

I-495 American Legion Bridge Transit and TDM Study

Stakeholder Meeting #3

October 16, 2020

Meeting Agenda

- Introductions
- Study Updates
- Refinement Process Results
- Prioritization- Next Steps
- Breakout Sessions – Zoom Rooms!
- Meeting Wrap Up

Team Introductions



Study Team

- **DRPT**

- Jennifer Debruhl
- Grant Sparks
- Todd Horsley
- Ciara Williams (Study Manager)

- **MDOT/MTA**

- Kate Sylvester
- Zachary Chissell (Agency Contact)
- Elizabeth Kreider (Study Manager)
- James Ritchey
- Gladys Hurwitz
- Kari Snyder

- **Consultant Team**

- Melissa DuMond (Study Manager)
- Paul Elman
- Erin Murphy
- Lucas Muller
- Steve Weller
- Grace Daigle
- Andrew Wainwright
- Andrew Zalewski

Study Stakeholders



Northern Virginia
Transportation Authority
The Authority for Transportation in Northern Virginia

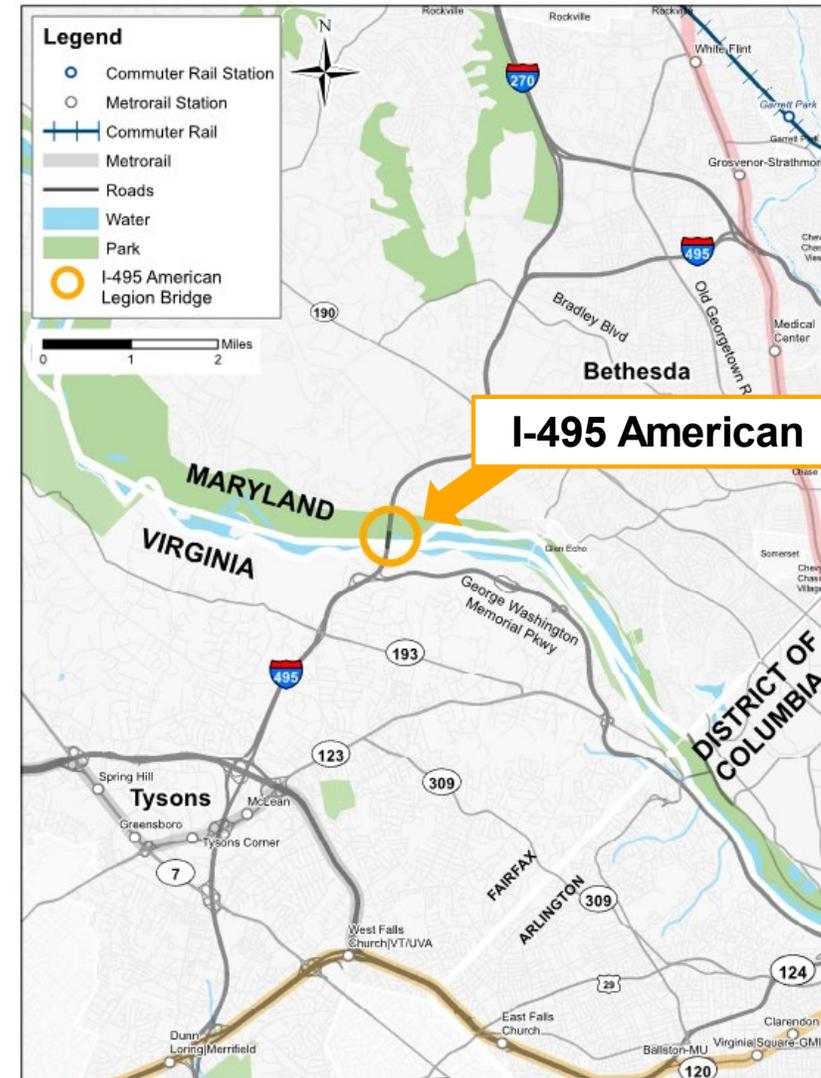


What Progress has been made on the I-495 American Legion Bridge Transit/TDM Study?

Study Purpose

Identify a range of potential current and future multimodal solutions that might be implemented to:

- Reduce congestion
- Improve trip reliability and regional connections
- Enhance existing and planned multimodal mobility and connectivity



Identified Project Needs

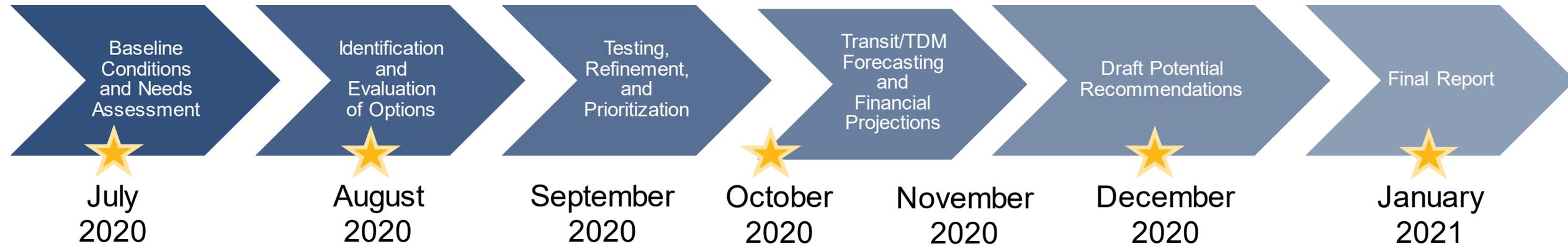
- Providing **congestion relief** in the corridor, including the bridge
- Accommodation of **future regional growth**
- New mobility choices to service travel **between Virginia and Maryland**
- Solutions to address **dispersed travel demand**
- Broader awareness about **affordable and viable commuting options**
- **Technology** to support real-time decision making and flexible travel patterns

Study Horizon

The potential recommendations will be grouped into three implementation **horizons**:

- **Near-Term:** Prior to the opening of the Managed Lanes up to and over the Bridge in both Maryland and Virginia
- **Mid-Term:** In conjunction with the opening of the Managed Lanes up to and over the Bridge in both Maryland and Virginia
- **Long-Term:** Following opening of the Managed Lanes

Timeline



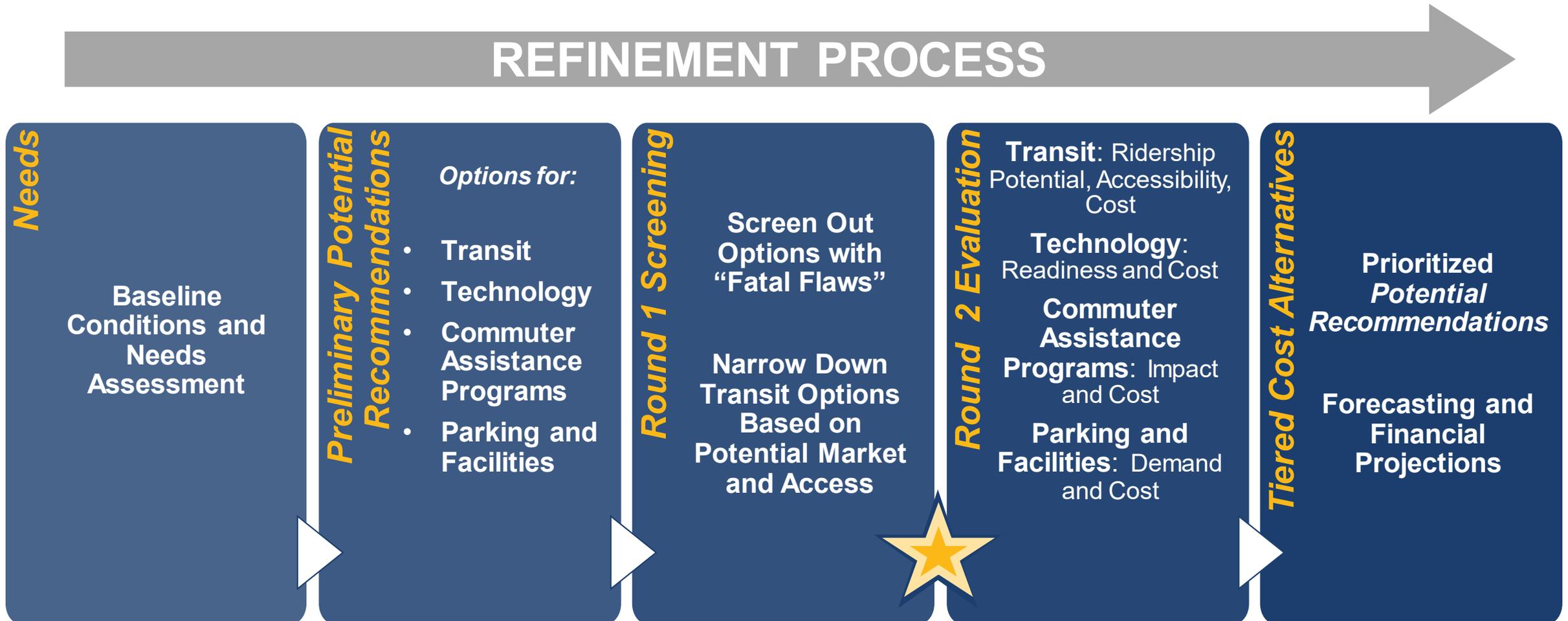
 Stakeholder Meetings

Project Updates

- Managed Lanes Study
- I-495 NEXT
- Updates from Stakeholders

Process

REFINEMENT PROCESS



Initial Transit Screening Objectives

- Ensure potential recommendations meet the needs of the study
- Focus on directly serving travel over the bridge
- Do not overlap or duplicate with existing/planned efforts
- Identify high origin-destination demand connections

Initial Transit Screening Results

- **Screened Out Routes:**

Insufficient Travel Demand Along Corridor	
Tysons	White Flint
	White Oak (via Silver Spring)
Reston/ Dulles	Frederick
	Germantown
	Gaithersburg
	Silver Spring
	White Oak
Not Competitive with Existing Transit Service	
Tysons	Friendship Heights
Dunn Loring	Silver Spring
Arlington	Rockville
	Bethesda
	Silver Spring
	White Oak
Indirect Access to Managed Lanes	
Tysons	Rockville
Reston	Rockville
Dunn Loring	Rockville

- **Routes Retained:**

- Bethesda – Tysons
- Germantown – Tysons
- Silver Spring – Tysons
- Gaithersburg – Tysons
- Frederick – Tysons
- Bethesda – Reston
- Bethesda – Dunn Loring
- Frederick – Arlington

Transit Testing and Evaluation

- Comparative rankings of the 8 retained routes
- Off-model analysis to assess transit demand
- Iteration on:
 - Alignments and stop locations
 - Interim stops vs. direct service
 - Destination routing
 - Managed lanes access

Scoring Methodology

- Routes scored relative to each other based on nine metrics
- Triple weighting assigned to overall potential ridership

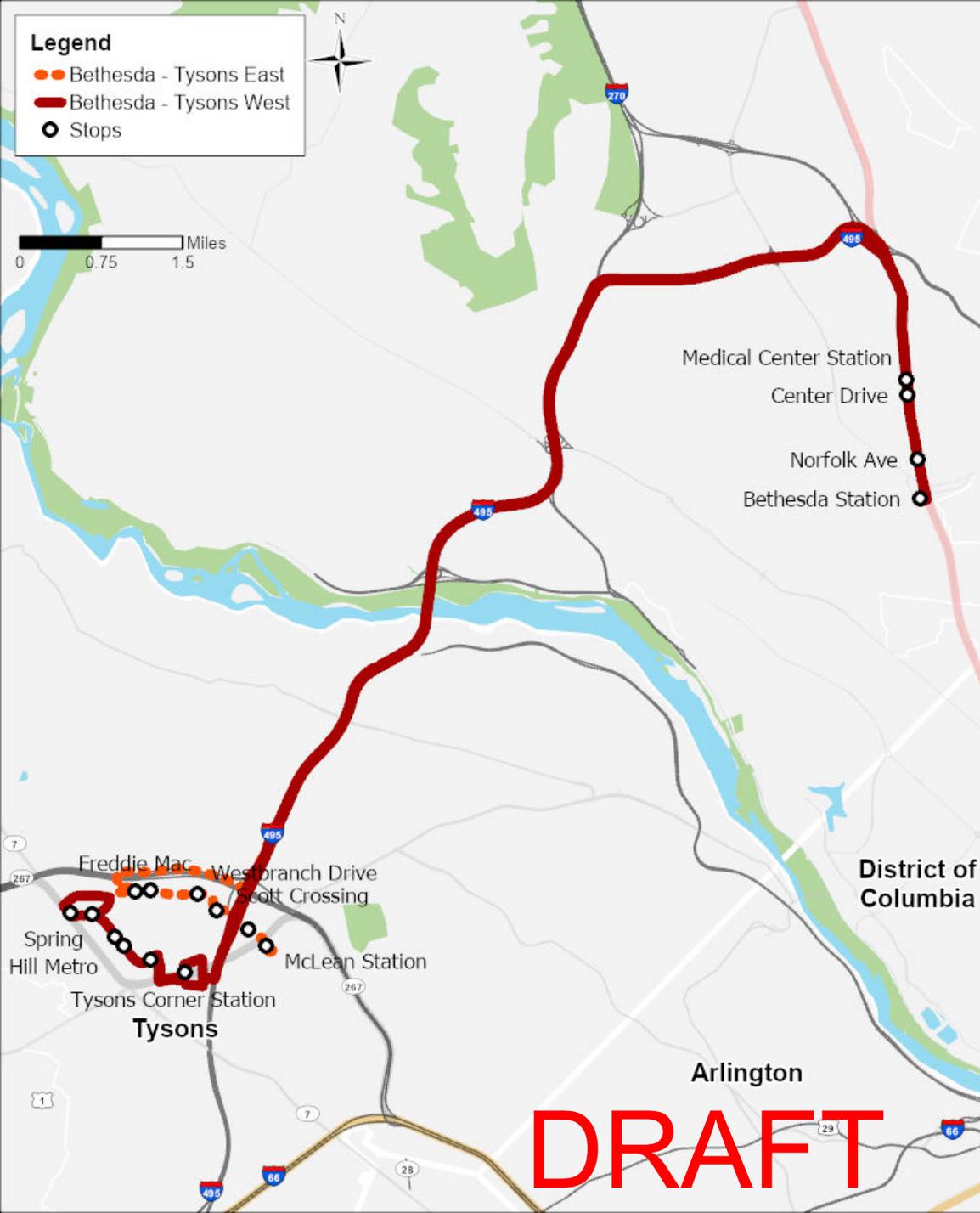
Category	Metric	Description
Productivity	Cost per Trip	Operating costs (assume \$152 per revenue hour) divided by trips.
	Trips	Number of trips per day on route.
	Boardings per Hour	Number of boardings divided by daily revenue hours.
	Capital cost per Boarding	Total fleet costs divided by trips.
Equity	Minority Population Served	Percent of population which identifies as non-white within 3 miles of a stop. Only estimated for production side of peak direction trips.
	Low-Income Population Served	Percent of population below the federal poverty line within 3 miles of a stop. Only estimated for production side of peak direction trips.
Connectivity	Total Jobs Served	Total number of jobs within ½ mile of a stop. Only estimated for attraction side of a trip.
	Population Served	Total population within 3 miles of a stop. Only estimated for production side of a trip
	Transit Connectivity	Total number of weekday transit trips that operate within 0.1 miles of a stop.



Metric	Bethesda - Reston
Cost/Trip	0.77
Trips	2
Boardings/Hour	13
Capital Costs/ Boardings	0.74
Minority Population	37%
Low-Income Population	8%
Total Jobs	110,092
Total Population	35,073
Peak Transit Trips (Transit Connectivity)	3,500
Final Rank	#10

Transit Assumptions

- Transit Demand
 - Number of trips **produced within 3 miles of a stop** (origin) and **attracted to locations within 0.5 miles of a stop** (destination)
 - Potential ridership - **5% transit mode share** for all trips
- Costs:
 - Operating costs - **\$152 per revenue hour**
 - Capital costs - **\$600,000 per peak vehicle required**
- Operating Speeds
 - Highway – **45 miles per hour**
 - Local roads – **15 miles per hour**



2a: Bethesda - Tysons

- **Trip Direction:** Bi-Directional
- **Number of Trips (One Direction):** 6 / 9
- **Assumed Headway (Peak):** 60 / 40 minutes
- **Prelim. Ridership (2021/2045):** 256 / 298
- **Evaluation:**

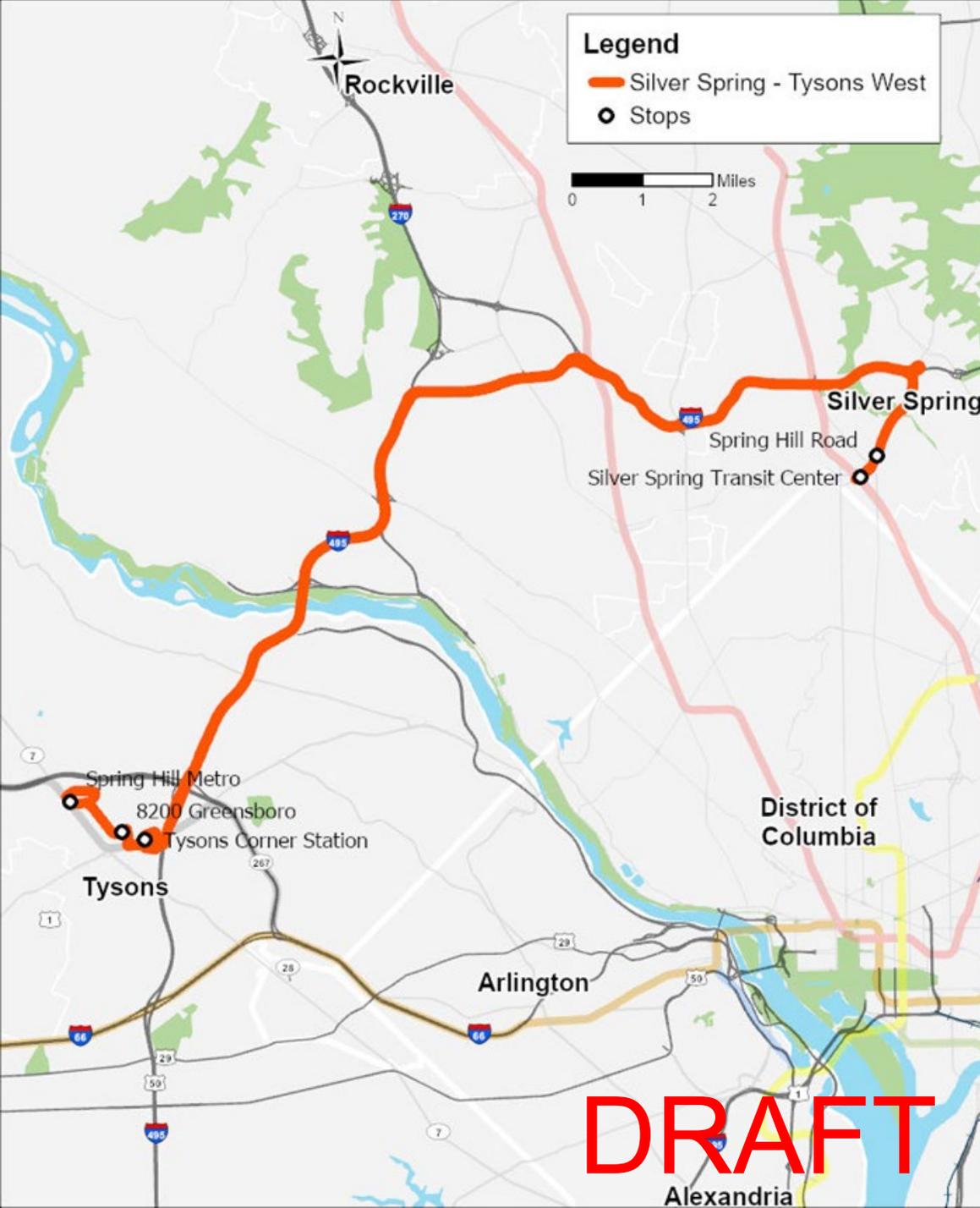
Metric	2a-East	2a-West
Boardings/Hour	21	17
Cost/Trip	\$7.12	\$9.18
Total Boardings	256	298
Capital Costs/ Boardings	\$4,682	\$4,024
Minority Population	33%	34%
Low-Income Population	6%	6%
Total Jobs	142,346	156,535
Total Population	42,009	44,569
Peak Transit Trips (Transit Connectivity)	2,182	1,846
Final Score	8.01	8.13
Final Rank	#4	#2



3a: Germantown - Tysons

- **Trip Direction:** Peak Direction Only
- **Number of Trips (One Direction):** 6 / 9
- **Assumed Headway (Peak):** 60 / 40 minutes
- **Prelim. Ridership (2021/2045):** 187 / 246
- **Evaluation:**

Metric	3a-East	3a-West
Boardings/Hour	16	14
Cost/Trip	\$9.74	\$11.12
Total Boardings	187	246
Capital Costs/ Boardings	\$12,810	\$9,756
Minority Population	58%	58%
Low-Income Population	12%	12%
Total Jobs	80,157	94,346
Total Population	26,605	26,605
Peak Transit Trips (Transit Connectivity)	2,739	4,007
Final Score	6.71	7.67
Final Rank	#7	#5



5a: Silver Spring- Tysons

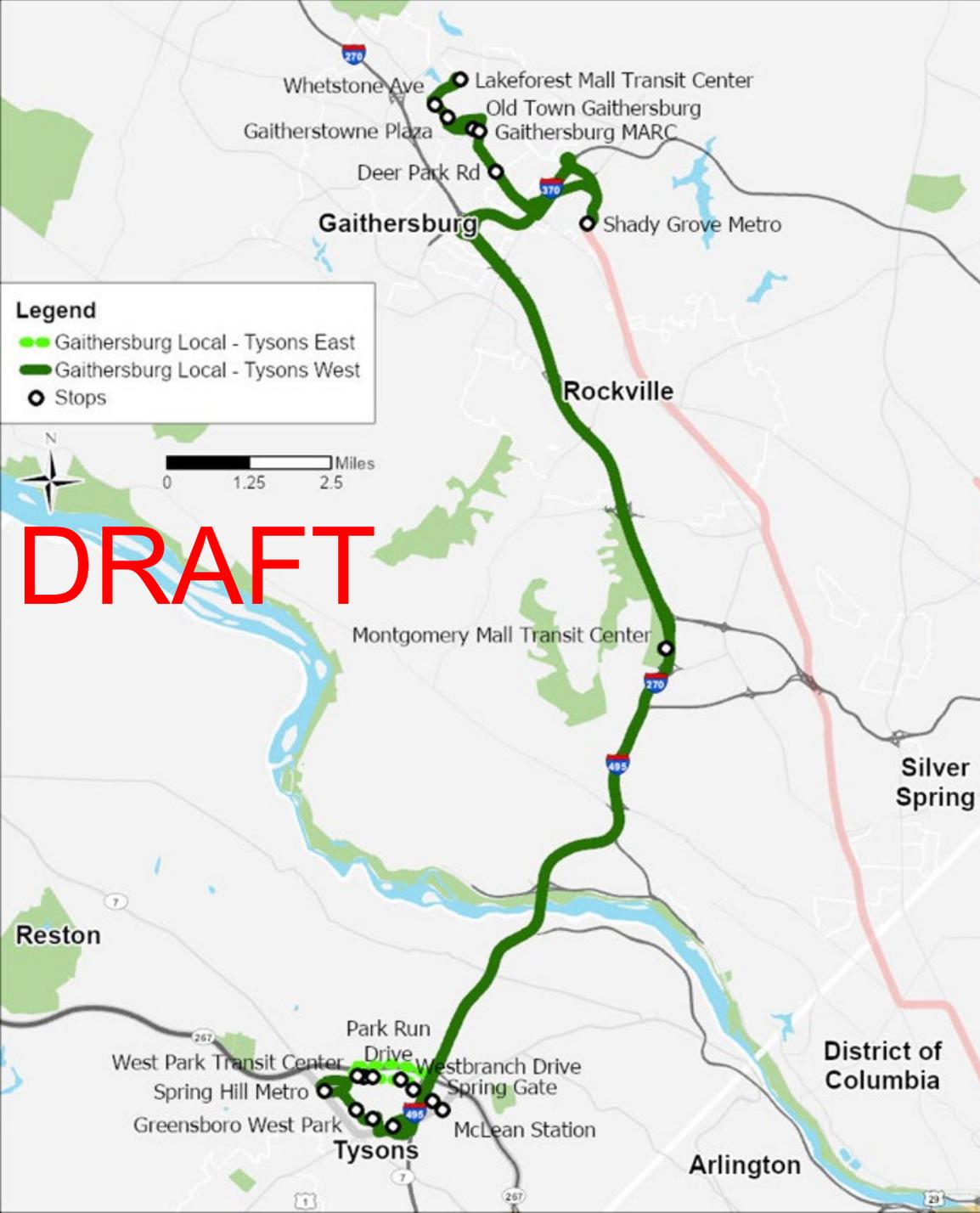
- **Trip Direction:** Peak Direction Only
- **Number of Trips (One Direction):** 6
- **Assumed Headway (Peak):** 60 minutes
- **Prelim. Ridership (2021/2045):** 136
- **Evaluation:**

Metric	5a-West
Boardings/Hour	11
Cost/Trip	\$13.45
Total Boardings	136
Capital Costs/ Boardings	\$8,851
Minority Population	65%
Low-Income Population	18%
Total Jobs	94,346
Total Population	34,330
Peak Transit Trips (Transit Connectivity)	2,302
Final Score	6.69
Final Rank	#8

5c: Gaithersburg- Tysons

- **Trip Direction:** Peak Direction Only
- **Number of Trips (One Direction):** 9 / 6
- **Assumed Headway (Peak):** 60 / 40 minutes
- **Prelim. Ridership (2021/2045):** 201 / 264
- **Evaluation:**

Metric	5c-East	5c-West
Boardings/Hour	11	11
Cost/Trip	\$13.59	\$13.80
Total Boardings	201	264
Capital Costs/ Boardings	\$11,919	\$9,079
Minority Population	55%	55%
Low-Income Population	12%	12%
Total Jobs	80,157	94,346
Total Population	61,074	61,074
Peak Transit Trips (Transit Connectivity)	2,403	3,836
Final Score	6.88	8.05
Final Rank	#6	#3





6: Frederick – Tysons West

- **Trip Direction:** Peak Direction Only
- **Number of Trips (One Direction):** 4
- **Assumed Headway (Peak):** 90 minutes
- **Prelim. Ridership (2021/2045):** 65
- **Evaluation:**

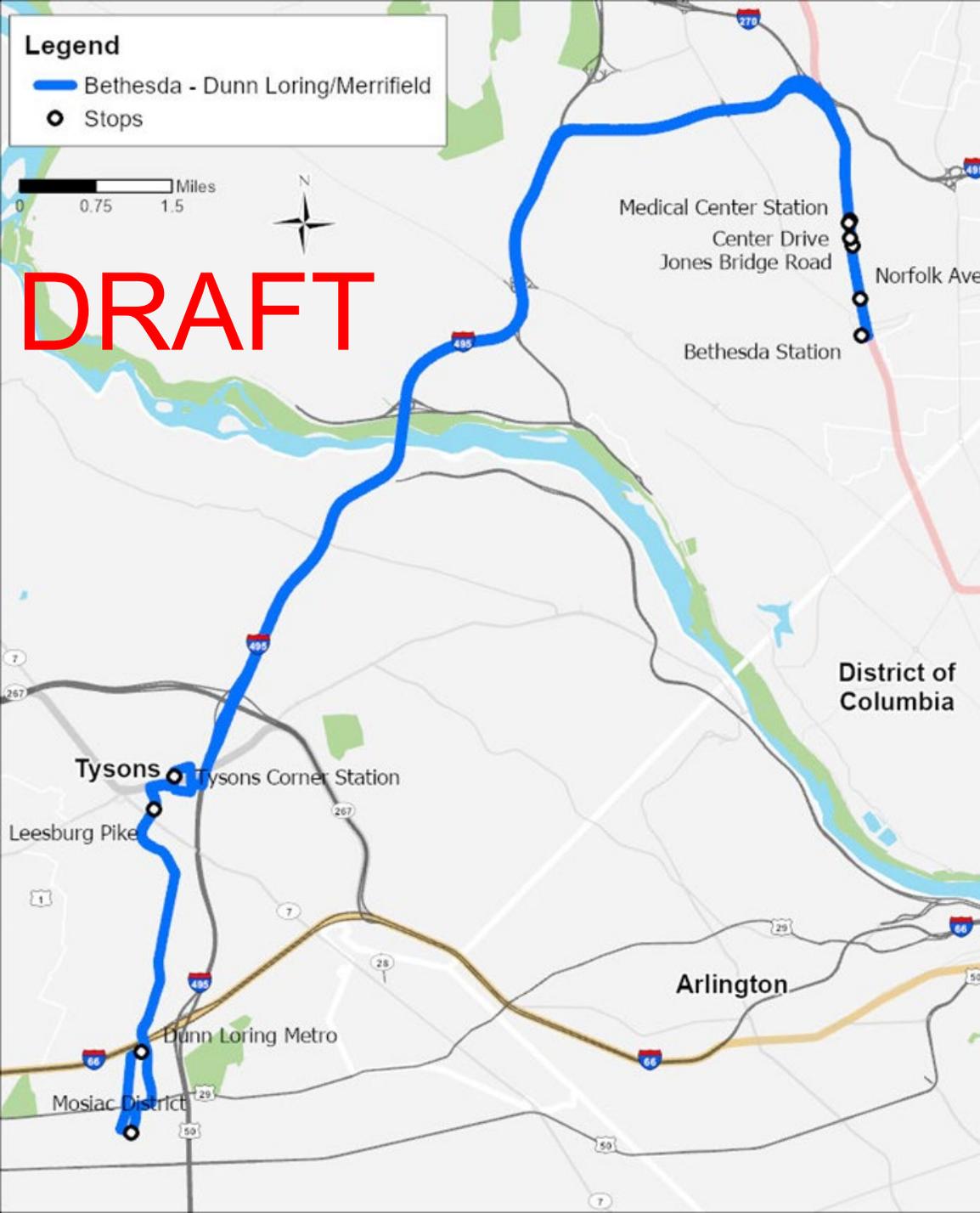
Metric	6
Boardings/Hour	5
Cost/Trip	\$28.00
Total Boardings	65
Capital Costs/ Boardings	\$18,423
Minority Population	40%
Low-Income Population	16%
Total Jobs	94,346
Total Population	32,284
Peak Transit Trips (Transit Connectivity)	1,601
Final Score	3.74
Final Rank	#11



7g: Bethesda to Reston

- Trip Direction: Bi-Directional
- Number of Trips (One Direction): 2
- Assumed Headway (Peak): 180 minutes
- Prelim. Ridership (2021/2045): 77
- Evaluation:

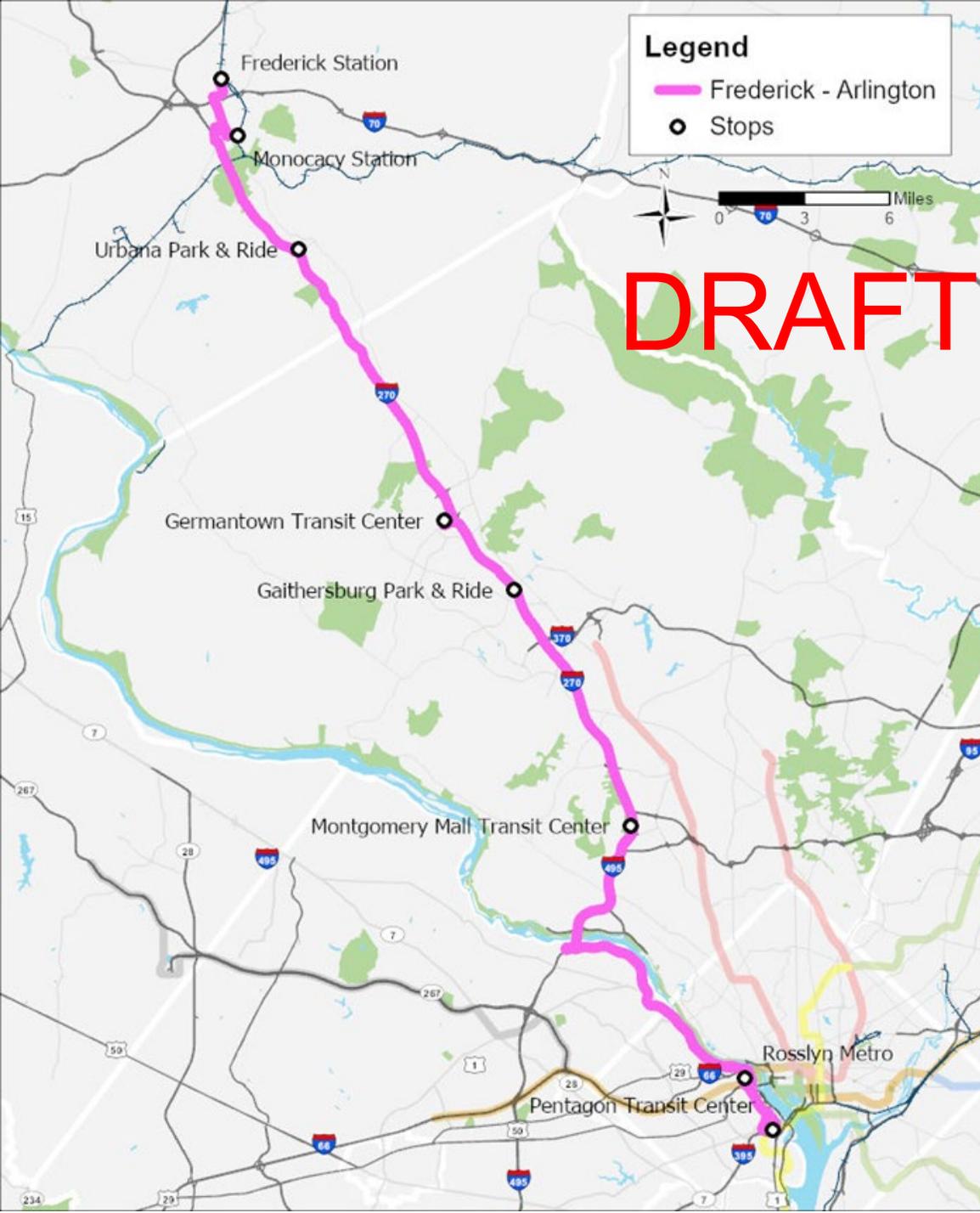
Metric	7g
Boardings/Hour	13
Cost/Trip	\$11.85
Total Boardings	77
Capital Costs/ Boardings	\$7,795
Minority Population	37%
Low-Income Population	8%
Total Jobs	110,092
Total Population	35,073
Peak Transit Trips (Transit Connectivity)	3,500
Final Score	5.82
Final Rank	#10



8g: Bethesda to Dunn Loring via Tysons

- **Trip Direction:** Bi-Directional
- **Number of Trips (One Direction):** 12
- **Assumed Headway (Peak):** 30 minutes
- **Prelim. Ridership (2021/2045):** 347
- **Evaluation:**

Metric	8g
Boardings/Hour	14
Cost/Trip	\$10.50
Total Boardings	347
Capital Costs/ Boardings	\$6,908
Minority Population	38%
Low-Income Population	8%
Total Jobs	174,125
Total Population	49,880
Peak Transit Trips (Transit Connectivity)	1,922
Final Score	8.56
Final Rank	#1



9a: Frederick to Arlington

- **Trip Direction:** Peak Direction Only
- **Number of Trips (One Direction):** 6
- **Assumed Headway (Peak):** 60 minutes
- **Prelim. Ridership (2021/2045):** 184
- **Evaluation:**

Metric	9a
Boardings/Hour	8
Cost/Trip	\$19.83
Total Boardings	184
Capital Costs/ Boardings	\$13,044
Minority Population	46%
Low-Income Population	13%
Total Jobs	55,415
Total Population	67,442
Peak Transit Trips (Transit Connectivity)	2,330
Final Score	6.04
Final Rank	#9

Transit Preliminary Ranking

1. Bethesda to Dunn Loring via Tysons Corner
2. Bethesda to Tysons West
3. Gaithersburg to Tysons West
4. Bethesda to Tysons East
5. Germantown to Tysons West
6. Gaithersburg to Tysons East
7. Germantown to Tysons East
8. Silver Spring to Tysons West
9. Frederick to Arlington
10. Bethesda to Reston
11. Frederick to Tysons West

Initial Technology Screening Results

- All Strategies Passed Initial Screening
- Methodology
 - Metrics
 - Readiness
 - Capital Cost
 - Annual O&M

Technology Testing and Evaluation

Results

Name	Technology Readiness	Cost Rank (1 = Lowest)	Capital Cost Estimate (2020 \$)	Annual O&M Costs (2020 \$)
Real-Time Toll and Transit Information	Low	1	\$180,000 – \$330,000	\$22,000 – \$44,000
VA Commuter Parking Information System	Medium	2	\$350,000 – \$760,000	\$28,000 – \$60,000
Real-Time Passenger Load Information	Low	3	\$440,000 – \$850,000	\$74,000 – \$174,000
Real-Time Transit Arrival Information	High	4	\$500,000 – \$980,000	\$36,000 – \$75,000
Transit Signal Priority	Medium	5	\$1,090,000 – \$1,910,000	\$74,000 – \$144,000
MD Commuter Parking Information System	Medium	6	\$1,160,000 – \$2,540,000	\$111,000 – \$240,000

Commuter Assistance Options Initial Screening

- **Metric:**
Measurable impact to the corridor beyond existing/ongoing efforts
- **Screened Out Programs:**

Supportive Regional/Local Ongoing Efforts

Incorporating TDM Strategies into local development ordinances

Carpool Promotion (CarpoolNow)

First/last mile infrastructure, services, and wayfinding

- **Programs Retained**

- Corridor-Specific Mobility Options Marketing Campaign
- Targeted Residential Outreach
- Targeted Employer Outreach
- Vanpool Formation and Expansion Program
- Corridor-Specific HOV Incentive
- Personalized and Dynamic TDM Technology (RM3P and MWCOC efforts)

Commuter Assistance Programs - Assumptions

- Corridor-Specific Mobility Options Marketing Campaign
 - Ads at stations and on buses
 - Digital, Radio/TV, Print
 - Coordinated with rollout of commuter bus service
- Targeted Residential Outreach
 - Focused on high-density residential areas
 - Funds 2 staff positions (employer TBD) – one VA and one MD focused
- Targeted Employer Outreach
 - Focused on high-density employment areas
 - Funds 2 staff positions (employer TBD) – one VA and one MD focused

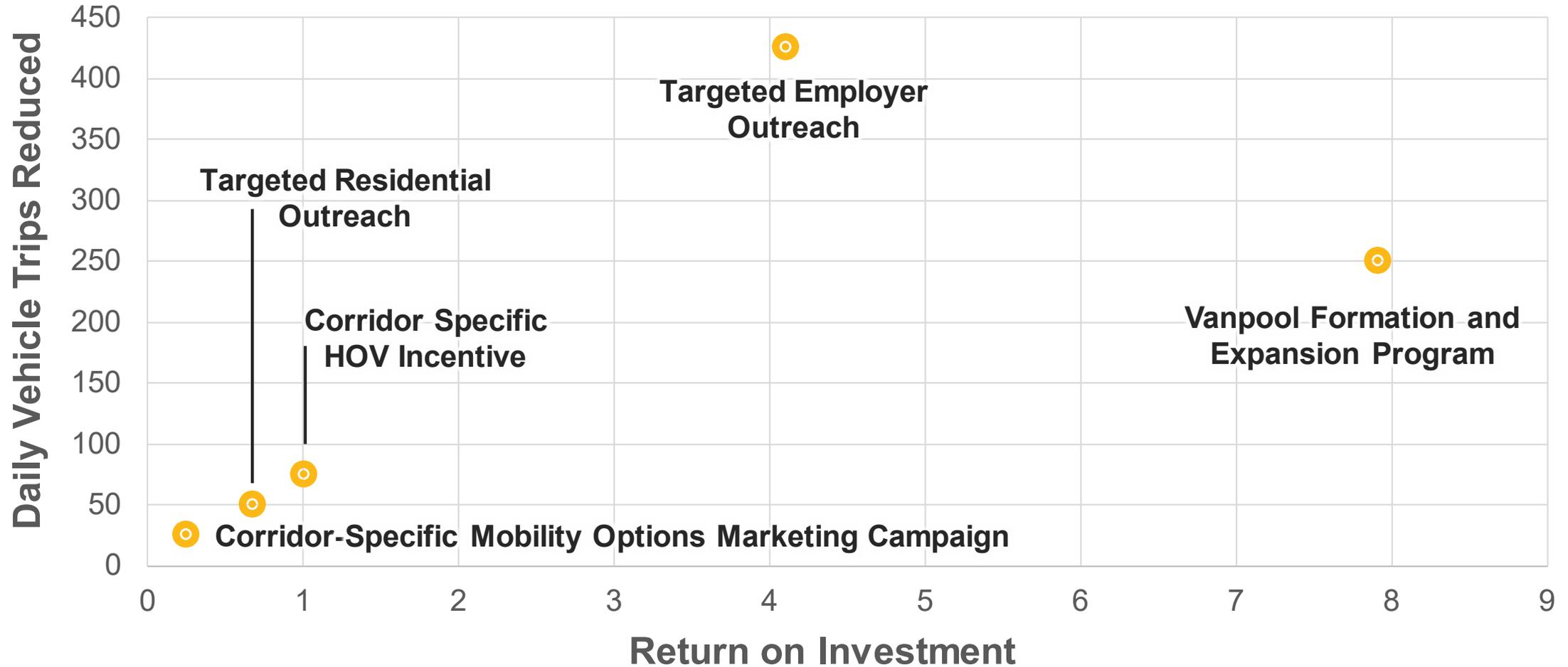
Commuter Assistance Programs - Assumptions

- Vanpool Formation and Expansion Program
 - Financial incentive to start new vanpools and retain existing ones
 - Includes administrative and support resources
- Corridor-Specific HOV Incentive
 - Short-term financial benefit to try a new mode (car/vanpool, transit) along the corridor
 - Could be implemented using existing or planned mobile platform

Scoring Methodology and Evaluation

- TDM Return on Investment Calculator
 - Assumptions for participation and costs
 - Based on regional survey data and existing programs
 - Outputs estimates for:
 - Daily Vehicle Trips Reduced
 - Daily Vehicle Mile Traveled (VMT) Reduced
- Each option scored independently in this phase

Commuter Assistance Programs - Results



Prioritization – Next Steps

- Refine Managed Lanes Assumptions
 - Congestion-free ride from I-370 across the ALB to the express lanes in VA
 - Construction timeframes for the investments
 - Near-term (before or during construction) investments
- Recommendation Refinement
- Develop Cost Packages
 - Timeframes
 - Funding sources/availability

Recommendation Refinement

- Transit
 - Iteration based on modeling efforts
 - Route refinement
- Parking and Facilities
 - Identify needs for parking and bus facilities based on proposed services
- Commuter Assistance Programs
 - Identify cumulative impact of strategies and transit
- Sensitivity Testing
 - How would different growth patterns or travel levels affect potential recommendations?

Breakout Sessions

Breakout Session Agenda

- Sensitivity to Regional Change
- Transit Routes Discussion
- Commuter Assistance Options Discussion

Breakout Groups

• Breakout Room 1

- Amanda Bahrij
- Melissa DuMond
- Paul Elman
- Gladys Hurwitz
- Beth Kreider
- Ciara Williams

- Kristen Blackmon
- Michael Felschow
- Allan Fye
- Courtney Glass
- Abi Lerner
- Anna Nissinen
- Kerri Oddenino
- Ben Owen
- Jonathan Parker
- Patrick Reed
- Joe Stainsby
- Yuqing Xiong

• Breakout Room 2

- Chris Arabia
- Zach Chissell
- Grace Daigle
- Erin Murphy
- Kari Snyder
- Grant Sparks
- Andy Zalewski

- Sandy Brecher
- Bob Brown
- Kirk Dand
- Dan Goldfarb
- Zach Khromal
- Jim Larsen
- Elizabeth Mann
- Philip McLaughlin
- David Metcalf
- Carol Rubin
- Charlie Scott

• Breakout Room 3

- Jennifer DeBruhl
- Todd Horsley
- Lucas Muller
- Heather Murphy
- Jim Ritchey
- Andrew Wainwright

- Fatemah Allahdoust
- Stuart Boggs
- Chris Conklin
- Gary Erenrich
- Dinah Girma
- Dan Hibbert
- Ria Kulkarni
- Holly Morello
- Penny Newquist
- Doug Pickford
- Nick Ramfos

Sensitivity to Regional Change

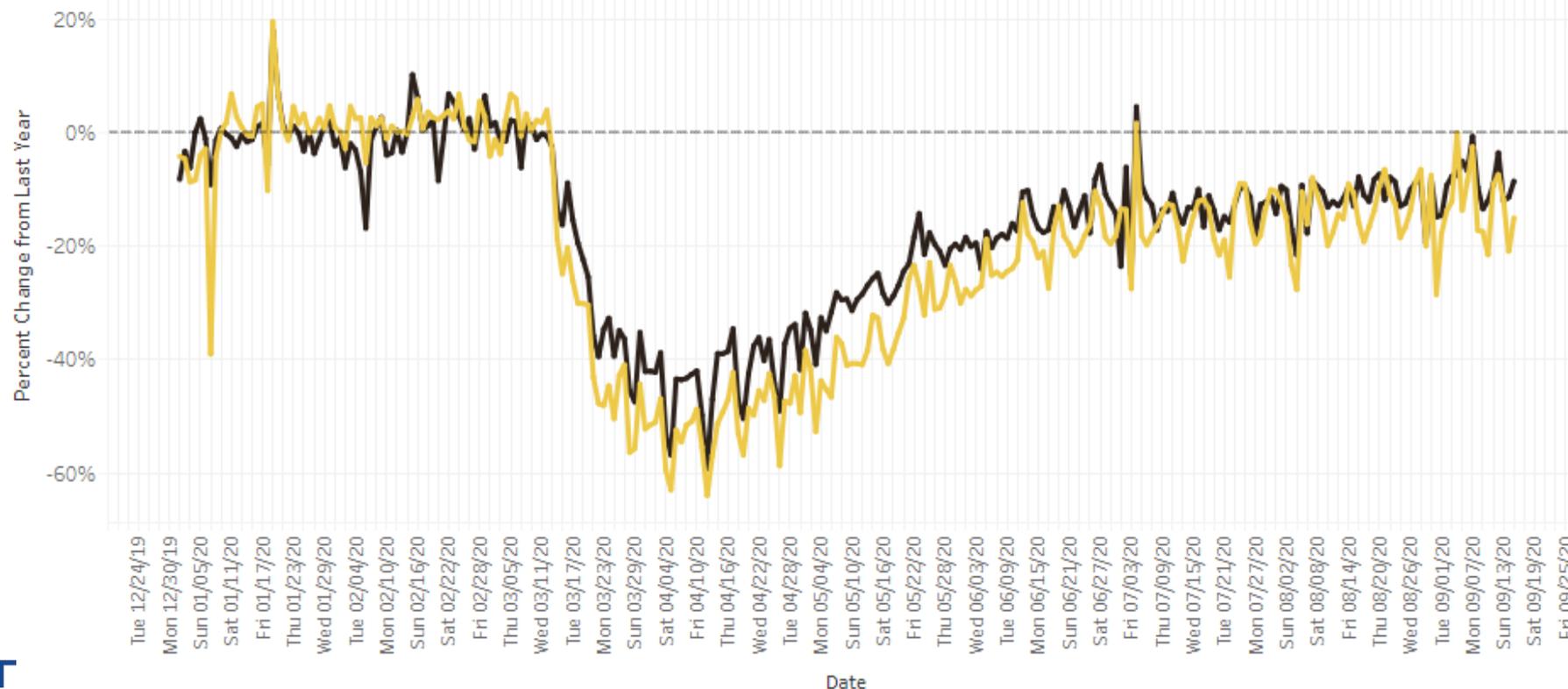
- What does travel across The Bridge look like in 2 years?
- What does it look like in 25 years?
- What if 20% of commuters telework moving forward?

<https://www.virginiadot.org/travel/commuter-survey.asp>

VDOT Permanent Count Station Data – January – September 2020 – Northern Virginia & Statewide Urban Interstate Traffic – All Vehicles in PM Peak



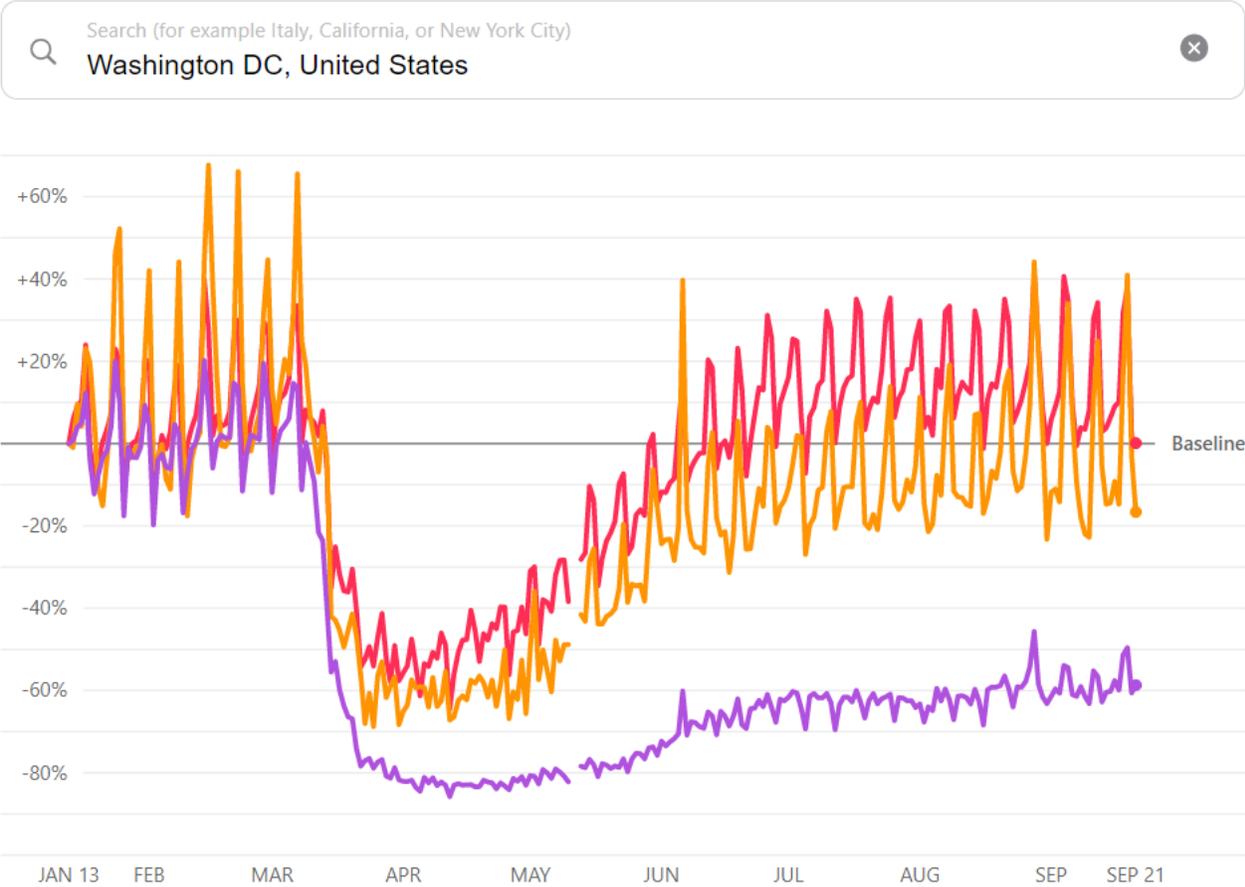
Traffic Volume Change by District



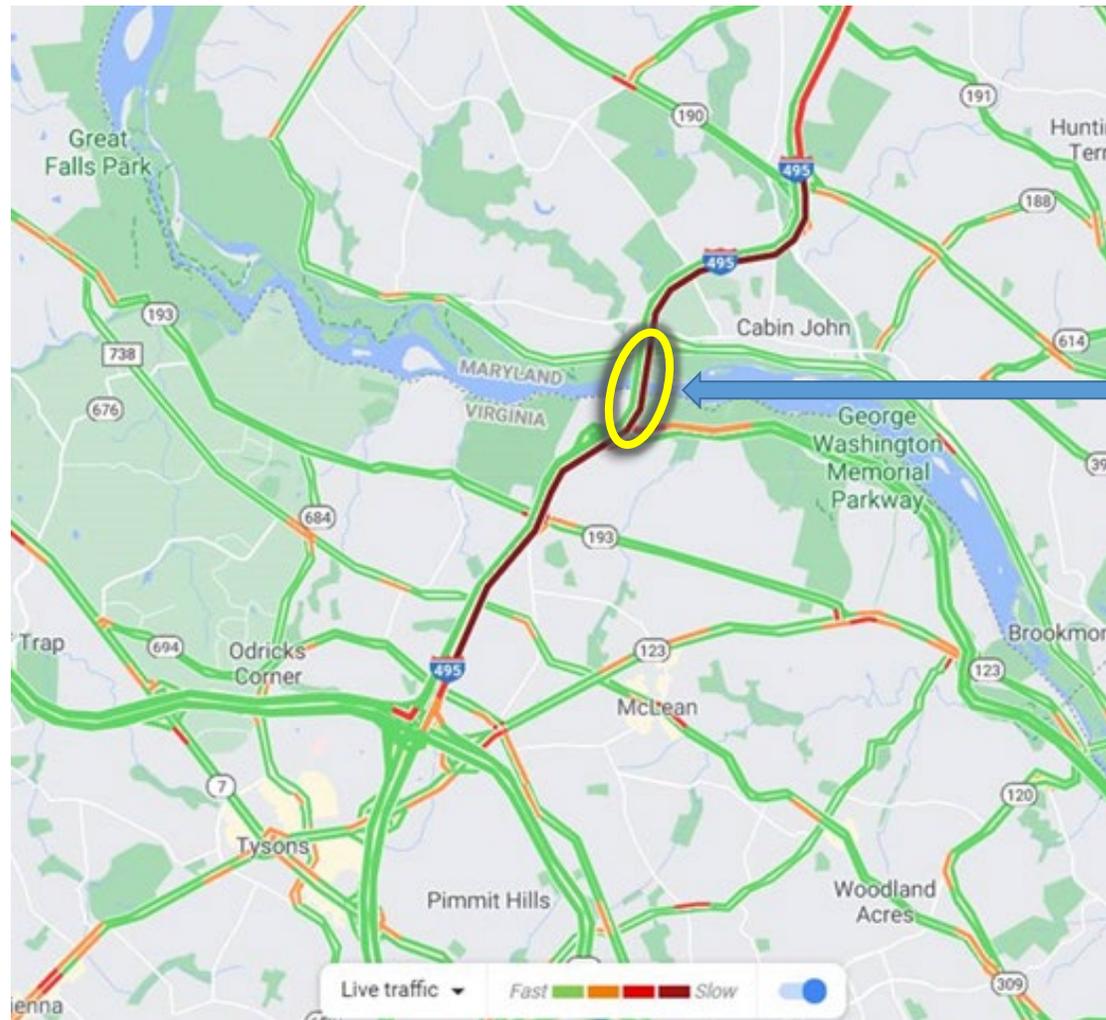
Apple Mobility Trends, September 21, 2020

Mobility Trends

Change in routing requests since January 13, 2020



Congestion on I-495 at ALB – 9/11/2020 at 3:30 PM



American Legion Bridge

Transit Routes

- Discuss Transit Options
 - Routes Structure
 - Stops
 - Frequency
 - Access
 - Additional iteration on interim stops versus direct service
 - Test midday service
- How can technology assist in bolstering transit?

Commuter Assistance Options

- How can we ensure that the recommendations turn into programming?
 - What are the logistical challenges?
 - Extending existing regional programs (eg. RM3P) to include I-495 corridor
- How do we make strategies applicable across such a broad study area?
 - Regional programs vs. individual agencies
- How do vanpool/carpool patterns that might be observed in the short-term integrate into long-term transit routes?

Meeting Wrap Up

Recap of Breakout Room Discussion

Next Stakeholder Meeting

- Fill out survey
 - Watch your inbox for the link to upcoming Survey #2
 - Help distribute Survey #2 to your stakeholder groups
- Save the date for Stakeholder Meeting #4
 - December 3, 2020

Keeping track of [the Study](#) is easy by connecting to DRPTs Major Initiatives Webpage

- The study webpage includes a [stakeholder comment link](#)