



Route 7 Bus Rapid Transit (BRT) Study

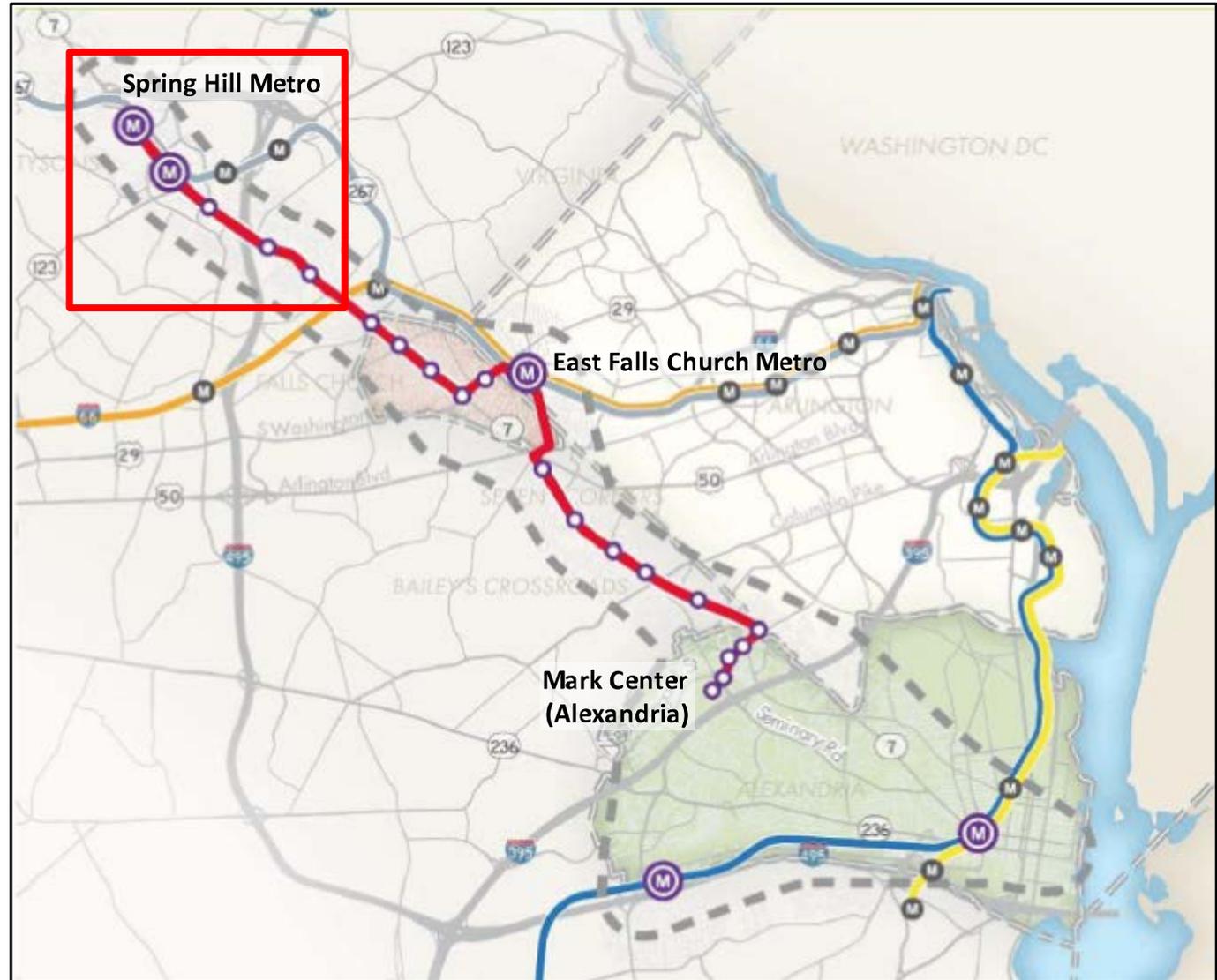
Board Transportation Committee
May 25, 2021

Sean Schweitzer, Project Manager
Fairfax County Department of Transportation

Background

Envision Route 7 Transit Study:

- Conducted by Northern Virginia Transportation Commission (NVTC)
- Identified BRT as preferred alternative from Mark Center in Alexandria to Tysons
- Recommended dedicated bus lanes within Tysons and provide multimodal solution
- Next phase will look at transportation analysis for entire Route 7 Corridor



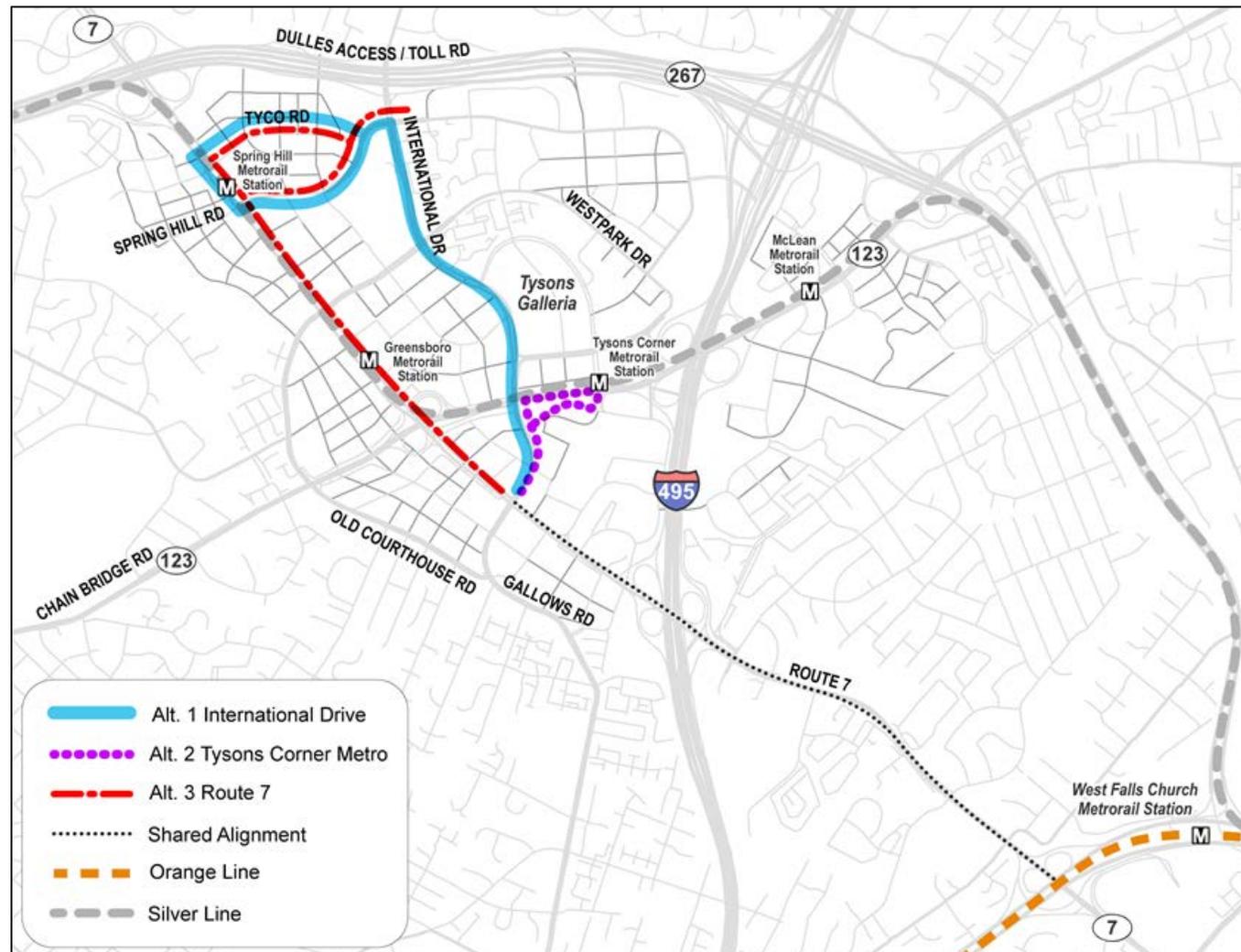
Alternatives Evaluation

Nine Preliminary Alternatives culled down to three Final Alternatives for Evaluation:

- Alternative 1 - International Drive
- Alternative 2 - Tysons Corner Metro
- Alternative 3 - Route 7

This study assumes:

- Headways*: 10 min peak/15 min off-peak
- Service Span*:
 - Weekday service 5 AM – 1 AM
 - Weekend service 6 AM – 12 AM
- Articulated buses with capacity of approximately 110 passengers
- Enter/Exit vehicle at all doors
- Transit signal priority
- Enhanced bus stations
- Fare comparable to local bus routes

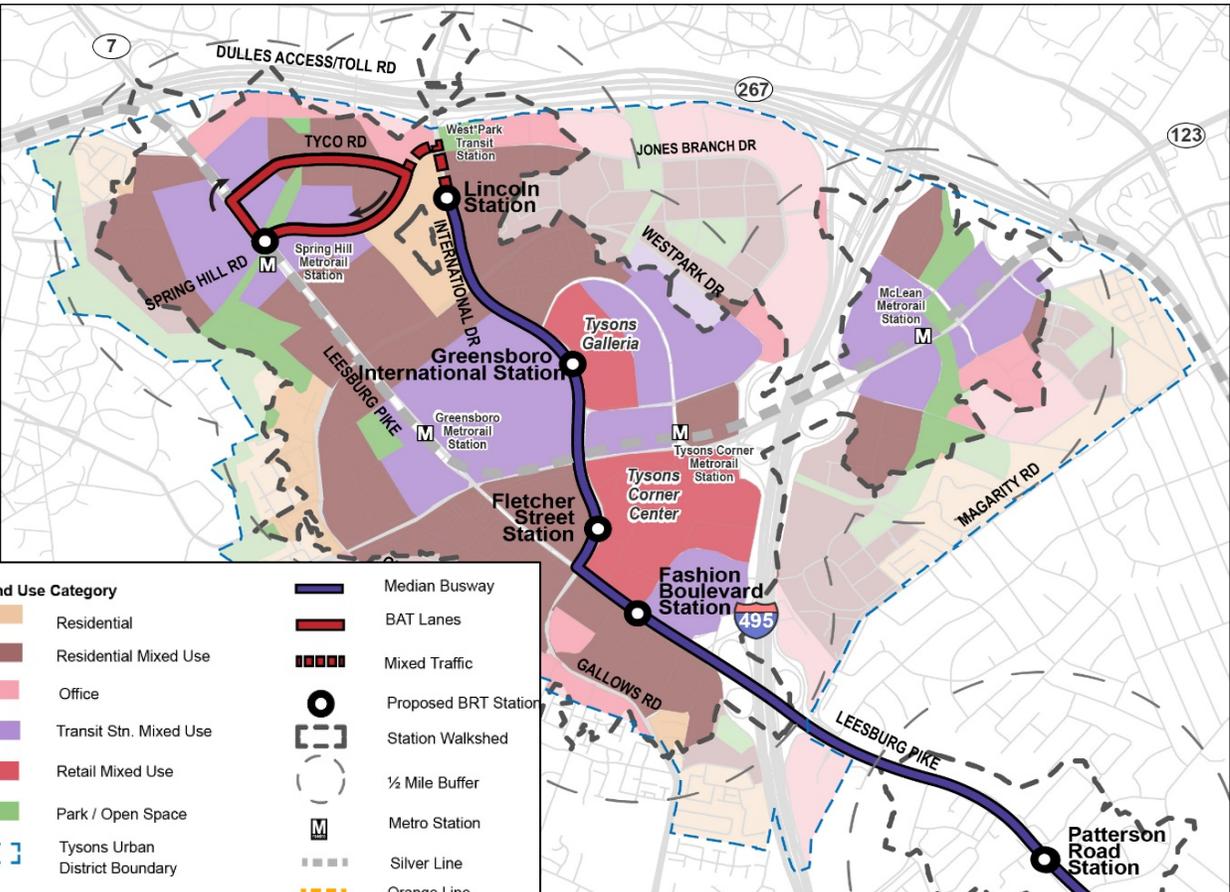


*Assumptions from 2017 NVTC Study

Alternatives Evaluation – Alternative 1 (International Drive)

Cross Section –

- Median runningway on Route 7 and International Drive
- “Bus and Turn only” BAT Lanes on Spring Hill Road and Tyco Road couplet

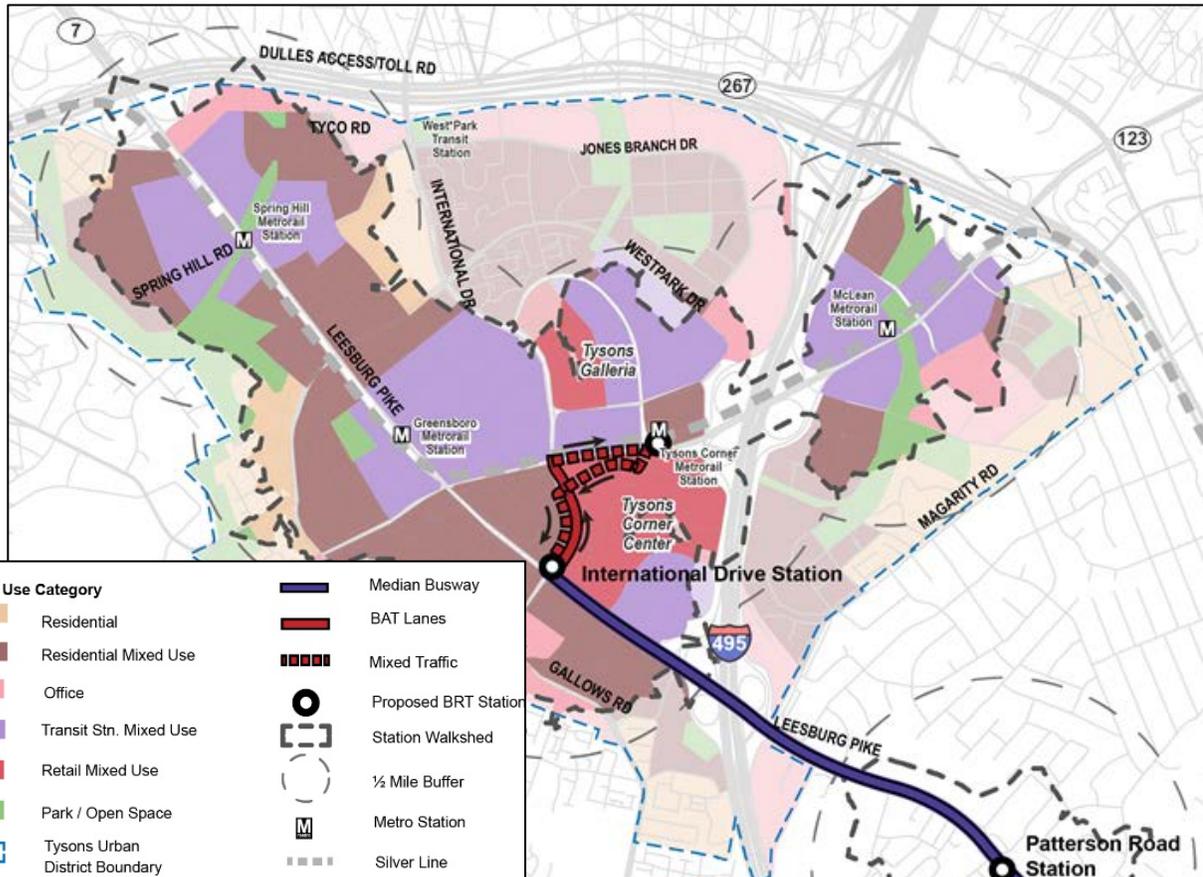


Street Name and Section	Description
Tyco Road	Eastbound BAT lane and two general traffic lanes in each direction
Spring Hill Road	Westbound BAT lane and two general traffic lanes in each direction
International Drive – Lincoln Circle to Spring Hill Road	Mixed traffic in both directions to facilitate transition to/from median busway
International Drive – Route 7 to Lincoln Circle	Median busway and two general traffic lanes in each direction
Route 7 – International Drive to I-495	Median busway and three general traffic lanes in each direction
Route 7 – I-495 to I-66	Median busway and two general traffic lanes in each direction

Alternatives Evaluation – Alternative 2 (Tysons Corner Metro)

Cross Section –

- Median runningway on Route 7
- BAT (bus and turn only) Lane northbound on International Drive
- Mixed traffic southbound on Tysons One Place and International Drive

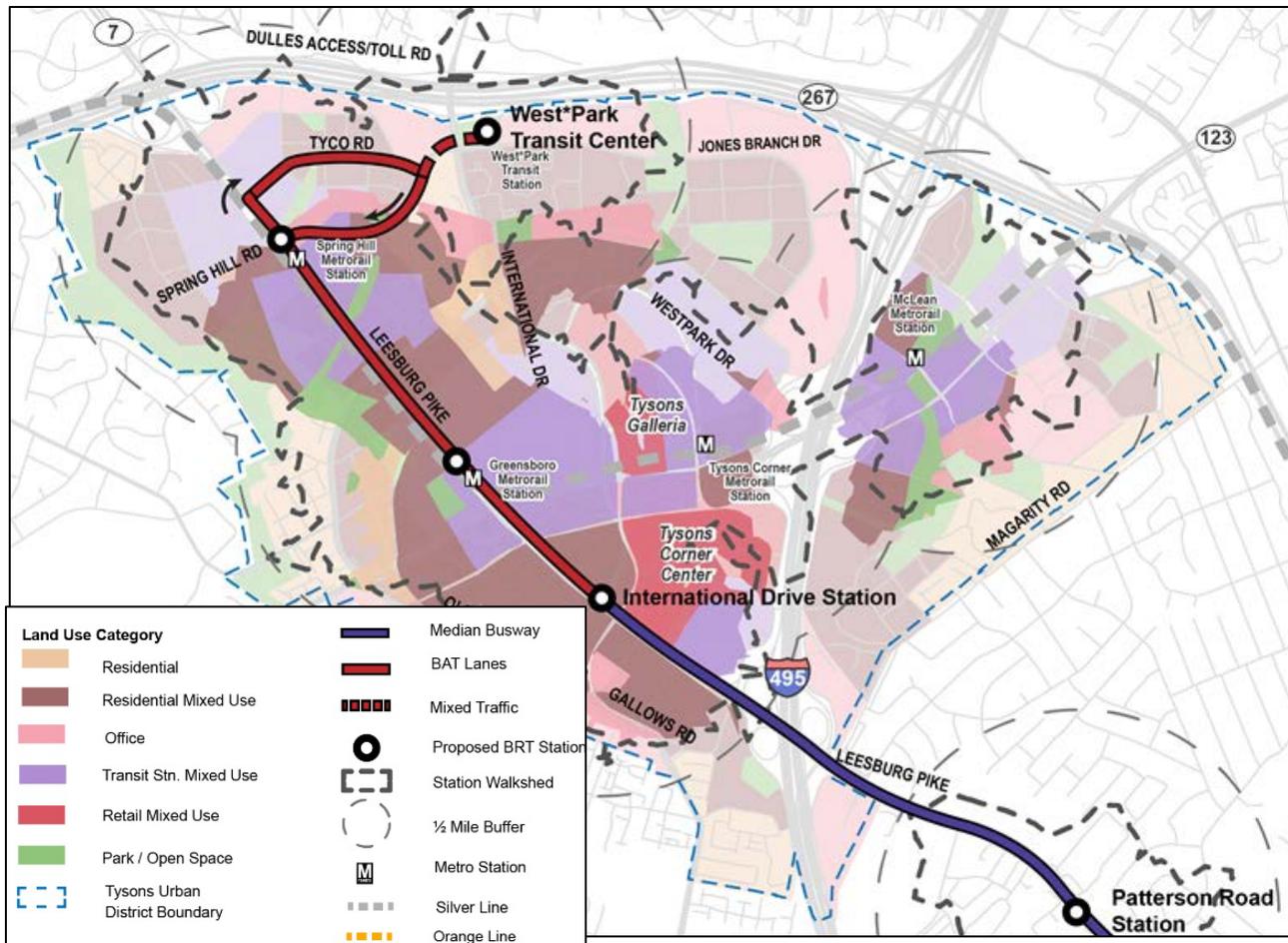


Street Name and Section	Description
Chain Bridge Road	Four general traffic lanes in each direction; BRT operates in mixed traffic in the EB direction to bus loop
Tysons One Place	One general traffic lane in each direction; BRT operates in mixed traffic in the WB direction
International Drive – Route 7 to Chain Bridge Road	Northbound BAT (bus and turn) lane and two general traffic lanes, three southbound general traffic lanes; BRT operates in mixed traffic in SB direction

Alternatives Evaluation – Alternative 3 (Route 7)

Cross Section –

- Median runningway on Route 7 to International Drive
- BAT (bus and turn only) Lane on Route 7 from International Drive to Tyco Road
- BAT (bus and turn only) Lanes on Spring Hill Road and Tyco Road couplet



Street Name and Section	Description
Tyco Road 	Northbound BAT (bus and turn) lane and two general traffic lanes in each direction
Spring Hill Road 	Southbound BAT (bus and turn) lane and two general traffic lanes in each direction
Route 7 – Spring Hill road to International Drive 	Curb BAT (bus and turn) lanes and three general traffic lanes in each direction

Performance Metrics

Performance Metrics

- Used to quantify/determine progress towards specific goals and objectives:

Access and Mobility

Mode Share/Efficiency

Land Use/Economic Vitality

Equity

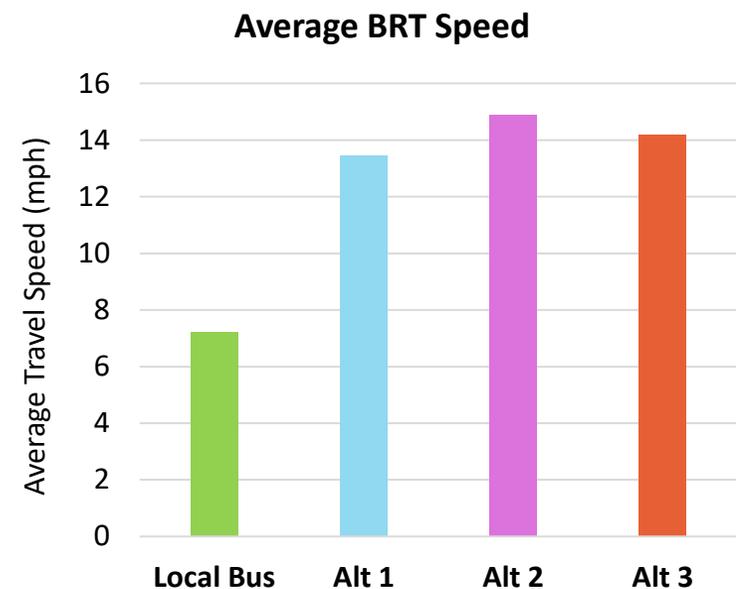
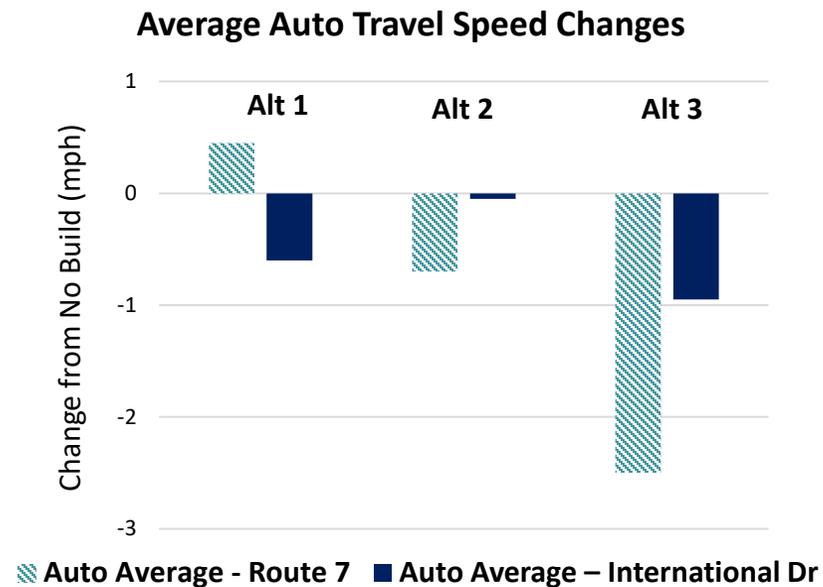
Safety

Environmental Concerns

Financial Feasibility

Average Travel Speeds (mph)

- BRT speeds exceed local bus speeds
- BRT on International Drive (Alt 1) has the least amount of impact to travel corridors
- BRT on Route 7 (Alt 3) has the most impacts to travel corridors

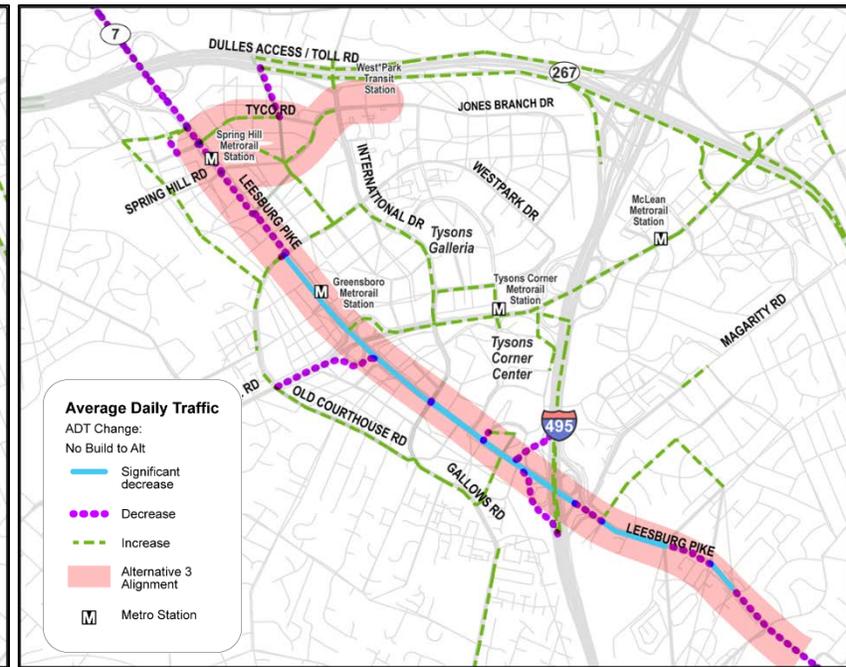
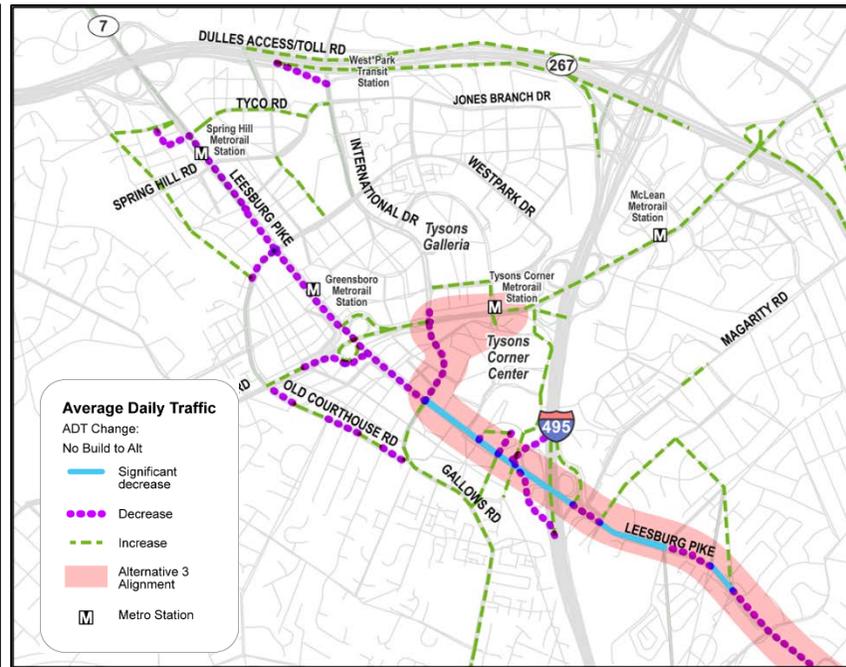
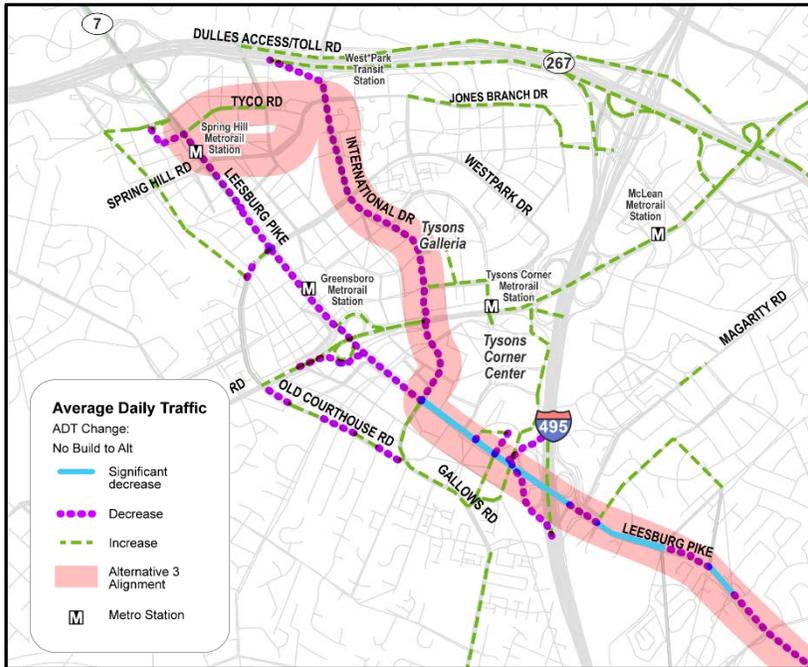


2045 Performance Metrics

Alt 1

Alt 2

Alt 3



- Estimated Daily BRT Ridership: 6,700

- Estimated Daily BRT Ridership: 3,500

- Estimated Daily BRT Ridership: 7,000

Automobile Intersection LOS
Number of Intersections at LOS F

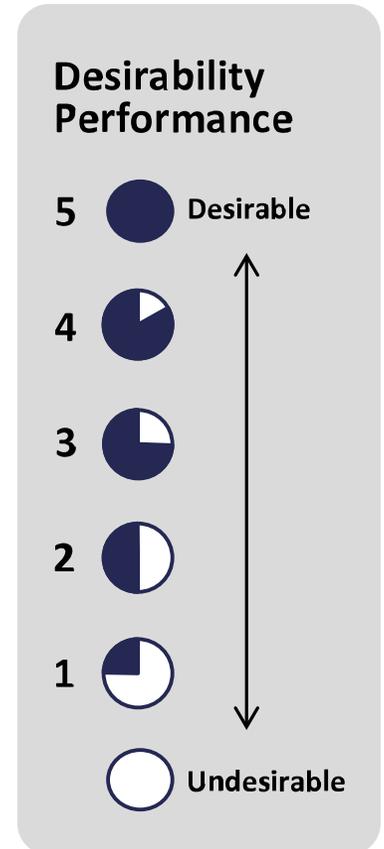
	No Build	Alt 1	Alt 2	Alt 3
AM	5	3	6	6
PM	8	6	6	9

Automobile Intersection Delay
Average (in seconds)

	No Build	Alt 1	Alt 2	Alt 3
AM	41.0	35.6	39.7	46.2
PM	43.7	39.9	42.6	51.5

Evaluation Summary

Measure of Effectiveness	Alternatives		
	Alternative 1 International Dr	Alternative 2 Tysons Corner Metro	Alternative 3 Route 7
Goal: Access and Mobility – Provide choices through accessible transit service			
Objective: Serve population, employment, and activity centers with BRT			
Demographics (HH, Pop, Emp)	5	1	3
Goal: Transportation Network Performance – Ensure efficient movement of people and goods			
Objective: Improve Transit Operations in Corridor			
BRT Ridership	4	2	5
Local Bus Travel Speed in Study Area	2	2	2
BRT Reliability 95th Percentile Travel Times	3	5	2
Average Automobile Travel Time	5	3	1
Automobile Intersection Delay	5	3	1
Pedestrian Crossing Times	3	3	2



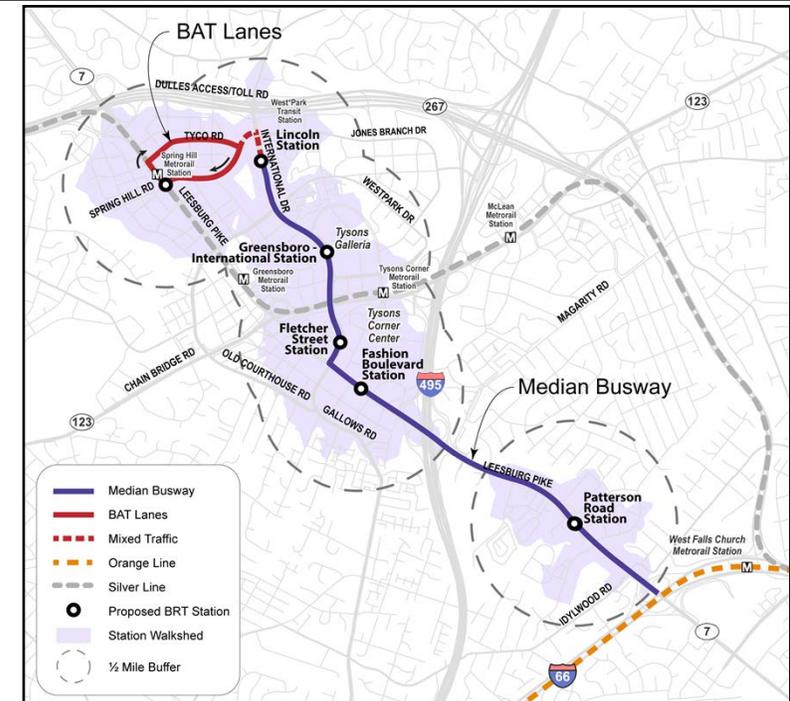
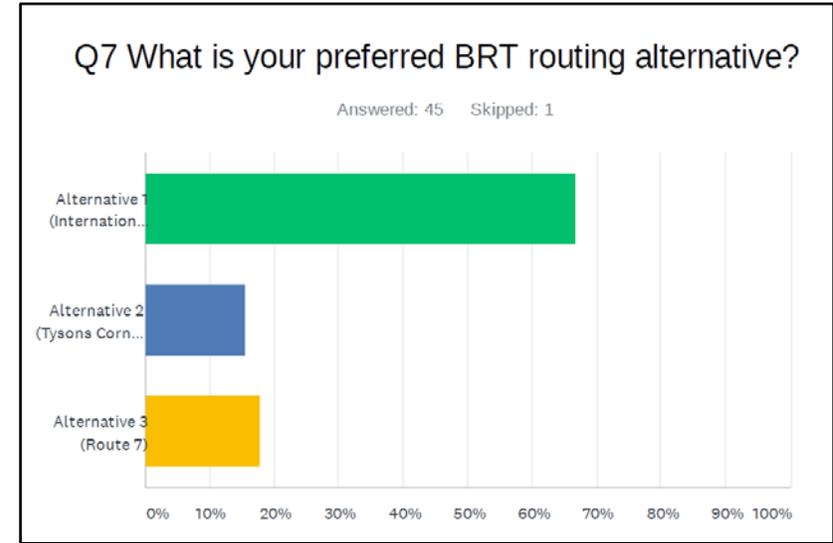
Preferred Alternative/Public Feedback

Public Feedback

- Public survey conducted: March 19 – April 22, 2021
- Concluded Alternative 1 (International Drive) preferred option
- Comments regarding Alt. 1 servicing West Park Transit Station
- Add stop near Marshall High School
- Bus Frequency, speed, and reliability most important factors to respondents

Alternative 1 – International Drive to Spring Hill Metro

- Serves more people, jobs, and households in Tysons
- Minimizes negative impact on the transportation network in study area



Next Steps

- Final Report – July 2021
- Request Board Endorsement of Final Recommendation and Authorization for Comprehensive Plan Amendment (July 13, 2021)
- Comprehensive Plan Amendment, Board Action (Summer 2021 to Winter 2021/2022)
- Incorporate preferred alternative into NVTC phase IV – Fall 2021
- Advance the design of Route 7 from I-66 to I-495 and from I-495 to Route 123

Feedback requested from the Board:

- **Comments regarding the draft preferred alternative (International Drive)**

Sean Schweitzer

Fairfax County Department of Transportation

(703) 877-5843

Sean.Schweitzer@FairfaxCounty.gov

