



Dulles Corridor Special Study Transportation Analysis Part 1 of 2

Presented to:

Reston Master Plan Special Study Task Force

Presented by:

Fairfax County Department of Transportation

April 24, 2012



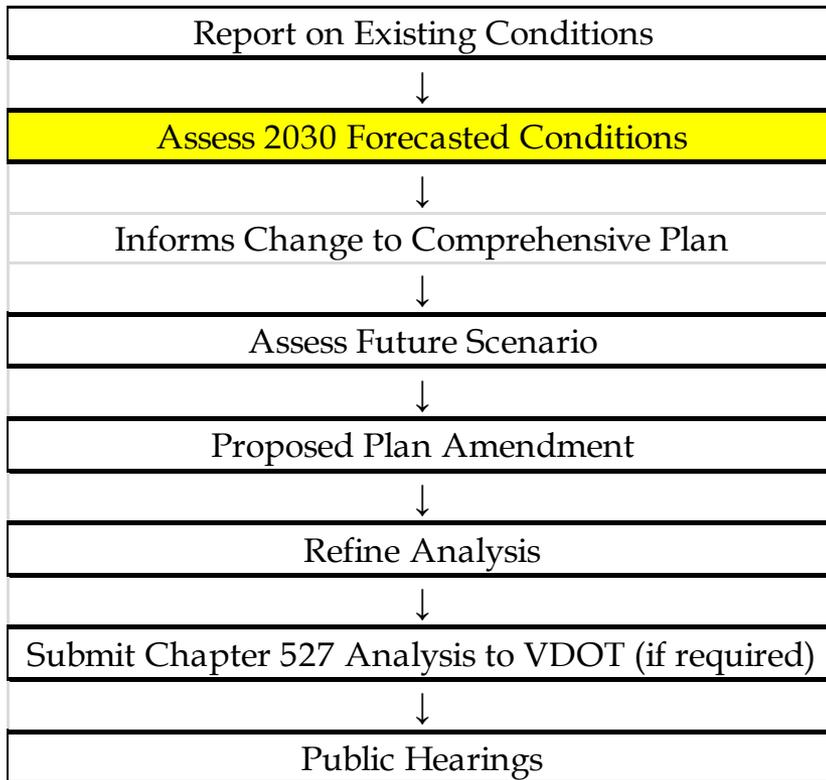
Presentation Outline

- Overview of Complete Streets & Tysons Street Standards
- Brief Recap of Prior Study Activities/Presentations
- Current Work Effort – Upcoming Presentation on Results
 - Land Use Scenarios
 - Street Connections Assessment
 - Intersection Mitigations
 - Dulles Toll Road Crossings - Feasibility Studies
 - Measures to Evaluate Transportation Impacts for Next Presentation
- Questions/Discussion

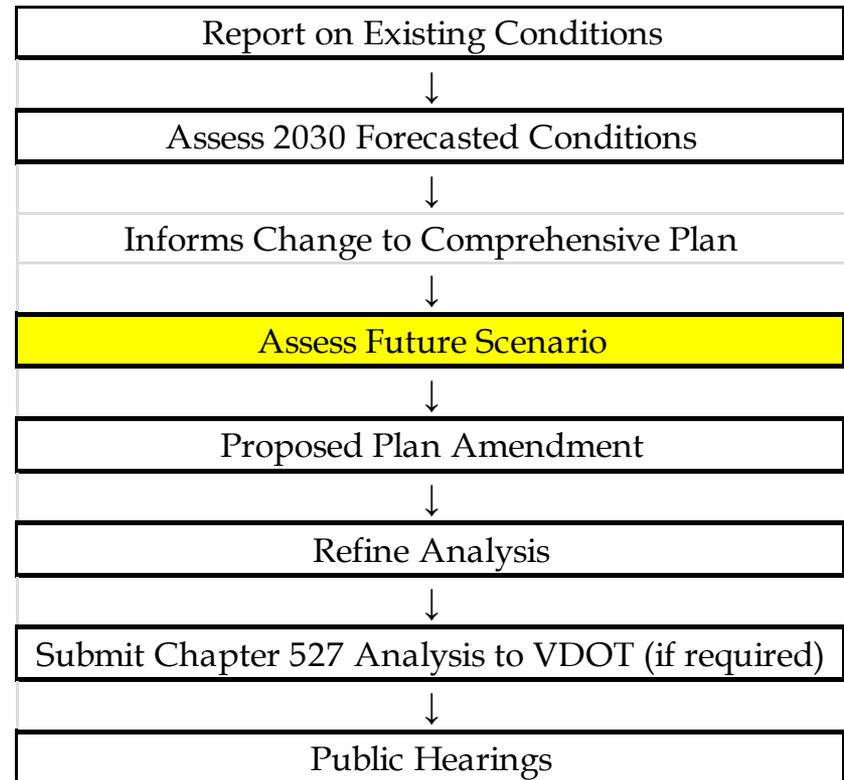


TRANSPORTATION ANALYSIS PROCESS

Status Last Presentation

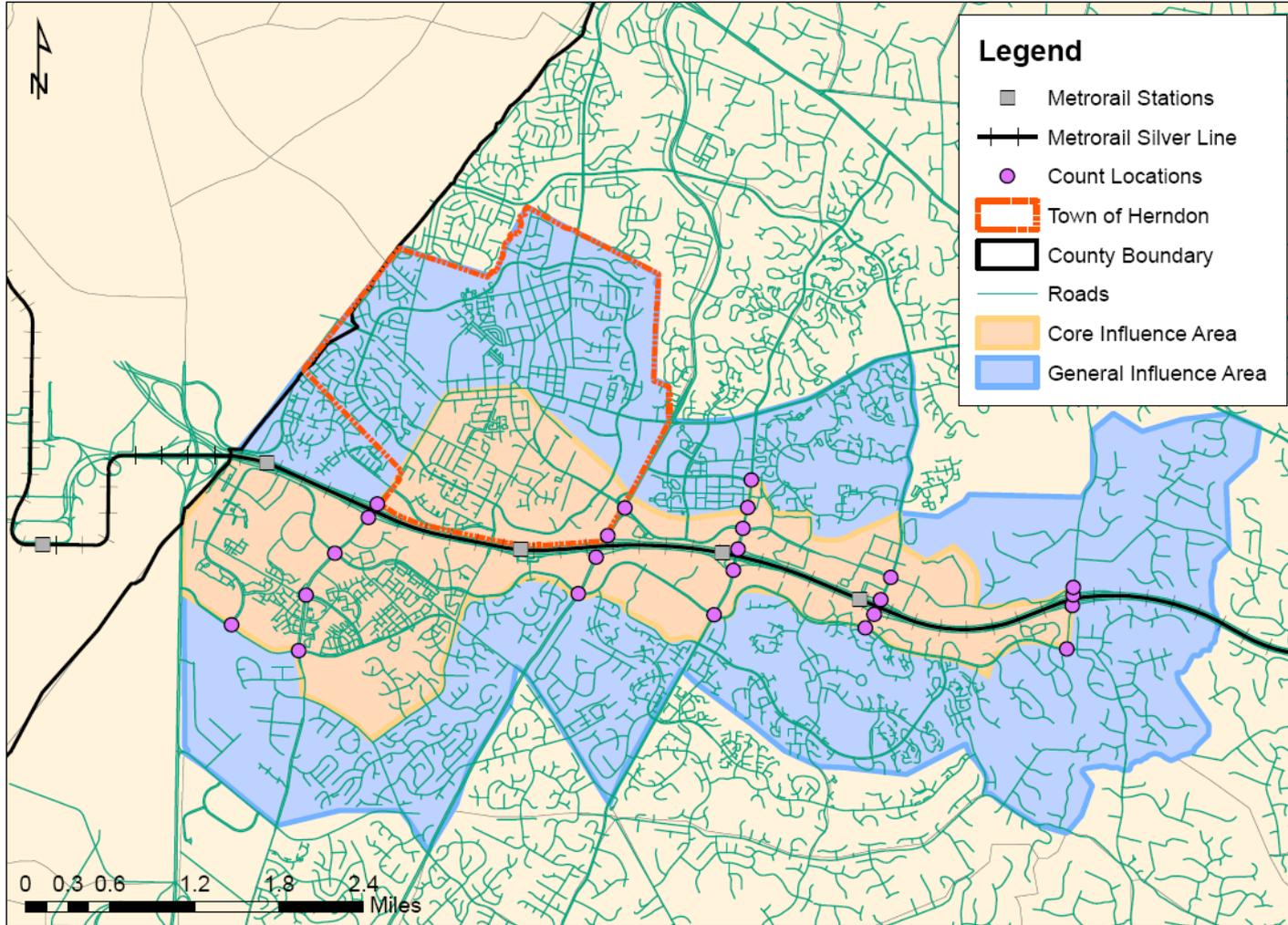


Status Now





Study Area





Model Assumptions

- Region and Study Area
- **Land Use – MWCOG Round 8.0**
- Road network improvements for 2030
(Transportation Plan Map)
- Transit (from Constrained Long Range Plan)
 - Stations along Phase II of Dulles Rail are open
 - Bus service is reoriented to serve rail stations and local area



Road Improvements Assumed in 2030 Base From Transportation Plan Map

- Widening of Route 28 to ten lanes including an HOV lane in each direction
- Widening of the Fairfax County Parkway to six lanes including an HOV lane in each direction
- An overpass across the Dulles Toll Road near the County line (Rock Hill Road Overpass)
- An overpass across the Dulles Toll Road west of Wiehle Avenue (Soapstone Overpass)
- An underpass under the Dulles Toll Road west of Reston Parkway (Town Center Parkway/Edmund Halley Drive Underpass)
- Widening of Centreville Road to six lanes per County Transportation Plan
- The extension of Sunrise Valley Drive south of Frying Pan Road, completion of improvements to West Ox Road and Reston Parkway, and widening/improvement of Fox Mill Road, Monroe Street, and Frying Pan Road



General Mitigation Strategies

- Strategic Land Use (TOD)
- Local Connections and Grid of Streets
- Enhanced Pedestrian and Bicycle Access
- Enhanced Transit Service and TDM
- Traffic Operations and Intersection Improvements



Land Use Scenarios Tested

Development Type	Base COG Rd 8.0	Scenario E	Scenario F	Scenario E - COG Rd 8.0		Scenario F - COG Rd 8.0	
				# Difference	% Difference	# Difference	% Difference
Office (sf)	22,612,598	30,987,805	30,987,805	8,375,207	37%	8,375,207	37%
Retail (sf)	999,118	1,791,180	1,791,180	792,062	79%	792,062	79%
Industrial (sf)	704,700	598,377	598,377	-106,323	-15%	-106,323	-15%
Institutional (sf)	1,744,200	3,731,023	3,731,023	1,986,823	114%	1,986,823	114%
Hotel (sf)	<u>1,537,105</u>	<u>2,703,330</u>	<u>2,703,330</u>	1,166,225	76%	1,166,225	76%
Nonresidential total (sf)	27,597,721	39,811,715	39,811,715	12,213,994	44%	12,213,994	44%
Residential (units)	16,382	22,598	45,927	6,216	38%	29,545	180%



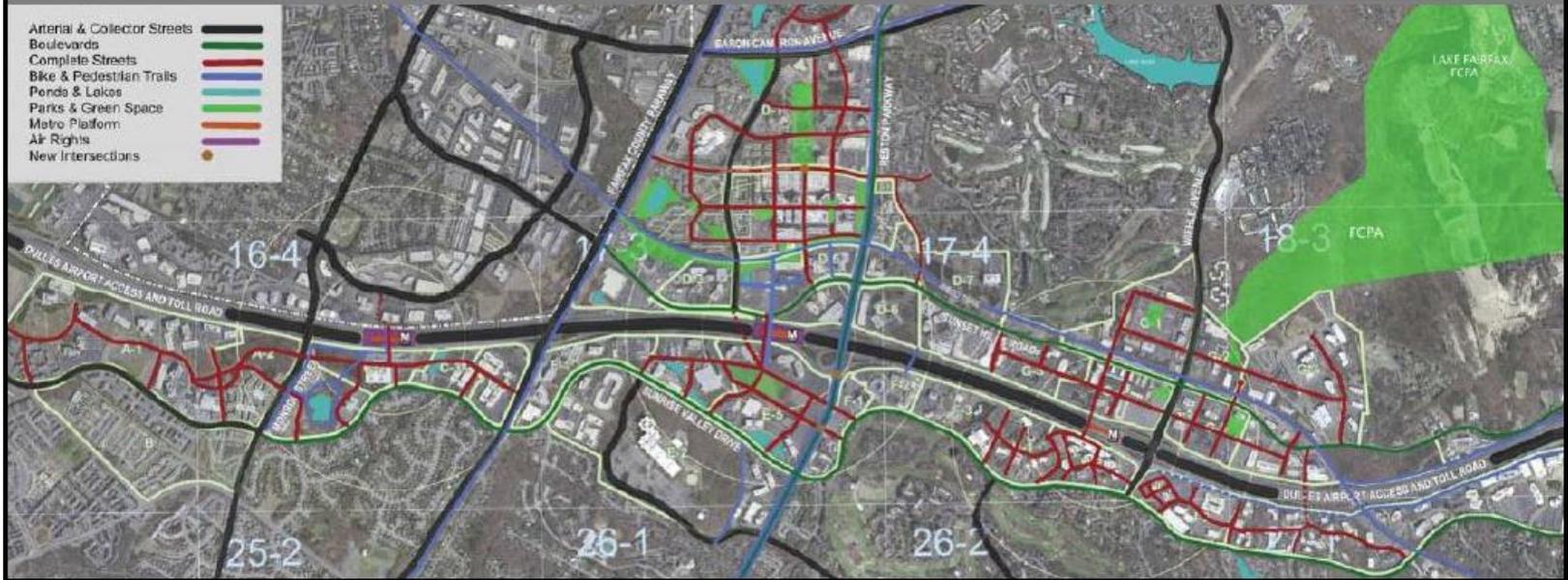
Reston Master Plan Transportation

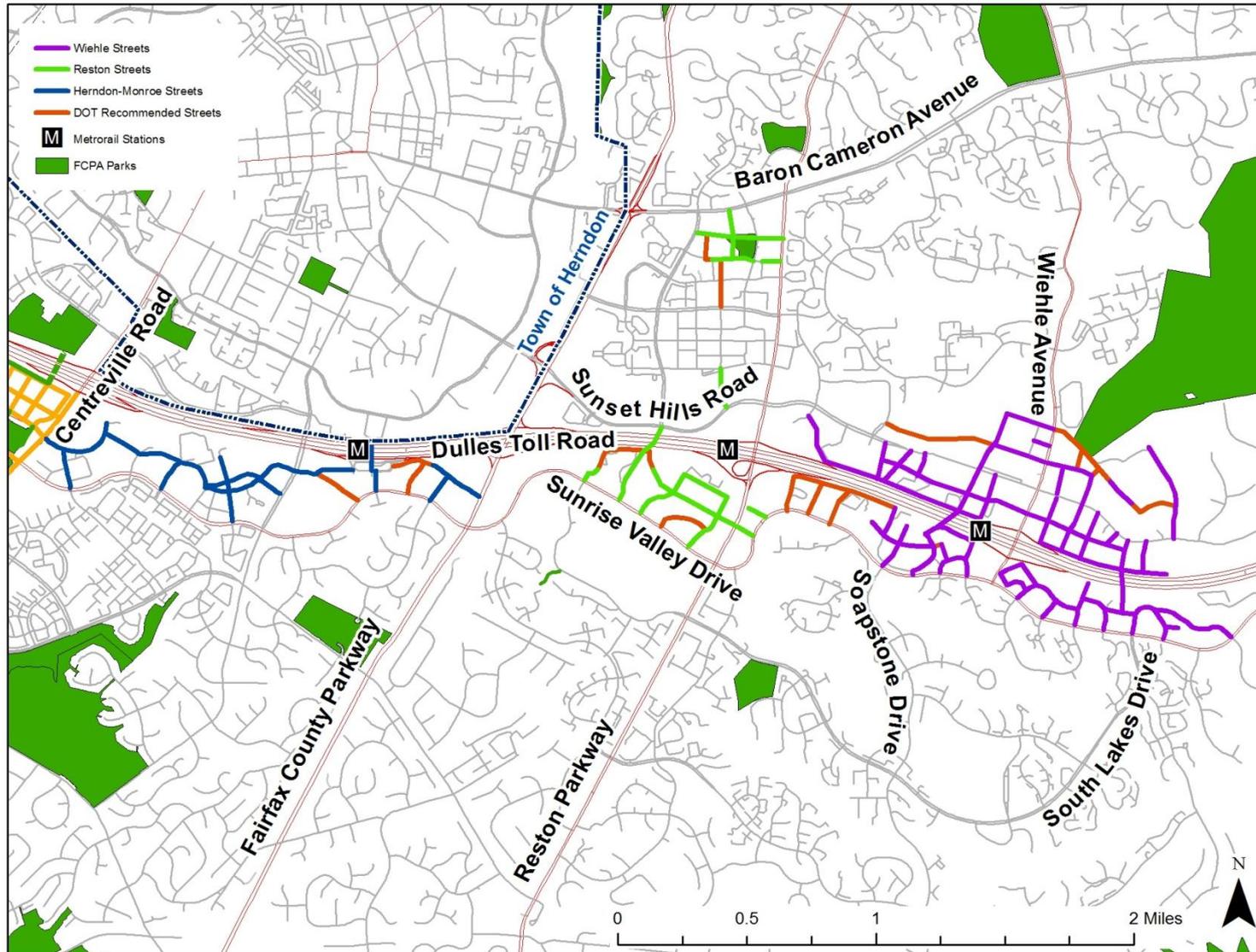
Expand network of streets:

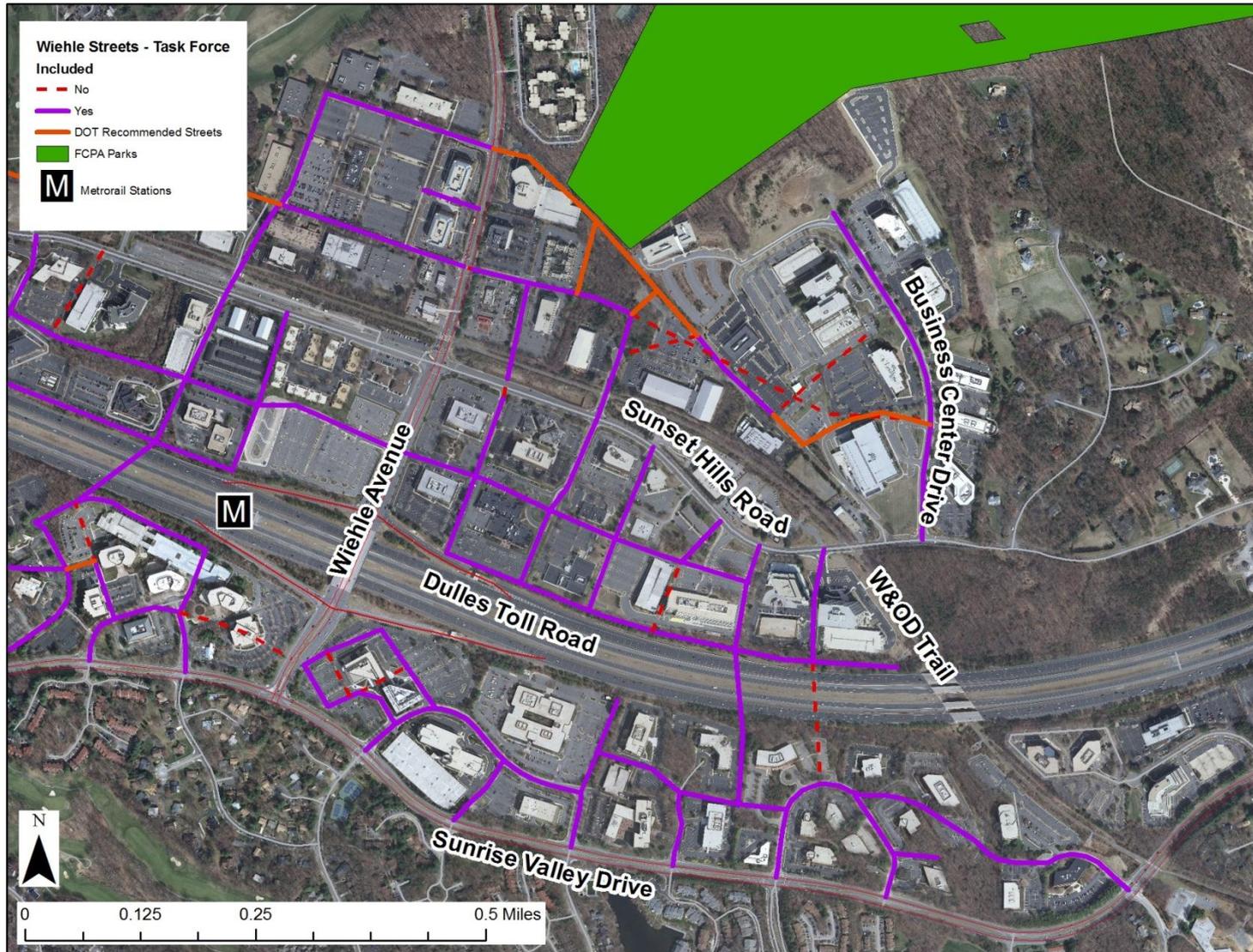
- Arterials
- Collectors
- Main Streets
- Business or local Streets



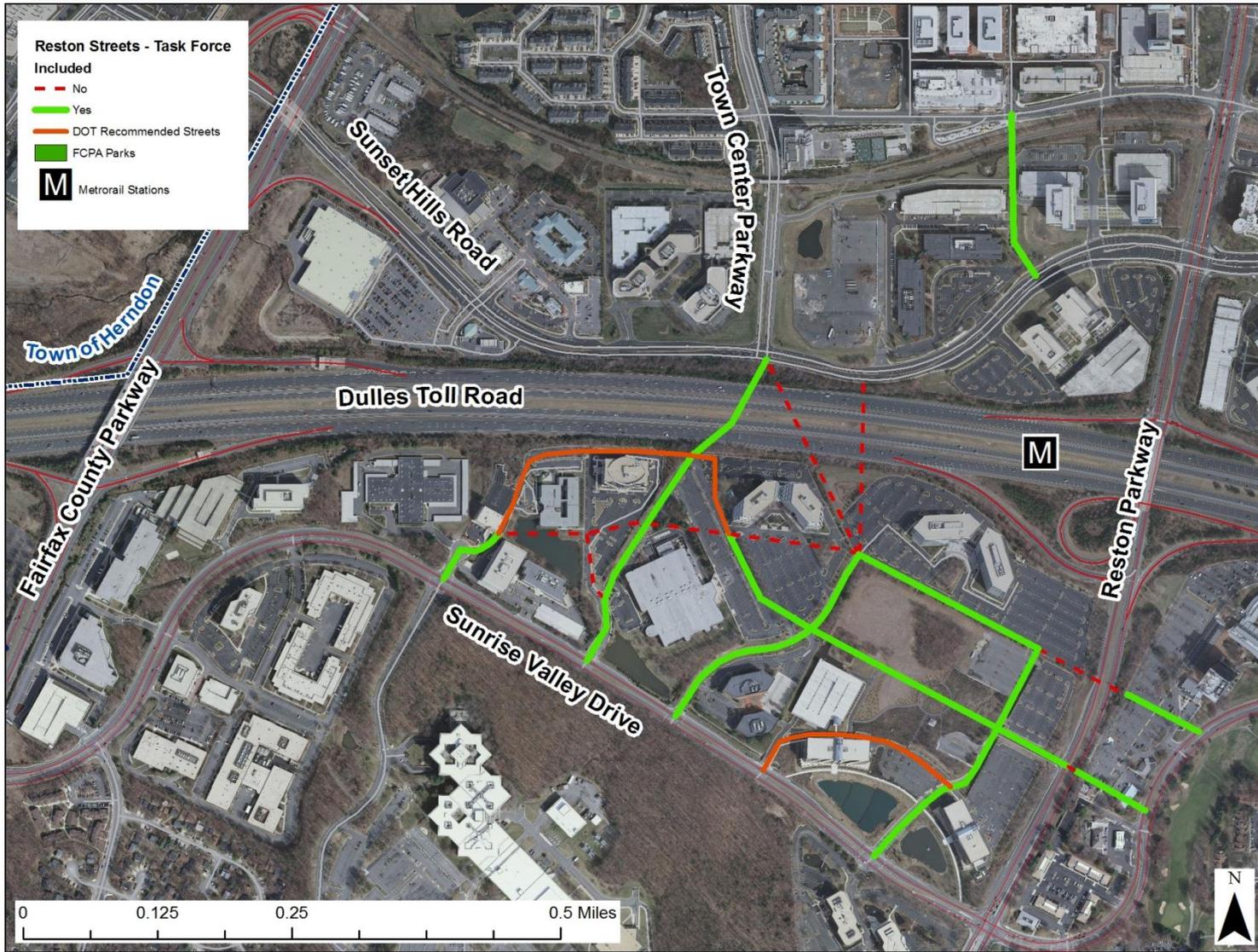
- Arterial & Collector Streets
- Boulevards
- Complete Streets
- Bike & Pedestrian Trails
- Ponds & Lakes
- Parks & Green Space
- Metro Platform
- Air Rights
- New Intersections



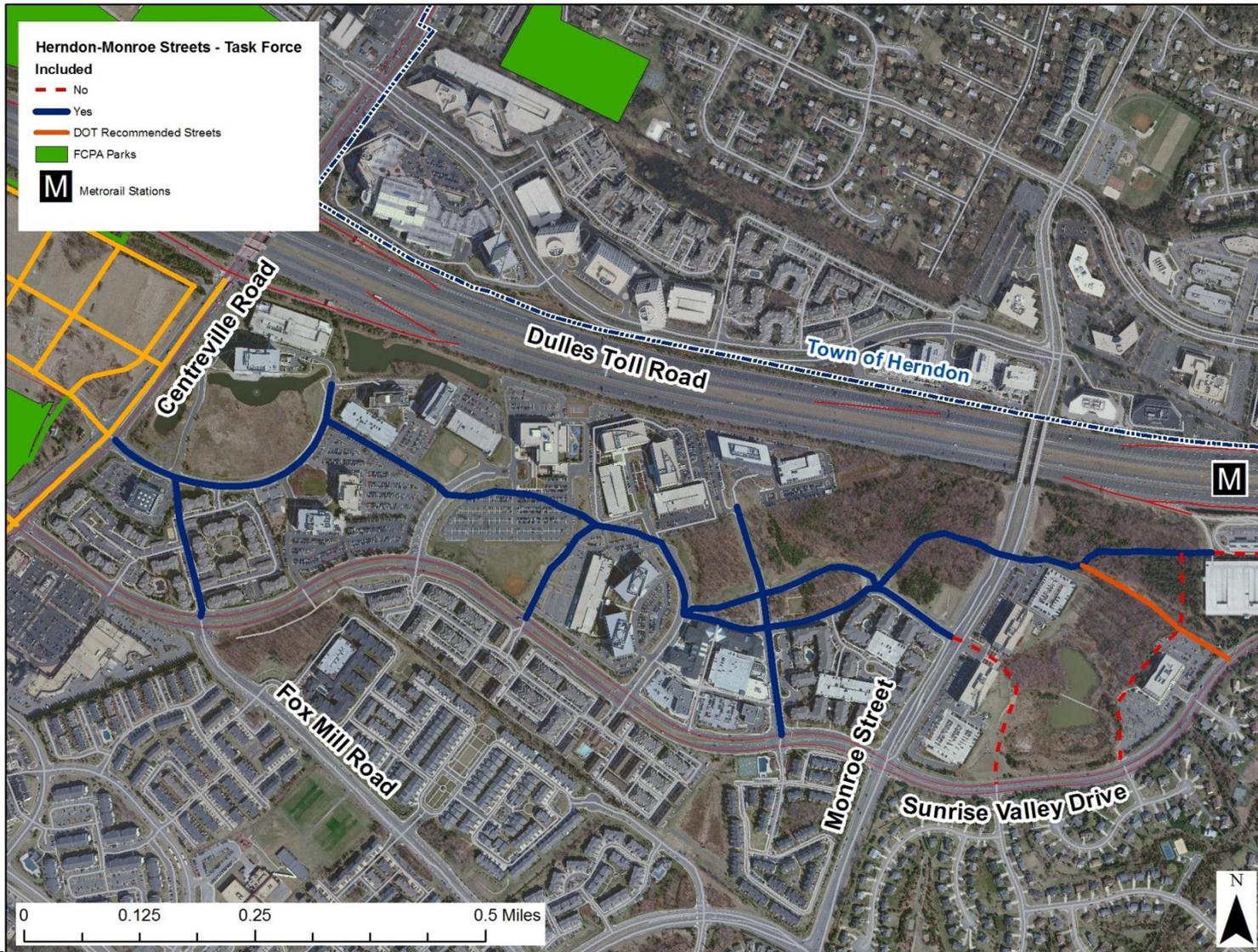












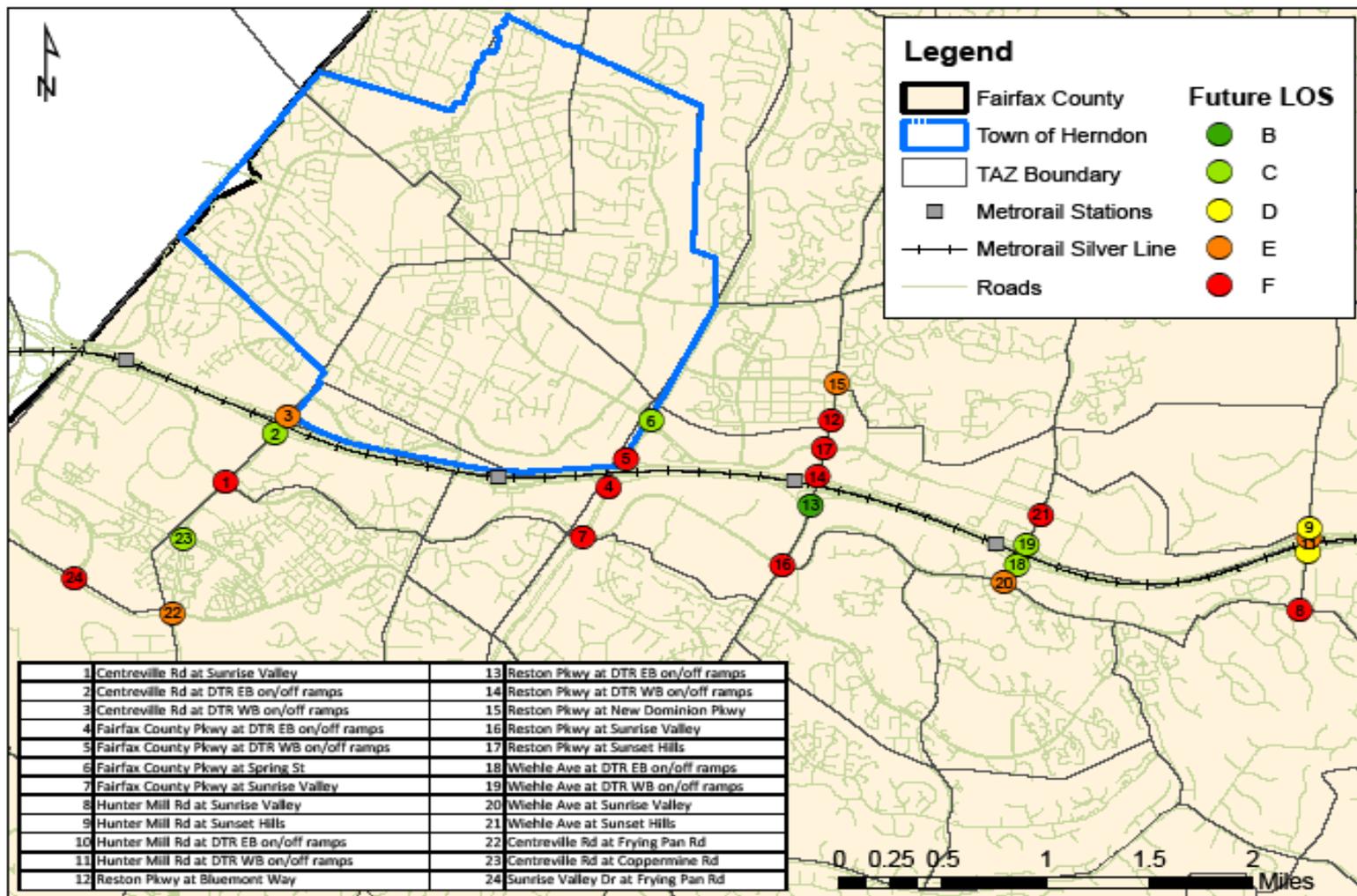


Intersection Mitigations

- 21 major intersections analyzed
 - Mitigation added at 14 intersections
 - Includes improvements at Dulles Toll Road ramps as proposed by the Metropolitan Washington Airport Authority
- Evaluated intersection improvements considering pedestrian and bicycle access issues



2030 Evening Peak Hour Level of Service (Round 8.0 Land Use) -Unmitigated





Wiehle Avenue at Sunrise Valley Drive

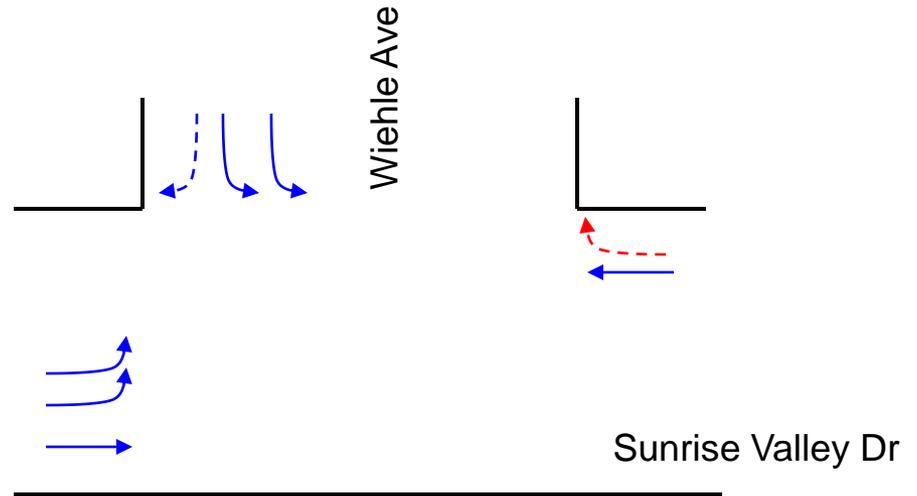
2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/85 s**
- Evening LOS/Delay: E/60 s

Mitigation Added:

- Implement free WB right turns

Mitigations Added



- Note 1: Red Arrow – Improvement Added
- Note 2: Dashed line indicates a free right turn



Wiehle Avenue at Sunset Hills Road

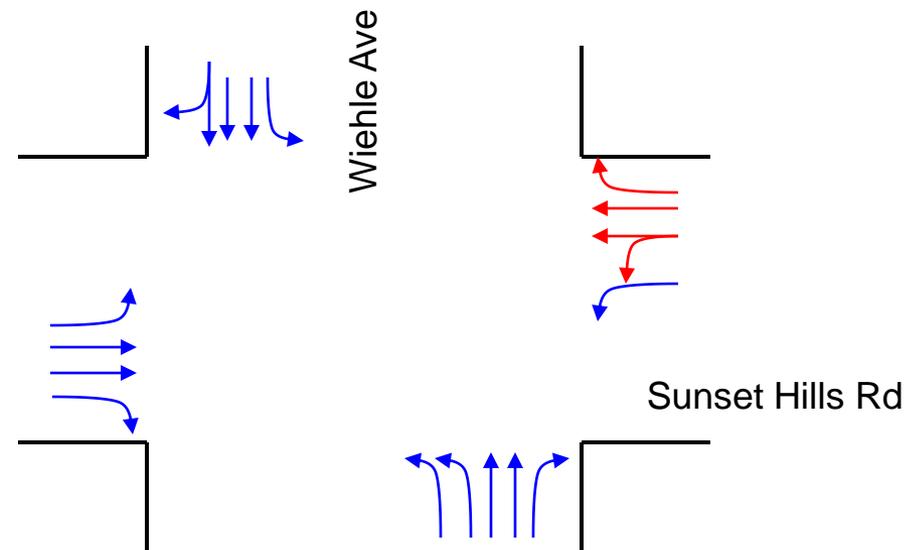
2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: E/79 s
- Evening LOS/Delay: **F/185 s**

Mitigation Added:

- Add a WB right-turn lane
- Convert WB thru/right into thru only
- Convert inner WB thru lane into thru/left

Mitigations Added



Note 1: Red Arrow – Improvement Added

Note 2: Dashed line indicates a free right turn



Reston Parkway at Sunrise Valley Drive

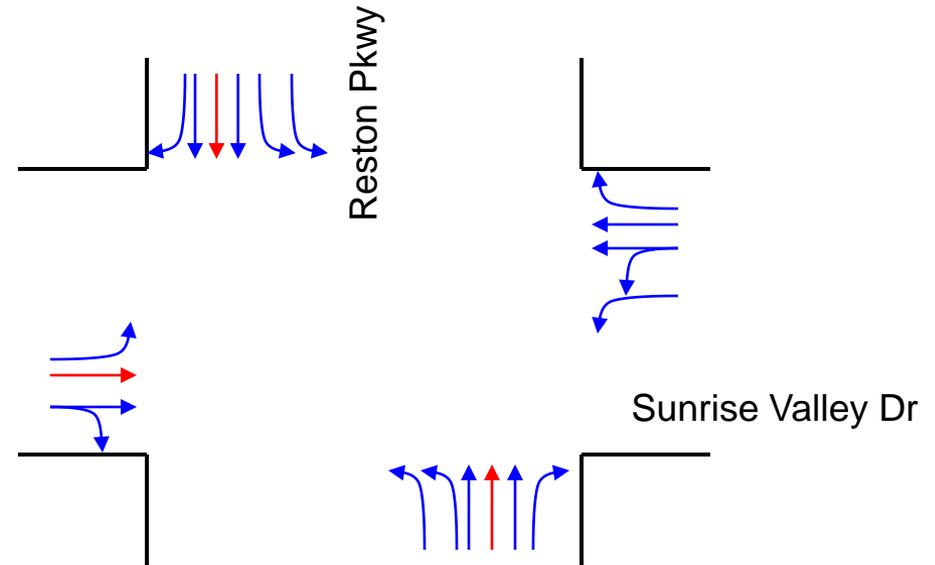
2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/175 s**
- Evening LOS/Delay: **F/160 s**

Mitigation Added:

- Add NB thru lane
- Add SB thru lane
- Convert EB thru/left lane to a thru lane

Mitigations Added



Note 1: Red Arrow – Improvement Added

Note 2: Dashed line indicates a free right turn



Reston Parkway at New Dominion Parkway

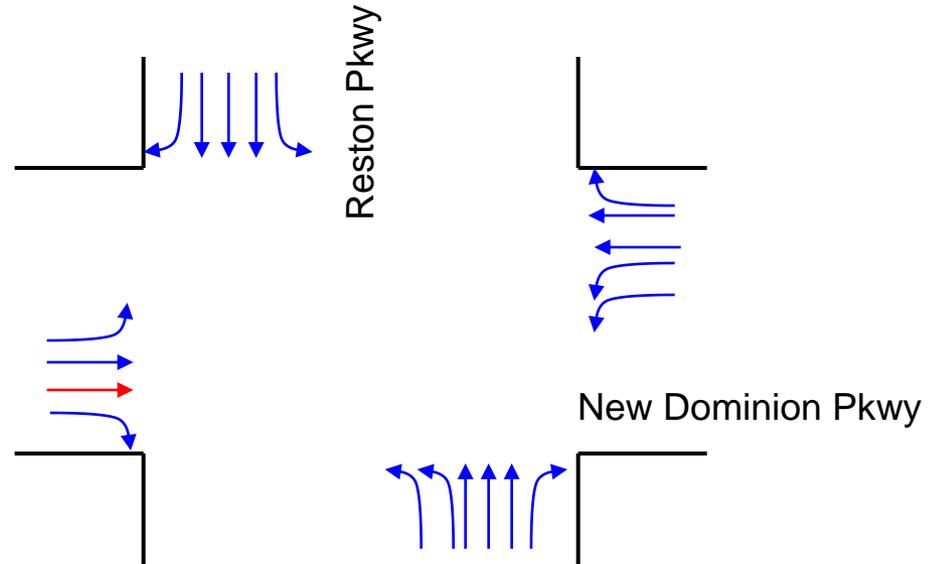
2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/100 s**
- Evening LOS/Delay: E/75 s

Mitigation Added:

- Convert 2nd EB right turn to thru lane

Mitigations Added



Note 1: Red Arrow – Improvement Added

Note 2: Dashed line indicates a free right turn



Reston Parkway at Bluemont Way

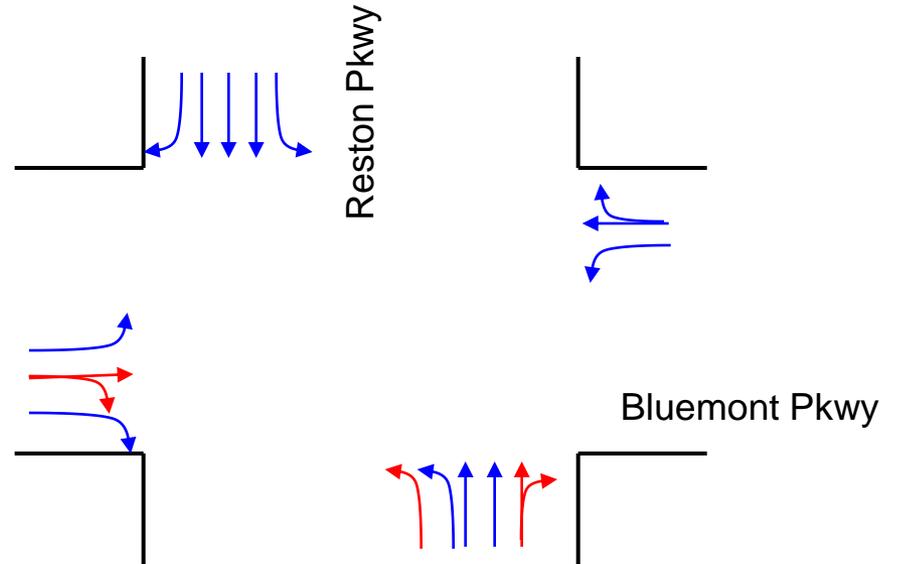
2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: E/40 s
- Evening LOS/Delay: **F/90 s**

Mitigation Added:

- Remove NB right turn
- Convert outer NB thru lane to a thru/right lane
- Add 2nd NB left turn
- Convert EB thru lane to a thru/right

Mitigations Added



Note 1: Red Arrow – Improvement Added

Note 2: Dashed line indicates a free right turn



Centreville Road at Sunrise Valley Drive

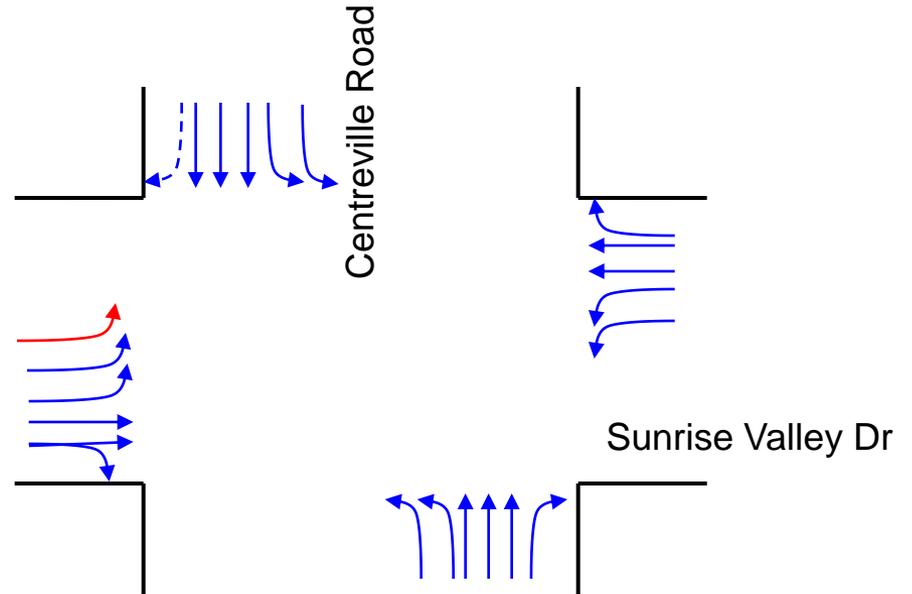
2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/90 s**
- Evening LOS/Delay: **F/135 s**

Mitigation Added:

- Add 3rd EB left turn

Mitigations Added



Note 1: Red Arrow – Improvement Added

Note 2: Dashed line indicates a free right turn



Fairfax County Parkway at Sunrise Valley Drive

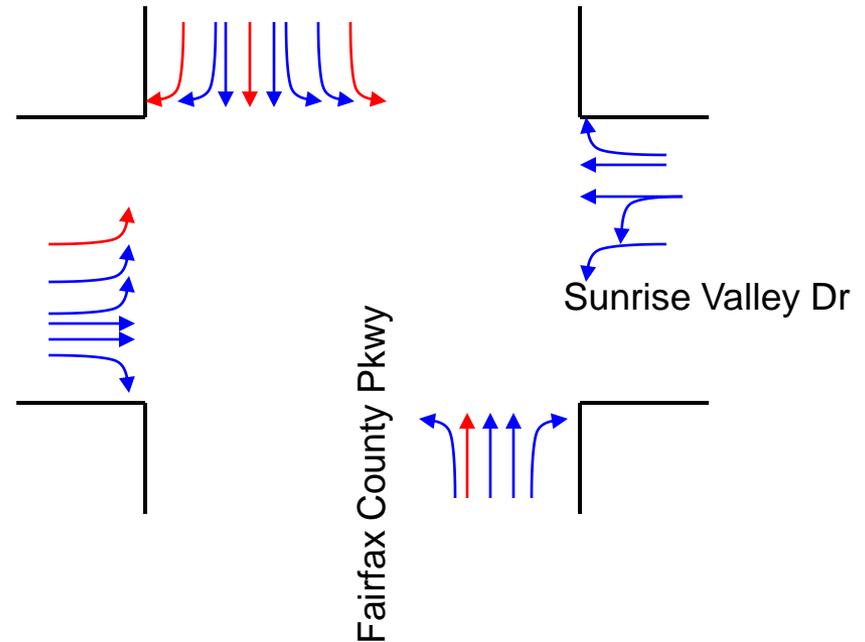
2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/163.5 s**
- Evening LOS/Delay: **F/213.6 s**

1st Mitigation Considered:

- Add southbound through lane
- Add 2nd southbound right turn
- Add 3rd southbound left turn
- Add 3rd eastbound left turn
- Add northbound through lane

Mitigations Added



- Note 1: Red Arrow – Improvement Added
- Note 2: Dashed line indicates a free right turn



Fairfax County Parkway at Sunrise Valley Drive

2030 Traffic Conditions (unmitigated):

- Morning LOS/Delay: **F/163.5 s**
- Evening LOS/Delay: **F/213.6 s**

1st Mitigation Considered:

- Add southbound through lane
- Add 2nd southbound right turn
- Add 3rd southbound left turn
- Add 3rd eastbound left turn
- Add northbound through lane

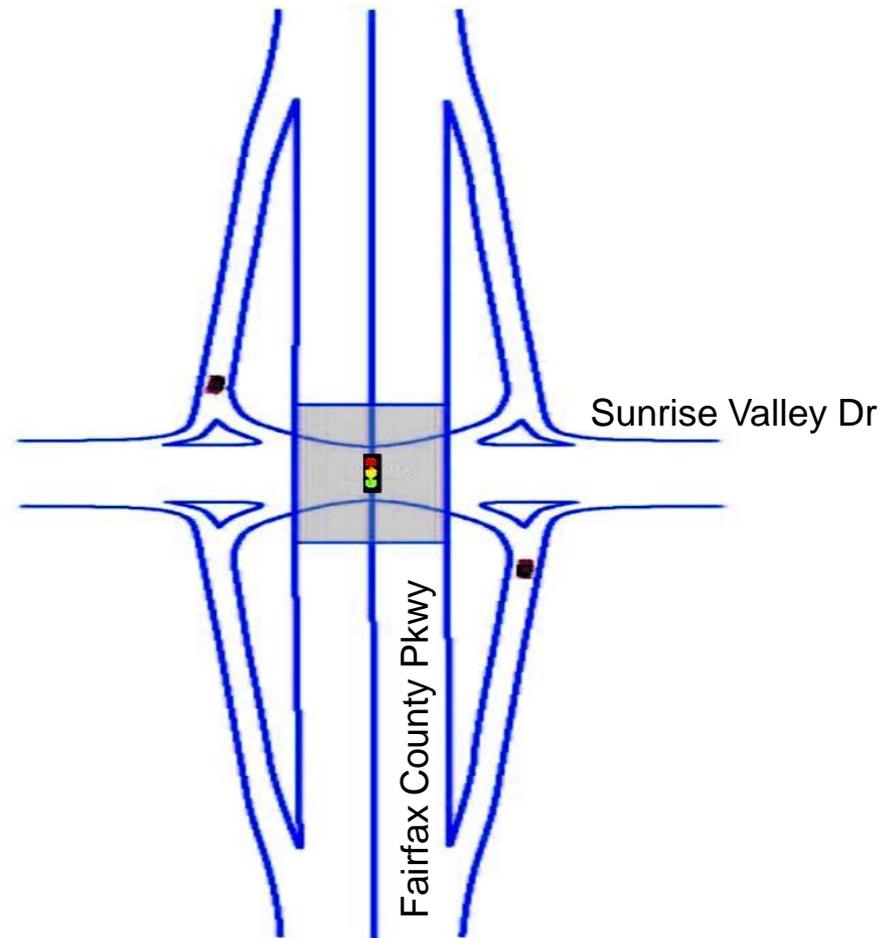
2nd Mitigation Considered:

- Grade Separation with a Single Point Urban Interchange
- Implement free SB right turns

 Note 1: Red Arrow – Improvement Added

 Note 2: Dashed line indicates a free right turn

Mitigations Added



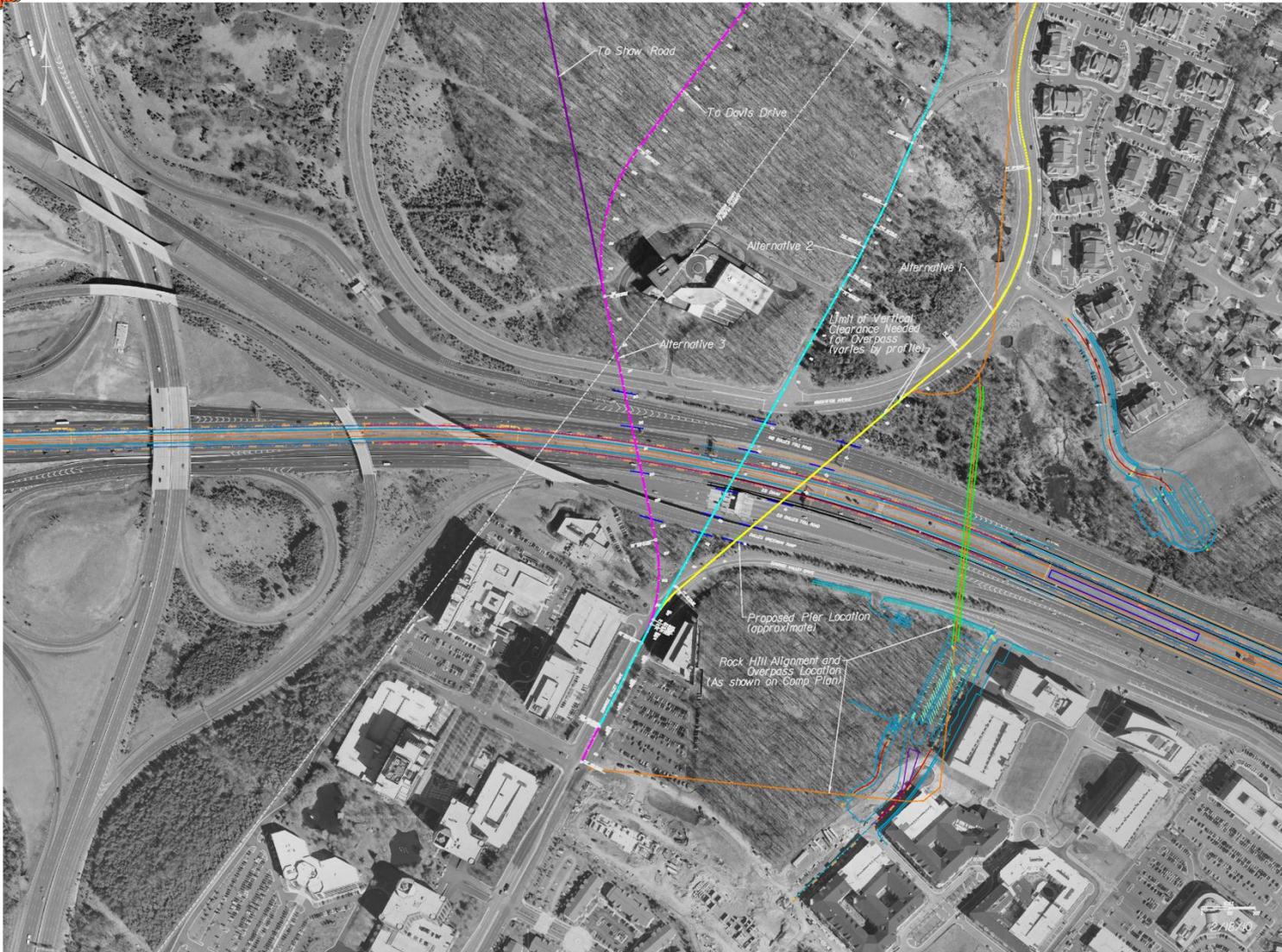


Dulles Toll Road Crossings – Feasibility Studies

- 4 Crossings of the Toll Road being studied
 - East of Wiehle Avenue (South Lakes Drive)
 - West of Wiehle Avenue (Soapstone Drive)
 - West of Reston Parkway (Town Center Parkway)
 - East of Route 28 (Rock Hill Road)



County of Fairfax, Virginia **Rock Hill Road Feasibility Study**





Scenarios and Network

- Scenarios: 2 land use scenarios compared to base

- Network:
 - Partial Build Network:
 - Major Road widenings on Transportation Plan Map
 - Soapstone Overpass
 - Enhanced Street Network
 - Intersection Mitigations Noted Previously
 - Full Build Network
 - 3 Additional Crossings of the Toll Road
 - Grade Separation at Sunrise Valley Drive and Fairfax County Parkway



Evaluation Measures

- The following are measures that will be used to assess/evaluate the transportation network:
 - Intersection Level of Service (LOS)
 - Intersection Peak Spreading
 - Drive Time Comparisons
 - System-wide congestion
 - Link Level of Service



Questions/Discussion