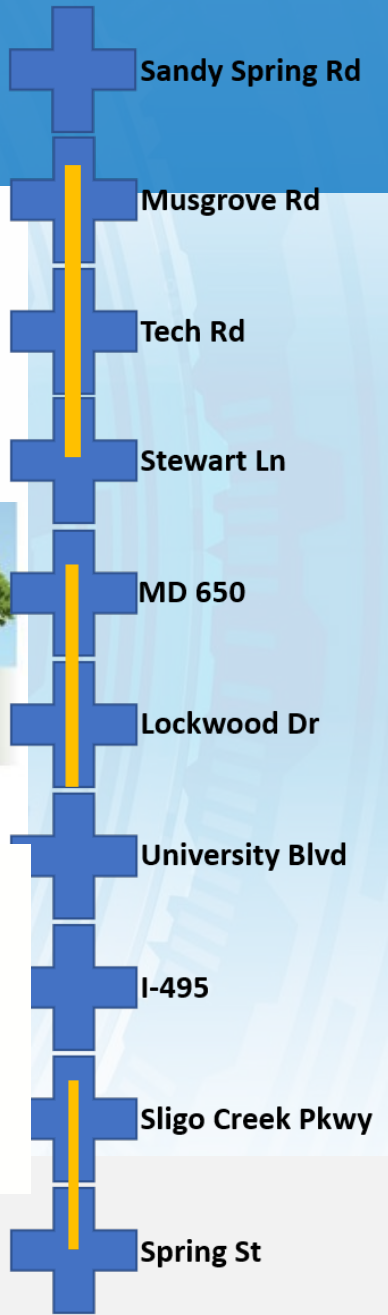






Bus/HOV Lane Concept ($40-$50M) PM Rush Period





Priority Intersection Improvements ($20-25M)

- Greencastle Road Intersection Improvements
- Tech Road Intersection Improvements
- Stewart Lane Intersection Improvements
- MD 650 Interchange Improvements
- US 29 Southbound Exit Ramp to Westbound I-495 Improvements
- Sligo Creek Intersection Improvements

Transportation Systems / Demand Management ($1 - $5M)

- Provide real-time travel time information from the county line to I-495 and Silver Spring
- Travel Demand Management (TDM) incentive programs to encourage carpool, transit, and bicycle use
- Develop Integrated Corridor Management Plans (US 29/I-95/US 1/MD 295)
- Increase incident response patrols
- Implement smart signal technology for demand-responsive timing plans
- Provide real-time commuter park and ride space availability

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Pedestrian and Bicycle Improvements ($15 - $20M)

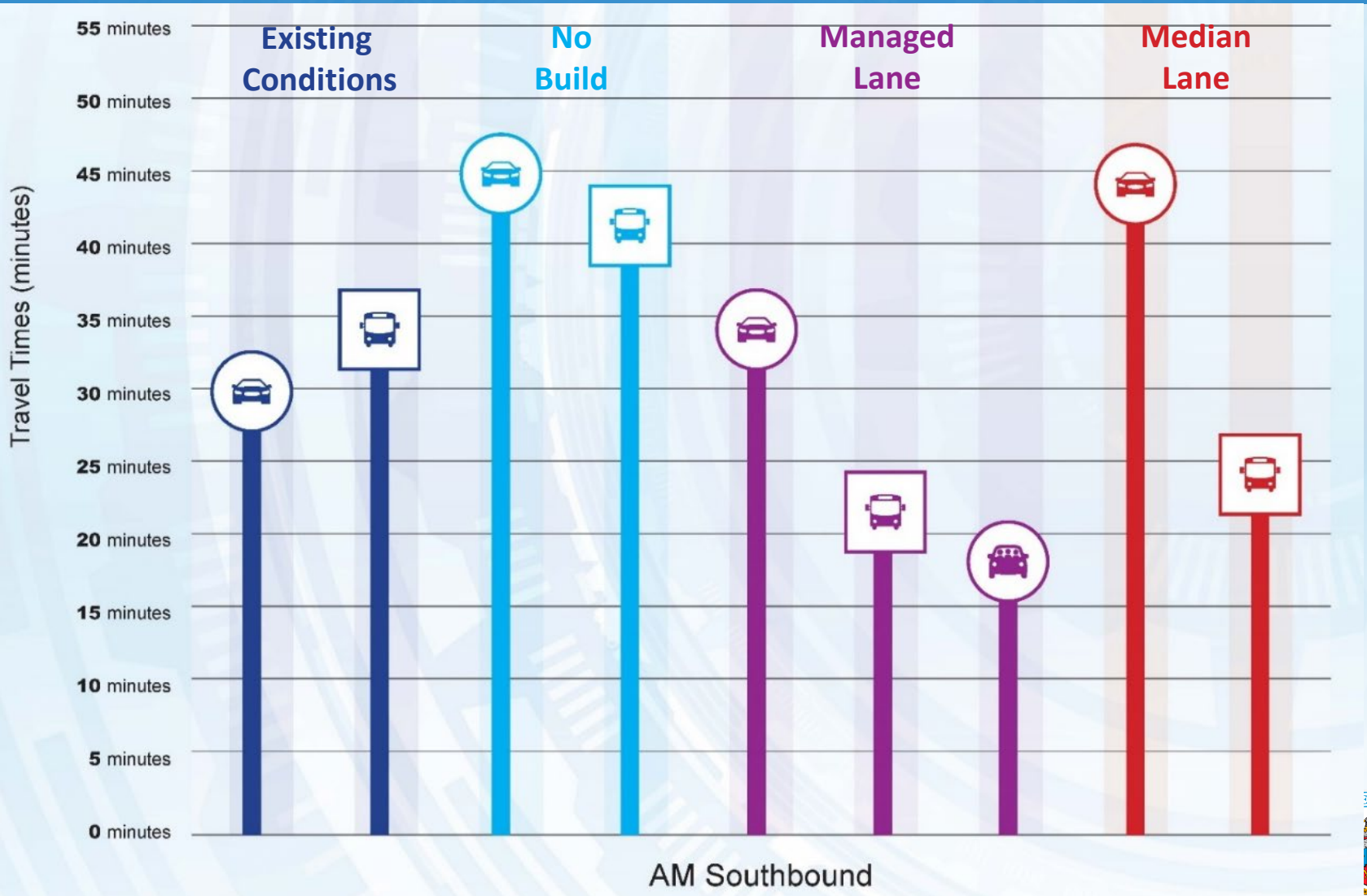
Over 200 individual walking and biking recommendations between Silver Spring and Tech Road

- New and widened sidewalks
- ADA compliance updates
- Bike routes/lanes
- US 29 crossing upgrades
- Bike parking/shares

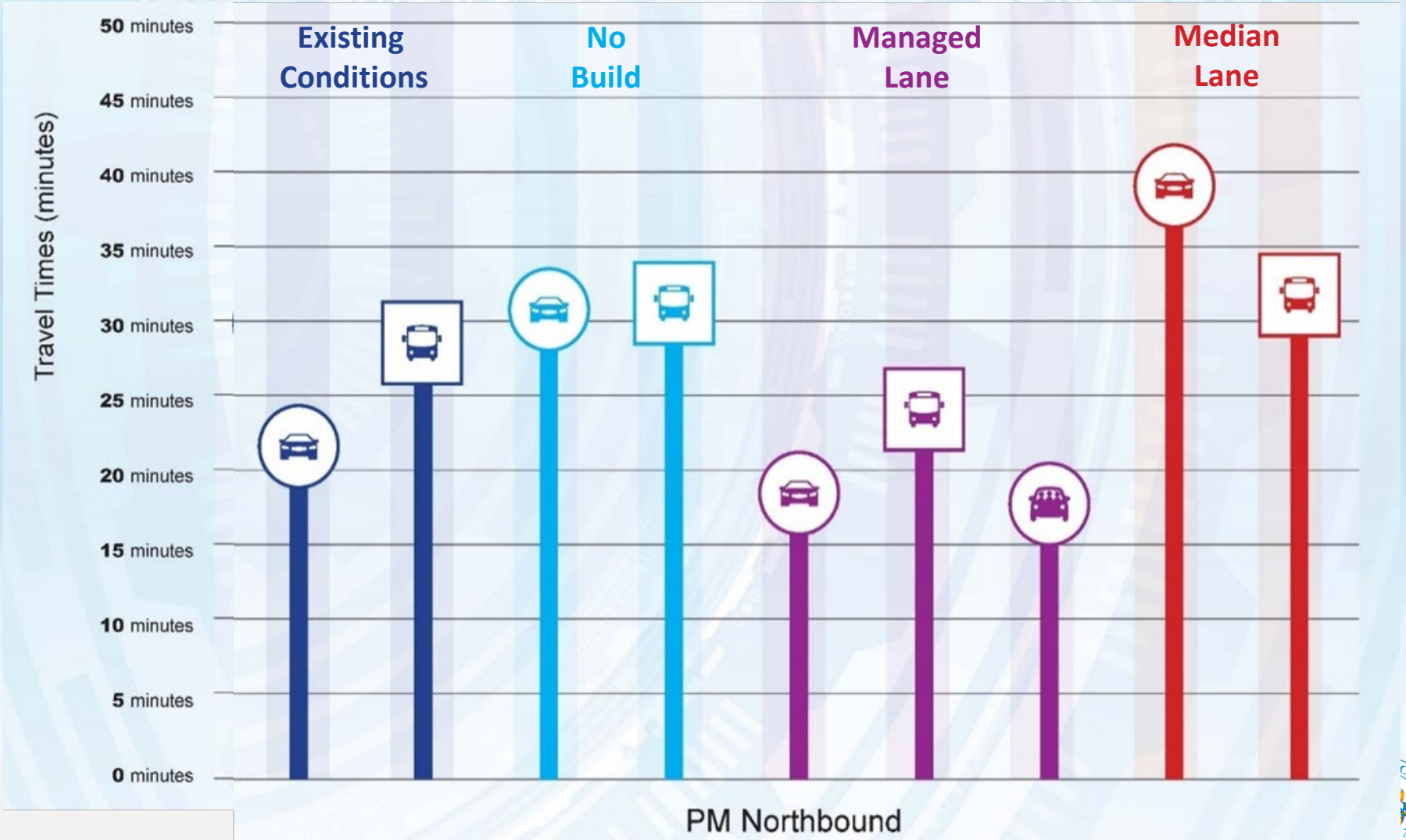
*Cost excludes sidepaths and bridges

US 29 Mobility and Reliability Study

Summary of Results Travel Time - AM Southbound



Summary of Results Travel Time - PM Northbound



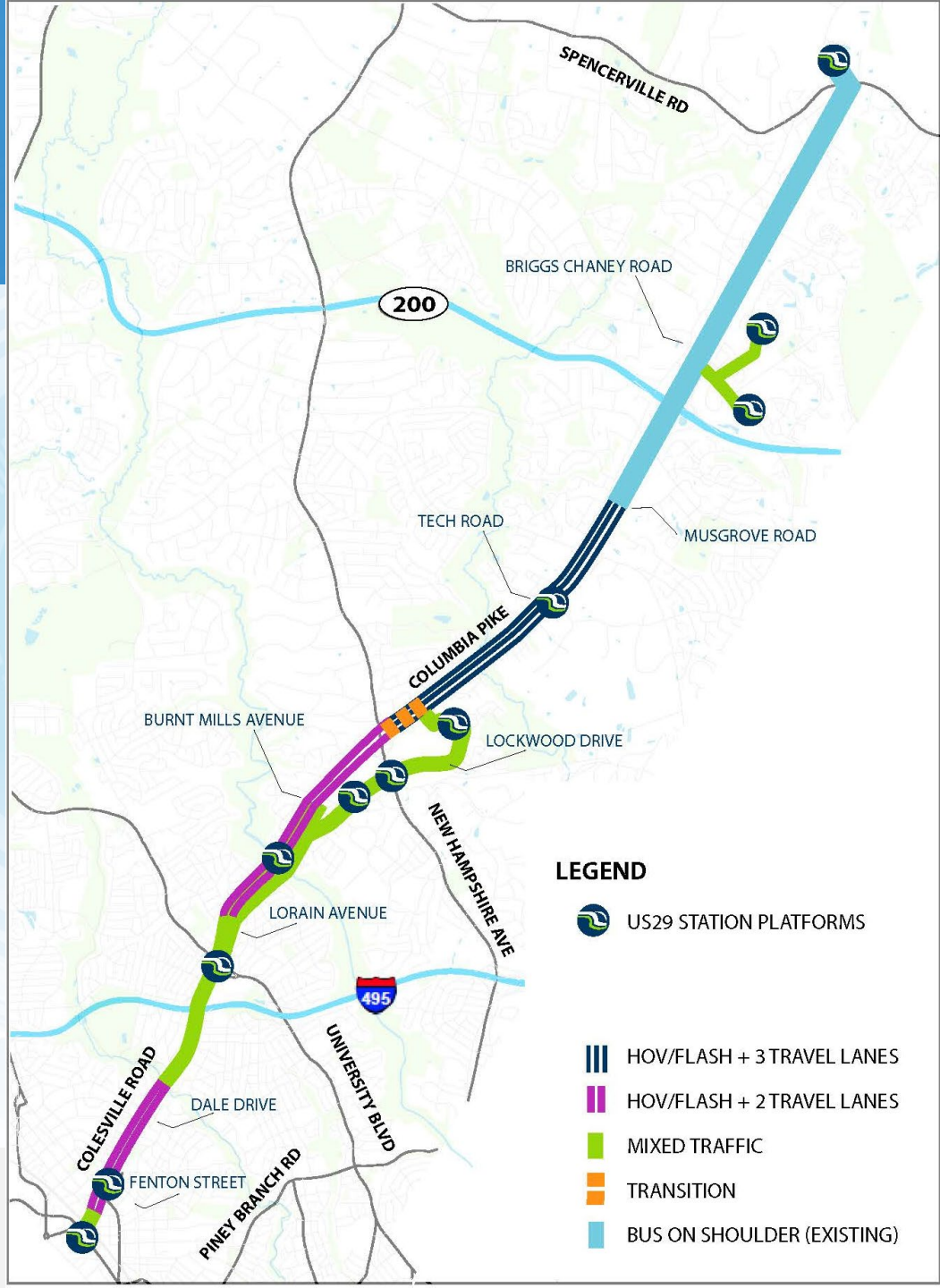
Summary of Results Comparison of Initial Alternatives

	No Build	Median Bus Lane	Managed Lane
Number of Intersections LOS E/F AM(PM)	12(9)	12(13)	7(4)
Number of Segments LOS E/F AM(PM)	19(12)	20(12)	15(8)
Person Throughput AM(PM)	3800(4250)	3800(3950)	4550(4650)
Travel Time Auto in Minutes AM(PM)	46(32)	45(40)	35(18)
Travel Time HOV in Minutes AM(PM)	n/a	n/a	19(19)
Travel Time BRT in Minutes AM(PM)	43(32)	25(33)	23(25)
Right-of-Way	n/a	9.8 acres	2.2 acres
Cost	n/a	$105-110M	$40-50M

*23 study intersections in corridor, 21 study segments, 10 miles in length

Proposed Recommendations – Initial Study

- Advance Bus/HOV lane concept ($40-50M)
  - **Musgrove Road to Stewart Lane** – Peak Period/Direction HOV + Bus Lane with Hard Running Shoulder
  - **MD 650 to Southwood/Burnt Mills** – Peak Period/Direction HOV + Bus Lane
  - **Sligo Creek Parkway to Spring Street** – Peak Period/Direction HOV + Bus Lane



Proposed Recommendations – Initial Study
Continued

- Advance the six intersection/interchange improvements ($20-25M)
- Advance station access (bike/ped) improvements ($15-20M)

Questions Received from Planning Board and Council

- Can the Median Bus Lane be improved for traffic and transit operations?
- Can the Median Bus Lane be re-engineered to be more cost effective?
- Can the Bus/HOV and Median Lane alternatives be assessed equally?
- Can the modeling further clarify HOV and transit mode shifts ?
- Can the independent utility of the spot improvements be addressed?

Mobility Study Continuation Goals

- Optimize median bus lane alternative
- Assess independent utility of the spot improvements
- Confirm/revise modeling assumptions
- Confirm/revise conceptual costs

Mobility Study Continuation Alternatives

1. Median Bus Lane with Common Intersection Improvements
2. Optimized Median Bus Lane
   - Include improvements necessary to make Median Bus Lane operate best while maintaining acceptable vehicle operations
3. Value Engineering of Median Bus Lane
   - Reduce cost of Median Bus Lane Concept
4. Hybrid Option
   - Combination of previous and new alternatives balancing operations and costs
5. Short Term/ Interim Improvements
   - Quick improvements to get operational benefit within 5 years. These would mesh with ultimate recommendations in above scenarios.

Value Engineering

Value Engineering is a systematic process of review and analysis of a project, during the concept and design phases, that is conducted to provide recommendations for:

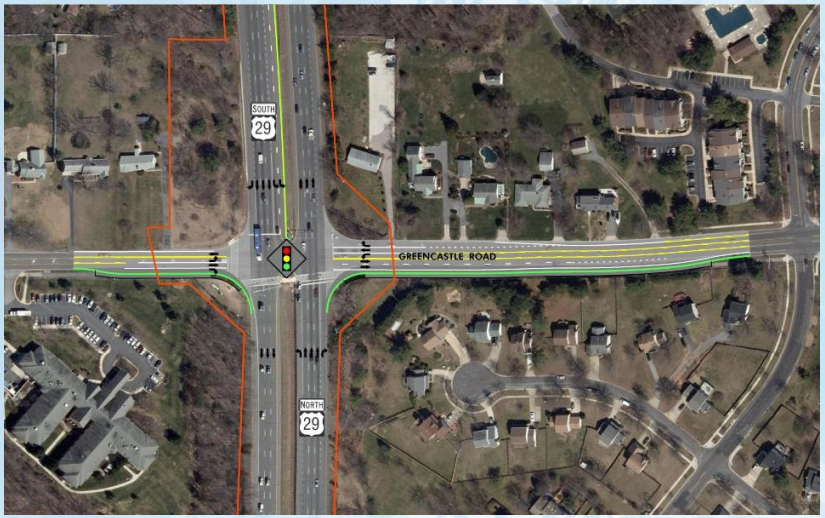
1. providing the needed functions safely, reliably, efficiently, and at the lowest overall cost;
2. improving the value and quality of the project; and
3. reducing the time to complete the project.

Potential Value Engineering Options

- Review of new/reconstructed traffic signals
- Review of bridge structures/retaining walls
- Review of busway facility needs/design standards
- Review of stormwater management facility type and needs
- Design Waivers:
  - Narrow Lanes and Narrow Shoulders
  - Resurfacing vs. pavement marking removal/eradication
  - Pedestrian/ bicycle facility design

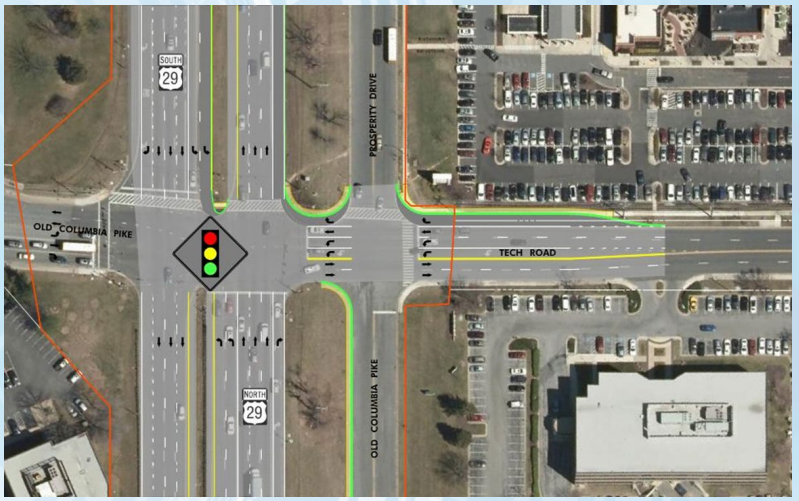
Intersection Improvements Initially Evaluated (1-2 of 6)

Greencastle Road



- Add Eastbound Right-turn Lane
- Add Second Southbound Left-turn Lane and Eastbound Receiving Lane
- Pedestrian Safety Needs

Tech Road



- Additional US 29 turn lanes (2nd SBL) and side street widening for additional westbound right-turn lane at Tech Road
- Pedestrian Safety Needs

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Intersection Improvements Initially Evaluated (3-4 of 6)

Stewart Lane

- Add a 2nd SB left turn lane on US 29 at Stewart Lane
- Pedestrian Safety Needs

MD 650

- 3rd Southbound US 29 lane addition through MD 650
- Potential Additional Intersection / Ramp Configuration Revisions
- Pedestrian Safety Needs

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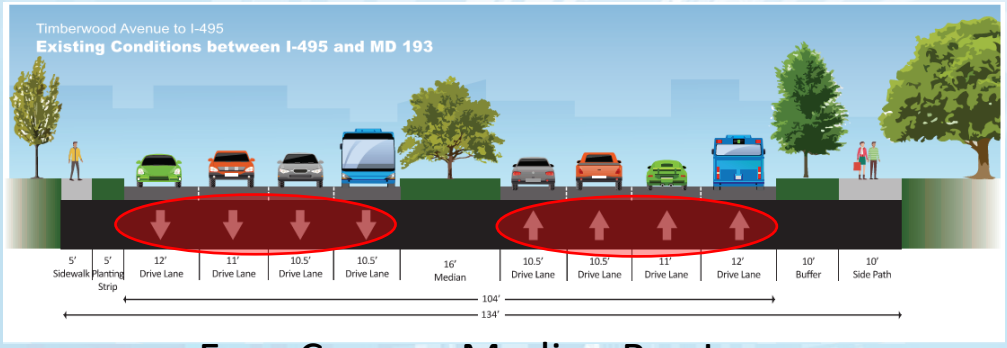
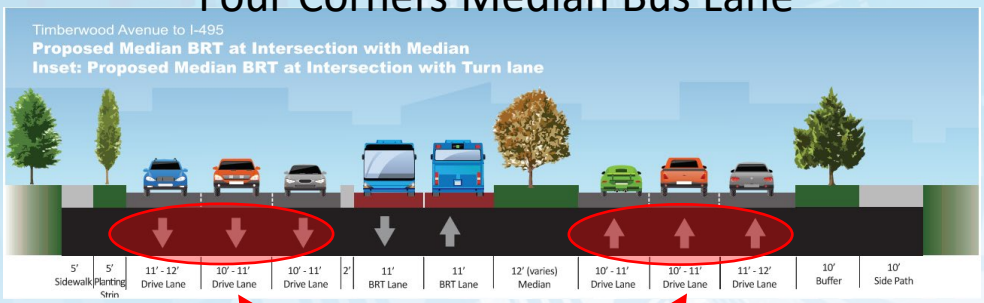
Intersection Improvements Initially Evaluated (5-6 of 6)

Four Corners Existing



Four Corners Median Bus Lane



Maintain 4 general purpose vehicle lanes through Four Corners, consider reversible single median bus lane

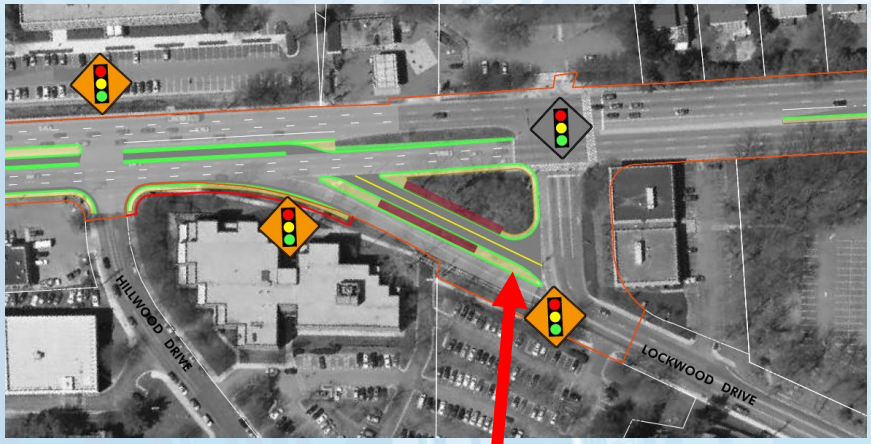
Sligo Creek Parkway

- Sligo Creek Parkway enhancement at US 29 for 2nd westbound through lane

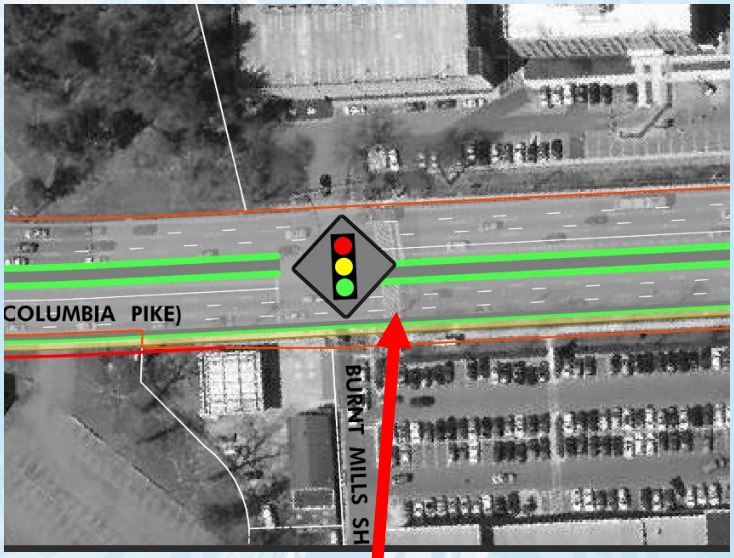
*Both Median Lane and Bus / HOV Lane included 2nd exit lane from SB US 29 to WB I-495

Station Locations/ Design

Alternatives



Median Bus Lane: Move stations to be on US 29. Stations on Lockwood Drive require complex signal phasing and take time from mainline US 29



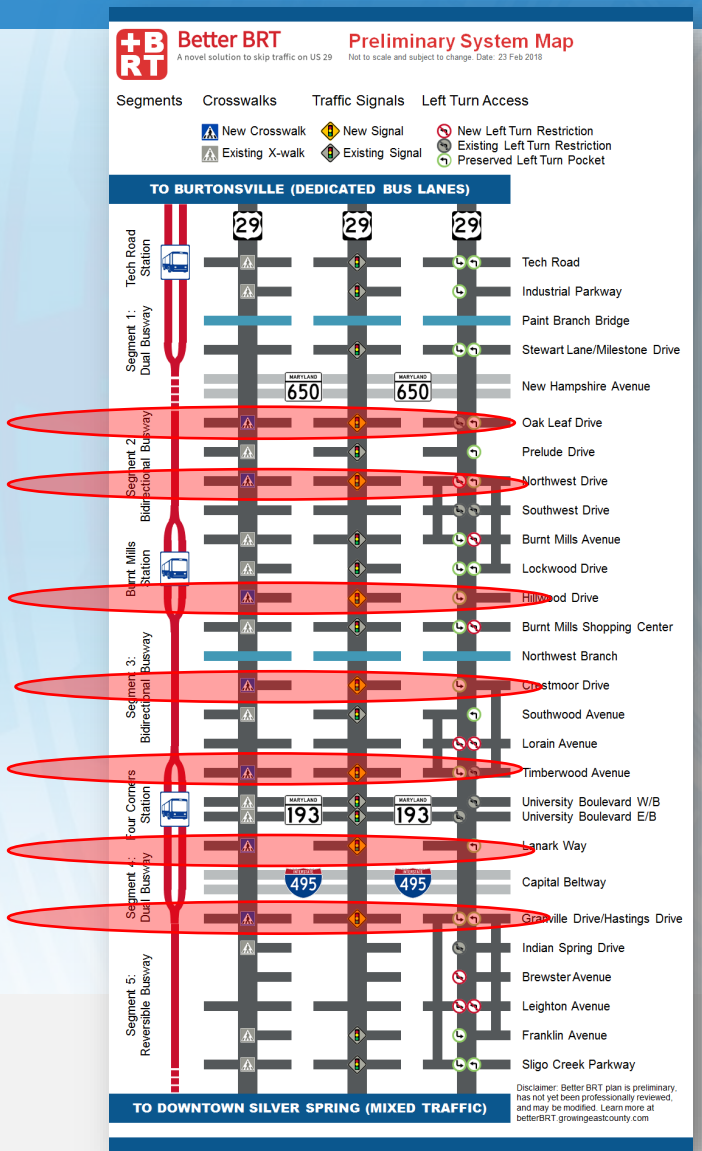
Bus/ HOV Lane: Relocation of ped crossing at Burnt Mills SC. Potential ped only signal at relocated Lockwood Station

Station Locations/ Design

Alternatives

Station may need redesigned/ relocated to maintain four northbound travel lanes

Proposed New Signals (Oak Leaf to Hastings) Median Bus Lane



Limit / consolidation of traffic signals at 7 intersections. Removal would result in additional turn restrictions and fewer pedestrian crossings.

Segment Breakout Discussion

- What are your top priorities for improving mobility on US 29?
- What project impacts are of most concern to you?
- What alternative do you like best?
- What design elements are most important to you?
- What selection criteria are most important to you?

Schedule and Next Steps

- CAC Meetings – November 16, 2021
- Public Meeting #1 – December 16, 2021
- Alternatives Development and Analysis – Winter 2022
- CAC Meetings – Late Winter/ Early Spring 2022
- Public Meeting # 2 – Spring 2022
- Report and Recommendation – Summer 2022

Contact

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Note: Email is much preferred for communication, rather than regular mail or our desk phones.