

Pipeline Success Arlington Boulevard and Washington Boulevard Interchange Improvements

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Arlington County

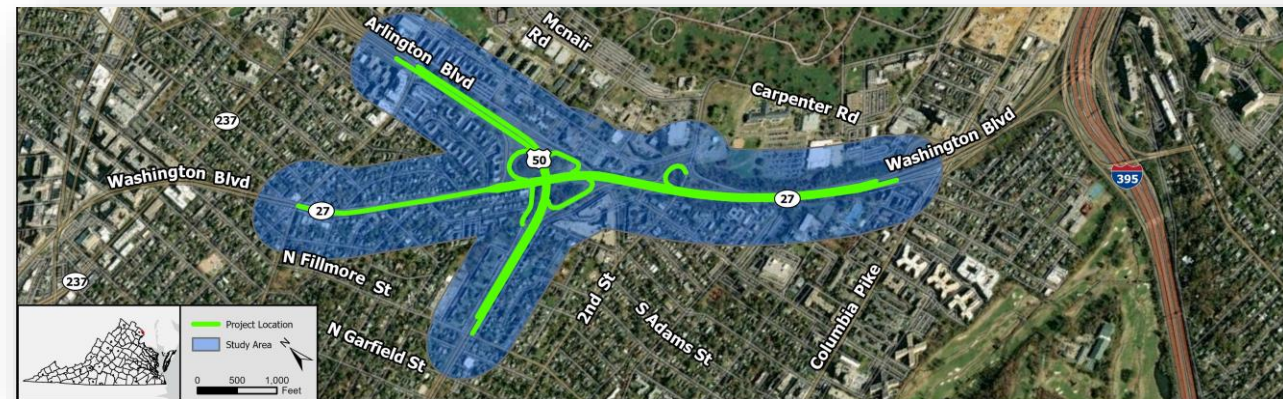
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ATCS



Study Area

- Route 50 (Arlington Boulevard)
 - Connection between I-495/Western NOVA to Washington DC
 - Other Principal Arterial (45 MPH)
- Washington Boulevard
 - Connection between Route 50 to I-395 (South) and Ballston to Rosslyn Corridor (North)
 - Other Principal Arterial (45 MPH/30 MPH)

- Places of Interest
 - Fort Myer (Military Base)
 - Arlington Department of Human Services
 - Arlington Blvd Trail & Washington Blvd Trail
 - Lyon Park Neighborhood
 - Transit Routes



Arlington County's Purpose for a Change

- Improve Safety at ramp interchanges
- Create Safer pedestrian/bicycle connections
- Reduce Congestion by giving better access to/from ramps

Arlington County

Top 10 2017-2019 Hot Spots

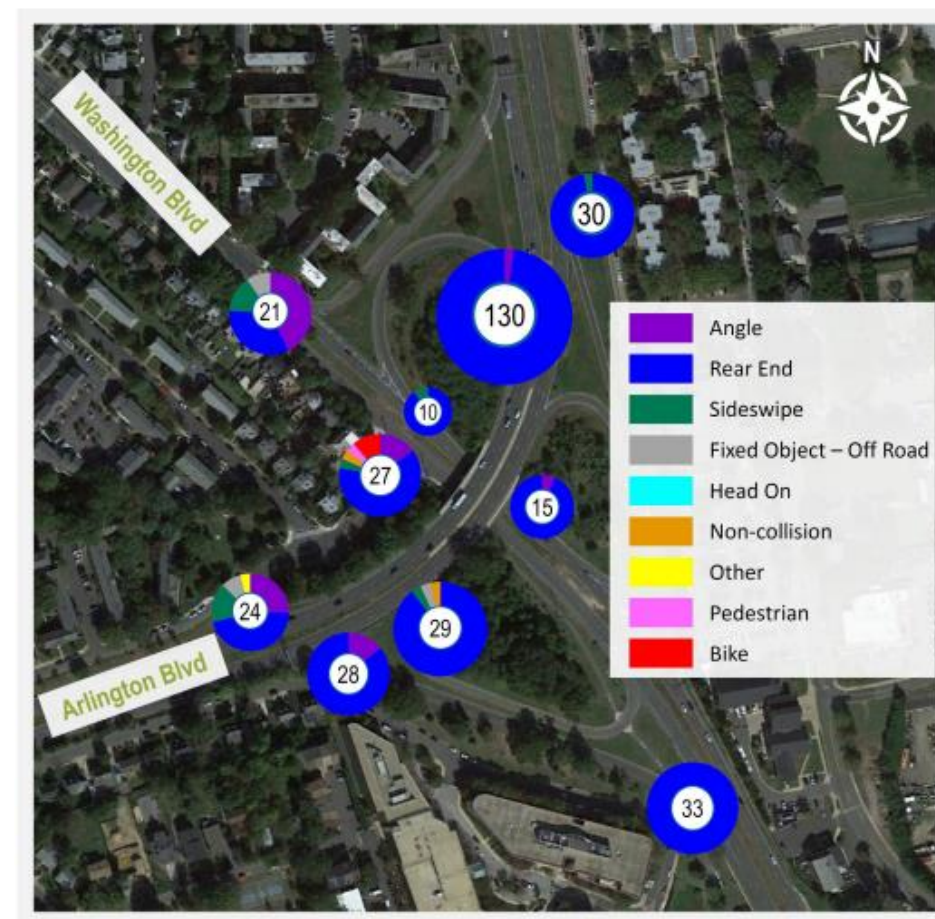
- **Washington Blvd at Arlington Blvd – 160**
- S Army Navy Dr at S Hayes St – 68
- Arlington Blvd at S Irving St – 39
- Washington Blvd at S Walter Reed Dr – 38
- S Walter Reed Dr at Four Mile Run Dr – 33
- Old Dominion Dr at Little Falls Rd – 31
- Columbia Pike at S Glebe Rd – 31
- Arlington Blvd at N Highland St – 30
- Fairfax Dr at N Glebe Rd – 28
- 7th St N/Pershing Dr at Washington Blvd - 28

Safety Issues

- 868 Crashes within the 8-year study period
- 236 Crashes led to injury
- 83% of the Crashes were Rear-end
- 9 pedestrian crashes

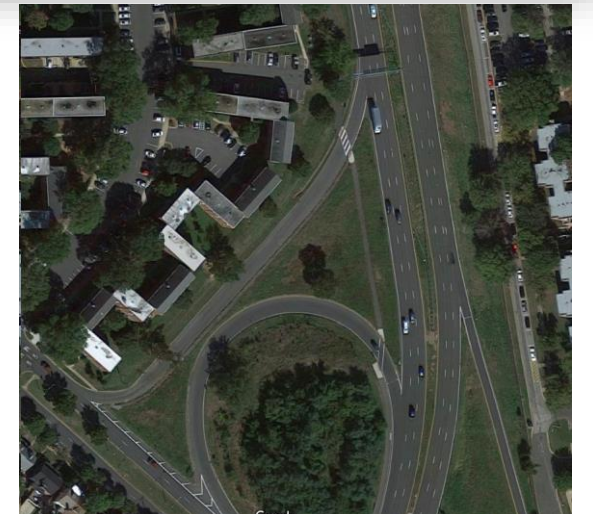
Study Area Crash Severity by Year

Crash Year and Severity	K. Fatal Injury	A. Severe Injury	B. Visible Injury	C. Nonvisible Injury	PDO. Property Damage Only	Total
2015	0	0	24	3	97	124
2016	0	3	36	7	108	154
2017	0	1	22	4	79	106
2018	0	2	33	3	83	121
2019	0	2	30	1	95	128
2020	0	1	10	2	36	49
2021	1	4	20	3	58	86
2022	0	2	18	3	74	97
Total	1	15	194	26	632	868



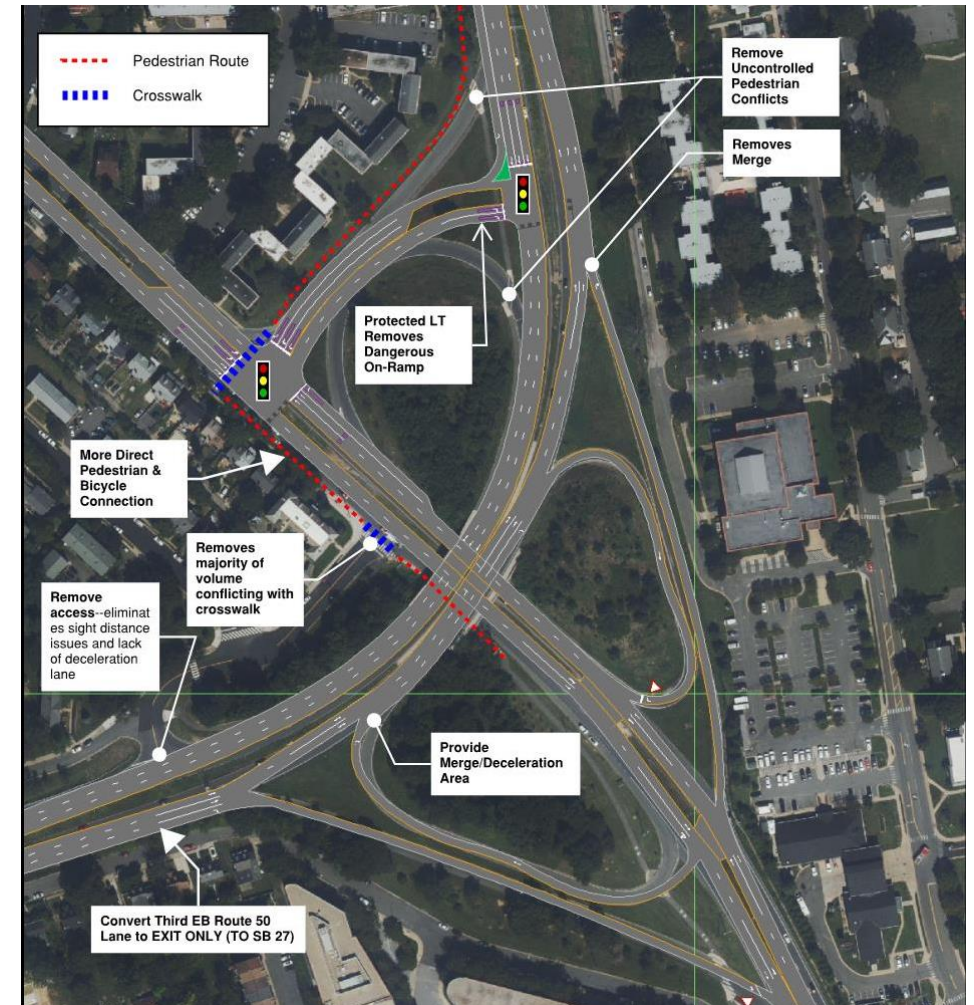
Operational Issues

- No Deceleration Lane for Route 50 Westbound Off-Ramp to Southbound Washington Blvd
- Long Queue Spill Back from Route 50 EB to Southbound Washington Blvd
- High Delay for Northbound Washington Blvd to Westbound Route 50



Early Concept

- Create a Quadrant Road between WB Route 50 and Washington Blvd (Two Signalized intersections)
- Modify EB Route 50's diverge, weave, and merge ramps to have exclusive lanes
- Reroute multimodal path from Route 50's Bridge to new Quadrant Road



- What defines success for a project in Pipeline?
- How do you get a successful project out of Pipeline?
- What are keys to developing a successful Pipeline project?

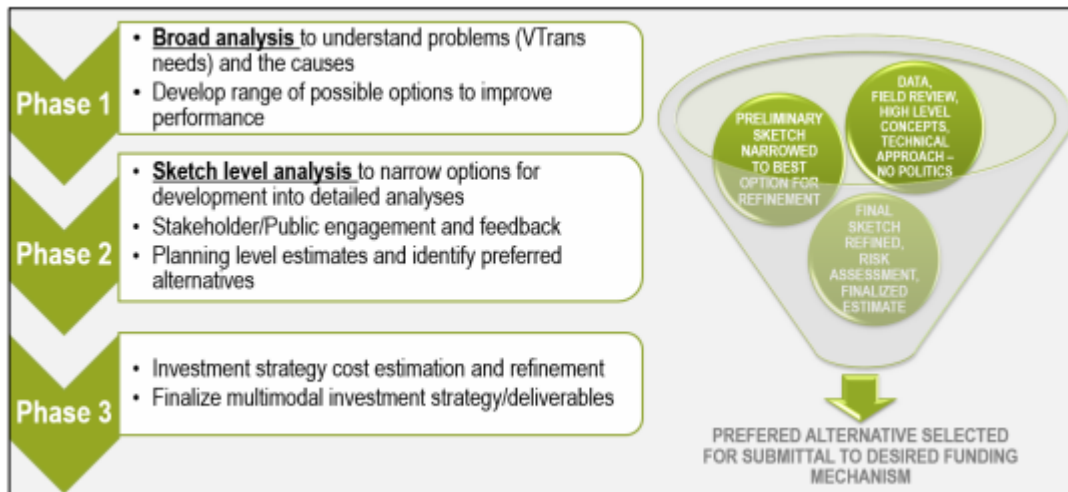
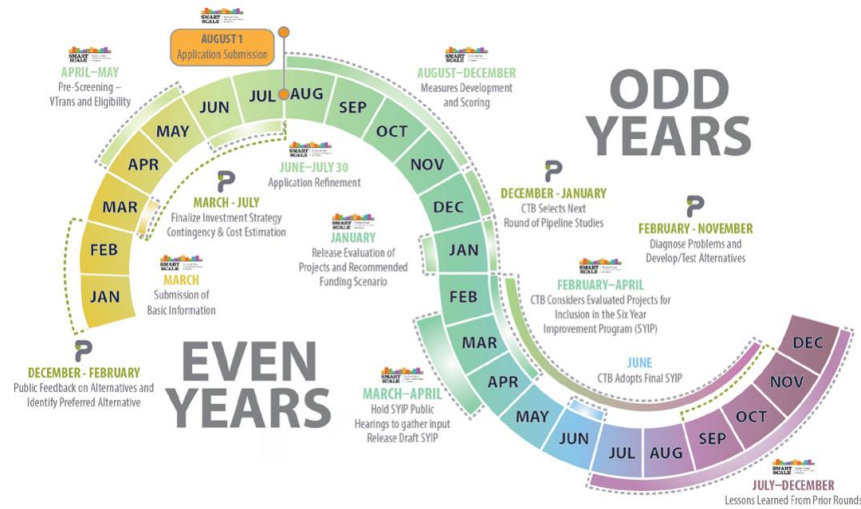


What is Pipeline

- Project Pipeline is a performance-based planning program to identify cost-effective solutions to multimodal transportation needs in Virginia.
- Final projects may be considered for funding through programs, including **SMART SCALE**, revenue sharing, interstate funding and others funding programs.
- Project Pipeline implements a standard statewide approach.
- The objective of the program is to focus on the priority locations and corridors.



Pipeline Process



Phase	Responsibility	CTB/Program Support	District	Consultant	DEPT	Locality	MPO/POC	VOOT Central Office
Study Selection & Initiation	Identify Study Needs and Priorities		X		X	X	X	
	Coordinate with CTB Members	X	X					
	Approve Final Study Locations	X						
	Data Collection Planning		X					
	Data Dashboards	X						
	Assign Consultants & Issue Task Orders	X						X
Phase 1	Initiate Study & Hold Kickoff Meeting		X	X	X			
	Prepare Framework Document		X	X				
	Approve Framework Document		X		X	X	X	
	Provide Existing Data		X		X	X	X	
	Collect New Data			X				
	Coordinate with Local Leaders					X		
	Conduct & Support Initial Public Outreach (if desired)	X	X	X		X		X
	Diagnose Existing Needs			X				
	Brainstorm & Develop Preliminary Alternatives		X	X	X			X
	Present Diagnosis & Alternatives to SWG			X				
	Provide Feedback & Input on Analysis & Alternatives					X	X	
	Develop Phase 2 Scope of Work			X				
	Approve Scope & Issue Task Orders	X						X
	Conduct Detailed Analysis of Alternatives			X				
Phase 2	Develop & Provide Input on Traffic Forecasting/Travel Demand Model	X				X	X	
	Refine Alternatives		X	X	X			X
	Present Alternative Analysis Findings to SWG		X	X				
	Provide Feedback on Alternatives				X	X	X	X
	Prepare Planning Level Cost Estimates			X				
	Conduct & Support Public Outreach on Alternatives	X	X	X		X		X
	Concurrence on Preferred Alternative(s)		X		X	X	X	X
	Develop Phase 3 Scope of Work			X				
	Approve Scope & Issue Task Orders	X						X
	Conduct Alternative Risk Assessment		X	X				X
Phase 3	Develop Practical Concept Design & Address Risk of Preferred Alternative		X	X				
	Prepare Cost Estimate with Workbook			X				
	Document Assumptions & Basis of Cost			X				
	Review & Concur with Concept & Estimate		X		X			X
	Prepare Final Study Deliverables, Design Packages & Estimates			X				
	Apply for Funding of Preferred Alternative(s)				X	X	X	
Investment, Application & Closeout	Application Support	X	X	X				
	Submit & Documentation & All Related Work			X				
	Review & Approve Final Deliverables for Public Visibility		X		X			
	Program Closeout & Summary	X						

Project Overview | NV-23-06

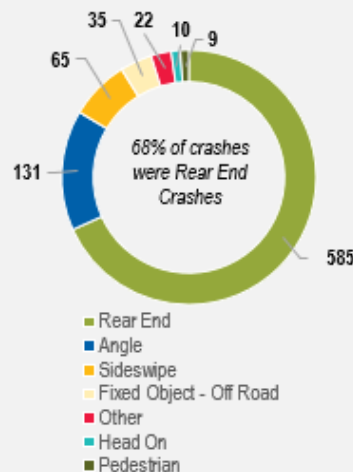
Arlington Boulevard Interchange



Project Purpose, Goals, & Objectives

Analyze the operational and safety issues identified along Arlington Blvd & Washington Blvd, with a focus on providing enhanced pedestrian & bicycle access and transportation demand management.

Identify cost-effective preferred improvement alternatives that address the deficient conditions and prioritize safety and accessibility.



Project Fact Sheet

VDOT District	Northern Virginia
Locality	Arlington County
Corridor Length	0.75 mile
Transit Routes	Arlington Transit Bus Routes (42, 45, & 77); WMATA Bus Route 16Y; WMATA Metro Stops nearby (Orange, Silver, Blue, & Yellow Lines)
Bikeways	Shared-Use-Path on the west side of Washington Blvd, south of Arlington Blvd & on the north side of Arlington Blvd
Functional Classification	Other Principal Arterial
Speed Limit	45 mph (south of Brookside Dr); 30 mph (north of Brookside Dr)

Issues in the Study Area

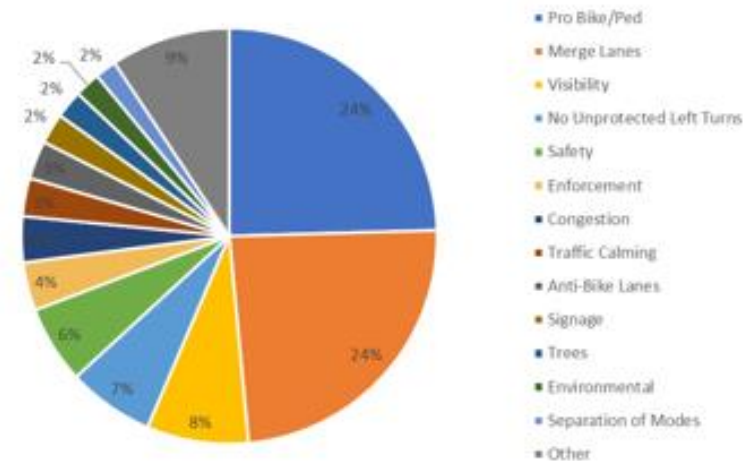
- The existing Shared Use Path (SUP) is on the west side of Washington Blvd, south of Arlington Blvd & on the north side of Arlington Blvd (passing over the overpass); SUP conditions & markings are inconsistent. Capital Bikeshare at Washington Blvd & Walter Reed Dr.
- Sidewalks are continuous along Washington Blvd, north of Arlington Blvd. Sidewalk conditions are inconsistent along Arlington Blvd. Crosswalks are present in the vicinity of the interchange.
- The current existing bus stops along Washington Blvd serve ART Routes 42, 45, & 77 and WMATA Bus route 16Y. The WMATA Metro Orange/Silver Line is 1.5 miles NW, and the Blue/Yellow Line is 2 miles SE.
- Very long queues were observed along the ramp from NB Washington Blvd to WB Arlington Blvd, spilling onto mainline WB Washington Blvd, during the AM & PM peaks.
- 10 pedestrian incidents in the surrounding areas (2015-2022), all resulted in an injury.
- 127 rear end incidents (2015-2022) along the ramp from NB Washington Blvd to WB Arlington Blvd. 361 incidents associated with the interchange of Washington Blvd at Arlington Blvd.



Public Comments

- In favor of better Bicycle and Pedestrian Infrastructure
- Complaints about Merge Lanes (too short, low visibility, congested, etc)
- Comments Mentioned Removing Parking to Improve Visibility
- In favor of removing unprotected left turns Favoring safety in general

Summary of Comments

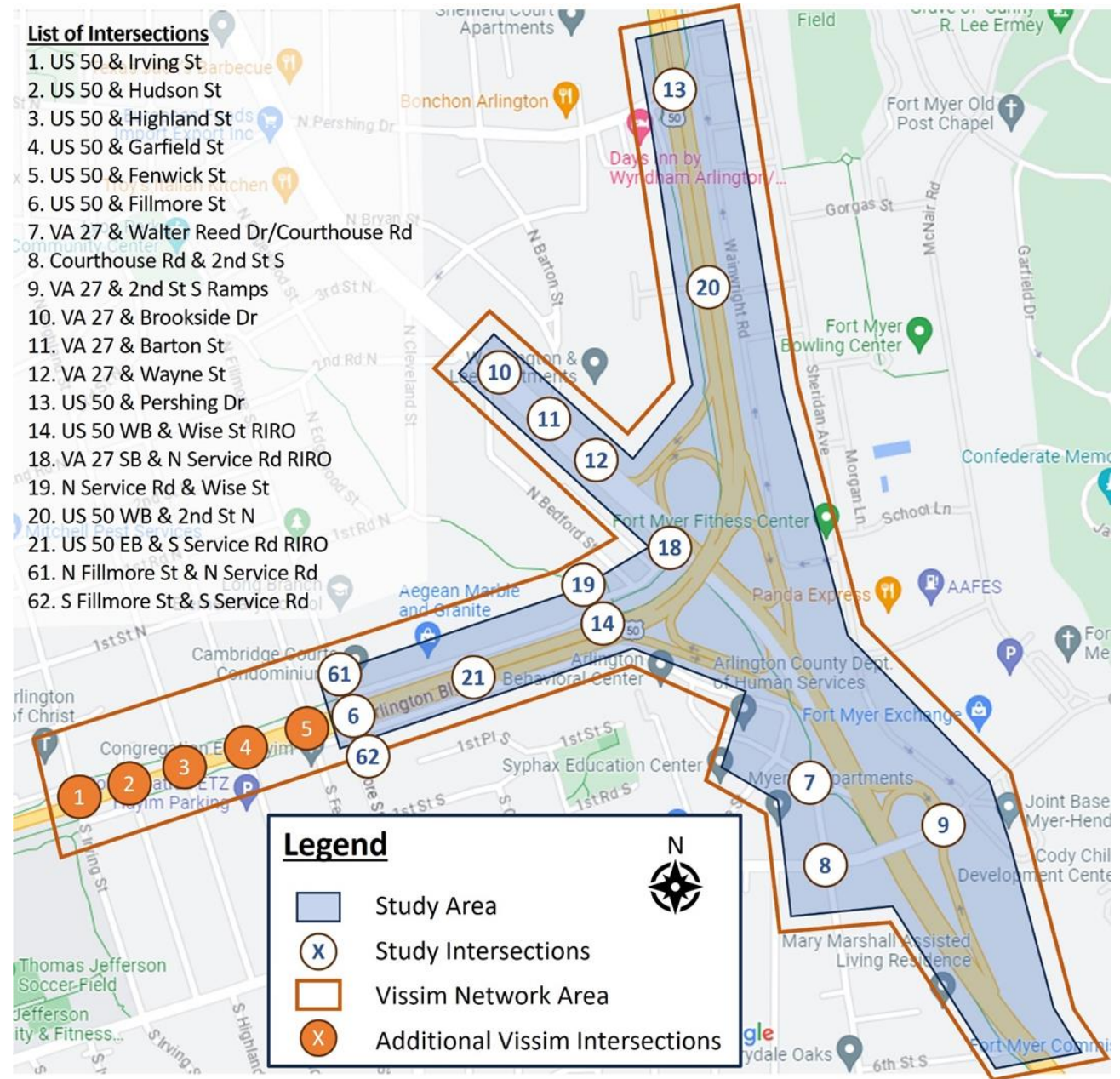


Constraints

- US 50 Expressway Facility
- Established Neighborhoods
- Joint Base Myer - Henderson Hall
- Arlington County Social Services Site
- Transit Stops
- Ballston-Rosslyn Corridor
- I-395/National Landing



Traffic Operations and Mobility



Operational Issues (#1)

- In the PM – Northbound VA 27 to Westbound US 50
- Challenging Merge Area
- Pedestrian Crossing
- Queue >500 ft on VA 27



Operational Issues (#2)

- In the PM – Westbound US 50 to Southbound VA 27
- Challenging Right Turn
 - Traffic Volume Southbound
 - Sight Distance
- Pedestrian Crossing
- Queue onto US 50
- Impacts NB to WB Movement (Issue #1)



Operational Issues (#3)

- Eastbound US 50 to Southbound VA 27
- Queue on Ramp
 - No Merge Sign
 - Weave Area Arlington County Site
- Pedestrian Crossing





Improvements North Ramps

- Pedestrian Path Reroute
- Reduce Interaction with Motorized Modes
- Provide Signalized Crossing for VA 27
- Relocate Parking (300 ft) Bike Facility
- Signal VA 27 & US 50 Westbound Ramps
- Drop Lane WB US 50
- Add Lane for NB to WB
- Close Service Road (relocated parking)



Improvements South Ramps

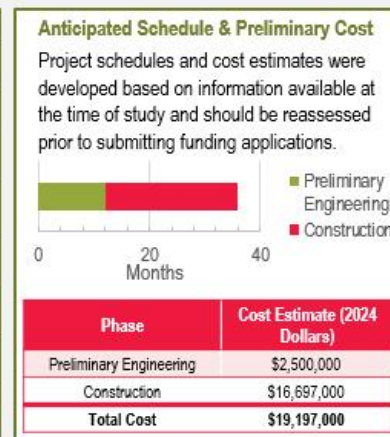
- US 50 Eastbound Ramp to VA 27 Southbound Signalized
- Safer Pedestrian Crossing
- Address Weave Issues
- Lane Drop on US 50 Westbound at Ramp
- Add Lane VA 27 Northbound Ramp to US 50 Eastbound

Alternatives



Alternative Comparison/Description		
Alternative	Advantages	Disadvantages
1A & 1B	<ul style="list-style-type: none"> -Reduces weaving on VA-27 SB, east of US 50 -Reduces conflicts on US 50 WB, south of VA-27 -Enhances safety and mobility for VA-27 to US 50 WB traffic -Enhances bicycle/pedestrian safety 	<ul style="list-style-type: none"> -Introduces signal control on US 50 WB with an expected increase in delay
2	<ul style="list-style-type: none"> -No half signal for US 50 WB compared to Alternative 1A & 1B 	<ul style="list-style-type: none"> -Lane drop introduces on US 50 WB at exist for ramp to VA-27 compared to Alternative 1A
3	<ul style="list-style-type: none"> -Maintains 6 lanes on US 50 	<ul style="list-style-type: none"> -Forces traffic on ramps from VA-27 NB and SB to stop before turning onto US 50 EB
4B	<ul style="list-style-type: none"> -Maintains 3 lanes on US 50 EB -Improves ramp and merge of ramp from VA-27 NB to US 50 EB -Continuous Green T- Intersection 	<ul style="list-style-type: none"> -Removes a ramp for a low volume movement

Measures of Effectiveness				
Travel Time Run (sec) from N. Pershing Dr. to S. Fillmore St.				
Alternative	2035 AM	2035 PM	2050 AM	2050 PM
No-Build	167.9	216.3	170.7	226.0
1A	192.7	295.6	196.0	371.1
1B	191.4	283.4	193.2	367.8
2	169.3	255.6	169.7	337.1
3	192.2	290.3	194.2	368.2
4	191.3	267.1	194.0	355.9



Final Alternative

✓ Non-Motorized/SUP Relocation

• Combining Ramp Movements

• Westbound

- US 50 WB Off-Ramp
- US 50 WB On-Ramp
- Signals on VA 27 (Washington Blvd)

• Eastbound

- Signalized Intersection VA 27 (Washington Blvd)
 - Partial (SB)
 - EB to NB & SB Full Signal

• Lane Drop US 50

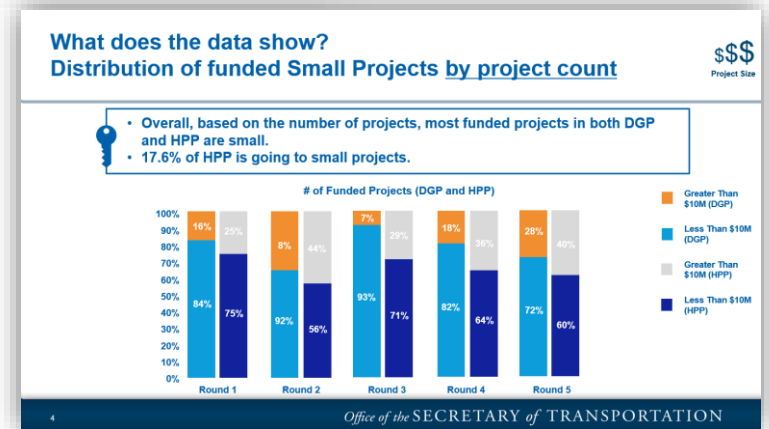
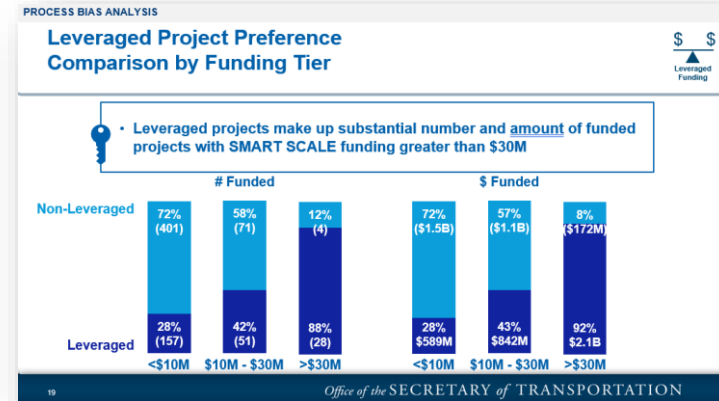
- WB On-Ramp (1300 ft from Pershing Drive, 500 ft from 2nd St)
- EB Off-Ramp (1300 ft from Filmore Street)
 - Allows for free-flow NB to EB On-Ramp

Total Project Cost Estimate Summary			Date of Current Cost
			7/25/2024
Phase	Base Estimate (\$)	Contingency (\$)	Total Phase
PE Phase Estimate	\$ 2,907,000.00	\$ 872,100.00	\$ 3,779,100.00
RW Phase Estimate	\$ 1,230,786.00	\$ 226,000.00	\$ 1,456,786.00
CN Phase Estimate(without CEI)	\$ 13,461,144.40	\$ 4,951,656.67	\$ 18,412,801.07
Total CEI	\$ 3,347,782.01	\$ 669,556.40	\$ 4,017,338.42
CN Phase Estimate(with CEI)	\$ 16,808,926.41	\$ 5,621,213.07	\$ 22,430,139.49
Total Estimate	\$ 20,946,712.41	\$ 6,719,313.07	\$ 27,666,025.49



Smart Scale Application

- Submission for 2024
- Other project funding sources
- Alternative Elements/Pieces
- What is being submitted?



Take Aways



Questions

