

Service Evaluation Study – Wilson Boulevard (1A,B,E,F, Z) And Fair Oaks – Dunn Loring (1C) Lines

Final Report June 2012



Study Purpose

- *The primary study purpose is to identify the strategic needs for programs and facilities for the Wilson Boulevard and Fair Oaks – Dunn Loring Lines. The study includes a review of capacity, productivity, reliability, and quality of service indicators as well as recommended changes to improve service delivery.*

Project Scope of Work

- *Transit Service Assessment*
 - Develop a detailed assessment and “snapshot” of the Wilson Boulevard and Fair Oaks - Dunn Loring Lines
 - Overall service characteristics, ridership and productivity, boardings and alightings, passenger loads, bus stop spacing, on-time performance, driver and planner interviews
- *Traffic Operations Assessment*
 - Identify the full range of traffic issues on the Wilson Boulevard and Fair Oaks – Dunn Loring Lines
 - Traffic signals and other traffic control devices
 - Lane widths and right-of-way
 - Turns and adequate turning radius

Project Scope of Work

- *Public Outreach*
 - Rider survey to gauge issues and needs
 - Two public meetings
 - Issues identification
 - Feedback on preliminary recommendations
 - Outreach results were key input into the study process and recommendations

Project Scope of Work

- *Recommendations*
 - Completed in two steps
 - Preliminary recommendations – relied on inputs from all previous steps
 - Final – incorporate project team comments
 - Areas covered by recommendations
 - Additional trips to address crowding
 - Hours of service
 - Passenger facilities
 - Traffic and running way improvements
 - Schedule adjustments to reflect actual run times
 - Reallocation of resources among routes

Line Summary

- Line Description

- The Wilson Boulevard Line and the Fair Oaks – Dunn Loring Line operate in Arlington, Fairfax County, and the City of Fairfax. The Wilson Boulevard Line (1A, 1B, 1E, 1F, 1Z) runs in an east-west direction with all route patterns terminating at the Ballston Metrorail Station in the east and western terminals at Seven Corners, the Dunn Loring-Merrifield and Vienna-Fairfax Metrorail Stations

The Fair Oaks-Dunn Loring Line (1C) runs in an east-west direction with the Dunn Loring-Merrifield Metrorail Station as the eastern terminus and the Fair Oaks Mall as the western terminus.

Line Summary

- *Service Characteristics*

- Days and Hours of Service (start of first trip to start of last trip)

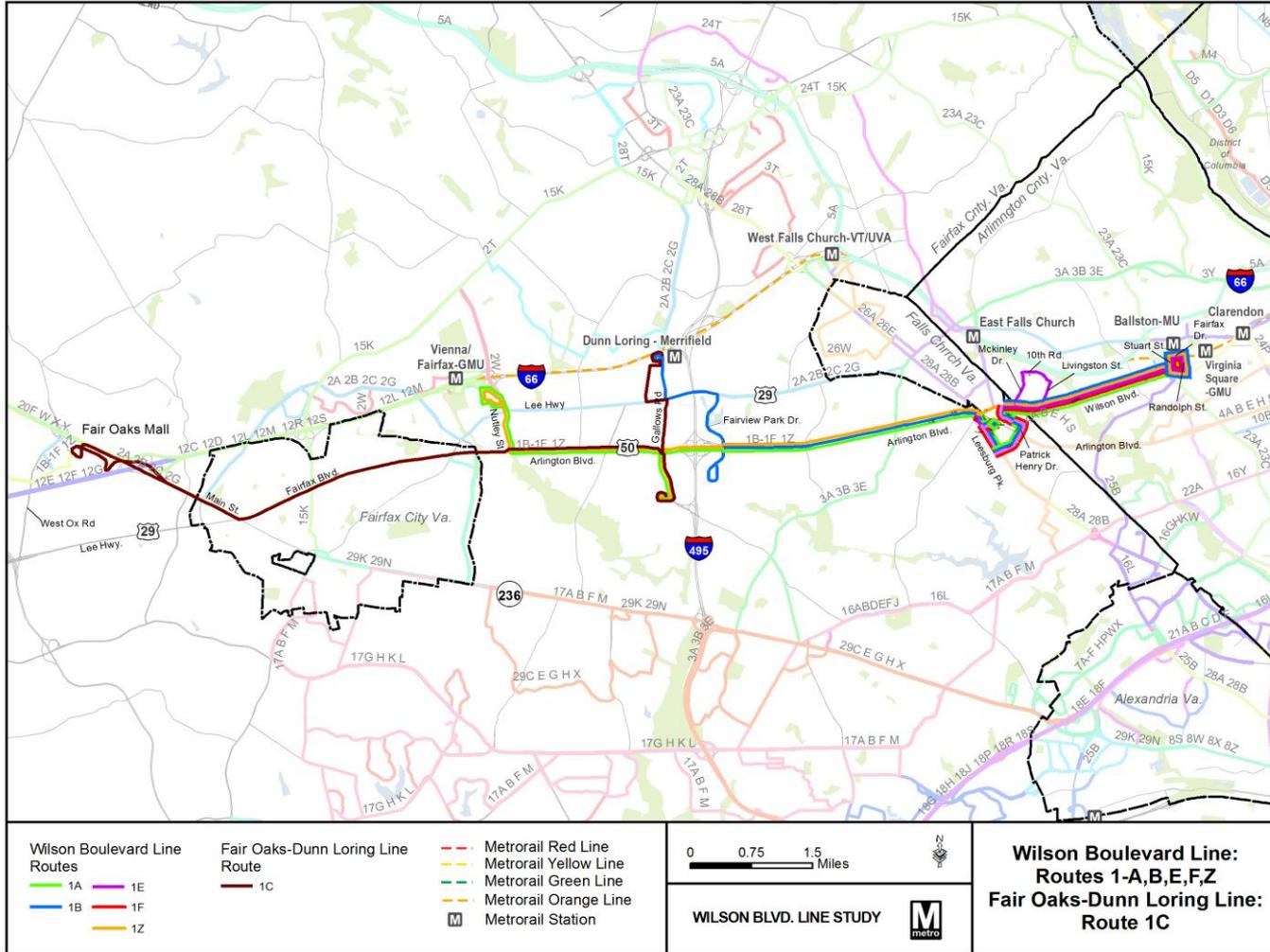
	Wilson Boulevard Line Hours of Service	Fair Oaks – Dunn Loring Line Hours of Service
Weekday	4:50 AM – 12:30 AM	4:51 AM – 11:32 PM
Saturday	5:38 AM – 12:30 AM	6:34 AM – 10:31 PM
Sunday	7:30 AM – 10:30 PM	7:25 AM – 9:07 PM

Line Summary

- Weekday Ridership and Productivity*

Line	Productivity Measure	Value	Minimum WMATA Standard
Wilson Boulevard (1A, B, E, F, Z)	Daily ridership	3,969	> 358
	Cost recovery from fares	26.34%	>14.96%
	Boardings/trip	34.5	>9.49
	Subsidy/passenger	\$2.74	<\$5.96
	Boardings/revenue mile	3.2	>1.16
Fair Oaks –Dunn Loring (1C)	Daily ridership	981	> 358
	Cost recovery from fares	16.97%	>14.96%
	Boardings/trip	19.2	>9.49
	Subsidy/passenger	\$4.80	<\$5.96
	Boardings/revenue mile	2.0	>1.16

Line Map



Study Findings

- On-Time Performance
 - Both lines fall below Metrobus goals for percent of total trips that are on time throughout the day and on different days of the week
- Insufficient Run Time
 - Review of NextBus data identified multiple incidences of insufficient scheduled run time when compared to actual run times
- Passenger Facilities
 - Bus stop spacing – multiple stops are too close together based on WMATA bus stop spacing guidelines
 - Multiple stops lack basic bus stop amenities as outlined in WMATA bus stop guidelines
- Hours of Service
 - WMATA guidelines for minimum hours of service are not met in both the morning and evening and on different days of the week

Service Recommendations

Recommendation #1

- *Recommendation*

- Run an Additional 1A Westbound Trip from Ballston in the AM

- *Recommendation Purpose*

- Concentrated demand on 1st westbound trip of morning results in excessive crowding on trip. Additional morning westbound trip would spread loads and relieve crowding

- *Estimated Annual Operating Cost Associated with Change*

- \$33,167

Note: A similar recommendation has been proposed for September 2012 schedule change. This service would begin at Seven Corners instead of Ballston

Service Recommendations

Recommendation #2

- *Recommendation*

- Add trips in order to expand hours of service on select routes
 - Add trips to meet WMATA hours of service guidelines
 - Weekday: First trip of day should arrive at final terminal no later than 7:00 AM, Last trip of day should leave starting terminal no earlier than 8:00 PM
 - Weekend – First trip of day should arrive at final terminal no later than 8:00 AM, Last trip of day should leave starting terminal no earlier than 8:00 PM
- 1B Route – Weekday PM
 - Two additional PM westbound trips
 - One additional PM eastbound trip
 - Note: Relatively small # of boardings and alightings on portions of overall Wilson Boulevard Line served only by 1B, on current last two trips of the day.

Service Recommendations

Recommendation #2 (cont.)

– Weekday 1C

- One additional AM westbound trip
- Two additional AM eastbound trips

– Sunday 1A

- One AM trip in each direction

– Sunday 1C

- One additional AM westbound trip
- One additional PM westbound trip

Service Recommendations

Recommendation #2 (cont.)

- *Recommendation Purpose*
 - The primary purpose is to meet WMATA Hours of Service guidelines. Reasonable hours of service will also allow riders to utilize transit for the full range of trip types and support riders who have non-traditional work hours or are required to work late
- *Estimated Annual Operating Cost Associated with Change*
 - 1B additional weekday trips
 - \$82,325
 - 1C additional weekday trips
 - \$46,592
 - 1A additional weekend trips
 - \$10,231
 - 1C additional Sunday trips
 - \$6,605

Service Recommendations

Recommendation #3

- *Recommendation*
 - Terminate 1E Service – Utilize Resources for Other Wilson Boulevard Line Service
- *Recommendation Purpose*
 - The 1E service has low boardings and alightings on the sections of the Wilson Boulevard Line served only by the 1E, and utilizes resources that can be better applied on other portions of the Line.
- *Estimated Annual Operating Cost Change Associated with Service Modification*
 - (\$174,128) (savings that can be used on other portions of the Line)

Service Recommendations

Recommendation #4

- *Recommendation*

- Adjust schedules to reflect actual run times and improve reliability on line

- *Recommendation Purpose*

- Inadequate scheduled run time results in a lack of service reliability, which causes rider inconvenience and hurts the rider experience

- *Estimated Annual Operating Cost Associated with Service Modification – Both Lines*

- Weekday - \$293,055
- Saturday - \$67,543
- Sunday - \$34,553

Service Recommendations

Recommendation #5

- *Recommendation*
 - Evaluate potential changes to vehicle pull-ins and pull-outs from garage
 - Dispatch some trips that begin at Ballston from a closer-in garage such as Four Mile
 - Start more West Ox blocks at the western end of the line, at either Vienna or Dunn Loring
- *Recommendation Purpose*
 - The Wilson Boulevard Line has a high amount of deadhead based on the location of its home garage, West Ox, in western Fairfax County, a far distance from its terminal points, especially Ballston
- *Estimated Annual Operating Cost Associated with Change*
 - Cost changes will be estimated once any changes are implemented

Service Recommendations

Recommendation #6

- *Recommendation*
 - Eliminate 1Z Trips and Replace with 1A trips
- *Recommendation Purpose*
 - The 1A route pattern is the backbone of the Wilson Boulevard Line and provides the greatest options for riders in terms of final destinations. This change would be especially advantageous for riders boarding and alighting along Wilson Boulevard
- *Estimated Annual Operating Cost Associated with Change*
 - \$142,145 (to account for longer run time of the 1A)

Facility Recommendations

Recommendation #7

- *Recommendation*
 - Begin bus stop consolidation process following WMATA procedures – potential candidates identified based on distance between stops guidelines
- *Recommendation Purpose*
 - Improve passenger convenience
 - Improve trip times
- *Estimated Capital Costs Associated with Change*
 - Costs cannot be calculated until specific stops to be consolidated are identified

Facility Recommendations

Recommendation #7 (cont.) – Wilson Boulevard Line Eastbound Stop Consolidation Candidates

Patrick Henry Dr+Arlington Blvd	10th Rd+Patrick Henry Dr	Wilson Blvd+Emerson St
Patrick Henry Dr+Willston Dr	Wilson Blvd+Liberty St	Wilson Blvd+George Mason Dr
Willston Dr+John Marshall Dr X	Wilson Blvd+Larrimore St	Wilson Blvd+Buchanan St
Willston Dr+Peyton Randolph Dr	Wilson Blvd+Manchester St	Wilson Blvd+Abingdon St
Wilson Blvd+John Marshal Dr	Wilson Blvd+Lexington St	Wilson Blvd+Wakefield St
Mckinley Rd+Wilson Blvd	Wilson Blvd+Harrison St	Wilson Blvd+Vermont
Mckinley Rd+9th Rd	Wilson Blvd+Greenbrier St	

Facility Recommendations

Recommendation #7 (cont.) – Fair Oaks – Dunn Loring line Eastbound Stop Consolidation Candidates

Fairfax+Oak St

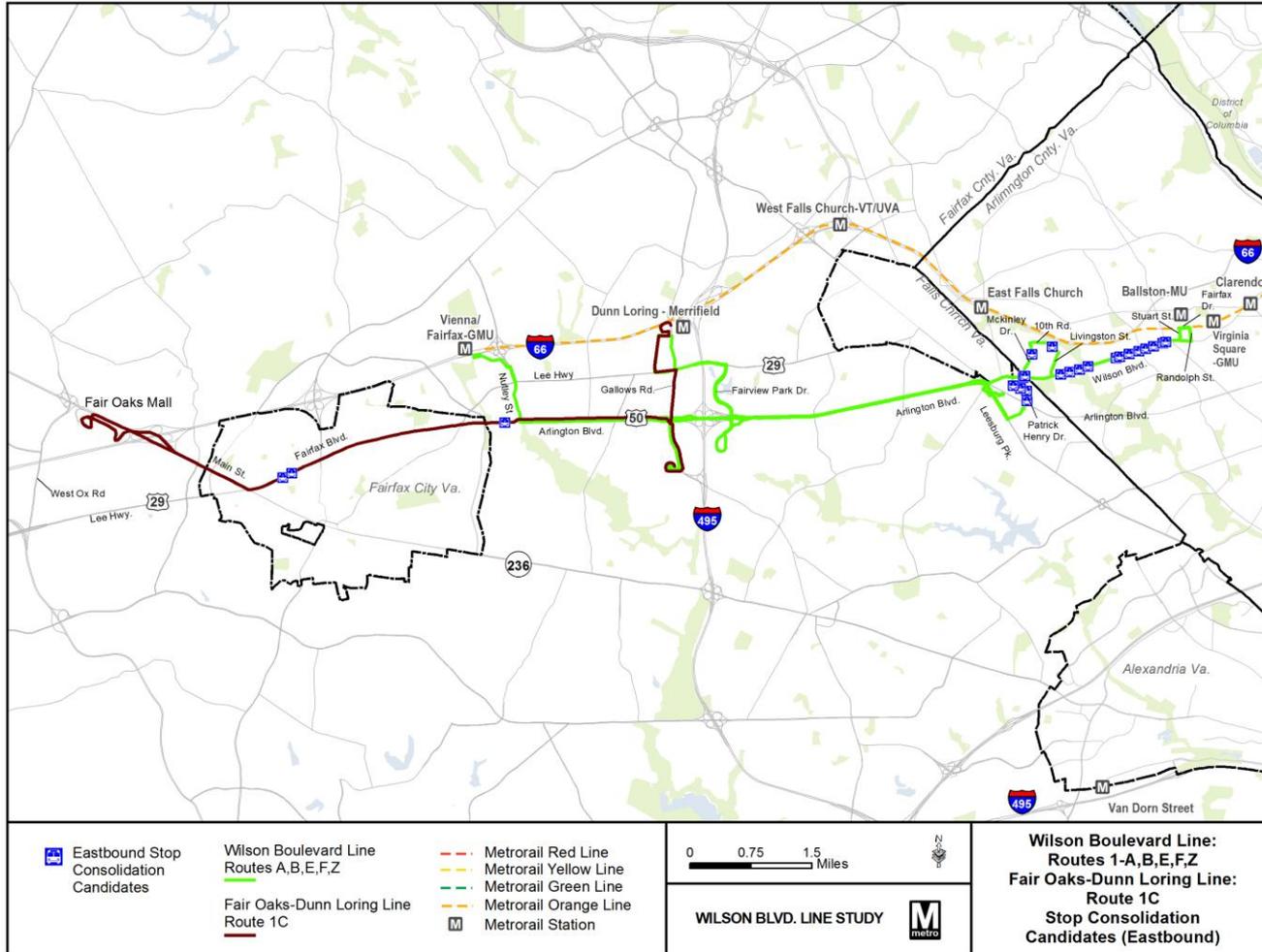
Fairfax+Paul VI HS

Arlington Blvd+Pickett Rd

Arlington Blvd+Stonehurst Dr

Facility Recommendations

Eastbound Stop Consolidation Candidates



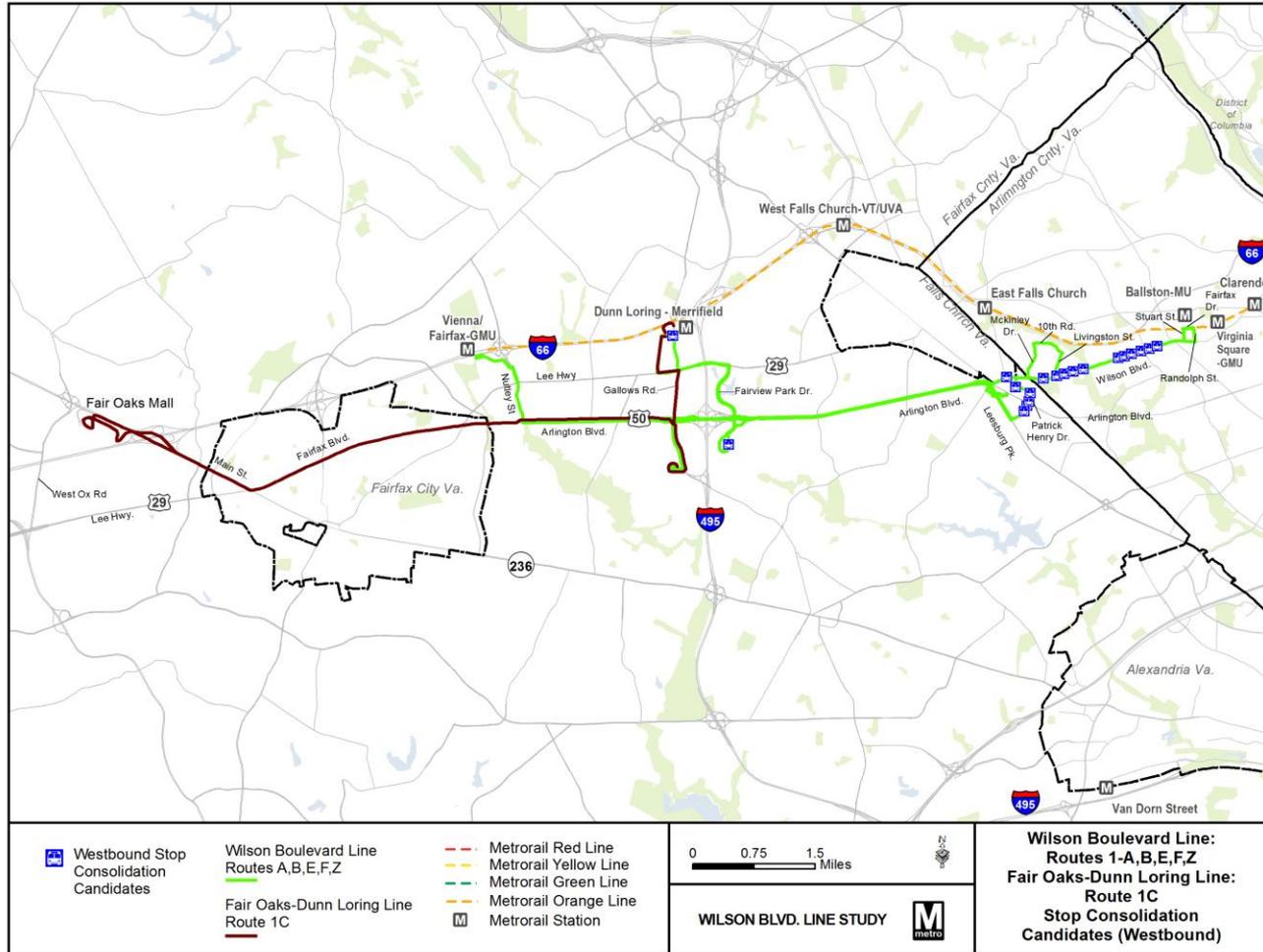
Facility Recommendations

Recommendation #7 (cont.) – Wilson Boulevard Line Westbound Stop Consolidation Candidates

Wilson Blvd+Abingdon St	Wilson Blvd+Larrimore St	Patrick Henry Dr+Willston Dr
Wilson Blvd+Buchanan St	Wilson Blvd+Liberty St	Patrick Henry Dr+Arlington Blvd
Wilson Blvd+George Mason Dr	Wilson Blvd+N Livingston St	Patrick Henry Dr+Arlington Blvd
Wilson Blvd+Frederick St	Wilson Blvd+Patrick Henry Dr	Patrick Henry+Brook Dr
Wilson Blvd+Greenbrier St	Wilson Blvd+Roosevelt Blvd X	Fairview Park Dr (S)+Marriot Service Entrance
Wilson Blvd+Harrison St	Peyton Randolph+Willston	
Wilson Blvd+Arlington Mill Rd	Willston Dr+John Marshall Dr	

- No Fair Oaks – Dunn Loring westbound consolidation candidates

Facility Recommendations



Westbound
Stop
Consolidation
Candidates

Facility Recommendations

Recommendation #8

- *Recommendation*
 - Improve amenities at bus stops
 - Candidates for additional amenities based on WMATA Bus Stop Amenity Hierarchy from the WMATA Bus Stop Guidelines
- *Recommendation Purpose*
 - Stops are the gateway to the transit system for bus passengers. Improving stop amenities creates a better passenger experience and an overall positive image for the system
- *Estimated Capital Cost Associated with Change*
 - \$303,200 for full program of improvements

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities –Westbound Stops Having Neither a Bus Stop Pad or Sidewalk

(Rt 29/50) Fairfax Blvd & University Dr (FC)	10Th Rd & Patrick Henry Dr (AR)	(Rt 50) Arlington Blvd & Cherry St (FX)
(Rt 50) Arlington Blvd & Covington St (FX)	Wilson Blvd & Patrick Henry Dr (AR)	(Rt 50) Arlington Blvd & Chichester La (FX)
Gallows Rd & Fairfax Plaza (FX)	Mckinley Rd & Wilson Blvd (AR)	(Rt 50) Arlington Blvd & Circle Tower Apts (FX)
N Livingston St & 10Th Rd (AR)	Peyton Randolph Dr & Wilson Blvd (AR)	(Rt 50) Arlington Blvd & Fairmont St (FX)
N Livingston St & 9Th Rd (AR)	(Rt 29/50) Fairfax Blvd & #10948 (FC)	(Rt 50) Arlington Blvd & Gallows Rd (FX)
Wilson Blvd & Greenbrier St (AR)	(Rt 50) Fairfax Blvd & Bevan Dr (FC)	(Rt 50) Arlington Blvd & Greenway Blvd (FX)
Willston Dr & John Marshall Dr (AR)	(Rt 29/50) Fairfax Blvd & Draper Dr (FC)	(Rt 50) Arlington Blvd & Jaguar Trail (FX)
Wilson Blvd & Larrimore St (AR)	(Rt 29/50) Fairfax Blvd & Eaton PI (FC)	(Rt 50) Arlington Blvd & Javier Rd (FX)
Wilson Blvd & Liberty St (AR)	(Rt 29/50) Fairfax Blvd & Fairchester Dr (FC)	(Rt 50) Arlington Blvd & Marshall St (FX)
10Th Rd & Madison St (AR)	(Rt 50) Fairfax Blvd & Jermantown Rd (FC)	(Rt 50) Arlington Blvd & South St (FX)
Mckinley Rd & N Quantico St (AR)	(Rt 29/50) Fairfax Blvd & Meredith Dr (Oak St) (FC)	(Rt 50) Arlington Blvd & Stonehurst Dr (FX)

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities –Westbound Stops Having Neither a Bus Stop Pad or Sidewalk

(Rt 50) Arlington Blvd & Summerfield Rd (FX)	(Rt 29/50) Fairfax Blvd & Rebel Run (FC)	Nutley St & Lee Hwy (FX)
Patrick Henry Dr & Willston Dr (FX)	(Rt 29/50) Fairfax Blvd & Warwick Dr #10708 (FC)	(Rt 50) Arlington Blvd & Woodlawn Ave (FX)
(Rt 50) Arlington Blvd & Woodlawn Ave (FX)	Gallows Rd & (Rt 29) Lee Hwy (FX)	
(Rt 50) Arlington Blvd & Greenway Blvd (FX)	Nutley St & (Rt 50) Arlington Blvd (FX)	
(Rt 50) Arlington Blvd & Jaguar Trail (FX)	Patrick Henry Dr & (Rt 7) Leesburg Pk (FX)	
(Rt 50) Arlington Blvd & Javier Rd (FX)	Arlington Blvd S R & (Rt 7) Leesburg Pk (FX)	
(Rt 50) Arlington Blvd & Marshall St (FX)	Patrick Henry Dr & Arlington Blvd (S/F) (FX)	
(Rt 50) Arlington Blvd & South St (FX)	Nutley St & Barrick St (FX)	
(Rt 50) Arlington Blvd & Stonehurst Dr (FX)	N Fairview Park Dr & Entr To Bell Atlantic (FX)	
(Rt 50) Arlington Blvd & Summerfield Rd (FX)	Gallows Rd & Gatehouse Rd (FX)	
Patrick Henry Dr & Willston Dr (FX)	(Rt 29) Lee Hwy & Hyson Ln (FX)	

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities – Eastbound Stops Having Neither a Bus Stop Pad or Sidewalk

(Rt 50) Arlington Blvd & Allen St (FX)	Wilson Blvd & Lexington St (AR)	(Rt 29/50) Fairfax Blvd & Oak St (FC)
(Rt 50) Arlington Blvd & Aspen La (FX)	Wilson Blvd & Liberty St (AR)	(Rt 29/50) Fairfax Blvd & Paul Vi H S (FC)
(Rt 50) Arlington Blvd & Barkley Dr (FX)	11Th Rd & Livingston St (AR)	(Rt 29/50) Fairfax Blvd & Plantation Pkwy (FC)
(Rt 50) Arlington Blvd & Chichester La (FX)	10Th Rd & Madison St (AR)	(Rt 29/50) Fairfax Blvd & Spring St (FC)
(Rt 50) Arlington Blvd & Covington St (FX)	Mckinley Rd & N 9Th St (AR)	(Rt 29/50) Fairfax Blvd & Stafford Dr (FC)
(Rt 50) Arlington Blvd & Graham Rd (FX)	Willston Dr & Peyton Randolph Dr (AR)	(Rt 29/50) Fairfax Blvd & Walnut St (FC)
(Rt 50) Arlington Blvd & Stonehurst Dr (FX)	Mckinley Rd & Wilson Blvd (AR)	Gallows Rd & #2995 (FX)
(Rt 50) Arlington Blvd & Wayne Rd (FX)	(Rt 29/50) Fairfax Blvd & (Rt 123) Chain Bridge Rd (FC)	Gallows Rd & (Rt 29) Lee Hwy (FX)
(Rt 50) Arlington Blvd & Westmoreland Rd (FX)	(Rt 29/50) Fairfax Blvd & Eaton Pl (FC)	Patrick Henry Dr & (Rt 50) Arlington Blvd (N/F) (FX)
Willston Dr & John Marshall Dr (AR)	(Rt 50) Fairfax Blvd & Jermantown Rd (FC)	N Fairview Park Dr & Entr Bell Atlantic Bldg (FX)
Wilson Blvd & Larrimore St (AR)	(Rt 29/50) Fairfax Blvd & Main St (FC)	(Rt 29) Lee Hwy & Gallows Rd (FX)

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities – Eastbound Stops Having Neither a Bus Stop Pad or Sidewalk

Nutley St & Hermosa Dr (FX)	(Rt 50) Arlington Blvd & Beechwood La (FX)
Wilson Blvd & John Marshall Dr (FX)	(Rt 50) Arlington Blvd & Circle Tower Apts (FX)
Gallows Rd & Prescott Dr (FX)	(Rt 50) Arlington Blvd & Greenway Blvd (FX)
(Rt 7) Leesburg Pk & Sleepy Hollow Rd (FX)	(Rt 29) Lee Hwy & Hartland Rd (FX)
Arl Blvd Serv Rdwy & Pickett Rd (Blake) (FC)	(Rt 50) Arlington Blvd & Javier Rd (FX)
(Rt 50) Arlington Blvd & #9211 (Nutley) (FX)	(Rt 50) Arlington Blvd & Marshall St (FX)
Nutley St & Barrick St (FX)	(Rt 50) Arlington Blvd & Williams Dr (FX)

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities – Westbound Stops Missing an Information Case

Wilson Blvd & Abingdon St (AR)	N Randolph St & Wilson Blvd (AR)	(Rt 50) Arlington Blvd & Covington St (FX)
Wilson Blvd & Arlington Mill Dr (AR)	(Rt 29/50) Fairfax Blvd & Plantation Pkwy (FC)	Gallows Rd & Fairfax Plaza (FX)
Wilson Blvd & Frederick St (AR)	(Rt 29/50) Fairfax Blvd & Spring St (FC)	N Livingston St & 10Th Rd (AR)
Wilson Blvd & Harrison St (AR)	(Rt 29/50) Fairfax Blvd & Stafford Dr (FC)	N Livingston St & 9Th Rd (AR)
Wilson Blvd & Kensington St (AR)	(Rt 50) Arlington Blvd & Annandale Rd (Tp) (FX)	Wilson Blvd & Greenbrier St (AR)
Wilson Blvd & Livingston St (Tp) (AR)	(Rt 50) Arlington Blvd & Barkley Dr X (FX)	Willston Dr & John Marshall Dr (AR)
Mckinley Rd & N 10Th Rd X (AR)	(Rt 29) Lee Hwy & Hartland Rd (FX)	Wilson Blvd & Liberty St (AR)
Mckinley Rd & N 9Th Rd (AR)	Lakeford Dr (N Fairview Park Dr) & New Providence Dr (FX)	10Th Rd & Madison St (AR)
Wilson Blvd & Taylor St (AR)	Wilson Blvd & Peyton Randolph Dr X (FX)	Mckinley Rd & N Quantico St (AR)
Wilson Blvd & Wakefield St (AR)	(Rt 50) Arlington Blvd & Williams Dr (Tp) (FX)	10Th Rd & Patrick Henry Dr (AR)
Peyton Randolph Dr & Willston Dr X (AR)	(Rt 29/50) Fairfax Blvd & University Dr (FC)	Mckinley Rd & Wilson Blvd (AR)

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities – Westbound Stops Missing an Information Case

(Rt 29/50) Fairfax Blvd & #10948 (FC)	Patrick Henry Dr & (Rt 7) Leesburg Pk (FX)	(Rt 50) Fairfax Blvd & Kamp Washington (FC)
(Rt 50) Fairfax Blvd & Bevan Dr (FC)	Arlington Blvd S R & (Rt 7) Leesburg Pk (FX)	(Rt 50) Arlington Blvd & Allen St (FX)
(Rt 29/50) Fairfax Blvd & Draper Dr (FC)	Nutley St & Barrick St (FX)	Patrick Henry Dr & Arlington Blvd (S/N) (FX)
(Rt 29/50) Fairfax Blvd & Eaton Pl (FC)	N Fairview Park Dr & Entr To Bell Atlantic (FX)	(Rt 50) Arlington Blvd & Cherry St (FX)
(Rt 29/50) Fairfax Blvd & Fairchester Dr (FC)	N Fairview Park Dr & Entr To Bell Atlantic (FX)	(Rt 50) Arlington Blvd & Chichester La (FX)
(Rt 50) Fairfax Blvd & Jermantown Rd (FC)	Nutley St & Lee Hwy (FX)	(Rt 50) Arlington Blvd & Circle Tower Apts (FX)
(Rt 29/50) Fairfax Blvd & Meredith Dr (Oak St) (FC)	Gallows Rd & Prescott Dr (FX)	(Rt 50) Arlington Blvd & Fairmont St (FX)
(Rt 29/50) Fairfax Blvd & Rebel Run (FC)	(Rt 50) Arlington Blvd & Prosperity Ave (FX)	(Rt 50) Arlington Blvd & Gallows Rd (FX)
(Rt 29/50) Fairfax Blvd & Warwick Dr #10708 (FC)	(Rt 50) Lee Jackson Hwy & Waples Mill Rd (FX)	(Rt 50) Arlington Blvd & Greenway Blvd (FX)
Gallows Rd & (Rt 29) Lee Hwy (FX)	(Rt 50) Lee Jackson Hwy & Waples Mill Rd (FX)	(Rt 50) Arlington Blvd & Jaguar Trail (FX)
Nutley St & (Rt 50) Arlington Blvd (FX)	(Rt 29/50) Fairfax Blvd & (Rt 123) Chain Bridge Rd (FC)	(Rt 50) Arlington Blvd & Javier Rd (FX)

Facility Recommendations

Recommendation #8 (cont.) – Bus Stop Amenities – Westbound Stops Missing an Information Case

(Rt 50) Arlington Blvd & Marshall St (FX)

(Rt 50) Arlington Blvd & South St (FX)

(Rt 50) Arlington Blvd & Stonehurst Dr
(FX)

Patrick Henry Dr & Willston Dr (FX)

(Rt 50) Arlington Blvd & Woodlawn Ave
(FX)

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities – Eastbound/Westbound Stops Missing an Information Case

Gallows Rd & Arlington Blvd (FX)	Gallows Rd & Towson St (FX)
Fair Oaks Mall & Entrance 'J' (Sears) (FX)	Gallows Rd & Willow Oaks Corp Dr (FX)
Gallows Rd & Prescott Dr (FX)	Castle Rd & (Rt 7) Leesburg Pk (FX)
Gallows Rd & Townsend St (FX)	S Fairview Park Dr & Entr To #3160 (FX)

Facility Recommendations

Recommendation #8 (cont.) – Bus Stop Amenities – Eastbound Stops Missing an Information Case

Livingston St 1E & 9Th Rd (AR)	Wilson Blvd & Patrick Henry Dr (AR)	Wilson Blvd & Roosevelt Blvd (FX)
Wilson Blvd & Abingdon St (AR)	Wilson Blvd & Wakefield St (AR)	(Rt 50) Lee Jackson Hwy & Waples Mill Rd (FX)
Wilson Blvd & Buchanan St (AR)	(Rt 29/50) Fairfax Blvd & Draper Dr (FC)	Lakeford Dr & Yancey Dr (FX)
Wilson Blvd & George Mason Dr (AR)	(Rt 29/50) Fairfax Blvd & Mclean Ave (FC)	(Rt 50) Arlington Blvd & Barkley Dr (FX)
Wilson Blvd & Glebe Rd (AR)	(Rt 50) Arlington Blvd & Pickett Rd (FC)	(Rt 50) Arlington Blvd & Chichester La (FX)
Wilson Blvd & Greenbrier St (AR)	Patrick Henry Dr & (Rt 50)Arlington Blvd(N/N) (FX)	(Rt 50) Arlington Blvd & Stonehurst Dr (FX)
Wilson Blvd & Kensington St (AR)	Arlington Blvd S R & (Rt 7)Leesburg Pk (FX)	(Rt 50) Arlington Blvd & Westmoreland Rd (FX)
Wilson Blvd & Livingston St (AR)	(Rt 50) Arlington Blvd & Annandale Rd (FX)	Wilson Blvd & Lexington St (AR)
Mckinley Rd 1E & N 10Th Rd (AR)	(Rt 50) Arlington Blvd & Jaguar Trail (FX)	Wilson Blvd & Liberty St (AR)
Mckinley Rd 1E & N 9Th Rd (AR)	Nutley St & Lee Hwy (FX)	11Th Rd & Livingston St (AR)
10Th Rd & Patrick Henry Dr (AR)	(Rt 50) Arlington Blvd & Prosperity Ave (FX)	10Th Rd & Madison St (AR)

Facility Recommendations

Recommendation #8 (cont.) – Bus Stop Amenities – Eastbound Stops Missing an Information Case

Mckinley Rd & N 9Th St (AR)	Gallows Rd & #2995 (FX)	(Rt 29) Lee Hwy & Hartland Rd (FX)
Mckinley Rd & Wilson Blvd (AR)	Gallows Rd & (Rt 29) Lee Hwy (FX)	(Rt 50) Arlington Blvd & Javier Rd (FX)
(Rt 29/50) Fairfax Blvd & Eaton Pl (FC)	N Fairview Park Dr & Entr Bell Atlantic Bldg (FX)	(Rt 50) Arlington Blvd & Marshall St (FX)
(Rt 29/50) Fairfax Blvd & Oak St (FC)	Nutley St & Hermosa Dr (FX)	
(Rt 29/50) Fairfax Blvd & Paul Vi H S (FC)	Gallows Rd & Prescott Dr (FX)	
(Rt 29/50) Fairfax Blvd & Plantation Pkwy (FC)	Arl Blvd Serv Rdwy & Pickett Rd (Blake) (FC)	
(Rt 29/50) Fairfax Blvd & Plantation Pkwy (FC)	(Rt 50) Arlington Blvd & #9211 (Nutley) (FX)	
(Rt 29/50) Fairfax Blvd & Spring St (FC)	Nutley St & Barrick St (FX)	
(Rt 29/50) Fairfax Blvd & Stafford Dr (FC)	(Rt 50) Arlington Blvd & Beechwood La (FX)	
(Rt 29/50) Fairfax Blvd & Walnut St (FC)	(Rt 50) Arlington Blvd & Circle Tower Apts (FX)	
Gallows Rd & #2995 (FX)	(Rt 50) Arlington Blvd & Greenway Blvd (FX)	

Facility Recommendations

Recommendation #8 (cont.) – Bus Stop Amenities – Stops Missing a Bus Stop Flag

Stop	Direction
(Rt 50) Arlington Blvd & Graham Rd (FX)	Westbound*
Wilson Blvd. and Vermont Street (AR)	Eastbound
(Rt 50) Fairfax Blvd & Bevan Dr (FC)	Eastbound

*Roadway and bus stop area was under construction.

Facility Recommendations

Recommendation #8 (cont.) – Bus Stop Amenities – Candidates for Installation of Trash Receptacle

Stop/Jurisdiction	Direction	Daily Boardings
Wilson Blvd & Taylor St (AR)	Westbound	131
Patrick Henry Dr & Arlington Blvd (S/N) (FX)	Westbound	93
(Rt 50) Arlington Blvd & Graham Rd (FX)	Westbound	59
(Rt 50) Arlington Blvd & Allen St (FX)	Westbound	41
Patrick Henry Dr & Willston Dr (FX)	Westbound	41
N Randolph St & Wilson Blvd (AR)	Westbound	37
Arlington Blvd S R & (Rt 7) Leesburg Pk (FX)	Westbound	35
Patrick Henry Dr & (Rt 7) Leesburg Pk (FX)	Westbound	30
Willston Dr & John Marshall Dr (AR)	Westbound	27
(Rt 50) Arlington Blvd & Annandale Rd (FX)	Eastbound	105
Patrick Henry Dr & (Rt 50)Arlington Blvd(N/N) (FX)	Eastbound	73

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities – Candidates for Installation of Trash Receptacle

Stop/Jurisdiction	Direction	Daily Boardings
Patrick Henry Dr & Willston Dr (FX)	Eastbound	65
Arlington Blvd Serv Rdwy & Pickett Rd (Blake) (FC)	Eastbound	62
Wilson Blvd & Peyton Randolph Dr (FX)	Eastbound	51
Willston Dr & Peyton Randolph Dr (AR)	Eastbound	51
(Rt 50) Arlington Blvd & Westmoreland Rd (FX)	Eastbound	44
Nutley St & Barrick St (FX)	Eastbound	44
(Rt 50) Arlington Blvd & Wayne Rd (FX)	Eastbound	39
Patrick Henry Dr & (Rt 50) Arlington Blvd (N/F) (FX)	Eastbound	34
(Rt 29) Lee Hwy & Gallows Rd (FX)	Eastbound	34
(Rt 50) Arlington Blvd & Covington St (FX)	Eastbound	31
(Rt 50) Arlington Blvd & Coralain Gardens Apt (FX)	Eastbound	25

Facility Recommendations

- Recommendation #8 (cont.) – Bus Stop Amenities – Candidates for Installation of a Shelter and Bench

Stop/Jurisdiction	Direction	Daily Boardings
Wilson Blvd & Taylor St (AR)	Westbound	131
Patrick Henry Dr & Arlington Blvd (S/N) (FX)	Westbound	93
(Rt 50) Arlington Blvd & Graham Rd (FX)	Westbound	59
(Rt 50) Arlington Blvd & Monticello Dr (Loehman's Plaza) (FX)	Eastbound	138 (shelter but no bench)
(Rt 50) Arlington Blvd & Annandale Rd (FX)	Eastbound	105
(Rt 50) Arlington Blvd & Allen St (FX)	Eastbound	88 (shelter but no bench)
Patrick Henry Dr & (Rt 50)Arlington Blvd(N/N) (FX)	Eastbound	73
Patrick Henry Dr & Willston Dr (FX)	Eastbound	65
Arlington Blvd Serv Rdwy & Pickett Rd (Blake) (FC)	Eastbound	62
Wilson Blvd & Peyton Randolph Dr (FX)	Eastbound	51
Willston Dr & Peyton Randolph Dr (AR)	Eastbound	51

Facility Recommendations

Recommendation #9

- *Recommendation*

- Continue to support existing efforts to increase layover space at Ballston

- *Recommendation Purpose*

- Inadequate layover space at the Ballston Metrorail Station is a major issue impacting efficient operations on the Wilson Boulevard Line. Improvements would help to address these issues

- *Estimated Capital Cost Associated with Change*

- Cost estimates for improvements will be completed when more detailed design is completed

Traffic Improvement Recommendations

Recommendation #10

- *Recommendation*

- Implement multiple traffic related recommendations to improve operations and reliability on the Wilson Boulevard and Fair Oaks-Dunn Loring Lines
- Specific Recommendations
 - Explore the potential for adding additional through lanes on Fairfax Boulevard at Main Street in order to reduce traffic delays at this intersection
 - Explore the potential for widening both Chain Bridge Road and Fairfax Boulevard at the intersection of Fairfax and Chain Bridge in order to increase roadway capacity and traffic throughput

Traffic Improvement Recommendations

Recommendation #10 (cont.)

- Explore the possibility of widening Nutley Street and providing dual left turn lanes on Nutley Street at Arlington Boulevard
- Evaluate the potential to provide a continuous right-turn lane along eastbound Arlington Boulevard between Nutley Street and Barkley Drive to reduce bus delays in this section
- Conduct turning movement counts at Prosperity Avenue and Arlington Boulevard and optimize signal timing based on demand on each leg of intersection
- Evaluate potential of providing additional through lanes on eastbound Arlington Boulevard at approach to Prosperity Avenue and along westbound Arlington Boulevard west of Prosperity Avenue
- Evaluate the potential to provide dual left-turn lanes on southbound Merilee Drive at Lee Highway

Traffic Improvement Recommendations

Recommendation #10 (cont.)

- Conduct turning movement counts at Merilee Drive and Lee Highway and optimize cycle length and splits based on traffic demand for all movements
- Conduct turning movement counts at Gallows Road and Belleforest Drive and Gallows Road and Prosperity Avenue and optimize cycle lengths and splits based on demand for all movements
- Check signal coordination along Gallows Road between Belleforest Drive and Prosperity Avenue and adjust offsets to improve signal coordination
- Conduct turning movement counts at Arlington Boulevard and Graham Road and optimize cycle length and splits based on observed demand for all movements

Traffic Improvement Recommendations

Recommendation #10 (cont.)

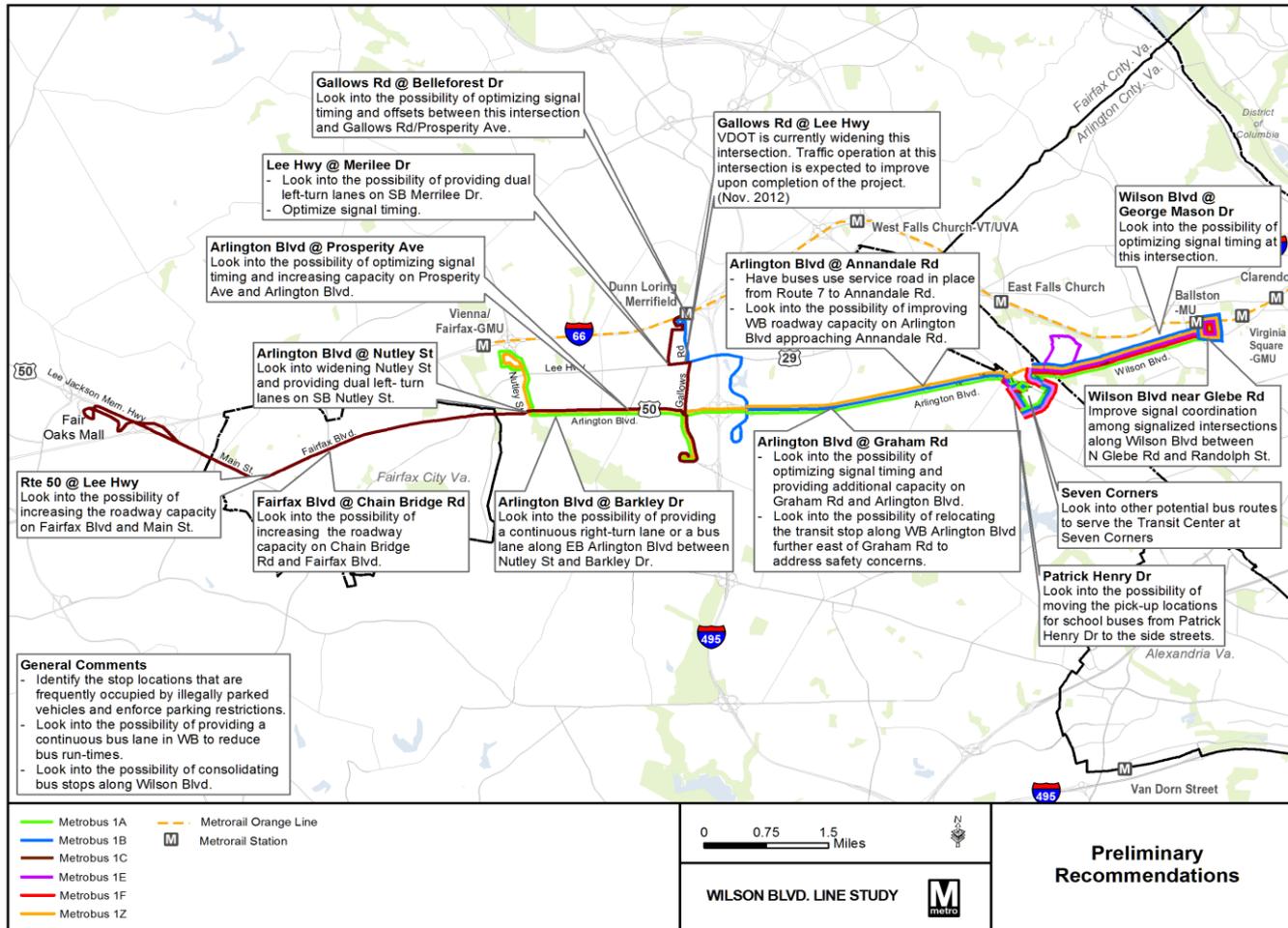
- Evaluate potential to widen Graham Road and Arlington Boulevard at this intersection in order to provide additional capacity
- Evaluate potential to widen westbound Arlington Boulevard approach to Annandale Road
- Evaluate the potential to reconfigure the intersection of Leesburg Pike, Arlington Blvd and Wilson Blvd in order to improve traffic operations
- Conduct turning movement counts at Wilson Boulevard and George Mason Drive and optimize cycle lengths/splits based on demand for all movements
- Improve signal coordination among signalized intersections along Wilson Boulevard between North Glebe Road and Randolph Street

Traffic Improvement Recommendations

Recommendation #10 (cont.)

- Evaluate the potential to modify roadways to improve lane widths and turning radius to better handle buses on the roadways approaching Seven Corners Transit Center
- Identify stop locations that are frequently occupied by illegally parked vehicles and enforce parking restrictions
- Explore the possibility of relocating the transit stop along westbound Arlington Boulevard at Graham Road farther east to address safety concerns
- Evaluate the potential to relocate waiting school buses on Patrick Henry Drive to adjacent side streets

Traffic Improvement Recommendations



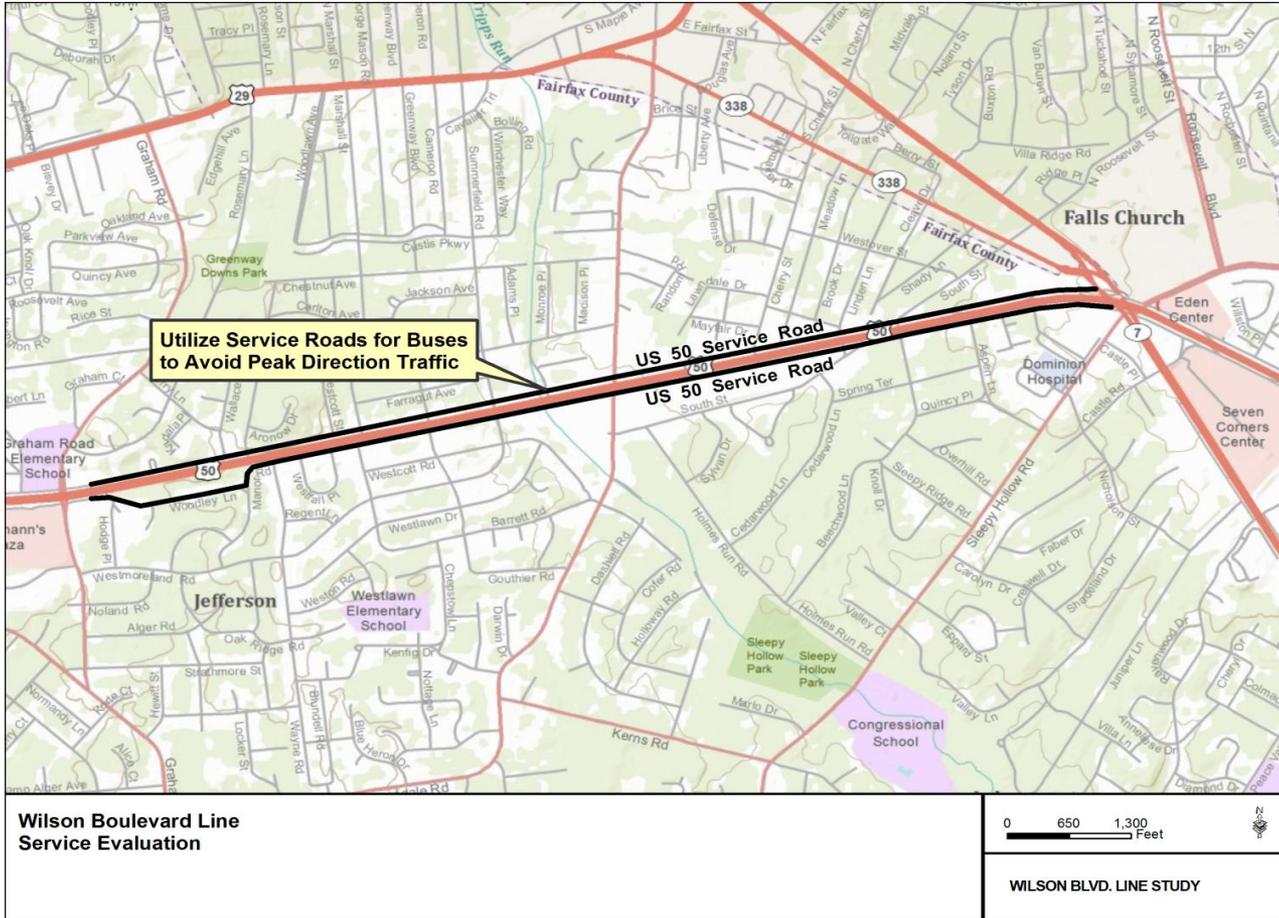
Summary of Traffic Improvement Recommendations

Traffic Improvement Recommendations

Recommendation #11

- *Recommendation*
 - Evaluate the feasibility of utilizing service roads on Arlington Boulevard as bus lanes
- *Recommendation Purpose*
 - Driver feedback and speed data from the project “Traffic Assessment” indicate that Arlington Boulevard just west of Route 7 is extremely congested. The service roads parallel to Arlington Boulevard provide an opportunity to bypass congestion and provide a more convenient and reliable bus service
- *Estimated Capital Cost Associated with Change*
 - Cost estimates for improvements will be completed when more detailed design is completed

Traffic Improvement Recommendations



Potential bus lanes utilizing Arlington Blvd. service roads