



County of Fairfax, Virginia

Urban Street Standards for Mixed-Use Centers

Fairfax County Department of Transportation
Capital Projects and Traffic Engineering Division

January 30, 2014



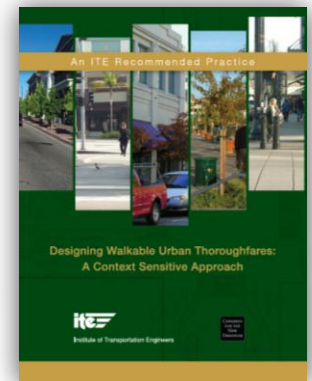
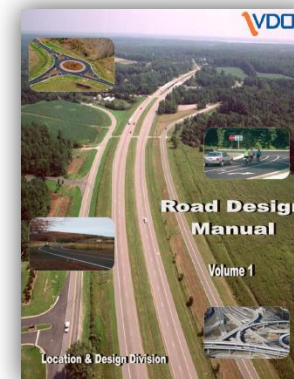
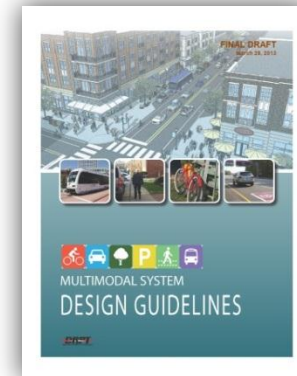
Purpose

- Develop a set of urban transportation design standards that can be utilized within the County's urban activity centers and revitalization areas.
- Based on a context-sensitive design approach that establishes a walkable low-speed urban roadway environment.
- Creates a flexible platform that will allow for implementation of the County's comprehensive plan.
- Focused on urban design elements that accommodate all modes of transportation, and reduce the number of design waivers and exceptions required from VDOT.



Primary Reference Sources

- Access Management Design Standards for Entrances and Intersections, VDOT
- American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, 2004; low speed urban street design
- Fairfax County Comprehensive Plan
- [Institute of Transportation Engineers \(ITE\) recommended practice: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, 2010](#)
- [Multimodal System Design Guidelines, Department of Rail and Public Transportation \(DRPT\)](#)
- [Road Design Manual \(RDM\), VDOT](#)





Background Activities

- April 2010 – The General Assembly of Virginia enacted HB 222 (Watts), “Design standards for state secondary highway system components,” which required VDOT and the Department of Rail and Public Transportation (DRPT), to work in conjunction with Fairfax County to develop new context sensitive, urban design standards for the county.
- September 2011 – The Board adopted Transportation Design Standards and a Memorandum of Agreement (MOA) with VDOT, for the Tysons Corner Urban Center.
- May 2012 – County Staff presented to the Board an approach to developing Transportation Design Standards for the remaining urban activity districts and revitalization areas in Fairfax County.
- September 2012 – County staff met with VDOT to initiate discussions about creating county-wide urban transportation design standards for public streets.



Background Activities – Continued

- November 2013 – The DRPT released the new Multimodal System Design Guidelines. These establish statewide guidelines for implementing urban transportation design standards.
- November 2013 – Fairfax County submitted to VDOT the first “straw man” multimodal system map for the Franconia-Springfield area.
- January 2014 – VDOT released a new Appendix B(2) to the road design manual, establishing statewide multimodal design standards for mixed-use urban centers.





The Current Process

- VDOT is creating a new appendix to its Road Design Manual that will establish state-wide urban design criteria for urban and mixed-use activity centers and revitalization areas.
- Fairfax County is developing a GIS based multimodal system map that includes functional classifications, modes of transportation, and urban center classifications (P1-P6).
- Fairfax County will develop, based on multimodal system map, the recommended urban roadway cross sections for each roadway within the urban activity centers, and for the through corridors connecting the activity centers.
- County staff are in continued negotiation with VDOT to further develop and refine the Draft VDOT Road Design Manual urban streets standards, so that the County's comprehensive plan can be implemented with the fewest number of design exceptions and waivers.



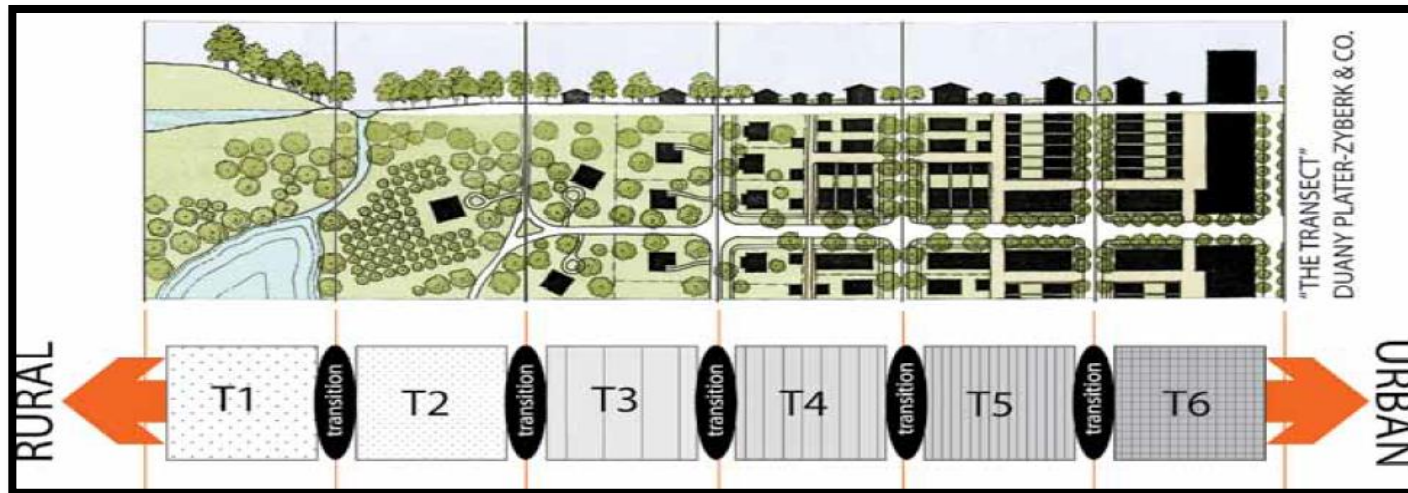
Functional Classification Matrix

VDOT Functional Class (Design Speed)	Interstate, Freeway or Expressway (50 – 70 mph)	Urban Other Principal Arterial (30 – 60 mph)	Urban Minor Arterial (30 – 60 mph)	Urban Collector (30 – 50 mph)	Local Street (20 –30 mph)
Multi Modal Street Typology (Design Speed)	Multimodal Through Corridor (35 – 55 mph)				
		Transit Boulevard (30 – 35 mph)			
		Boulevard (30 – 35 mph)			
			Major Avenue (30 – 35 mph)		
			Avenue (25 – 30 mph)		
					Local Street (25 mph)



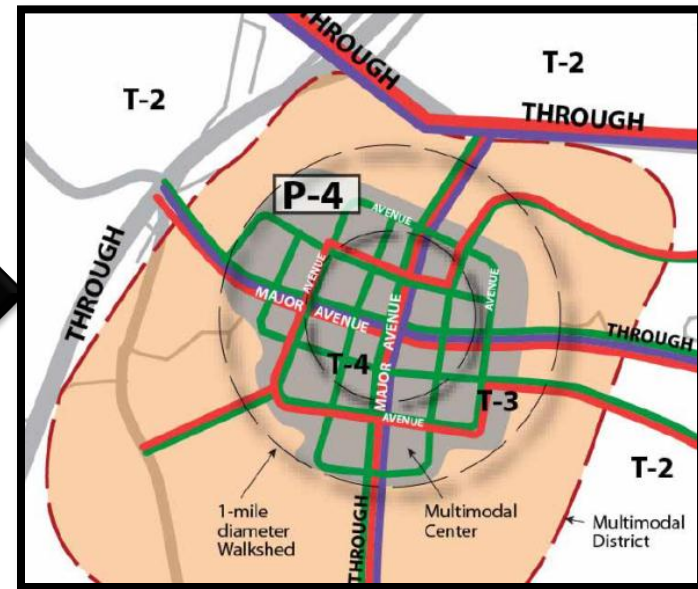
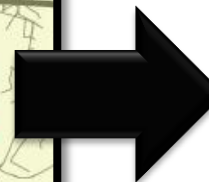
Activity Centers Designations

P-6	• Urban Core
P-5	• Urban Center
P-4	• Large Town or Suburban center
P-3	• Medium Town or Suburban Center
P-2	• Small Town or Suburban center
P-1	• Rural or Village Center
SP	• Special Center





Activity Centers Designations – Continued



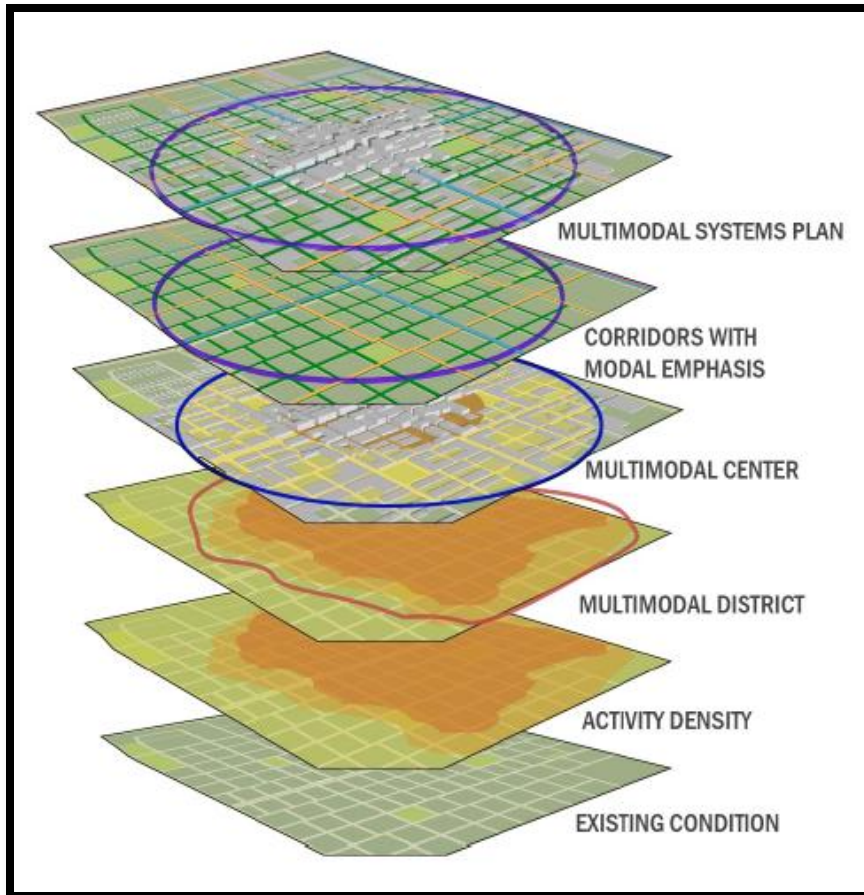


Activity Centers Designations – Continued





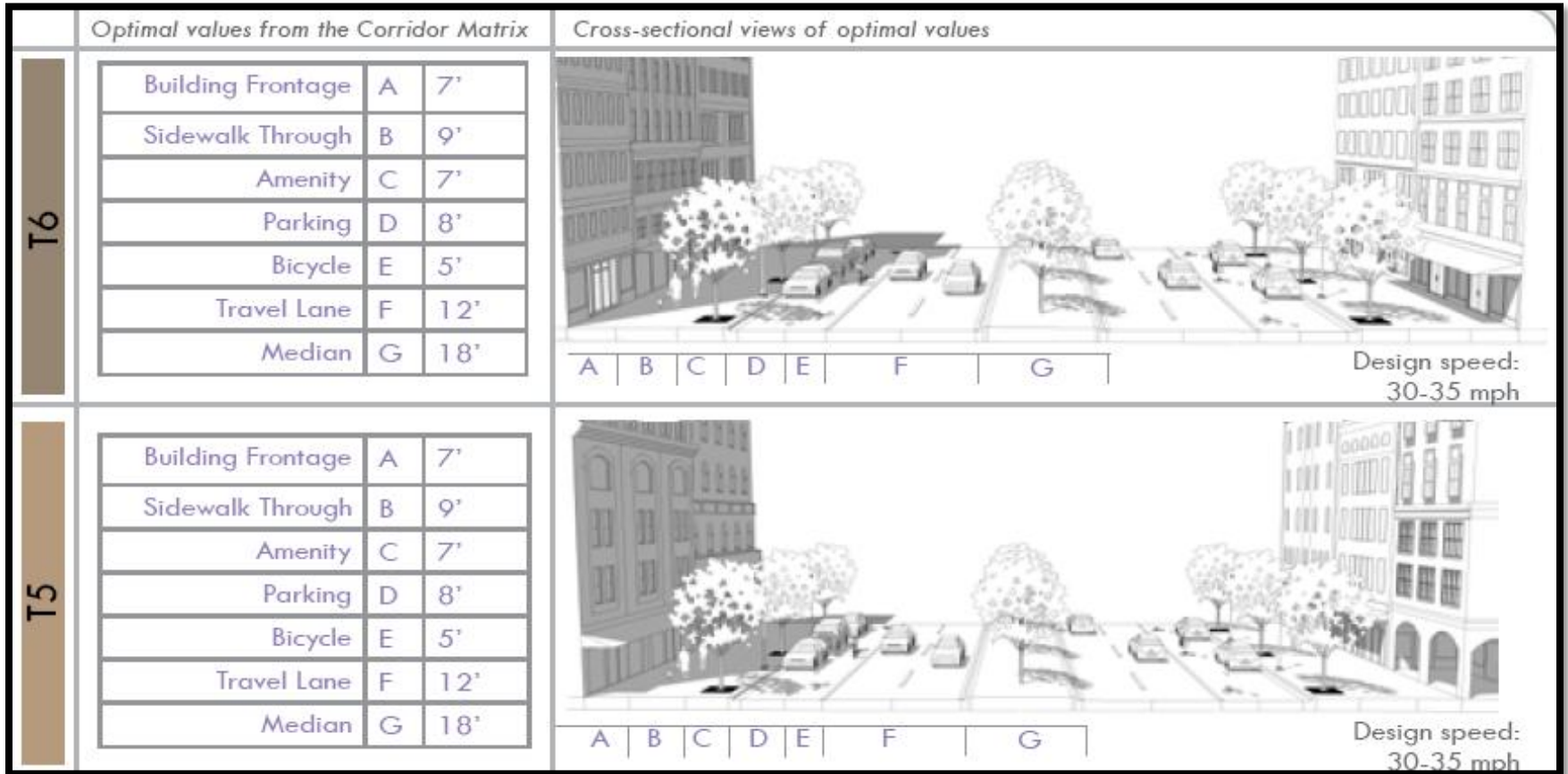
Multimodal System Map



MODAL EMPHASIS		
	MODE (1)	TYPICAL CORRIDOR ELEMENTS EMPHASIZED (2)
	Auto	• Travel Lane Element (3)
	Pedestrian	• Building Frontage Element • Sidewalk Through Element • Amenity Element
	Bicycle	• Bicycle Element
	Transit (4)	• Amenity Element • Travel Lane Element
	Green (5)	• Amenity Element • Median Element
	Parking	• Parking Element



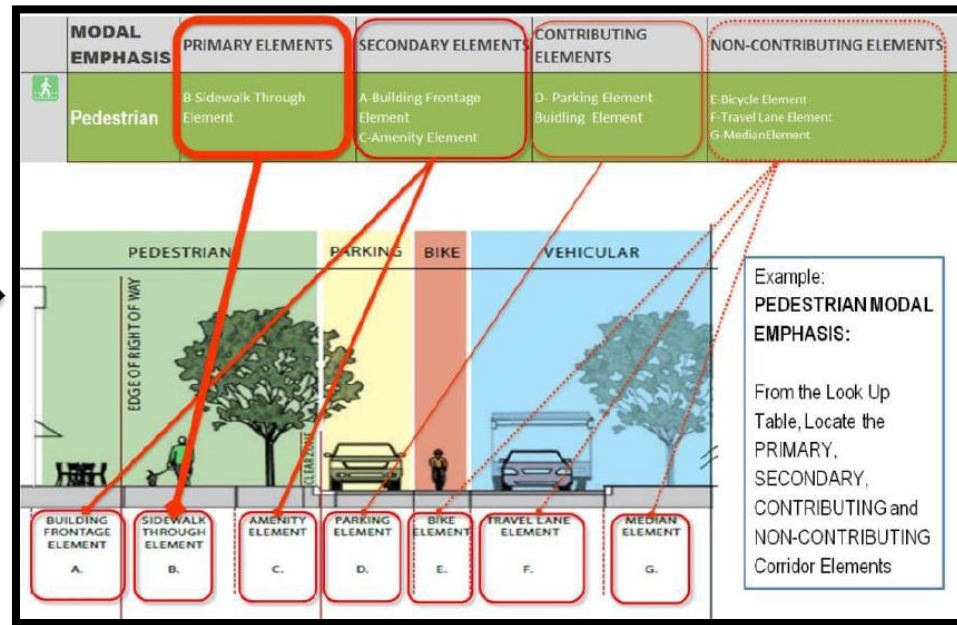
Optimal Cross Sections





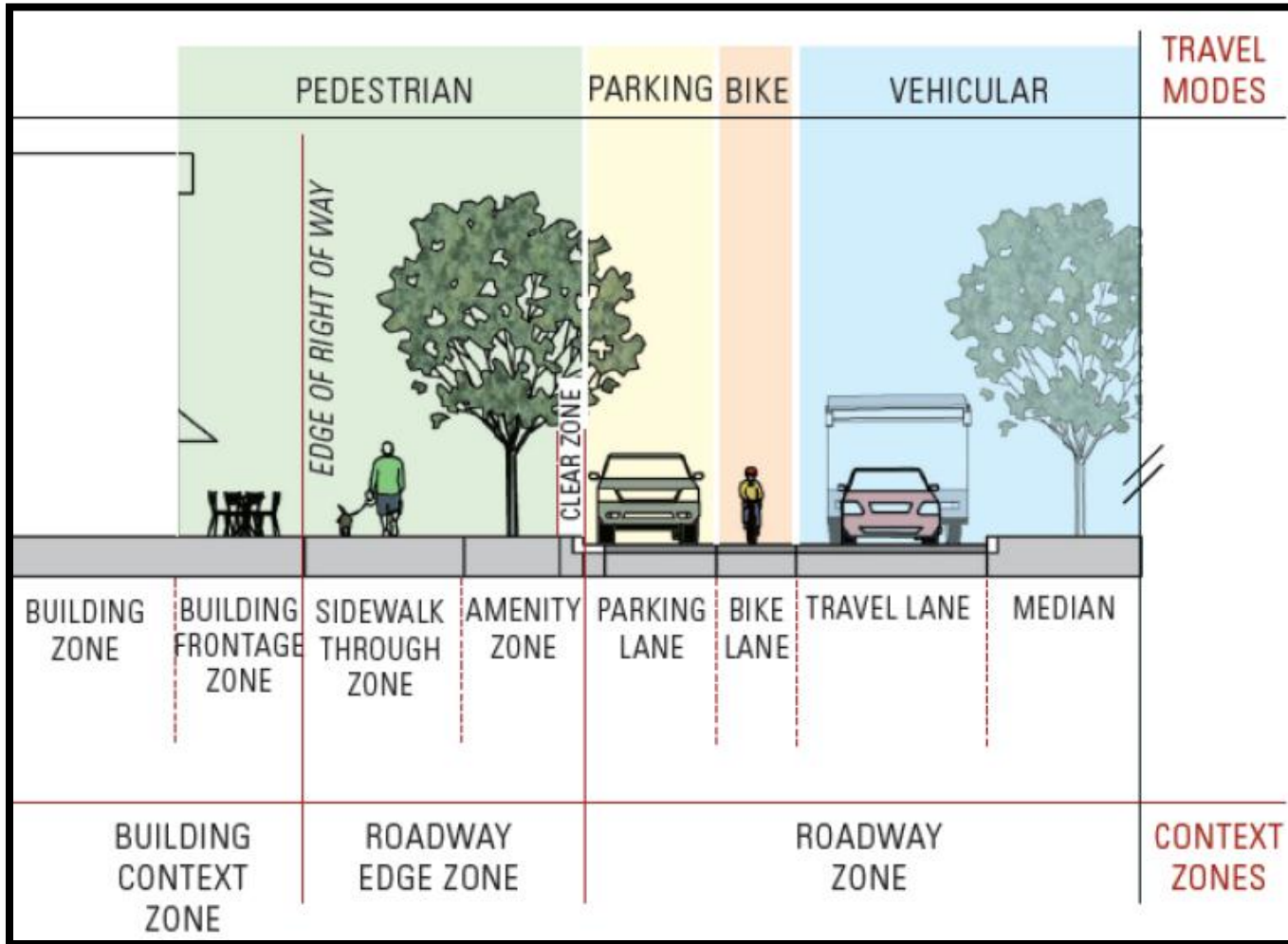
Modal Emphasis/Priority

HOW TO CHOOSE DESIGN STANDARDS BASED ON TYPE OF ELEMENT				
	PRIMARY ELEMENTS	SECONDARY ELEMENTS	CONTRIBUTING ELEMENTS	NON-CONTRIBUTING ELEMENTS
Which Standard to Choose	Use Optimum Standard in all cases	Use Optimum Standard whenever ROW width allows	Use Optimum if ROW allows - May use Minimum if ROW is constrained	May use Minimum Standard



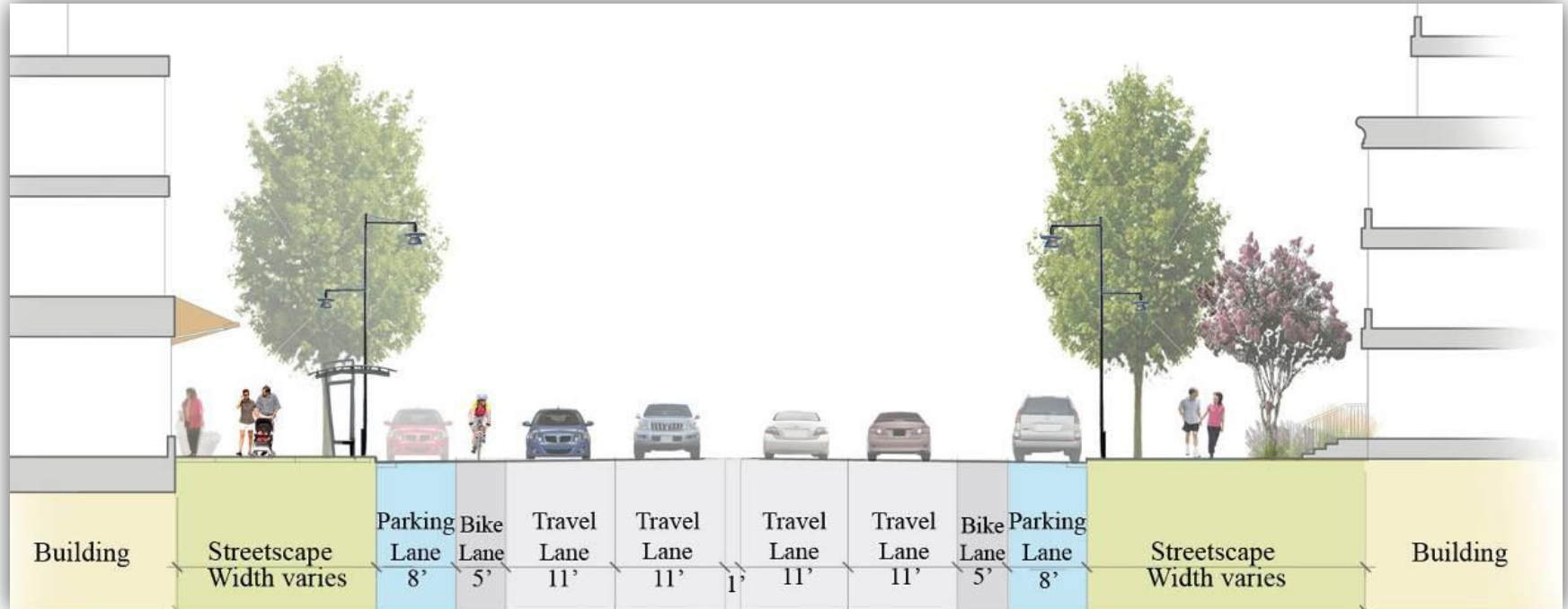


Proposed Cross Sections





Proposed Cross Sections – Continued





Appendix B(2)

- “Appendix B(2) serves to provide interested localities an optional mechanism within the Road Design Manual to implement the methodology of the Department of Rail and Public Transportation’s (DRPT) Multimodal System Design Guidelines and establish multimodal design standards for mixed-use urban centers.”
- The methodology contained within the Multimodal System Design Guidelines constitutes a “Complete Streets” approach.
- The methodology addresses the common limitation of constrained rights of way by affording localities additional flexibility to attempt to accommodate all transportation modes.
- Where all modes cannot be accommodated, the methodology embraces the concept of modal emphasis in which localities can identify which modes to prioritize.



Appendix B(2) – Continued

- The Multimodal System Plan review and approval process is a two phase process conducted by DRPT and VDOT staff.
 - Phase 1 involves the review and approval of the Multimodal System Plan, which shall include components that address locality plans for each transportation mode.
 - Phase 2 involves the review and approval of the roadway typical sections using the multimodal design standards based on the center type, roadway typology and modal emphasis



Appendix B(2) Intersection Spacing Standards

Minimum Access Point Spacing within P5 and P6 Multimodal Activity Centers				
Street Typology	Speed (MPH)	Signalized Intersections	Roundabouts or Unsignalized Intersections or Crossovers	Right-in / Right-out Intersections
Through Corridor	≥ 35	1000	500	300
Transit Boulevard	30 - 35	600	400	300
Boulevard & Major Avenue	30 - 35	600	300	200
Avenue	25-30	500	250	150
Local Street	25 ≥	See RDM, Appendix B(1) and Appendix F		



Appendix B(2) Intersection Spacing Standards – Continued

Minimum Access Point Spacing within P4 Grid Pattern Multimodal Activity Centers				
Street Typology	Speed (MPH)	Signalized Intersections	Roundabouts or Unsignalized Intersections or Crossovers	Right-in / Right-out Intersections
Through Corridor	≥ 35	See RDM, Appendix F, Table 2-2		
Transit Boulevard & Boulevard	30 - 35	800	400	200
Major Avenue & Avenue	25 – 35 **	660	330	200
Local Street	25 ≥	See RDM, Appendix B(1) and Appendix F		

- Intersection Spacing Standards for P4 through P6 without an Urban Connected Network and for all P1 thru P3 shall be in accordance with the APPENDIX F, TABLE 2-2 MINIMUM SPACING STANDARDS FOR COMMERCIAL ENTRANCES, INTERSECTIONS AND CROSSOVERS.



Appendix B(2)

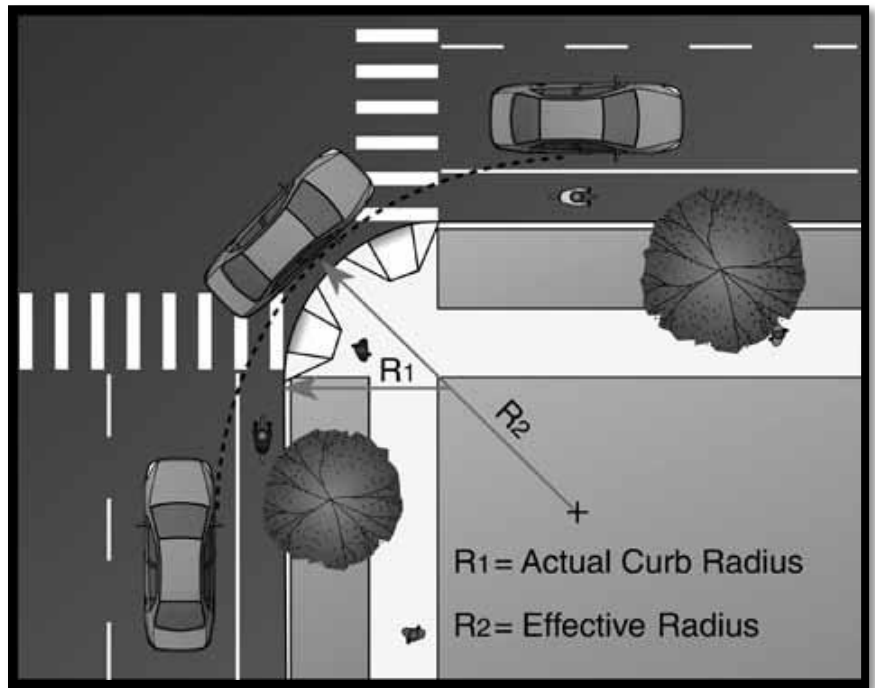
Stopping and Intersection Sight Distance

- Stopping Sight Distance may be used for intersection design for P5 and P6 with Urban Connected Network for streets with design speeds of 35 mph or less as shown in APPENDIX F, TABLE 2-5 STOPPING SIGHT DISTANCE and TABLE 2-6 STOPPING SIGHT DISTANCE ON GRADES. However, Intersection Sight Distance shall be used for all Multimodal Through Corridors.
- Intersection Sight Distance shall be used for all P1 thru P4 with and without Urban Connected Network in accordance with APPENDIX F, TABLE 2-7 INTERSECTION SIGHT DISTANCE.



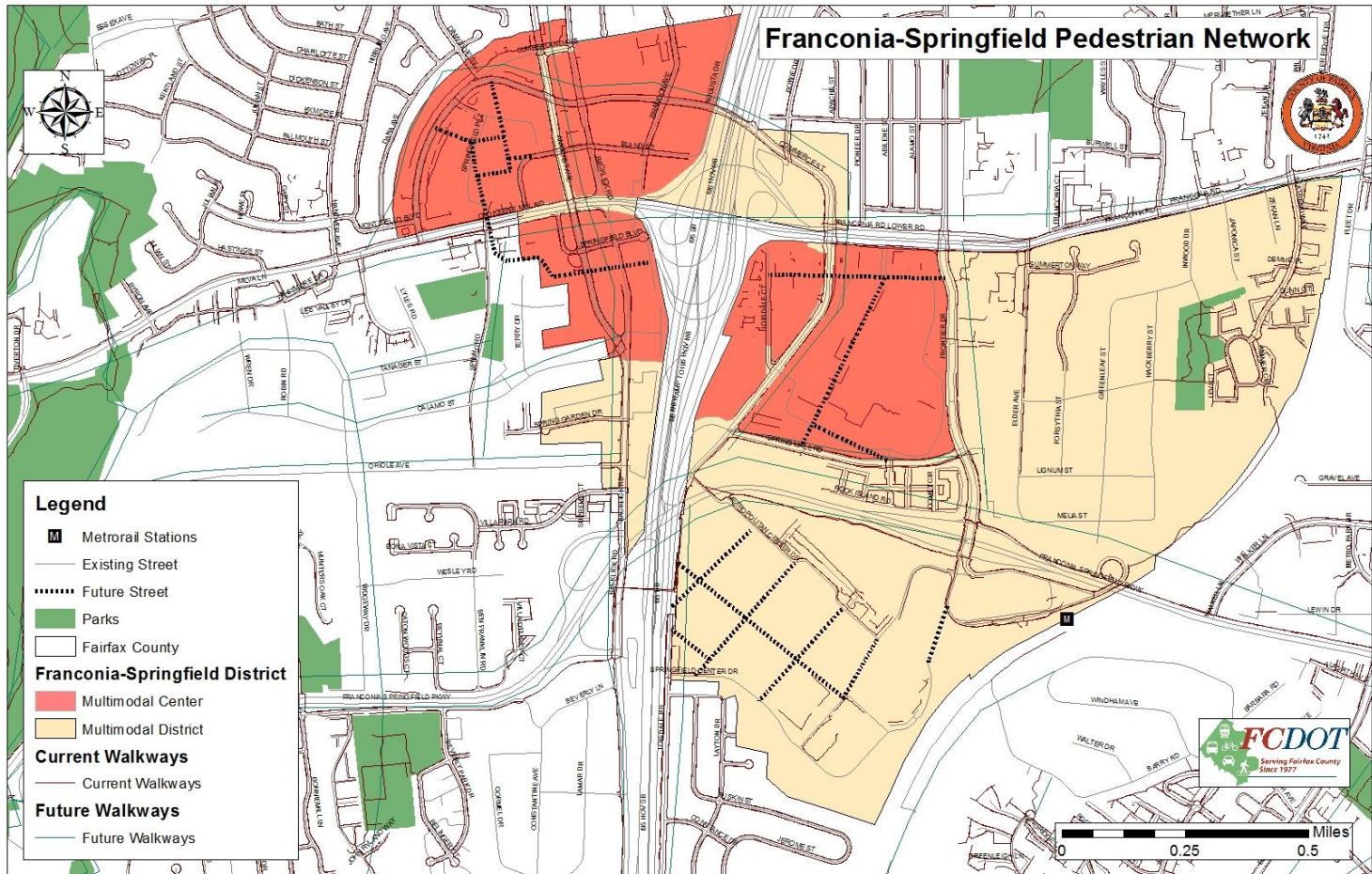
Appendix B(2) Elements of a Typical Cross Section

- Bicycle and pedestrian facilities
- Parallel on-street parking
- Curb extensions (bulb-outs)
- Reduced turn-lane tapers
- Actual and effective curb radii



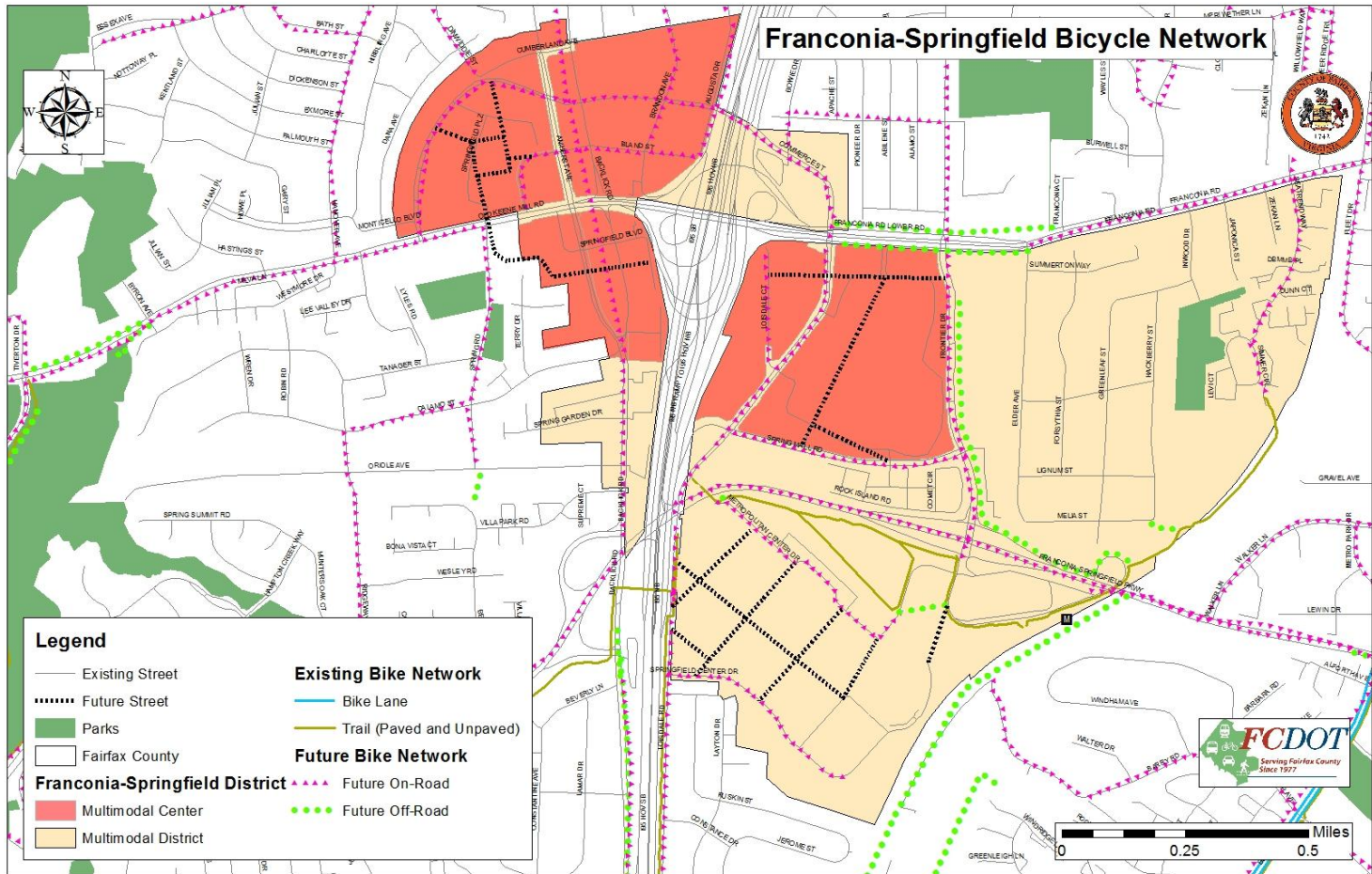


Franconia-Springfield Pedestrian System Map



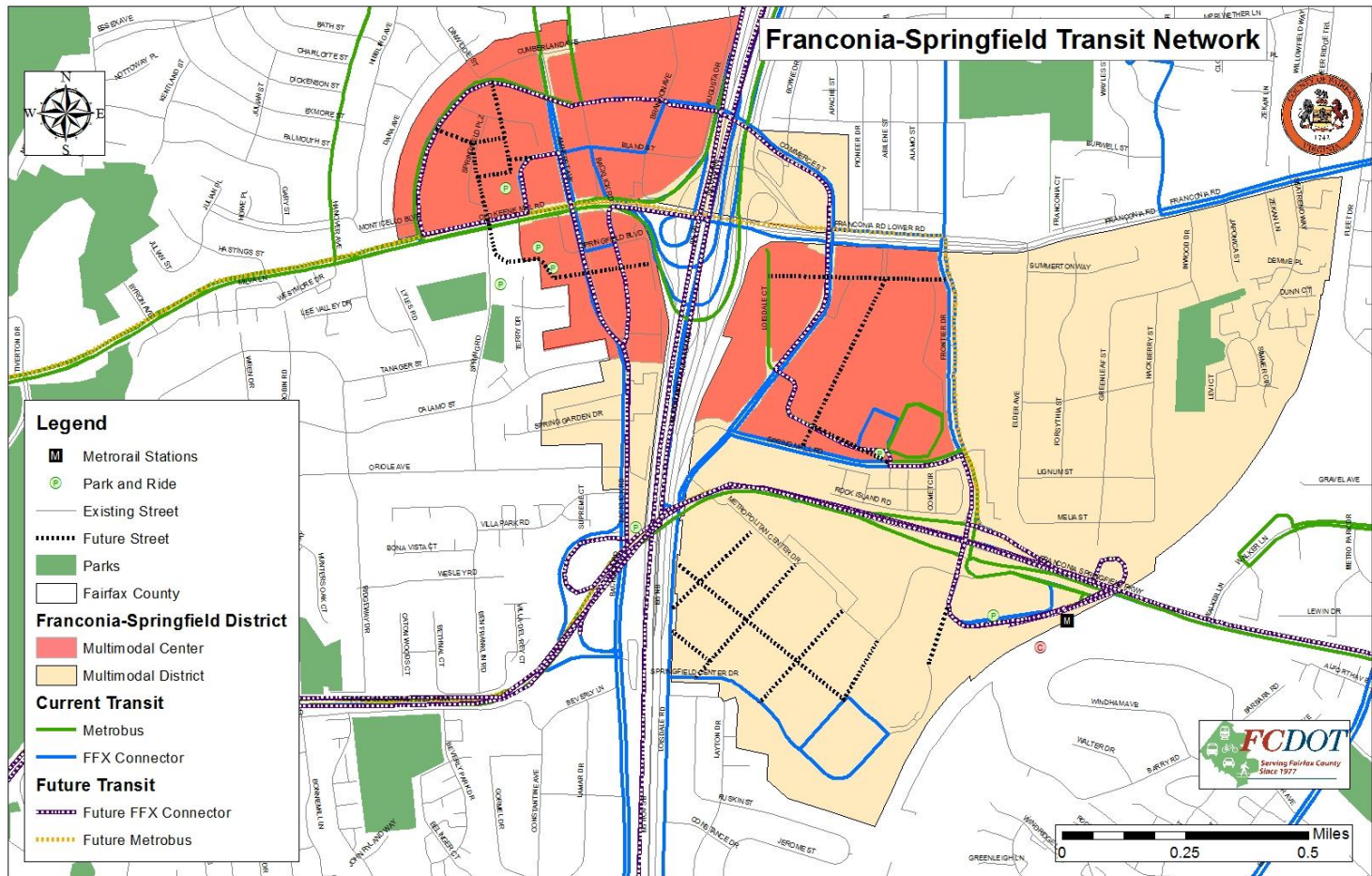


Franconia-Springfield Bicycle System Map



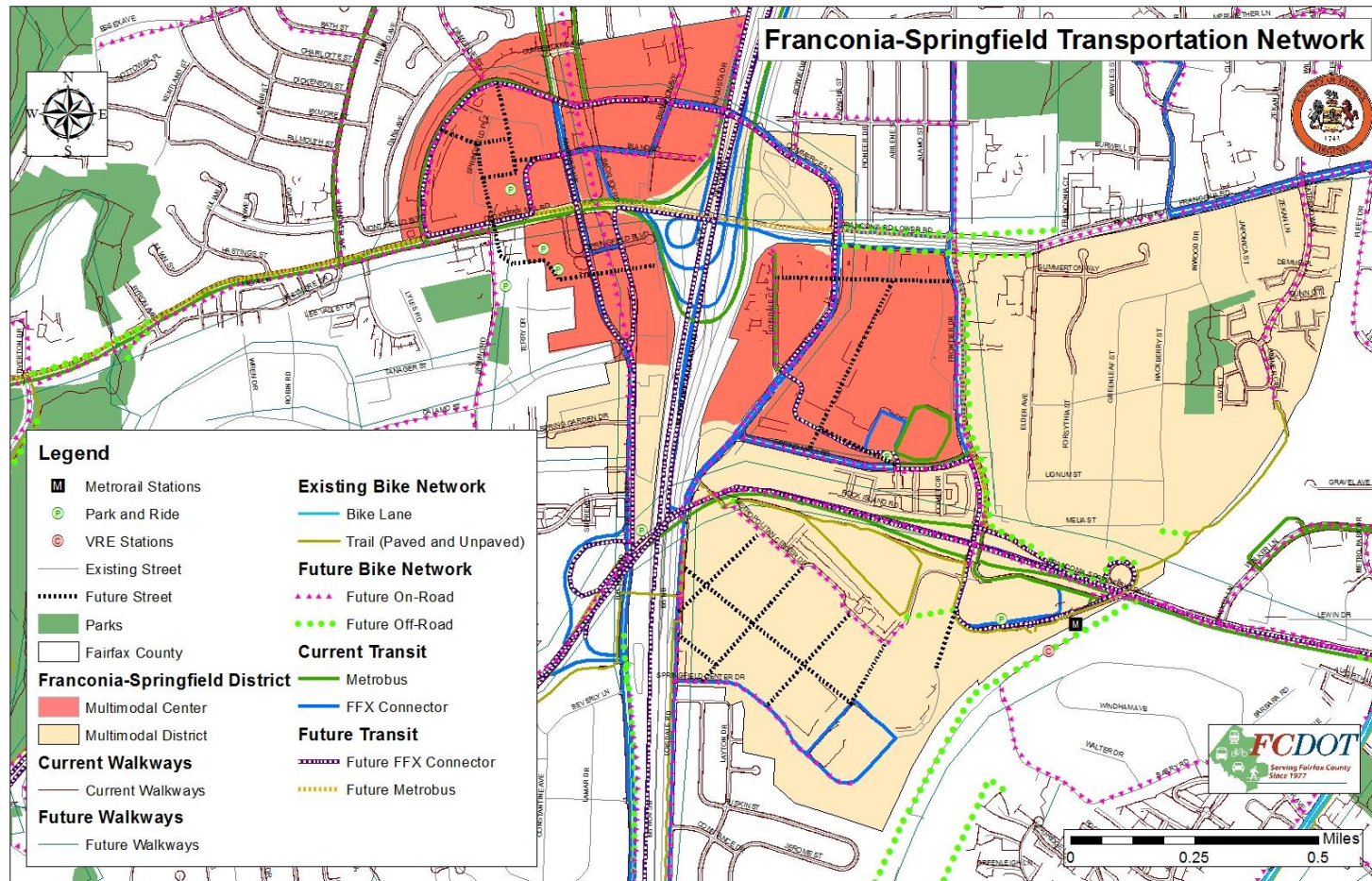


Franconia-Springfield Transit System Map





Franconia-Springfield Multimodal System Map





Current Activities

- VDOT has written a new appendix for the State Road Design Manual that incorporates by reference, the methodology of the DRPT Multimodal System Design Guidelines, and facilitates the implementation thereof. Expectation is to have the appendix adopted in January 2014.
- Fairfax County is developing GIS based multimodal system maps for all remaining compatible urban activity districts.
- Activity districts that are under further study, such as Route 1 and Seven Corners will be submitted after those studies are finished.
- Fairfax County will later develop, based on the County comprehensive plan, recommended urban roadway cross sections for all roadways within the approved urban activity districts.



Remaining Tasks

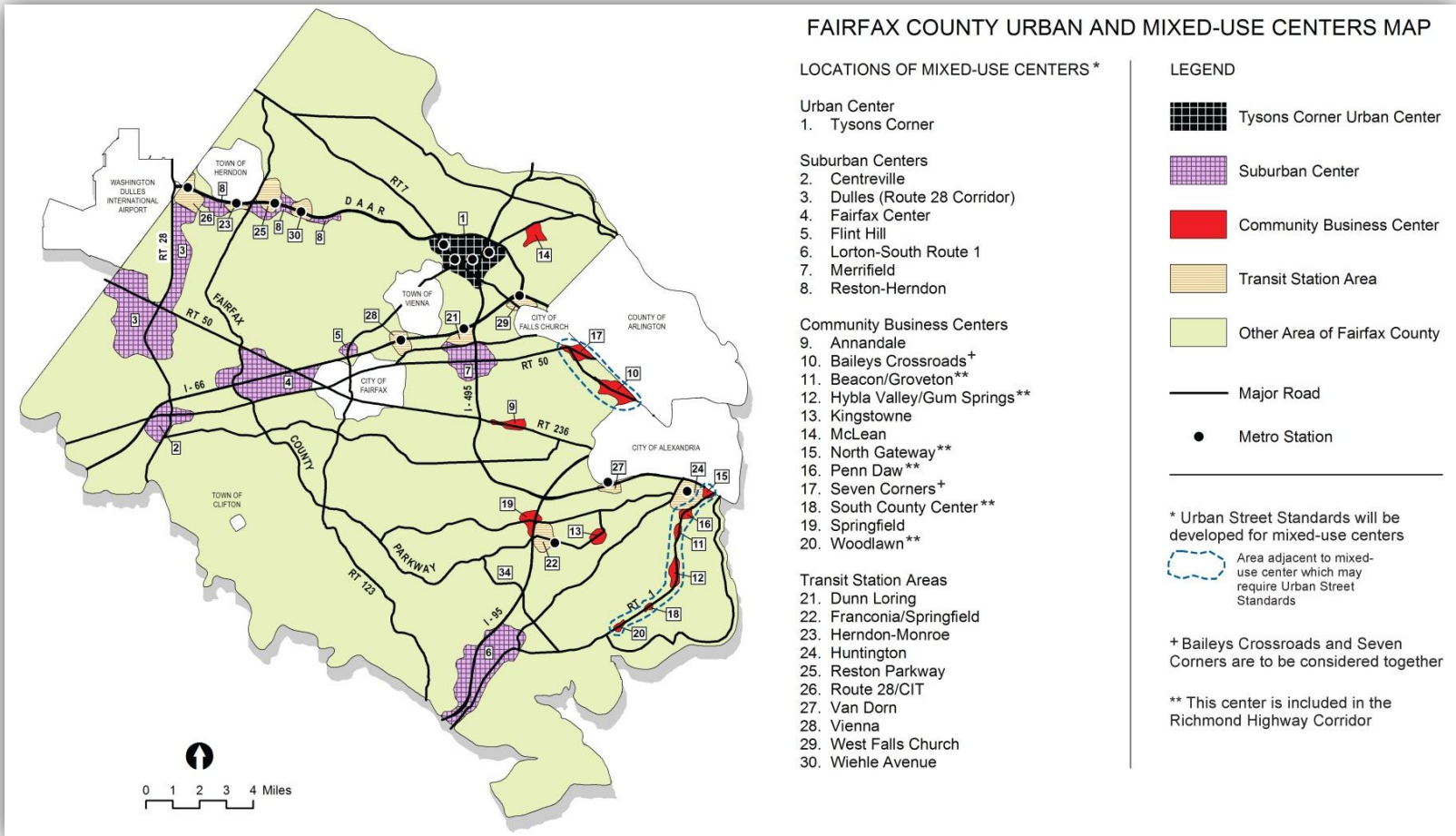
□ There are 30 activity districts within the county. The Tysons Design standards will remain unchanged. Eleven of the 24 activity districts that are compatible with the multimodal system design guidelines will be developed in this general order:

- Franconia-Springfield
- Reston Town Center TSA
- Innovation Station TSA
- Bailey's Crossroads
- Wiehle-Reston East TSA
- McLean
- Annandale
- Herndon TSA
- Merrifield-Dunn Loring
- Vienna TSA
- West Falls Church TSA





All Revitalization and Urban Activity Districts





All Revitalization and Urban Activity Districts

- | | |
|------------------------------|---------------------------|
| 1. Tysons | 16. Penn Daw |
| 2. Centerville | 17. Seven Corners |
| 3. Dulles (Route 28) | 18. South County Center |
| 4. Fairfax Center | 19. Springfield |
| 5. Flint Hill | 20. Woodlawn |
| 6. Lorton (So. Route 1) | 21. Dunn Loring |
| 7. Merrifield | 22. Franconia-Springfield |
| 8. Reston-Herndon | 23. Herndon-Monroe |
| 9. Annandale | 24. Huntington |
| 10. Baileys Crossroads | 25. Reston Parkway |
| 11. Beacon-Groveton | 26. Route 28-CIT |
| 12. Hybla Valley-Gum Springs | 27. Van Dorn |
| 13. Kingstowne | 28. Vienna |
| 14. McLean | 29. West Falls Church |
| 15. North Gateway | 30. Wiehle Avenue |

Note: Greyed districts are those that are not compatible with the multimodal system design guidelines.



Proposed Submission Schedule

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014
Franconia-Springfield	✓									
Reston Town Center TSA				✓						
Innovation Center TSA				✓						
Bailey's Crossroads					✓					
Wiehle-Reston East TSA					✓					
Mclean						✓				
Annandale						✓				
Herndon TSA							✓			
Merrifield-Dunn Loring								✓		
Vienna TSA									✓	
West Falls Church TSA										✓



Remaining Tasks

- The preceding schedule represents the county's anticipated submission deadlines, but does not project the actual time needed for DRPT and VDOT review and approval.
- VDOT and Fairfax County are initiating training with their staff on the multimodal system design guidelines and the proposed road design manual appendix.
- County staff expects to complete the adoption of the County-wide Bicycle Master Plan into the county's comprehensive plan by April or May 2014. Adoption of the bike plan is required in order to generate multimodal system maps and road cross sections that incorporate bicycle facilities.
- As VDOT and DRPT complete their review of the multimodal system maps, County staff will bring the maps to the Board of Supervisors for approval.



Remaining Tasks – Continued

- Once approved by the Board, staff will develop the road cross sections for those activity districts that have cross sectional information defined in the comprehensive plan.
- For those districts that do not have cross sectional information defined in the comprehensive plan, the interim default cross sections will be those adopted in the DRPT Multimodal System Design Guidelines.
- County staff may consider, at the direction of the Board, to initiate corridor studies or community plans that would eventually, through a comprehensive plan update, provide detailed cross section information for those districts. This initiative would take several or more years to complete for each district.
- County staff will be working through the implementation details of the new design standards, primarily through the land development process.



Remaining Tasks – Continued

- County staff will be discussing with DPWES the possible need for an update to the County's Public Facilities Manual (PFM), that will allow for application of the urban design standards to by-right developments.
- County staff are working with VDOT to resolve maintenance responsibilities within the County's urban activity districts.





Questions?

