FAIRFAX COUNTY COMPREHENSIVE TRANSIT PLAN AND TRANSIT DEVELOPMENT PLAN UPDATE

Technical Memorandum

7. Service Recommendations

Prepared for

Fairfax County Department of Transportation

By

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In association with

FOURSQUARE INTEGRATED TRANSPORTATION PLANNING

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7.1 Introduction

7.1.1. Data Inputs

Service and Total Ridership

A variety of data sources were used in developing the recommendations contained in this CTP. Technical Memoranda 1 and 2 provided a detailed review of the current operating characteristics and ridership for Fairfax Connector and Metrobus Routes, respectively. Those Technical Memoranda provide information about transit service as it existed in August 2014 and provide farebox ridership and revenue data for Fiscal Year 2013 (July 2012 – June 2013) for Fairfax Connector and September 2013 for Metrobus.

In order to ensure that service was analyzed and modifications recommended based on the most recent information, the analysis in the following sections uses updated data, as shown in Table 7-1. For Fairfax Connector, service operating characteristics reflect existing service as of the county's January 2015 service change, which included a number of modifications to Silver Line related routes based on experience in the field after six months of operations. Ridership for Fairfax Connector reflects farebox data for September 2014. For Metrobus, the service statistics reflect the service offered in the fall 2014 service period (September – November), and ridership is an average of that period from WMATA's Automated Passenger Counters (APC) system.

Boarding and Alighting Data

Boarding and alighting data at each stop along each route were analyzed as an input to the service planning process. For Metrobus routes, APC data averaged from spring 2014 (March – June) was used for all routes not serving Tysons; for routes serving Tysons APC data from fall 2014 (September – November) was used. For Fairfax Connector routes, ridechecks were conducted in the fall of 2013 for most routes in the south and west parts of the county, while ridechecks were conducted on routes in the northern part of the county (and south county routes serving Silver Line Metrorail stations) in fall 2014.

Table 7-1: Data Sources Used in Service Recommendations

	Service Characteristics	Total Ridership	On-Off Counts
Fairfax Connector	Service as of January 2015	September 2014 farebox data	Ridechecks conducted fall 2013 – fall 2014
Metrobus	Service for fall 2014 service period	Fall 2014 service period farebox data	APC from spring and fall 2014

7.1.2. Stakeholder Input

Information from the project's extensive public outreach campaign, *Connections 2015*, was a key source of data used in developing the service recommendations. The campaign's outreach efforts centered on eleven public events: four informal Pop-Up Events, six formal Public Workshops, and one *Ask Fairfax!*

Virtual Town Hall. The variety of event formats, activities, and locations was intended to attract a diverse set of participants, including frequent riders, potential riders, and Title VI protected populations. In addition to the physical events and the Virtual Town Hall, FCDOT engaged interested parties through an online presence and social media. Focus groups were also held with six community-based organizations and discussion sessions were held with Fairfax Connector operators at each of the three divisions. In addition to these stakeholders, input from all members of the County Board of Supervisors, various County boards and commissions, and other local jurisdictions was taken into account.

All comments received through all avenues were compiled into a searchable comment database containing every comment received during the outreach process to ensure that they could all be easily considered along with the quantitative data. While most comments were related to specific routes, the most commonly received suggestions were for increased frequency or span of service, improved running time, route realignment, or creation of new routes.

7.1.3. Transit Suitability

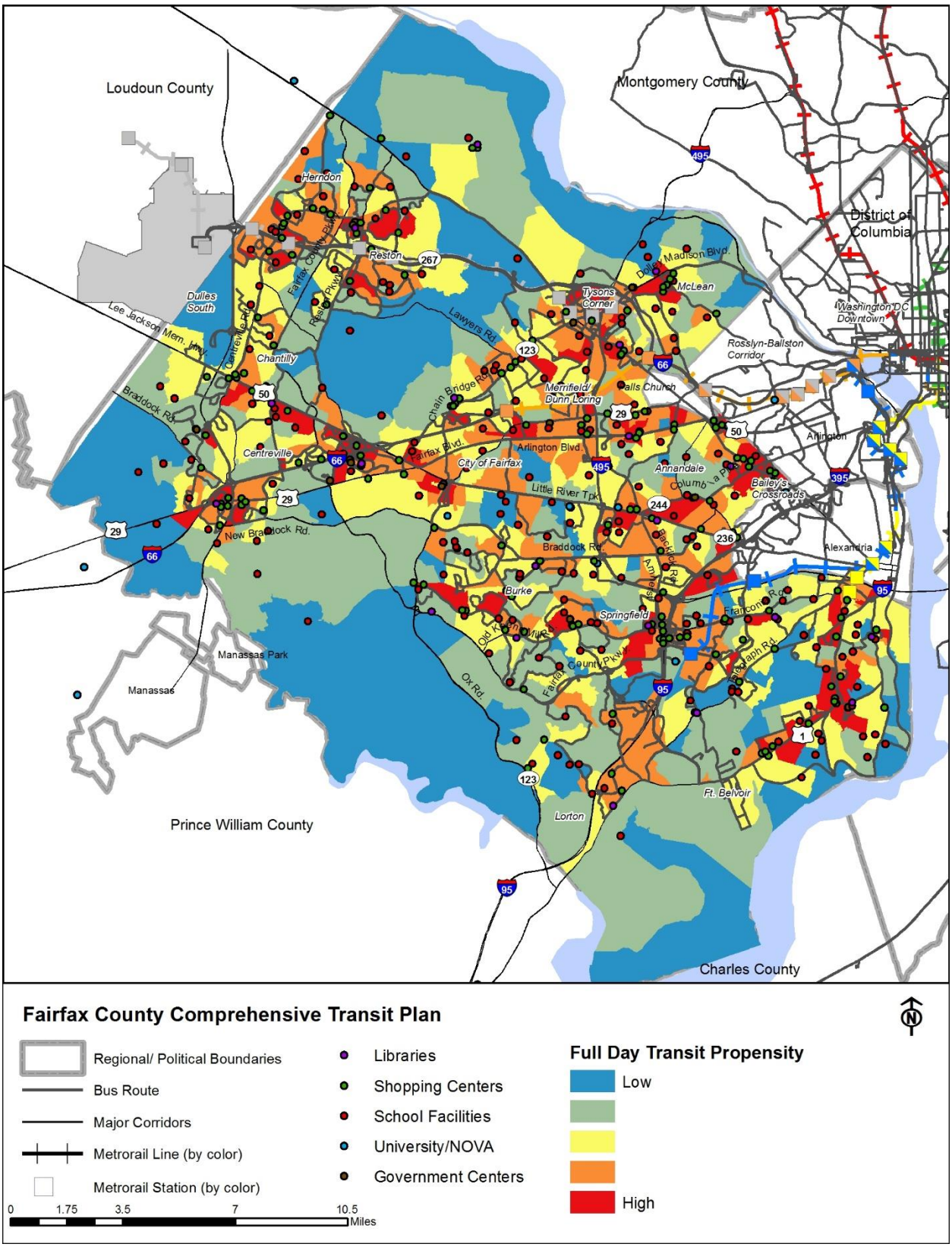
Methodology

Understanding the type of transit that makes sense in the various parts of the county is very helpful in guiding bus service recommendations. The different types of transit service levels include all-day bus service, peak-only bus service, or some kind of flexible alternative to fixed-route service (as discussed further below). A transit suitability measure, reflecting the propensity to utilize transit, was developed to assess the suitability of different parts of the county for these different levels of transit service. The analysis, described in further detail in the Appendix, uses data from the American Community Survey, the North American Industry Classification System, the Census Transportation Planning Package and local data to calculate transit demand based on demographics, commuting, and trip generation. The data are measured at the census block group level. The transit suitability layers measured transit need during the peak and full-day periods, focusing peak service on residential to employment connections, and full-day service on areas of high population density and other places where people are likely to make off-peak non-work trips by transit.

Results

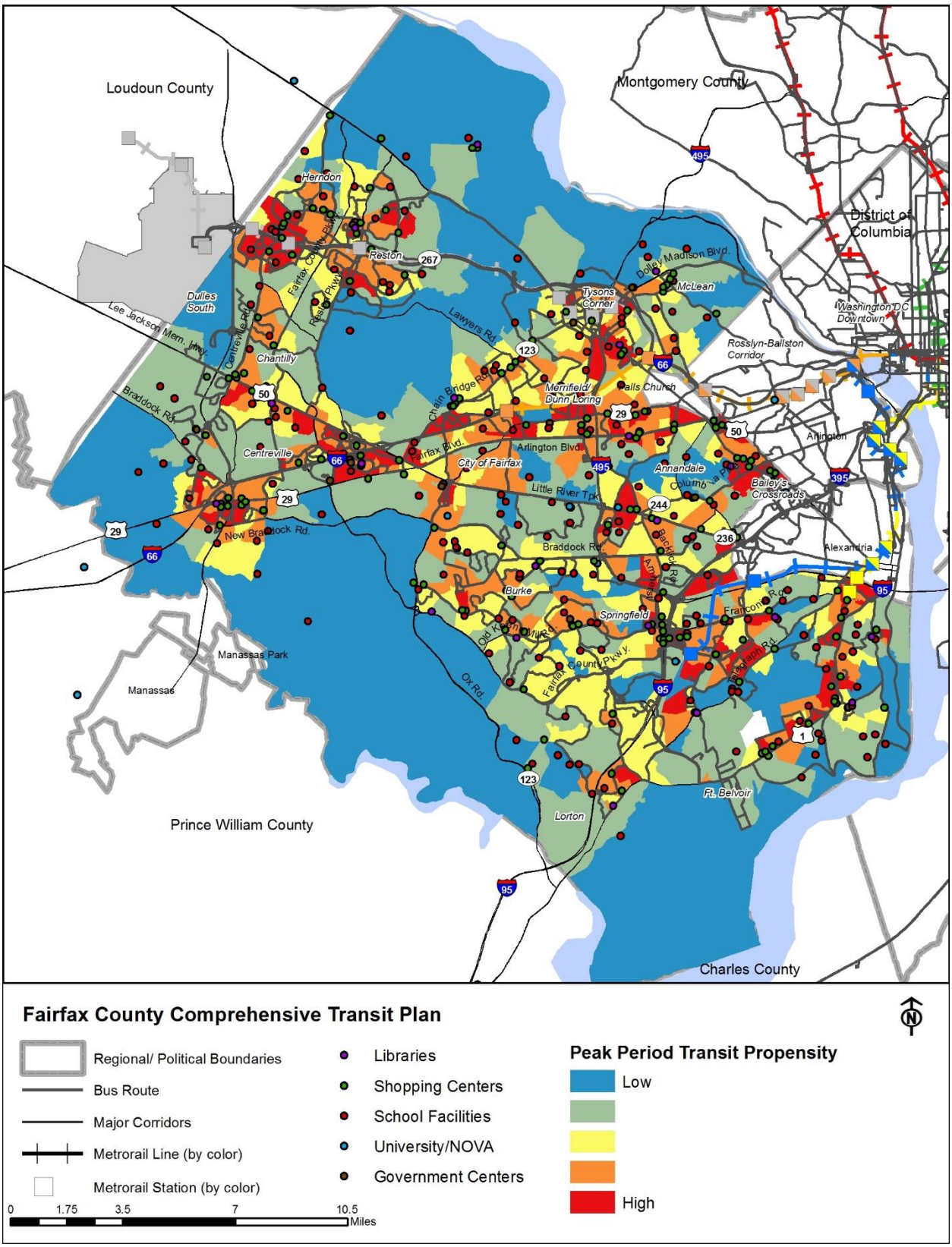
Figure 7.1 shows the propensity for transit use for all day service. These areas tend to be lower-income or densely-populated areas of the county, or areas adjacent to major activity centers with high concentrations of retail, medical, and educational facilities. In the southern portion of the county, the US-1 corridor between Fort Belvoir and Huntington, as well as southern portions of Springfield west of I-95, have high full-day scores. In the central part of the county, Bailey's Crossroads and portions of Annandale along Little River Turnpike have high full-day scores. On the western side of the county, several areas of Centreville and the area around Fair Oaks Mall and along US-50 have high full- day scores. Finally, in the northern portion of the county, high full-day scores are found in Tysons and McLean, as well as Reston (near Reston Town Center) and Herndon along the Dulles Toll Road.

Figure 7.1: Suitability for All Day Transit Service



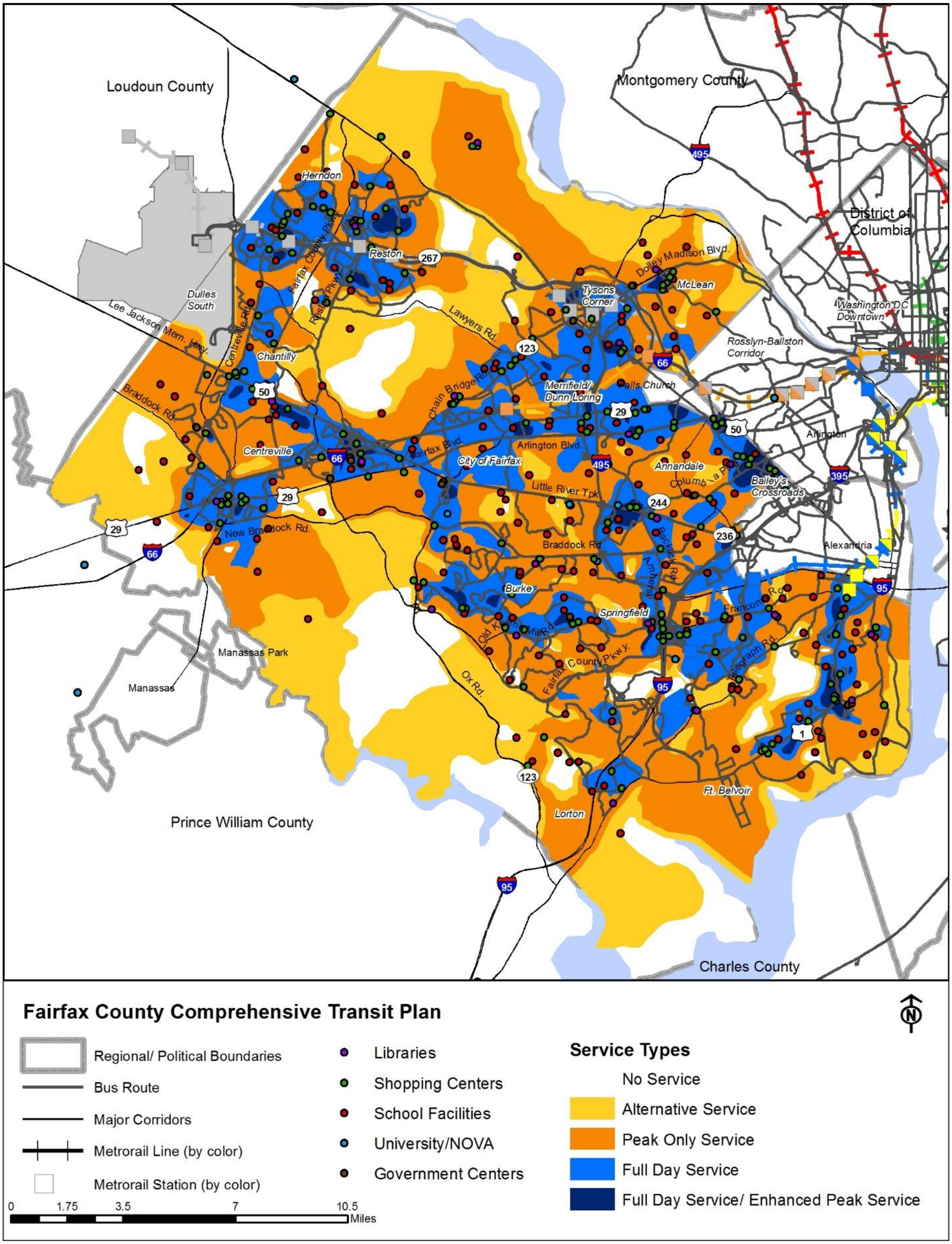
As shown in Figure 7.2, high peak-period propensities are found in many of the same areas of the county, including the US-1 corridor, Bailey's Crossroads, Centreville, Tysons, Reston and Herndon. Areas with high *peak-period* propensities with lower *full-day* propensities include portions of Franconia west of Telegraph Road, and several neighborhoods near exit 10 of the Dulles Toll Road. Additionally, much of Springfield and McLean that have high full-day propensities only have moderate peak propensities. Areas with high peak-period propensities tend to be densely populated but not completely transit-dependent. In addition, areas that show a low peak-period propensity do not necessarily indicate that there is no demand for peak-period transit but rather that local service would not be particularly effective. Rather, express or commuter bus service from a park and ride in or near those areas could be an attractive option for people living and working in those areas.

Figure 7.2: Suitability for Peak Only Transit Service



Peak-period and full-day propensities were combined into a single transit service typology. As shown in Figure 7.3, this composite typology shows that several portions of the county can likely support full-day service or even full-day service with enhanced service during peak periods. In the southern portion of the county, the US-1 corridor between Alexandria and Fort Belvoir can likely support full-day service with enhanced peak-period service. Much of Franconia and Springfield, particularly near I-95 and along Old Keene Mill Road, could support full-day service. In the central portion of the county, Bailey's Crossroads and the VA-7 corridor along with much of Arlington Boulevard, Little River Turnpike and portions of Burke could support full-day or full-day with enhanced peak-period service. In the western portion of the county, the I-66, US-29 and US-50 corridors in and around Centreville and Chantilly could all support full-day service. In northern areas of the county, Tysons, McLean and Reston could support full-day service with enhanced peak-period service, while much of Dunn Loring/Merrifield and Herndon could support full-day service. Peak-only service could be supported in many additional areas beyond those previously mentioned, including Fort Belvoir, Lorton, Annandale and the Braddock Road corridor in Burke. Opportunities for alternative service include much of the southern and western portions of the county near Prince William County and along the George Washington Memorial Parkway between Alexandria and Fort Hunt.

Figure 7.3: Transit Service Typology for Fairfax County



7.1.4. Travel Patterns

Origin-Destination Patterns

As outlined in great detail in Technical Memorandum 3 of this CTP, Fairfax County and Fairfax City residents are projected to make over 295,000 daily work trips by all modes in 2015; that figure is expected to increase by 11 percent by 2025. Figure 7.4 shows the destinations for Fairfax County home-based work trip flows anticipated for 2025. In 2025, nearly 50 percent of work trips for Fairfax County and City residents are expected to be destined for other locations within the county and city, followed by about 20 percent to DC, 16 percent to Arlington County, five percent to the City of Alexandria, 3 percent to Montgomery County, and 2 percent to Loudoun County; the rest of the trips are to a variety of other destinations. In terms of absolute numbers, work trips to destinations within Fairfax County are projected to increase the most, while trips to neighboring Loudoun County are projected to have the largest percentage increase. It is notable that Washington DC, while remaining the second largest destination, is projected to have no increase in work trips from Fairfax County. Nearby Arlington, Alexandria and Montgomery County are expected to remain the third, fourth and fifth largest destinations with near average growth in work trips from Fairfax.

Figure 7.5 and Figure 7.6 show the travel patterns between activity centers both within the county and to other places in the region, as anticipated for 2025 using MWCOG projections. Figure 7.5 shows the activity centers with at least 312 projected daily home-based work trips (on all modes) between them, indicating some level of desire for transit service. Some of the strongest travel demand is shown between Tysons and other activity centers, including Merrifield / Dunn Loring, Fairfax Center, Fairfax City, and the City of Falls Church. Other connections with high travel demand include Dulles South to Fairfax Center and Fairfax Center to Fairfax City along US 50, and between the activity centers along the 267 corridor. The most north south movements are shown in the western part of the county from activity centers along US 50 and I-66 to the 267 corridor. Intracounty home-based work activity is significantly lower in the south part of the county than the north, with many more home-based work trips from that part of the county into other jurisdictions, as shown in Figure 7.6.

Figure 7.4: Home-Based Work Trip Destinations for Fairfax County and City of Fairfax Residents

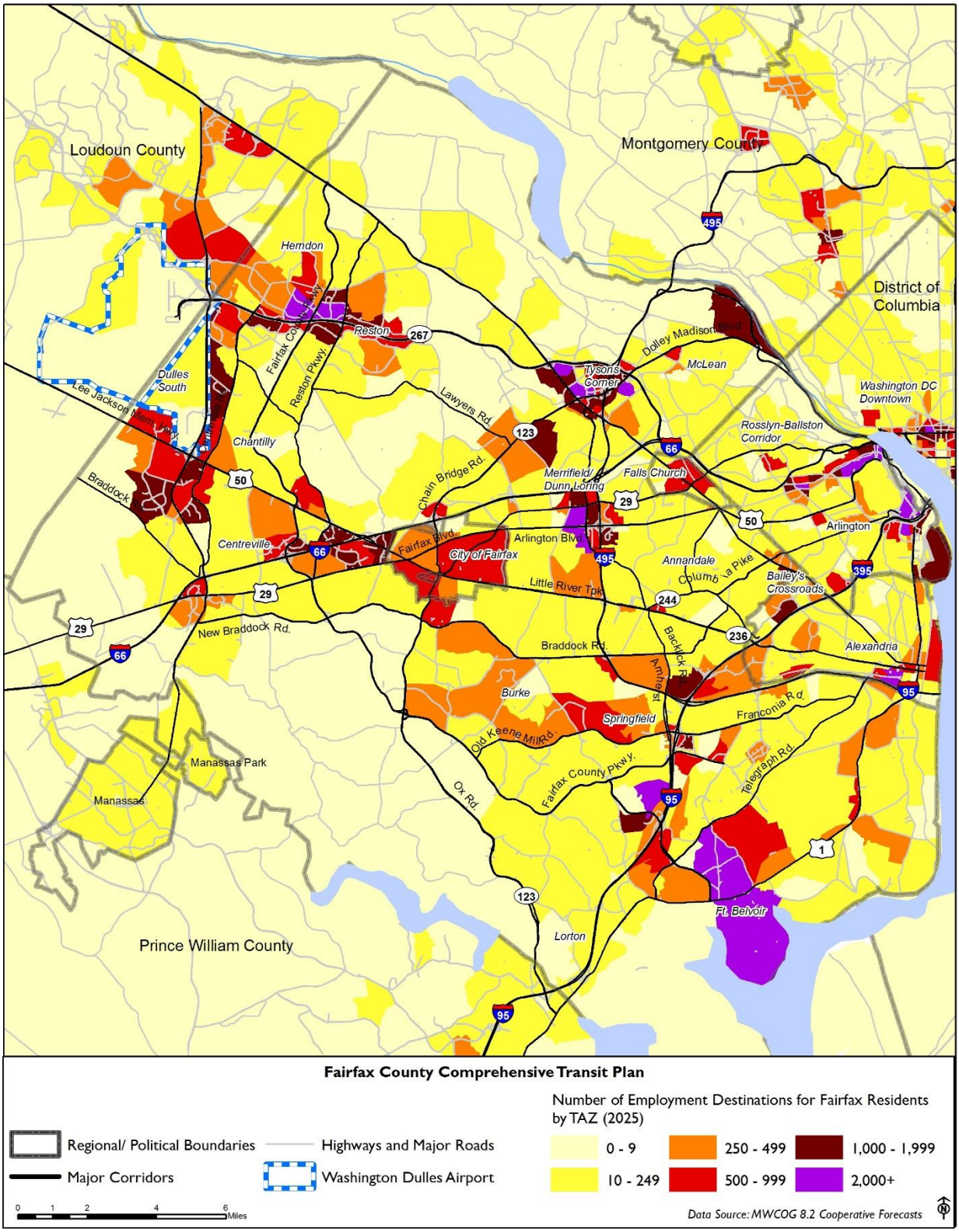


Figure 7.5: Largest Origin-Destination Patterns - Within Fairfax County

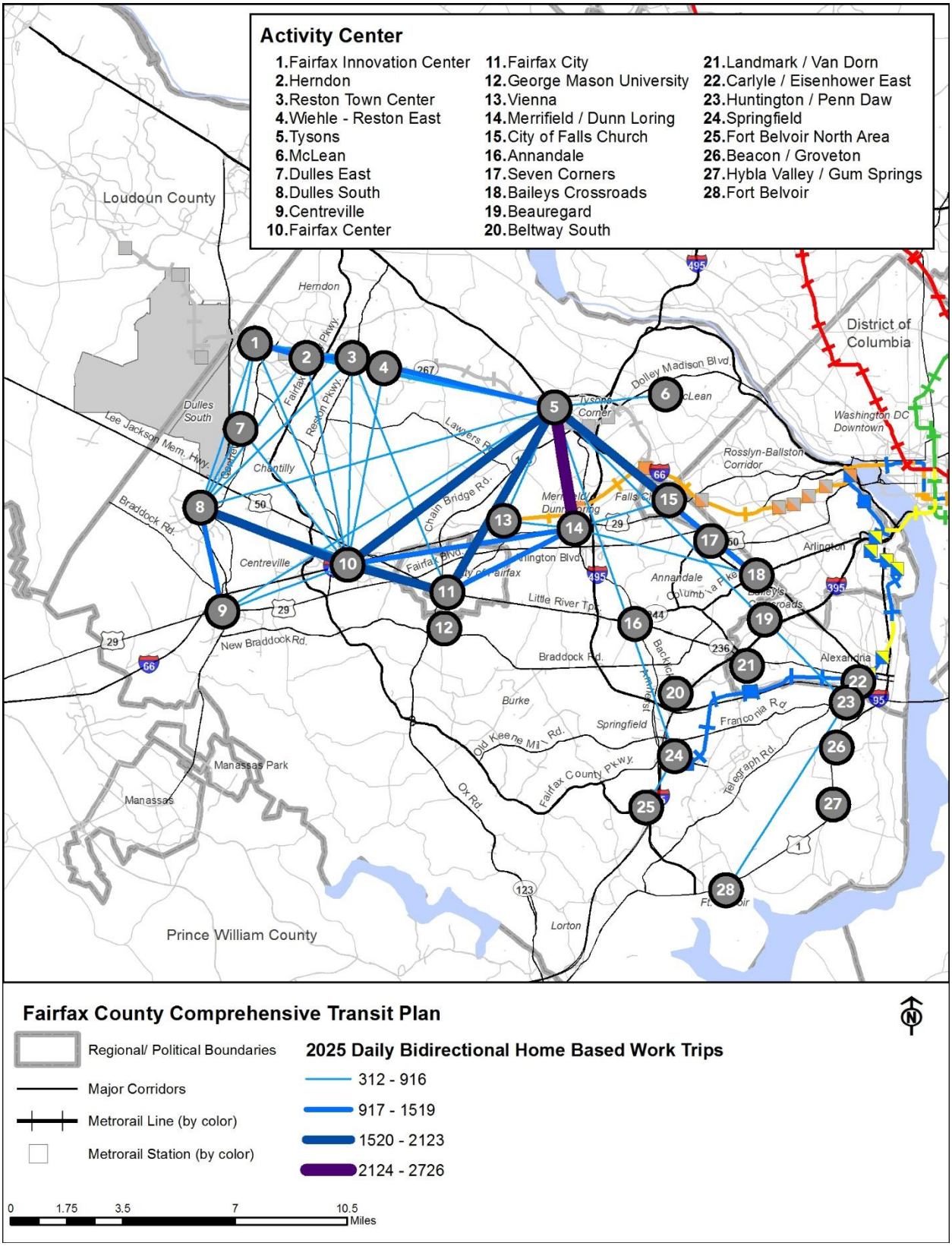
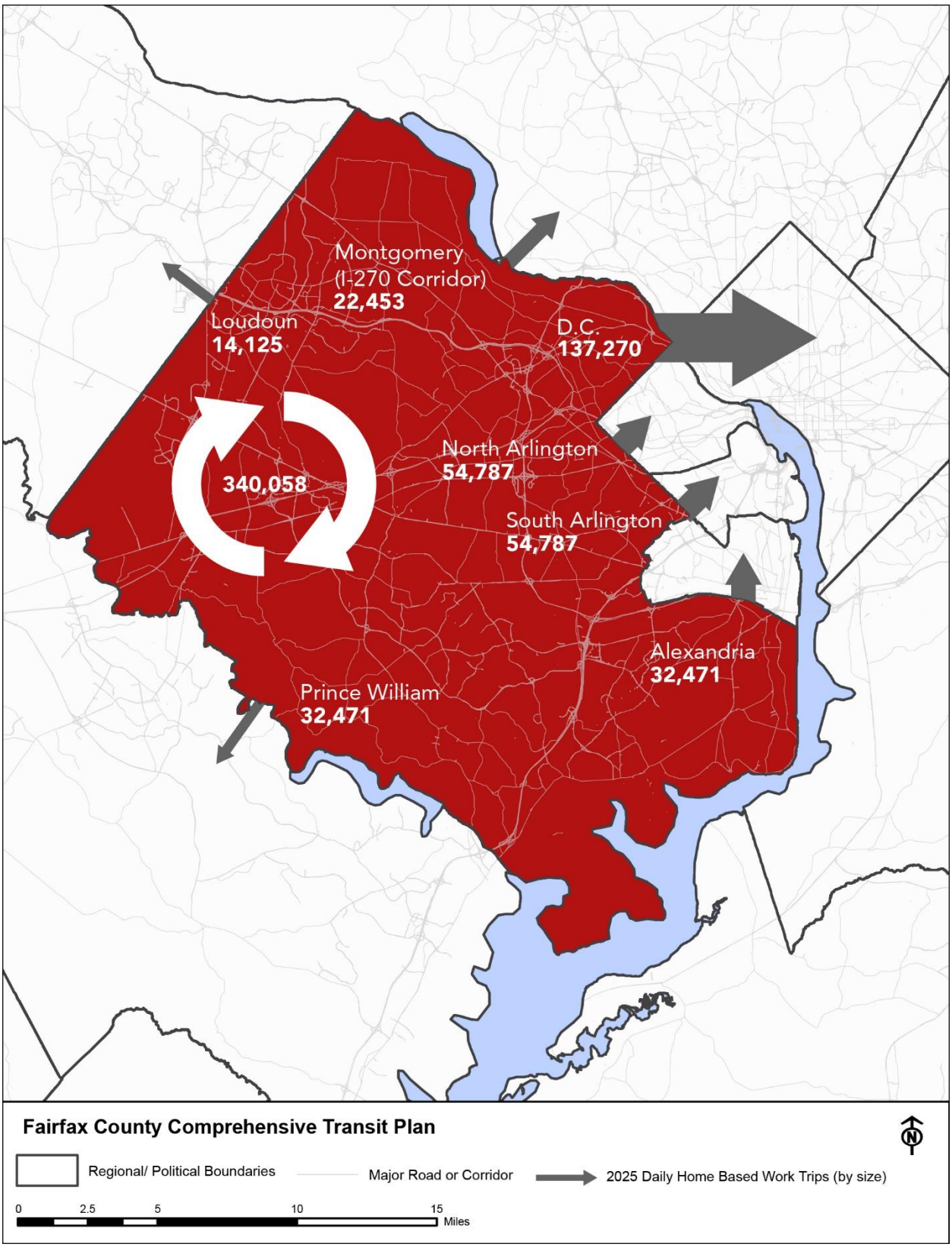


Figure 7.6: Largest Origin-Destination Patterns - To Regional Activity Centers



Existing Connections

When considering the need for transit service based on the origin-destination patterns identified above, it is important to take into account existing links between key activity centers. Figure 7.7 shows how key activity centers in the county are currently connected by bus and rail service and also shows bus connections to places outside the county.

Figure 7.7: Existing Transit Connections Between Key Activity Centers

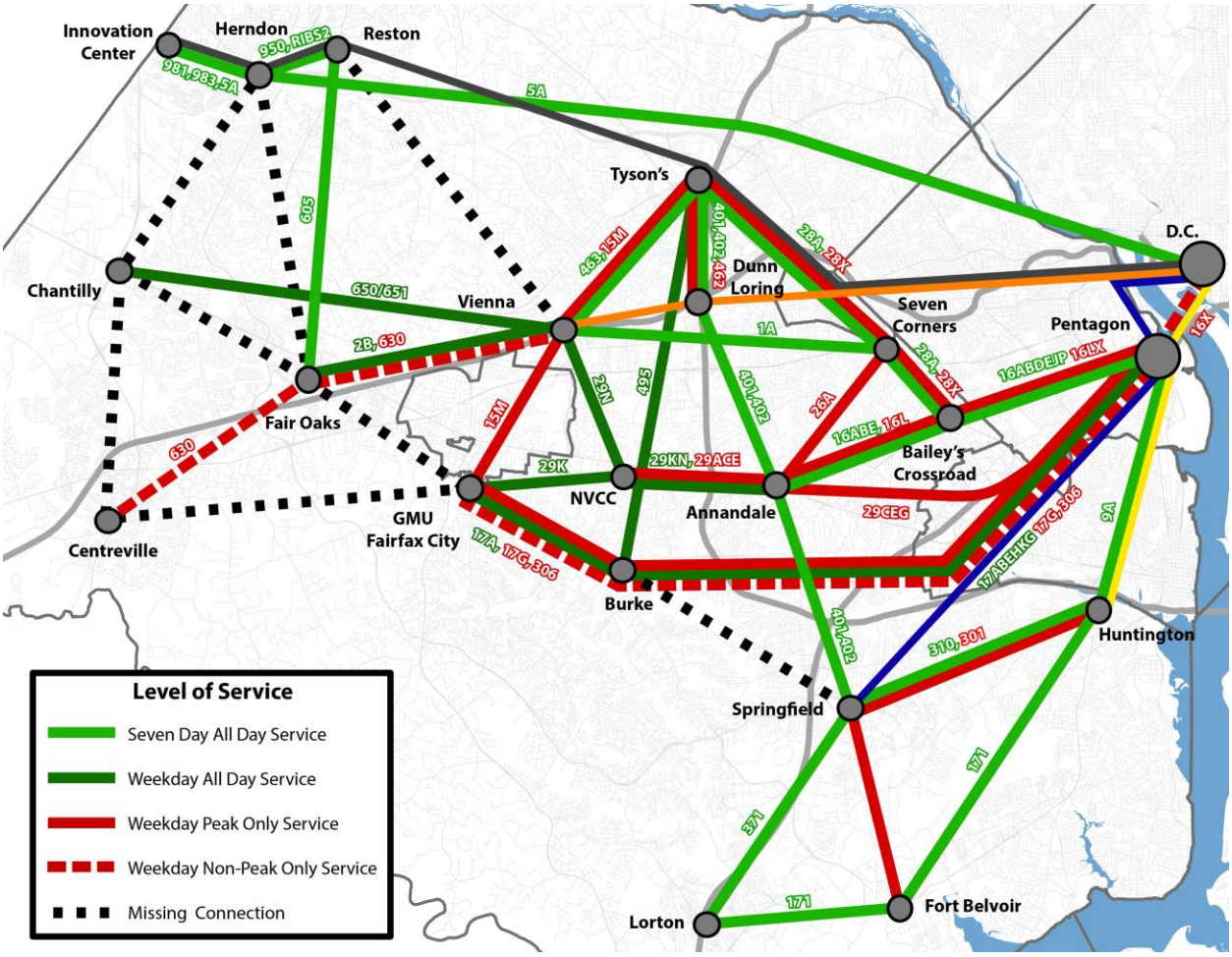


Table 7-2**Error! Reference source not found.** provides a comparison between the existing and missing connections shown in Figure 7.7 with the desire lines depicted in Figure 7.5.

Table 7-2: Comparison of Existing Connections and Desire Lines

Common Connections Based on HBW Trips	Existing Service
Tysons – Merrifield / Dunn Loring	401/402, 462
Tysons – Fairfax Center/Fair Oaks	No direct connections; many transfer

Common Connections Based on HBW Trips	Existing Service
	opportunities at Vienna
Tysons – Fairfax City	15M
Tysons – City of Falls Church	28A, 28X
Dulles South – Fairfax Center	630 from Centreville, midday only; no direct connections from Chantilly
Fairfax Center to Fairfax City	No direct connections
267 Activity Centers: Innovation-Herndon-Reston-Wiehle	981, 983, 5A, 950, RIBS, Silver Line
Innovation to Dulles South	No direct connections
Herndon-Reston to Fairfax Center	605 from Reston; no direct connection from Herndon
Springfield-Fort Belvoir	334, 335

7.1.5. Recommendations Overview

Existing service described in this memorandum is current as of June 2015 and includes service changes implemented by Fairfax Connector on May 16, 2015 and by WMATA Metrobus on June 21, 2015.

Most of the recommendations described in detail in this CTP are centered around improving an already robust bus network. This includes improvements to frequency and span of service, such as additional midday or weekend service. In addition, recommendations to routing to streamline operations and provide quicker service, or alternatively recommendations for rerouting existing buses to serve new destinations, are also included. Finally, new routes have been recommended to connect locations that either do not have transit connections today or do not have a direct connection. In addition to these improvements, the recommendations outlined in this CTP include specific suggestions related to four key areas: Silver Line feeder service, inter-jurisdictional services, cross-county services, and alternatives to fixed-route bus service.

Inter-Jurisdictional Services

Currently Fairfax County residents, employees and visitors are provided with inter-jurisdictional service through Metrorail, numerous Metrobus lines, and Virginia Railway Express (VRE). Additionally, several Fairfax Connector routes provide service into Arlington County, particularly Crystal City and the Pentagon, as well as to Dulles Airport in Loudoun County.

The Potomac and Rappahannock Transportation Commission (PRTC) also offers several commuter and "Metro Direct" buses into the county (separate routes from Woodbridge, Gainesville, and Manassas to Tysons, and Dale City and Woodbridge to Franconia-Springfield). However, those services are only available for trips originating in Prince William County. Loudoun County Transit also provides service into Fairfax County, providing connections on separate routes from Potomac Falls and Leesburg to the Wiehle-Reston East Metrorail station, with the Leesburg route continuing on to Tysons.

While Metrorail connections are feasible to connect Fairfax County with many other parts of the region, and are expanding with the Silver Line being added, the travel times can be long. This CTP recommends several direct bus connections between parts of the county and other key activity centers in the region, including a direct route from Tysons Corner to Bethesda and another one from Huntington Station to National Harbor.

Cross County Services

One of the most frequent comments provided by stakeholders is the need for more cross-county service to provide transit options for those traveling between the northern and southern parts of the county, both in west county and further east. The 2009 TDP recommended express service along VA-28 between Dulles Airport and Manassas. This proposal is no longer recommended and not included in this plan. However, there are several other proposals for new cross-county service discussed in the recommendations that follow:

- Route 313 - Fair Oaks Mall – Springfield via Judicial Center
- Route 315 - Vienna Metro – Springfield via GMU
- Route 496 - Herndon Station – Franconia-Springfield Station via Fairfax County Parkway, express service with bus priority and in-line stations.
- Route 607- Fair Oaks Mall – Herndon Metro Station
- Route 901 - Centreville United Methodist Church – Herndon Metro Station

Commuter Service on Limited Access Roadways

Over the past several years several managed lanes facilities, or High Occupancy Toll (HOT) lanes have opened in Northern Virginia, providing Fairfax County with free-flow highway facilities that can be used for high-speed bus service. In November 2012, The 495 Express Lanes opened between the Springfield interchange to a point just north of the Dulles Toll Road, north of Tysons Corner. In December 2014, the 95 Express Lanes opened between Acquia, just south of Marine Corps Base Quantico in Prince William County, through Fairfax County and into Alexandria on I-395.[1] Upon opening of these new HOT lanes, Fairfax Connector began service on Routes 493 and 495, from Lorton and Burke Center to Tysons, respectively. The CTP offers recommendations for these services and also addresses route Route 393 that begins in May 2015 and will operate between the Saratoga Park and Ride and the Mark Center and Pentagon, utilizing the I-95 and I-395 HOT lanes.

VDOT is currently studying managed lanes west of Beltway along I-66 which are anticipated to open in 2021. FCDOT is an active participant in this study, and additional transit services that are being planned for those managed lanes will be included in the final CTP when they are published. The operator for these proposed new routes has yet to be determined.

BRT / Enhanced Bus

In corridors with high service frequency and ridership, the CTP recommends implementing Bus Rapid Transit (BRT) or Enhanced Bus services. Bus Rapid Transit features a package of elements including limited stops, traffic signal priority, queue jump lanes, off-board fare collection, bus stop amenities, branding, and exclusive rights of way. Enhanced Bus includes a more limited set of these elements. For example, WMATA's REX and Metro Extra services have branding, limited stops, direct alignments, and frequent service, and would be considered Enhanced Bus. The Metroway, which opened in August 2014

[1] The newly expanded toll lanes that allow single-occupant vehicles via EZ-Pass payment end prior to the City of Alexandria; at that point buses may use the pre-existing HOV/3 lanes into the District of Columbia.

and will be completed in spring 2015, is one example of Bus Rapid Transit in the region. This route between Alexandria and Arlington features spacing of ½ a mile or more between its substantial stations, proof-of-payment fare collection with all door boarding and exclusive bus lanes for most of the 7-mile route.

In determining where to look into the implementation of BRT or Enhanced Bus in Fairfax County over the next ten years, existing plans for BRT and Enhanced Bus were considered, including several corridors undergoing detailed study for improved transit conditions such as Route 7, US-1, Columbia Pike, Little River Turnpike, Backlick/Gallows, Fairfax County Parkway, and Braddock Road. The Route 1 Multimodal Alternatives Analysis, completed in January 2015, recommends a preferred transit alternative of BRT from the Huntington Metro to Route 123 in Woodbridge (median running in Fairfax County and curb running in Prince William County). This recommendation is contingent upon increased land use density and project funding, and is anticipated for implementation of Phase 1, from Huntington to Hybla Valley, in 2026, just outside the planning horizon for this CTP.

Silver Line

With the July 26, 2014 opening of the Silver Line through Tysons Corner and out to Reston, Fairfax County has continued to monitor and improve bus service that feeds these stations, along with the internal circulator routes in Tysons Corner. Proposals for improving these services are currently under review for implementation in May 2015. This CTP recommends further improvements to continue to ensure that the Silver Line connections are effective over time and continue to serve the growing needs of the county. This CTP also addresses the changes that will need to be made to existing services to best provide access to Phase 2 of the Silver Line, which is anticipated to open for service in 2018. The Phase 2 extension will provide three more stations within Fairfax County: Reston Town Center, Herndon, and Innovation Center, just east of VA Route 28.

Alternative Services

Currently, Fairfax County residents who live in areas that are not suitable for or cannot support public transportation have access to a handful of county-supported mobility services such as Fairfax County's RideSources, which provides carpool and vanpool ridematching services and the county's Neighborhood and Community Services Department transportation services, which provide taxi subsidies to ADA-eligible residents (TaxiAccess), income-eligible residents (Dial-A-Ride), seniors (Seniors-On-The Go), and residents who must undergo life sustaining medical treatments (FASTRAN). In addition to these services and traditional taxis, Virginia state law was changed in February 2015 to permit the operation of services such as Uber and Lyft. This new type of on-demand service might be used to improve access to traditional transit services and possibly supplement existing paratransit services. At the neighborhood level, the Transportation Association of Greater Springfield (TAGS), in collaboration with Metro, sponsors a low-cost, ADA-accessible shuttle service that circulates throughout Springfield's business district.

In addition to these services, Fairfax County is considering other tools that go beyond fixed route bus or rail service that can serve portions of the County that do not currently have adequate demand for traditional transit service and are not expected to in the near future. Throughout this technical memorandum there are recommendations that may be more appropriate for one of these service types instead of the traditional fixed-route service that is provided in the county by Fairfax Connector and Metrobus. The options for flexible, alternative services are described in the following paragraphs. The County will need to thoroughly study the operating and capital requirements of each type of service described in the paragraphs below. Issues related to facilities, vehicles, operators, and support requirements are among those that will need to be resolved before the procurement process to select a contract operator for such service could start.

Deviated Fixed Route Service

Deviated fixed route transit service operates along a prescribed route or alignment at generally fixed times, but may leave the route alignment to collect or drop off passengers who have requested the deviation.[2] In route-deviation service, buses maintain scheduled checkpoint stops. However, unlike regular fixed-route service, nonscheduled stops are accommodated and the bus may leave and return to the route to pick up requests for demand-responsive trips near the route. Passengers may call in advance for a route deviation, or may access the system at predetermined route stops. The limited geographic area where the bus travels off the route is known as the route deviation corridor.[3]

A local example of a deviated fixed route service is PRTC's OmniLink bus service. OmniLink operates in eastern Prince William County and the Manassas area, and was designed to meet the transportation needs of those communities, including individuals who may have difficulty getting to established bus stops. With advance notice, OmniLink buses can be rerouted to serve locations up to three-quarters of a mile from the prescribed route when there is time available in the schedule.

Subscription Service

Subscription service is a shared-use transit service operating in response to on-going reservations made by passengers to the transit operator, who can schedule in advance a consistent trip to pick up the passenger(s) and transport them to their destination. When a passenger or group of passengers requests a repetitive ride (such as a daily or weekly service on an ongoing basis), trips can be scheduled on a subscription or "standing order" basis. So long as there is additional capacity on the subscription route, non-subscribers can request one-time rides on the routes with advance notice.

For example, Capital Area Rural Transportation System, a rural/urban transit district, provides subscription transit services in a nine-county area surrounding Austin, Texas. The district's Commuter Route service is available on a monthly subscription basis. Commuters pay a monthly rate and the agency provides a consistent service.[4]

Neighborhood Circulators or Shuttles

Circulators provide direct, timely linkages within communities, with connections to the regional rail or bus networks made available at designated transfer locations. The services themselves provide the primary public transportation resource within the community and as such complement the larger network with services that penetrate into neighborhoods that might otherwise be unserved. This type of service can help solve the first mile/last mile problem, and can also be useful for older school age children who need transportation home after staying late at school for sports or clubs, or to after school programs and jobs. In addition to providing needed services, this use can serve to develop a transit habit in this demographic that can be carried into their later lives. Neighborhood Circulators or shuttles could be contracted out and, although coordinated with the County, would not necessarily be operated by Fairfax Connector.

This CTP has identified three areas that are primary candidates for initial deployment of flexible services in the following parts of the county: Centreville (north and south of Centreville Square), McLean, and Annandale. All of these areas have relatively low transit propensity using the methodology previously

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[2] National Transit Database Glossary http://www.ntdprogram.gov/ntdprogram/Glossary.htm

[3] Transit Cooperative Research Program (TCRP) Report 6, *Users' Manual for Assessing Service-Delivery Systems for Rural Passenger Transportation*. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_06-a.pdf

[4] More information is available at http://www.ridecarts.com

described. The specific "flexible service areas" are described and mapped in the corresponding geographic section of this document. Although the specific flexible service type has not yet been determined, the concept for these routes is that they would have a defined route with the ability to deviate within the flexible service area under certain predefined parameters. However, it should be noted that FCDOT does not currently have a flexible route program, and it could take several years to deploy the equipment, labor agreements, and service plans required to put one in place.

7.1.6. Sectors

Fairfax County was subdivided into 11 sectors for service analysis based mostly on geography, activity centers, and Metrorail service. This structure allows for an organized analysis and presentation of results. However, it does not preclude considering and recommending service between different parts of the county; in fact, many of the sectors overlap, and indeed there are many routes and recommendations that span multiple sectors. Figure 7.8 shows how the county was divided into sectors. The lighter shades within each sector, which are general boundaries, indicate portions of the area that currently have no transit service operating within that area (in some cases the part of the unserved area bordering on the served area has access to bus service that is operating on a roadway at the edge of the served area).

Figure 7.8: County Service Analysis Sectors

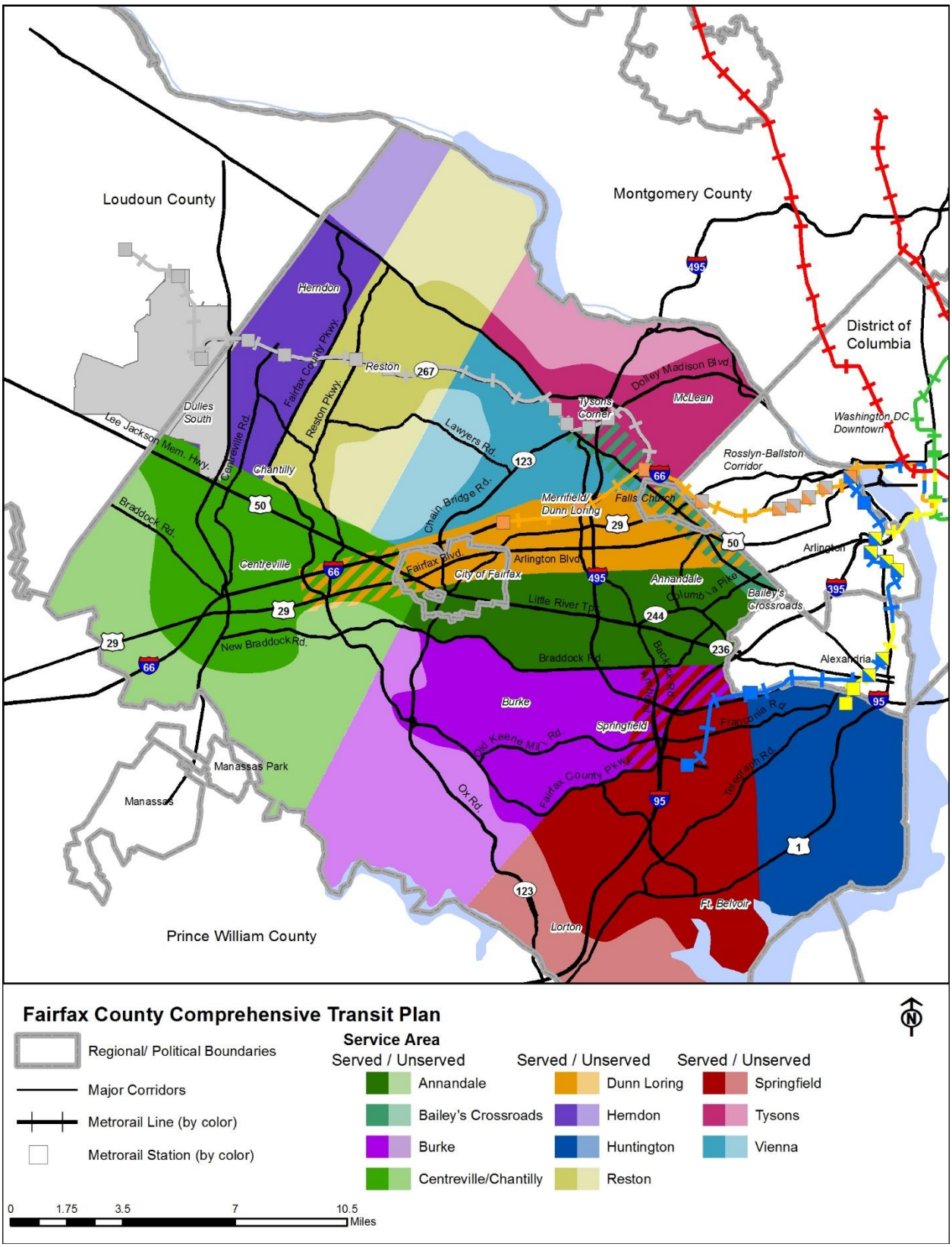


Table 7-3 provides a summary by sector of the Fairfax Connector and Metrobus routes, both existing and proposed, that are included in the presentation and analysis.

Table 7-3: Existing and Proposed Routes by Sector

	Fairfax Connector	Metrobus
Herndon	**921/922**, 924, 926, 927, 929, 937, 950, 951, 952, **954**, 980, 981, 983, 985	5A
Reston	505, 507, 551, 552, 553, 554, 556, 557, 558, 559, 574, 585, RIBS 1-5	None
Centreville/Chantilly	605, **607**, **610**, 621, 622, 623, **624**, 630, 631,632, **634**, 640, 641, 642, 644, 650, 651, 652, **901**	None
Tysons	422, 423, 424, 432, 721, 724, 734	3T, **14A**, 15KL, 23AT
Vienna	**451**, 461, 462, 463, **464**, 466	15M, 2T
Bailey's Crossroads	None	4A, 22ACF, ***25ACDE***, 25B, 28A, 28X, 28FG
Dunn Loring	None	1C, 1 ABEZ, 2A, 2B
Annandale	401/402	3A, 7AFY, 7BCHPWX, 16AB***D***EJP, 16GHK, 16L, 16X, 26A, 29KN, 29C***E***G***HX***W
Burke	306, 495	17ABFM, 17GHKL, 18EF, 18GHJ
Huntington	101, **105**, 109, 151, 152, 159, 161,162, 171, **172**, 301, **308**, 310	***9A***, 10A, 11Y, REX, **NH7**
Springfield	231/232, **238**, **244**, 305, **313**, **315**, 321/322, 333, 334, 335, **340/341**, 371/372/373, 393, 394/395, 493/494, **496**	TAGS S80/S81

Note: Routes proposed in this plan are shown in **bold**; routes discontinued since the start of data collection are shown in ***bold italics***.

7.1.7. Service Guidelines and Standards

The County's design guidelines and service standards were utilized in analyzing the current service and developing the recommendations in this CTP. While these guidelines and standards have been developed thoughtfully, they are indeed guidelines, intended to be used in conjunction with other inputs, including a broader understanding of nearby routes, input from stakeholders and the public, and the needs of the ridership that the route serves.

Recommended Service Design Guidelines

The service design guidelines that the county follows for its Fairfax Connector service is divided into five sections: span and frequency; road types and routings; route numbering; scheduling; and operations planning guidelines. The first two sections related to service levels and routing are summarized here, as those were major inputs to the recommendations.

Span
Full-day routes

Weekdays	5:00 AM to 10:00 PM
Saturdays	7:00 AM to 8:00 PM
Sundays	8:00 AM to 8:00 PM

Peak-only routes

Weekday AM	5:00 AM to 9:00 AM (Arrival times at the relevant Metrorail station. Note that buses need to arrive shortly before 5:00 AM at the outer terminal stations and slightly later at the downstream stations.)
Weekday PM	3:30 PM to 7:30 PM (Departure times from the relevant Metrorail station.)

Headways

Full-day routes

Weekdays	Peak – 30 minutes Off-peak – 30 minutes Late (after 9:00 PM) – 60 minutes
Saturdays	Base (9:00 AM to 5:00 PM) – 30 minutes Fringe – 60 minutes
Sundays	60 minutes

Peak-only routes

Weekday AM	Peak 2 hours (e.g., 6:30 AM to 8:30 AM) – 20 minutes Beginning and end of the period – 30 minutes
Weekday PM	Peak 2 hours (e.g., 4:30 PM to 6:30 PM) –20 minutes Beginning and end of the period – 30 minutes

Road Types and Routing

In general, bus routes should be operated on arterial streets that have adequate infrastructure (sidewalks, etc.) and that do not have vehicle parking on either or both sides. Routing should be as direct as possible, except in cases of significant generators off of the main corridor that can yield at least two passengers per additional revenue mile.

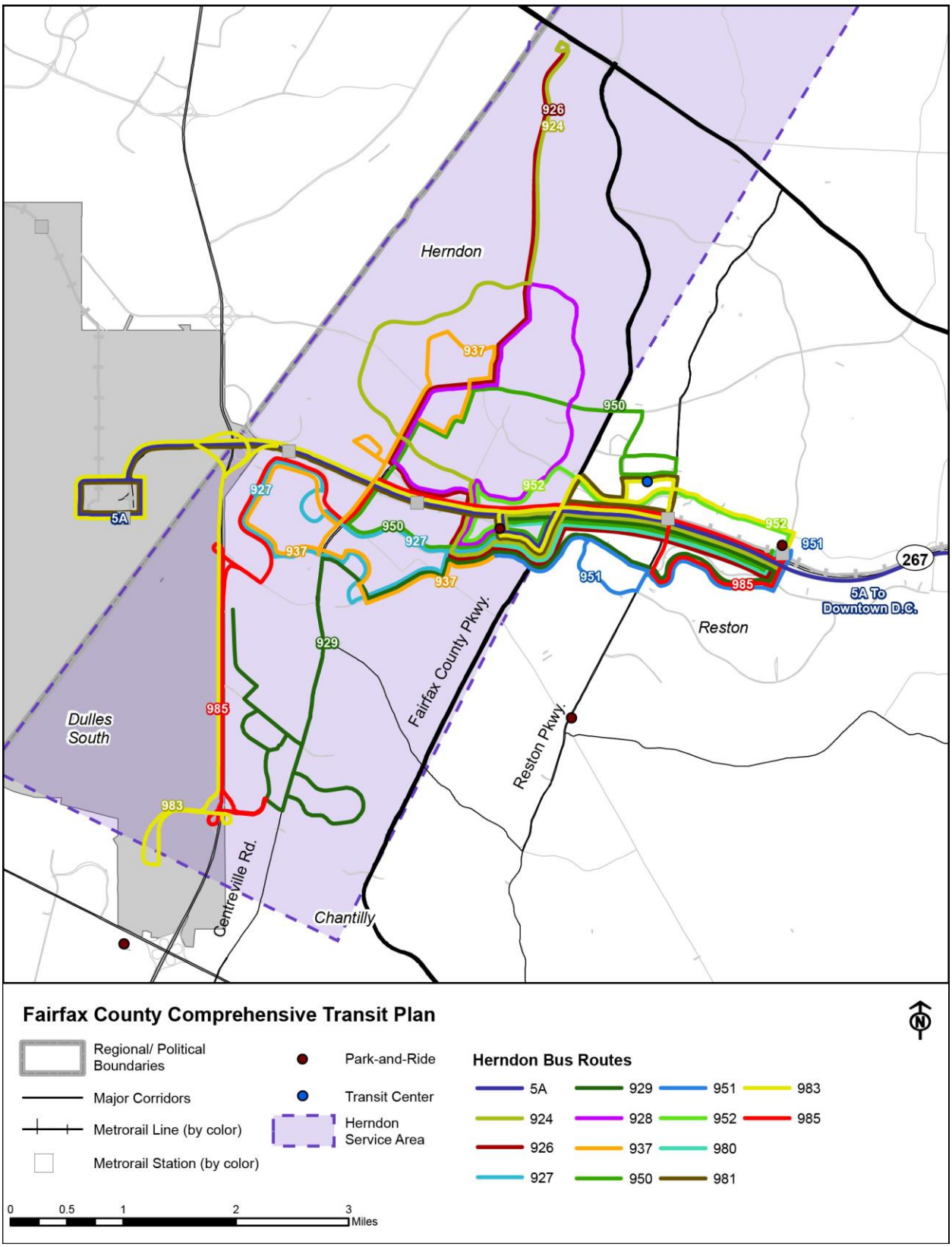
7.2.1. Background

Service Area

Fairfax County's North County Herndon service area includes the incorporated town of Herndon and territory to the north and south, including sections of three magisterial districts (Dranesville, Hunter Mill and Sully). The service planning area is roughly bounded by Leesburg Pike on the north, the County line on the west, US-50 on the south, and the Fairfax County Parkway (VA-286) on the east as shown in Figure 7.9.

The northern part of the area is largely residential. Herndon Parkway operates as a beltway within the Town of Herndon, with the northern and western portions being residential, and the southern and eastern portions being more commercial and industrial. The area immediately south of the Dulles Toll Road is primarily commercial, with a mix of residential, retail and commercial stretching beyond that area along Centreville Road. Herndon has an historic center along and north of Elden Street. Historically, Herndon was a commuter suburb that was served by passenger rail until the early 1960s. The resultant development pattern lends itself to transit service that connects with the current and planned Metrorail Silver Line.

Figure 7.9: Herndon Service Area-Existing Service



Current Services

Fourteen bus routes, thirteen Fairfax Connector routes and one Metrobus route operate within the Herndon Service Area.[5] Only routes 927, 928 and 937 do not provide direct Metrorail connections. Route 927 provides service to the Herndon Park and Ride, and is planned in the Silver Line Phase 2 Plan to serve the Herndon and Innovation Center Metrorail stations. Route 928 provides peak period service from the eastern portion of Herndon Parkway and the center of Herndon to the Herndon-Monroe Park-and-Ride. Route 937 currently provides service to the Herndon-Monroe Park and Ride and according to the Silver Line Phase 2 Plan will serve the Herndon Metrorail Station. All other Herndon-area Fairfax Connector routes, currently serve the Wiehle-Reston East Metrorail Station. Metrobus 5A connects the Rosslyn and L'Enfant Plaza Metrorail Stations to Dulles International Airport via the Herndon-Monroe Park-and-Ride. Fairfax Connector Routes 924 and 926 are complementary routes, with 924 providing peak direction service from Dranesville Road and the western portion of Herndon Parkway to Wiehle Ave and Route 926 providing reverse peak service to Worldgate Drive and the center of the Town of Herndon. Both provide peak and evening (but not midday) service. Route 929 is a feeder from the southern part of the Herndon service area, covering areas to the east and west of Centreville Road. Route 950 provides all day service between Reston and Herndon as well as connection to Wiehle-Reston East Metrorail Station. Route 980 provides supplemental peak-only service along the Dulles Toll Road between Herndon-Monroe and the Wiehle Ave Metrorail Station. Routes 951 and 952 are also a complementary pair connecting the Metrorail station with Herndon-Monroe. Route 951 covers Sunrise Valley Drive on the south side of the Toll Road, and Route 952 covers Sunset Hills Road on the north side. Both operate all-day, five days a week. Routes 981 and 983 provide seven-day, all-day service between Wiehle-Reston East Metrorail station and Dulles Airport, with Route 983 serving as an extension of the 981 to the Udvar-Hazy Smithsonian National Air and Space Museum. Finally, Route 985 is the reverse peak complement to Route 585 in Reston, offering connections to the Dulles Discovery Center.

[5] Route 928 was initiated in July 2014 but will be merged with RIBS 5 in May 2015.

Table 7-4: Herndon Bus Services

Route	Name	District	Metrorail Station Served	Average Weekday Boardings
Fairfax Connector Routes				
924	Herndon Parkway – Dranesville Road – peak plus evening	Dranesville, Hunter Mill	Wiehle – Reston East - Silver	**224**
926	Worldgate – Dranesville Road – peak plus evening	Dranesville, Hunter Mill	Wiehle – Reston East- Silver	**98**
927	South Herndon – peak only	Dranesville, Hunter Mill		**133**
928	Herndon Parkway – Elden Street	Dranesville, Hunter Mill		**16**
929	Centreville Road – McNair Farms – peak plus evening	Dranesville, Hunter Mill, Sully	Wiehle – Reston East- Silver	**182**
937	Coppermine – Elden	Dranesville, Hunter Mill		**124**
950	Herndon – Reston Town Center – Wiehle	Dranesville, Hunter Mill	Wiehle – Reston East- Silver	**2,755**
951	Sunrise Valley – weekday only	Hunter Mill	Wiehle – Reston East- Silver	**110**
952	Sunset Hills – weekday only	Dranesville, Hunter Mill	Wiehle – Reston East- Silver	**118**
980	Herndon Monroe – Wiehle – peak only	Hunter Mill	Wiehle – Reston East- Silver	**1,358**
981	Dulles Airport - Wiehle	Dranesville, Hunter Mill, Sully	Wiehle – Reston East- Silver	**155**
983	Dulles Airport – Udvar-Hazy – Wiehle		Wiehle – Reston East	**502**
985	Dulles Discovery – Dulles Technology Corridor – weekday only	Dranesville, Hunter Mill, Sully	Wiehle – Reston East	**84**
WMATA Metrobus Routes				
5A	DC – Dulles	Dranesville, Hunter Mill	Rosslyn – Orange, Silver and Blue, L'Enfant Plaza – Orange, Silver, Blue, Yellow and Green	**1,261**
Total Boardings				**7,104**

Most of the routes in Herndon were altered with the opening of Silver Line Phase 1 in July 2014. The 92X series routes other than 927 were extended to Wiehle-Reston East Metrorail station. Routes 928 and 937 were established as brand new routes. In May 2015, Route 928 will be folded into a restructured RIBS 5 and Route 937 will be restructured. Route 929 was restructured in July 2014, and then restructured again in January 2015 to respond to passenger requests to restore direct access to Park Center Road. Routes 950, 951, 952, 980, and 981 were cut back from West Falls Church to

Wiehle-Reston East. Route 983, a daytime extension of Route 981 to the Udvar-Hazy Air & Space Museum, was a new service introduced in July 2014. Route 985 was also a new service, acting as an operational companion to an extended Route 585 in Reston.

As shown in Table 7-4, three Herndon-area routes operate peak period service only: 927, 928 and 980. Service is operated on these routes between approximately 5:00 AM and 9:00 AM weekday mornings and between 3:00 PM and 8:00 PM weekday evenings. Scheduled headways range between 20 and 30 minutes. Three routes operate peak period plus evening service: 924, 926, and 929. Service is operated on these routes between approximately 5:30 AM and 10:00 AM weekday mornings and between 3:30 PM and 9:00 PM weekday evenings. Scheduled headways range between 30 and 40 minutes. Three routes operate weekday service only: 951, 952 and 985. Service is operated on these routes between approximately 5:30 AM and 8:00 PM. Scheduled headways during peak periods range between 20 and 30 minutes, and headways during off-peak periods range from 40 to 70 minutes. Five routes operate a full-day schedule, seven days a week: 937, 950, 981, 983, and 5A. Weekday service for all these routes is currently scheduled with a headway between 20 and 30 minutes, with a span of service from approximately 5:30 AM to 12:00 AM. Weekend routes 950, 981, and 5A operate with headways between 30 and 60 minutes, with Saturday service between approximately 6:00 AM and 12:00 PM and Sunday service between approximately 6:00 AM and 12:00 PM. Weekend Routes 937 and 983 operate with 30 minutes headway, with Saturday service between approximately 9:00 AM and 8:00 PM, and Sunday service between 9:00 AM and 7:00 PM.

The routes in Herndon serve both a feeder function to the Metrorail system and a local function. As shown below in Table 7-5, Routes 951, 952, 980, and 985 have very few passenger trips that do not involve the Metrorail station at Wiehle Avenue. Although Routes 924, 926, 929 and 981 primarily act as feeders to rail, roughly one third of the passengers on those routes do not transfer to or from the rail system. For Routes 950 and 983, the majority of trips do not involve rail. Routes that do not connect to Metrorail (927, 928, and 937) are not included in the table.

Table 7-5: Metrorail Station Passenger Activity

Route	Total Weekday Boardings*	Wiehle - Reston East Station Weekday Boardings	Wiehle - Reston East Station Weekday Alightings	Trips Not Involving Wiehle - Reston East Station (Percent of Route Ridership)
924	223	60	90	73 (33%)
926	122	46	25	51 (42%)
929	215	64	95	56 (26%)
950	2,813	597	475	1,741 (62%)
951	93	37	47	9 (10%)
952	100	41	51	8 (8%)
980	1,572	771	801	0 (0%)
981	162	48	55	59 (36%)
983	517	162	134	296 (57%)
985	74	36	36	2 (3%)

*Note: Figures based on Fall 2014 ridechecks. Figures may not exactly match the totals in Table 7.1, which are based on farebox counts.

Twelve of the Fairfax Connector routes and Metrobus 5A serve the Herndon-Monroe Park and Ride, as shown in Table 7-6, with some routes providing limited circulation within contiguous residential neighborhoods. The park-and-ride lot offers more than 1,700 spaces with no daily fee. The lot utilization is high at 75 percent, and will continue to grow since this lot will also serve the Herndon Metrorail Station when it is completed as part of Silver Line Phase 2. This area's routes operate primarily along Herndon Parkway and Route 228. Land use along these routes consists of a mix of single family home developments, shopping plazas, commercial uses, and office developments.

Table 7-6: Herndon Park and Ride Lot Feeder Bus Services

Park and Ride Lot – Community Location	Routes	Spaces[6]	Utilization
Herndon-Monroe Park and Ride	924, 926, 927, 928, 929, 937, 950, 951, 952, 980, 981, 983	1,745	75%

[6] http://www.fairfaxcounty.gov/connector/parkandrides/

Service Productivity

Route productivity is presented in Table 7-7. These thirteen routes average 16.7 boardings per revenue-hour and 10.4 boardings per trip. Eight of the routes have boardings per revenue-hour higher than 10 passengers; these routes provide a mix of seven-day, all-day service and peak-only service. Route 937, which provides seven-day, all-day service, and Route 985, which provides weekday service, exhibit the lowest productivity for the service area with fewer than 6 boardings per revenue-hour and fewer than 4 boardings per-trip. Route 980, which provides weekday peak-only service, is the highest performing route with more than 64 boardings per revenue-hour and more than 25 boardings per trip.

Table 7-7: Herndon Bus Service Productivity

Agency	Route	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings/ Trip
FFC	924	Weekday Peak Period plus Evening	Feeder	15.0	10.2
FFC	926	Weekday Peak Period plus Evening	Feeder	7.3	5.5
FFC	927	Weekday Peak Period only	Circulator	16.4	8.3
FFC	928	Weekday Peak Period only	Feeder	2.2	1.3
FFC	929	Weekday Peak Period plus Evening	Feeder	8.7	9.1
FFC	937	Seven Day, all day service	Circulator	3.9	3.9
FFC	950	Seven Day, all day service	Feeder	31.3	26.2
FFC	951	Weekday	Distributor	11.5	3.9
FFC	952	Weekday	Distributor	9.1	3.9
FFC	980	Weekday Peak only	Feeder	64.8	25.1
FFC	981	Seven Day, all day service	Express	10.0	6.4
FFC	983	Seven Day, all day service	Express	10.0	8.4
FFC	985	Weekday	Distributor	5.6	3.0
MB	5A	Seven Day, all day service	Airport Express	23.2	21.0
		Herndon Service Area Average		16.7	10.4

Note: Productivity values are based on farebox data for September 2014 and service provided at that time, but the service characteristics described for the Herndon area routes reflects service current as of January 24, 2015.

Status of 2009 TDP Recommendations

Table 7-8 presents the current (2015) status of the implementation of the 2009 TDP recommended service modifications. This table provides a summary of changes implemented by route, indicating whether or not those changes are the same as the 2009 recommendations.

Table 7-8: Implementation Status of 2009 TDP Recommendations

Agency	Route	Name	2009 TDP Recommendation	2015 Implementation Status
FFC	924	Herndon Parkway – Dranesville Road	Extend to Wiehle-Reston East	Implemented
FFC	925	Reston South – Herndon	New route	Not yet implemented (Phase 2 service)
FFC	926	Worldgate – Dranesville Road	Extend to Wiehle-Reston East	Implemented
FFC	927	South Herndon	Extend to Wiehle-Reston East	Restructured
FFC	928	Herndon Parkway – Elden Street	Not in TDP	
FFC	929	Centreville Road – McNair Farms	Extend to Wiehle-Reston East and restructure	Implemented
FFC	937	Coppermine – Elden	Not in TDP	
FFC	950	Herndon – Reston Town Center – Wiehle	Truncate to Wiehle-Reston East; improve service	Implemented
FFC	951	Sunrise Valley	Eliminate/replace by 959	Restructured instead
FFC	952	Sunset Hills	Eliminate/replace by 959	Restructured instead
FFC	959	Sunrise/Sunset Circulator	New route	Not implemented; replaced by other services
FFC	980	Herndon Monroe – Wiehle	Reduce service/truncate to Wiehle-Reston East	Implemented
FFC	981	Dulles Airport – Wiehle	New route to serve Dulles Corridor	Implemented in 2012; truncated to Wiehle-Reston East with Silver Line opening
FFC	983	Dulles Airport – Udvar-Hazy – Wiehle	Not in TDP	
FFC	985	Dulles Discovery – Dulles Technology Corridor	Not in TDP	
MB	5A	DC – Dulles	Replace with 981	Tysons West*Park Transit Station stop removed

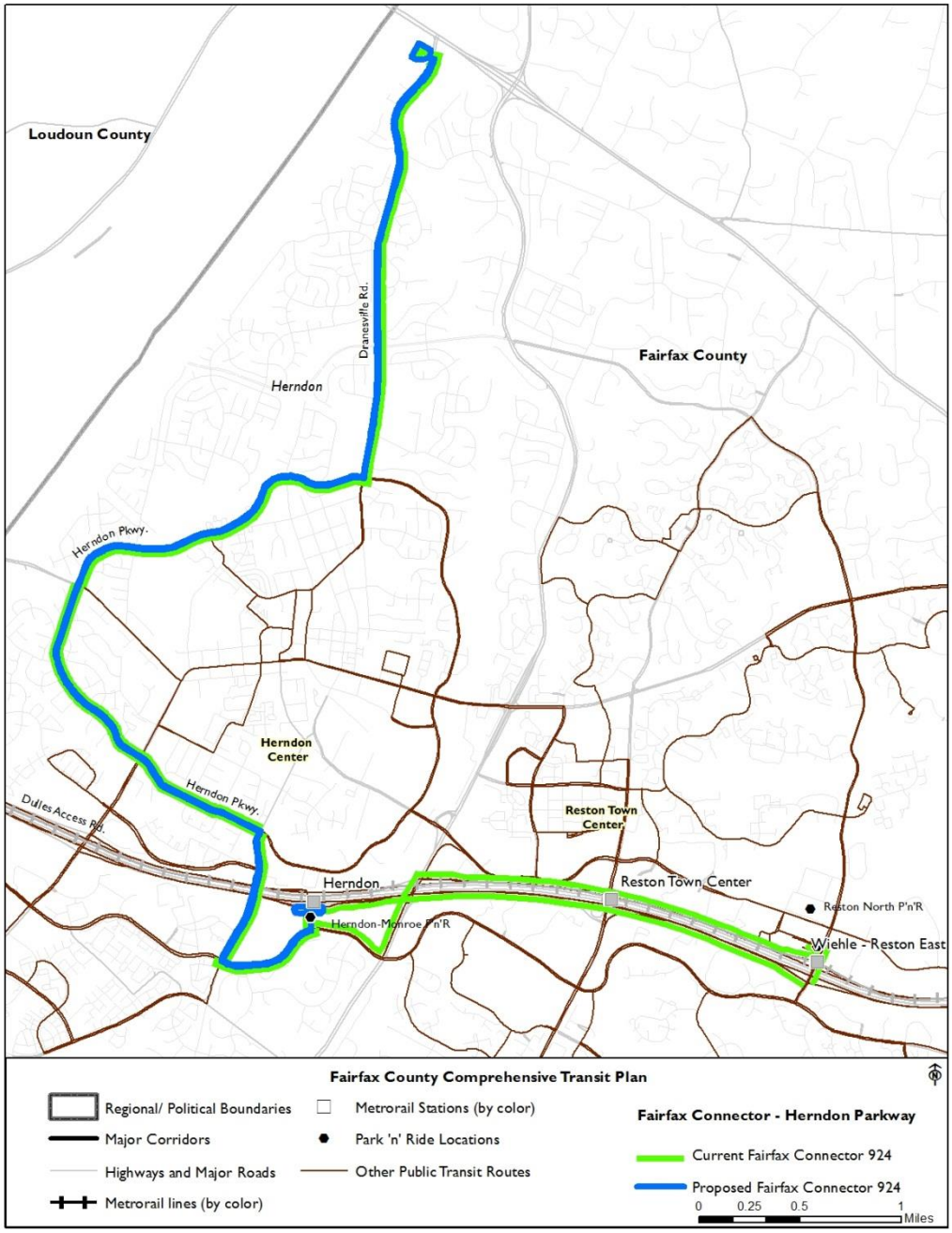
7.2.2. Recommendations for Existing Service

Among the Herndon feeder routes that are oriented toward commuters (924, 926, 927 and 929), the overall theme of the recommendations is to truncate service at the future Herndon Metrorail Station when Phase 2 of the Silver Line opens and use the hours saved to increase the level of service. This could include higher frequency service during peak periods and additional service in midday, evening and weekend periods. Each of these routes is discussed individually below.

Truncate and Improve Service on Route 924

Route 924 is currently paired with Route 926 to provide peak direction commuter service from residential areas of Herndon to the Silver Line, while the 926 provides reverse peak direction service to employment areas in Herndon. In the future, as shown in Figure 7.10, it is proposed that this pair of routes be separated and that Route 924 provide bidirectional service for its alignment on the west side of Herndon Parkway and Dranesville Road to the junction with VA 7. The alignment would stay the same as far as what is presently operated into the bus bays at Herndon-Monroe, the future south side of the Herndon Metrorail station. The route would terminate there instead of continuing to the Wiehle-Reston East Metrorail station.

Figure 7.10: Proposed Route 924



With the savings from the route cut back at Herndon-Monroe, the three buses now in service on the 924/926 pair would stay in service on the new bidirectional 924 to improve from a 30 minute to a 20 minute headway during peak hours. New off-peak service would be operated at a 60 minute headway for an initial period, improving to a 30 minute headway in the future if demand warrants.

Table 7-9: Route 924 Proposed Service Levels

		Route 924 (Initial)	Route 924 (Future)
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	5:15 AM – 10:00 PM	5:15 AM – 10:00 PM
	Saturday	7:00 AM – 8:00 PM	7:00 AM – 8:00 PM
Headway (minutes)	**Weekday Peak**	20	20
	Weekday Off-Peak	60	30
	Saturday	60	30

Restructure Route 927

It is recommended that Route 927 be realigned, as recommended in the 2009 TDP, so that it operates on Coppermine Road instead of Sunrise Valley and River Birch – this will allow it to serve the development on Coppermine more directly (it has no other service) and to save a few minutes of running time so that the cycle time could efficiently allow for a 30 minute headway throughout the peak period. Additionally, another route (revised Route 983) is now proposed to serve the segment of Sunrise Valley Drive that would be removed from the 927. The 927 alignment shown in Figure 7.11 should be implemented along with the changes to the Route 983. It is also proposed to restore midday and evening service on Route 927.

Although ridership on this route is not high, an improved service level should be operated when Silver Line Phase 2 opens to help develop transit demand in this area. Even with the realignment, it is unlikely that a 30 minute cycle time could be achieved. Thus the peak headway with two buses would be 17 or 18 minutes. During off-peak periods, a 30 minute headway would be operated.

Figure 7.11: Proposed Route 927

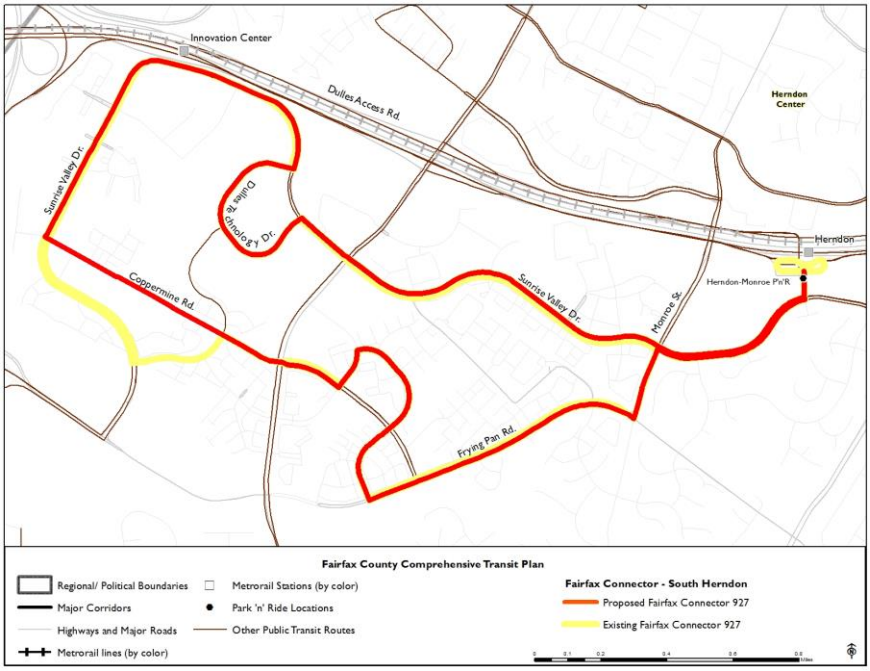


Table 7-10: Route 927 Proposed Service Levels

		Route 927
	Operator	Fairfax Connector
Span	**Weekday**	5:30 AM – 10:00 PM
	Saturday	7:00 AM – 8:00 PM
Headway (minutes)	**Weekday Peak**	17
	Weekday Off-Peak	30
	Saturday	25

Truncate and Improve service on Route 929

Route 929 currently connects areas to the east and west of Centreville Road south of the Town of Herndon to the Wiehle Ave Metrorail station via Herndon-Monroe. Once Silver Line Phase 2 opens, this route will be cut back to the Herndon Metrorail station. Prior to that time, with the completion of the extension of Air & Space Museum Parkway between Wall Road and EDS Drive, it is recommended that for morning service only, the route be realigned along this road segment instead of using Centreville Road between McLearen Road and Kinross Circle, as shown in Figure 7.12. In the afternoon, the route should continue to use the present alignment in this area to minimize difficult bus turning movements. One other minor adjustment is to have buses use Thomas Jefferson Drive between Coppermine and Frying Pan Road because the left turn onto Frying Pan has better visibility than the turn from Coppermine onto Frying Pan.

In the longer term, if the proposed Route 901 is implemented (see Centreville/Chantilly section), it is recommended for Route 929 to be removed from a portion of Centreville Road to avoid duplication, and instead to use McLearen Road, West Ox Road, and Monroe Street to connect the Kinross/Park

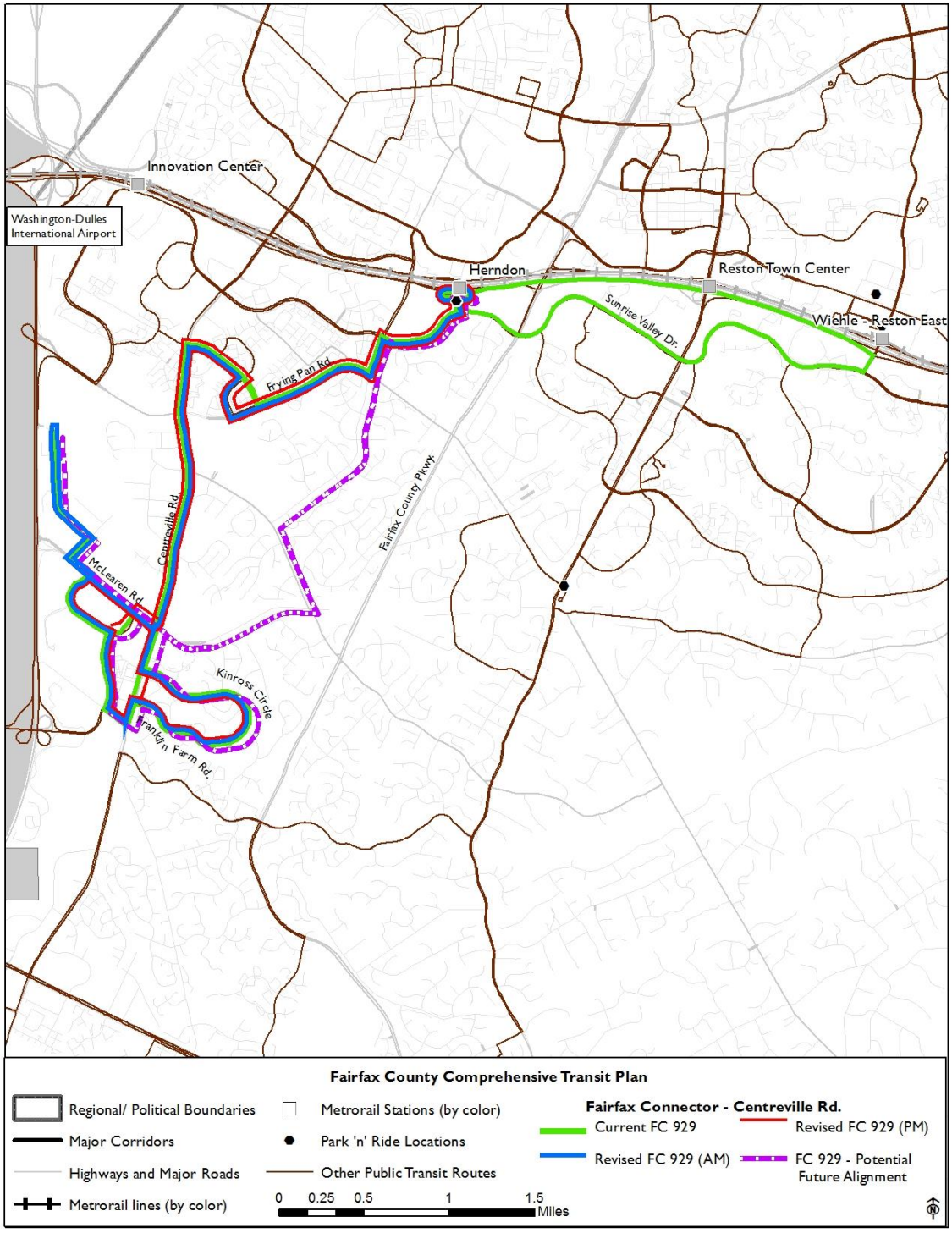
Center Road area with the Herndon Metrorail Station. This alignment is shown as a dashed line on Figure 7.12.

The current headway of Route 929 is roughly 30 minutes, though some trips are 35 to 40 minutes apart. When Silver Line Phase 2 opens, it is recommended to improve the headway to no more than every 20 minutes. In addition, midday and evening service should be offered and eventually Saturday service.

Table 7-11: Route 929 Proposed Service Levels

		Route 929
	Operator	Fairfax Connector
Span	**Weekday**	5:30 AM – 10:00 PM
	Saturday	7:00 AM – 8:00 PM
Headway (minutes)	**Weekday Peak**	18
	Weekday Off-Peak	30
	Saturday	30

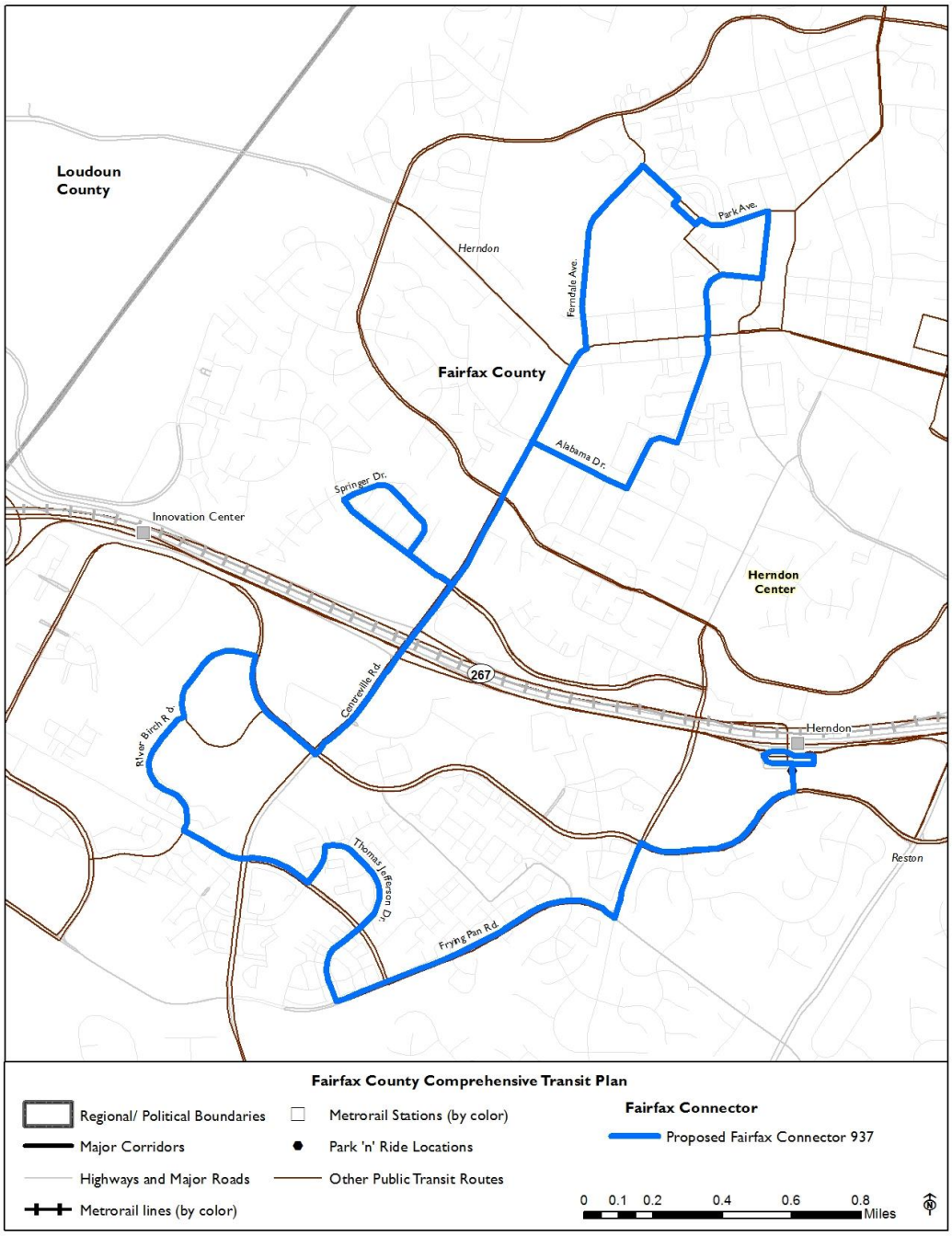
Figure 7.12: Proposed Route 929



Monitor Route 937

Route 937 was a brand new service introduced in July 2014 with the Silver Line opening. It will be substantially restructured in May 2015 to simplify and improve the service offered to various neighborhoods in Herndon. The new alignment as of May 2015 is shown in Figure 7.13. The CTP has no further recommendations for this route other than to monitor ridership and reliability.

Figure 7.13: Route 937



Restructure Route 950

Route 950 is currently the third highest ridership route in the Fairfax Connector system, behind only the 401/402 and Route 171. In addition to serving as a feeder to the Silver Line at the Wiehle-Reston East station, it provides essential local service in Reston and Herndon, serving the commercial centers of both communities. When Silver Line Phase 2 opens, it will no longer be necessary for the route to connect the Herndon-Monroe Park and Ride to the Wiehle Ave Metrorail Station, since the Park and Ride will have Silver Line access at the Herndon Metrorail Station.

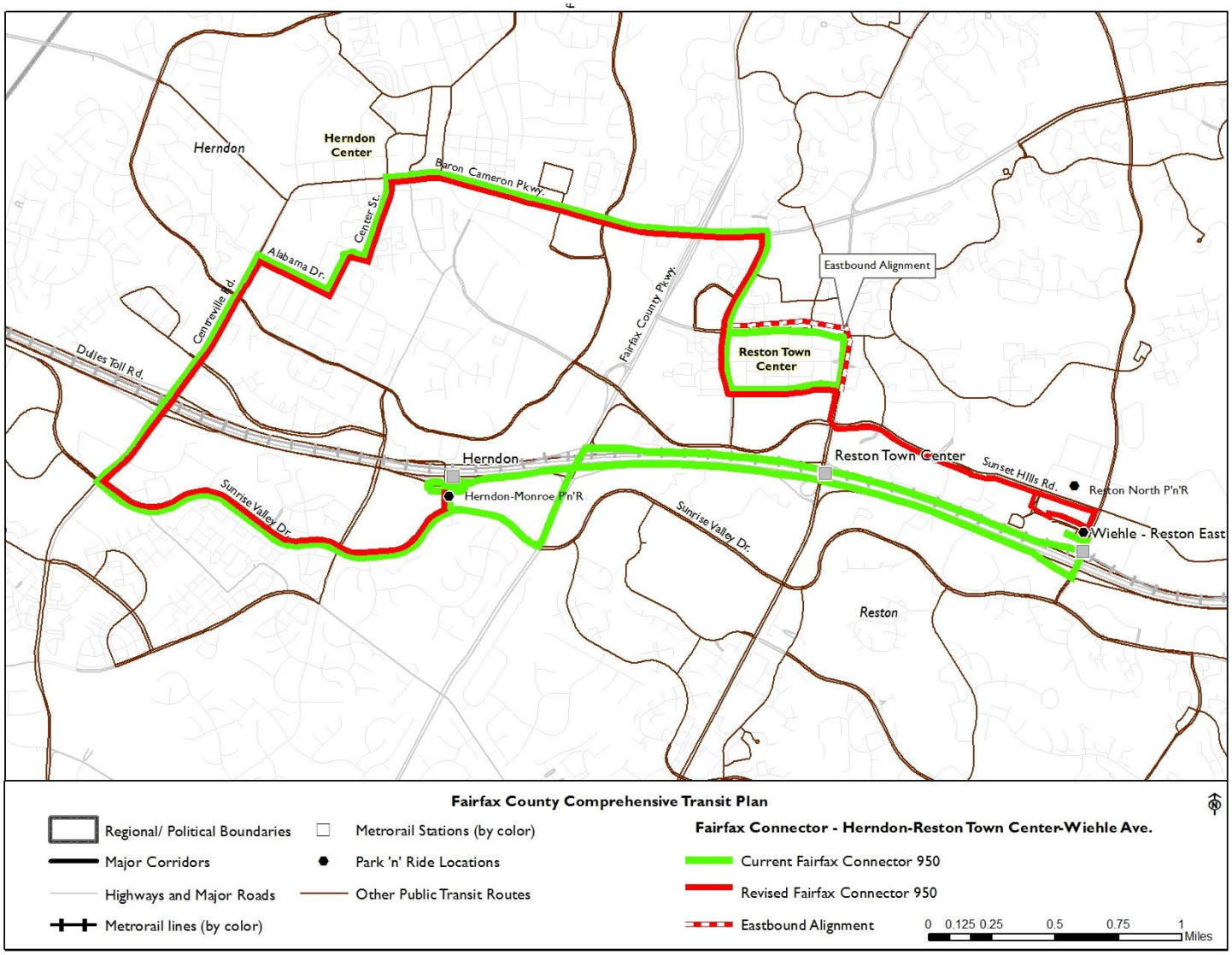
As shown in Figure 7.14, instead of simply truncating the route at the new Herndon station, the CTP proposes that the Route 950 maintain the connection to the Wiehle-Reston East station by absorbing the current Route 505, thereby extending 950 service from Reston Town Center transit station to Wiehle-Reston East Station. This way, riders in Reston and Herndon along the 950 alignment will have a quick and direct one-seat trip to the Silver Line. The route is not proposed to serve the new Reston Metrorail station, but would rather take the most direct route between Reston Town Center and Wiehle-Reston East station, as the 505 does today.

Route 950 currently offers 20 minute headways during peak periods and 25-30 minute headways at other times. It is recommended to upgrade this service to 15 minute peak headways and 20 minute headways in the midday period. Evening service would remain at 30 minute intervals. Midday service on Saturdays should also be upgraded to 20 minute headways from the current 30.

Table 7-12: Route 950 Proposed Service Level

		Route 950
	Operator	Fairfax Connector
Span	**Weekday**	4:00 AM – 1:30 AM
	Saturday	6:00 AM – 1:30 AM
	Sunday	6:00 AM – 1:30 AM
Headway (minutes)	**Weekday Peak**	15
	Weekday Mid-day	20
	Weekday Evening	30
	Saturday	20/30
	Sunday	30

Figure 7.14: Proposed Route 950

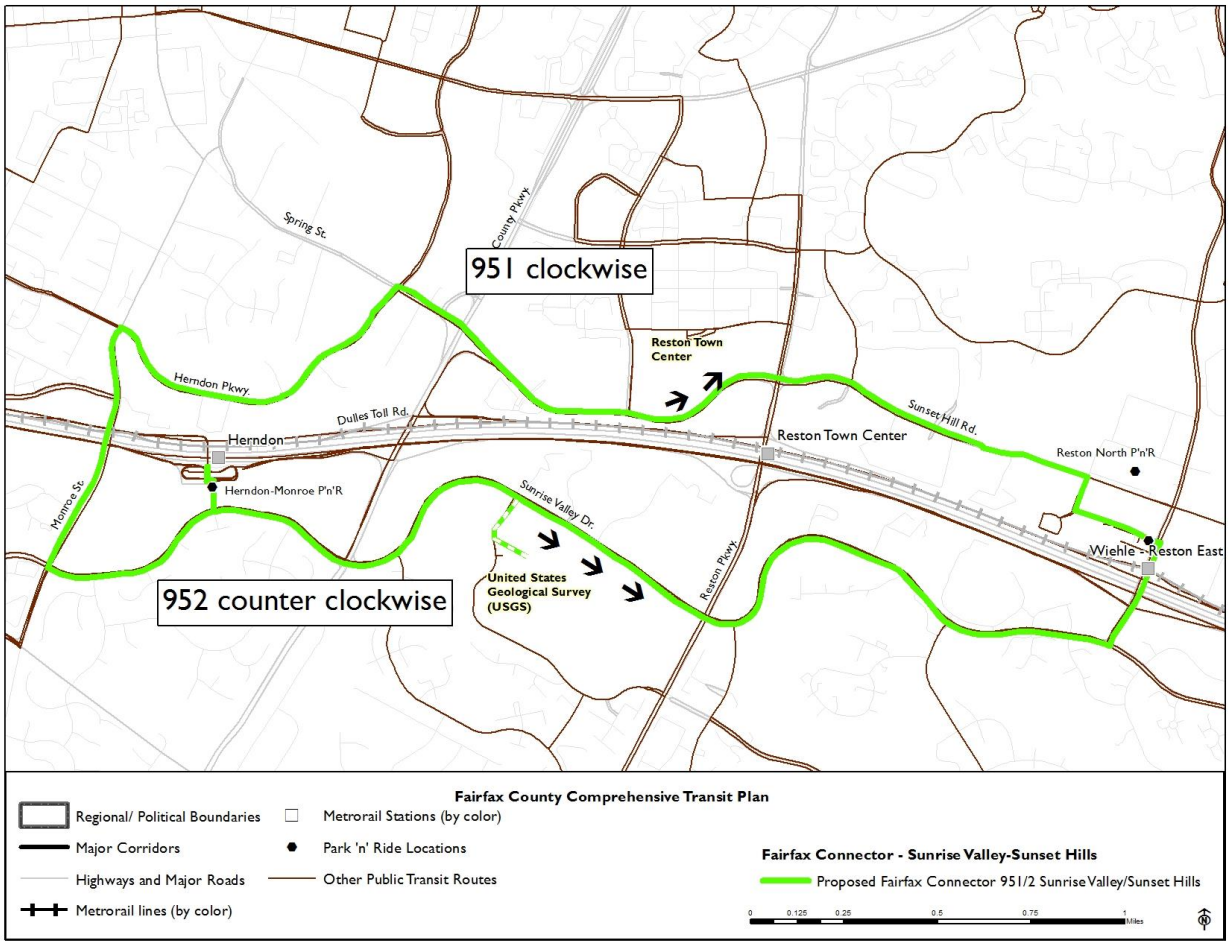


Combine 951 and 952 Into a Circulator Loop

The 2009 TDP had recommended a long circulator service on Sunrise Valley Drive and Sunset Hills Road (Route 959) that had first been proposed in the Wiehle Avenue/Reston Parkway Station Access Plan. That route extended from Hunter Mill Road in the east to Centreville Road in the west. During implementation planning, it was determined that breaking the long circulator into shorter segments would be more effective, and thus Route 507 was designed to cover the eastern end (from Hunter Mill Road to Wiehle - Reston East Ave Station), routes 951 and 952 the middle segment (from Wiehle – Reston East Station to Monroe Street), and Route 950 the westernmost segment.

Currently the 951 and 952 operate as independent routes in the morning peak period, as an interlined loop in the midday and evening, and a reverse-peak direction service interlined with Route 980 during the afternoon peak period. As shown in Figure 7.15, the recommendation in this CTP is to join the two routes together as a circulator loop along the current alignment. This route would serve the Wiehle – Reston East and Herndon Metrorail stations, as well as the Reston Metrorail Station from Sunset Hills Road. A diversion into the Reston station would also be possible from Sunset Valley Drive, though it is unclear whether there would be sufficient demand for that additional connection to justify the additional running time (since riders from the west could pick up the bus at Herndon and riders from the east could pick up the bus at Wiehle –Reston East).

Figure 7.15: Proposed Route 951/952



During peak periods, service would be operated in both directions with the 951 operating clockwise and the 952 operating counterclockwise. During off-peak periods, the route would operate as Route 951, the clockwise loop, as it effectively does today. For the period of the present CTP, this route would continue to operate only on weekdays. If demand increases significantly, Saturday service would be added in the future.

Table 7-13: Route 951/2 Proposed Service Levels

		Route 951 (Clockwise)	Route 952 (Counterclockwise)
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	5:30 AM – 10:00 PM	5:30 AM – 9:30 AM 3:30 PM – 7:00 PM
Headway (minutes)	**Weekday Peak**	25	25
	Weekday Off-Peak	40	--

Eliminate Dulles Toll Road Service; Restructure Service to Air & Space Museum

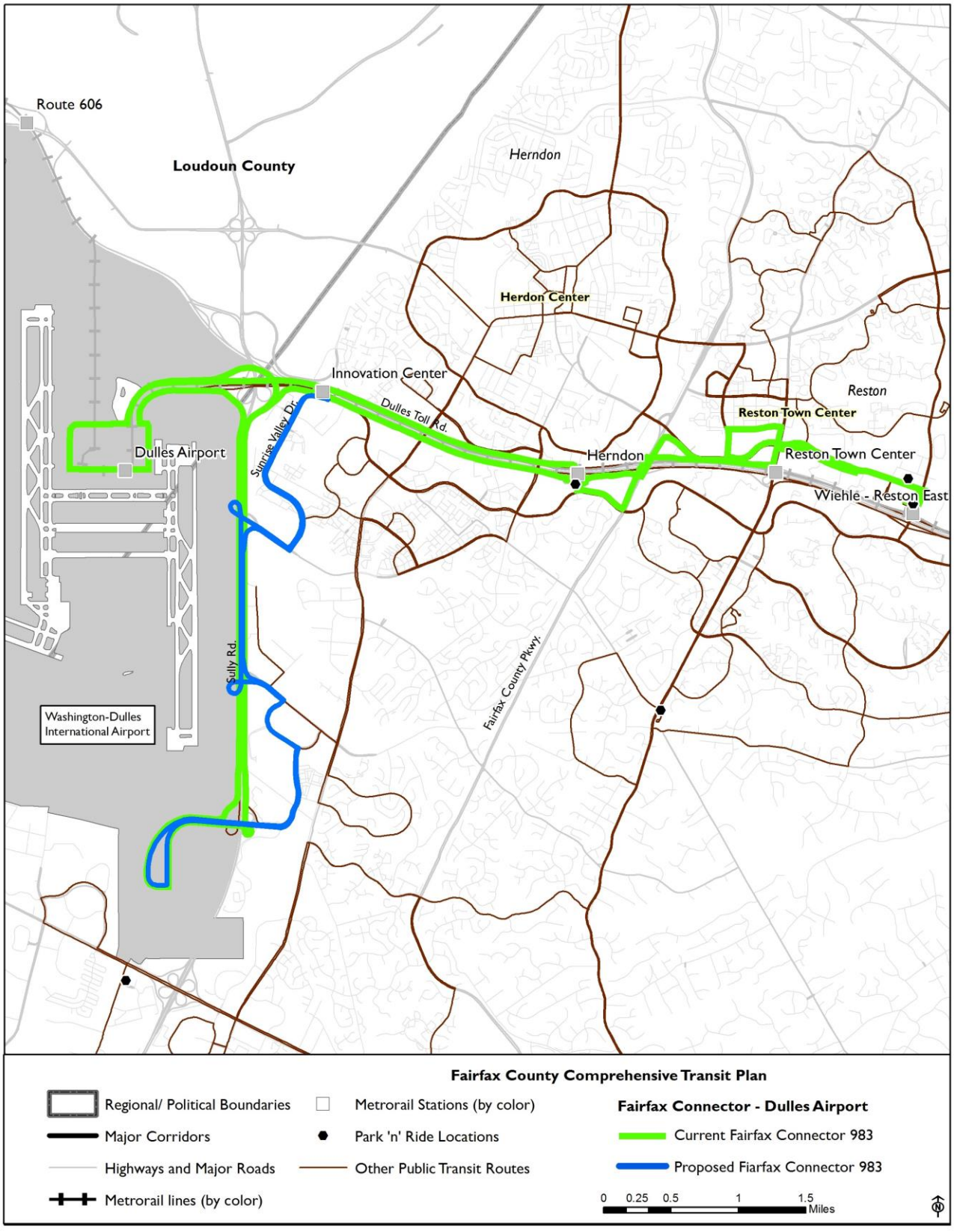
When Silver Line Phase 2 opens it will no longer be necessary to operate parallel bus service on the Dulles Toll Road. Thus, Metrobus 5A and Connector routes 980 and 981 will be discontinued. Route 983, which is an extension of Route 981 between Dulles Airport and the Udvar-Hazy Air & Space Museum, has proven to be a popular service and should be continued. The other service in this area, Route 985, the reverse-peak companion to Route 585 serving the Dulles Discovery campus on Wall Road, would also be discontinued, since Route 585 is proposed to be extended and operated in both directions (see Reston section). To maintain service to Dulles Discovery and Udvar-Hazy, a restructured Route 983 is proposed.

As shown in Figure 7.16, the restructured Route 983 would originate at the Innovation Center Metrorail Station and serve Sunrise Valley Drive to reach Sully Road (VA 28). Rather than running directly to the museum, the route would use McLearen Road, EDS Drive and Air & Space Museum Parkway to serve Dulles Discovery and then the museum. It would return north to the Metrorail station along the same alignment.

Table 7-14: Route 983 Proposed Service Levels

		Route 983
	Operator	Fairfax Connector
Span	**Weekday**	6:30 AM – 8:00 PM
	Saturday	9:00 AM – 7:30 PM
	Sunday	9:00 AM – 7:30 PM
Headway (minutes)	**Weekday Peak**	20
	Weekday Mid-day	30
	Saturday	30
	Sunday	30

Figure 7.16: Proposed Route 983



7.2.3. Recommendations for New Service

Replace Proposed 925 with Cross-County Route

The 2009 TDP recommended a new Route 925 feeder service, to be implemented with Phase 2 of the Silver Line, that would connect Reston South Park-and-Ride with the Herndon Metrorail Station. It would serve part of the Route 553 alignment (west of Reston Parkway) allowing that route to be streamlined, and also offer new neighborhood access for the area west of Fairfax County Parkway and north of West Ox Road. This CTP recommends instead that Route 553 be preserved as is, and that a new cross-county route from Fair Oaks to Herndon serve the New Parkland Drive neighborhood (see Route 607 in Centreville/Chantilly section). These recommendations would make Route 925 superfluous, and thus it is not recommended to be carried forward from the last TDP into this CTP.

Convert Route 926 to Herndon Downtown Circulator

As mentioned above, Route 926 currently provides reverse-peak service to commercial areas in Herndon as the continuation of peak-direction Route 924 service. With the opening of the new Metrorail station in Herndon at the location of the current Herndon-Monroe park-and-ride facility, the resources employed for the current Route 926 would be better used to provide a quick connection between the Metrorail station and a broader set of employment destinations in Herndon.

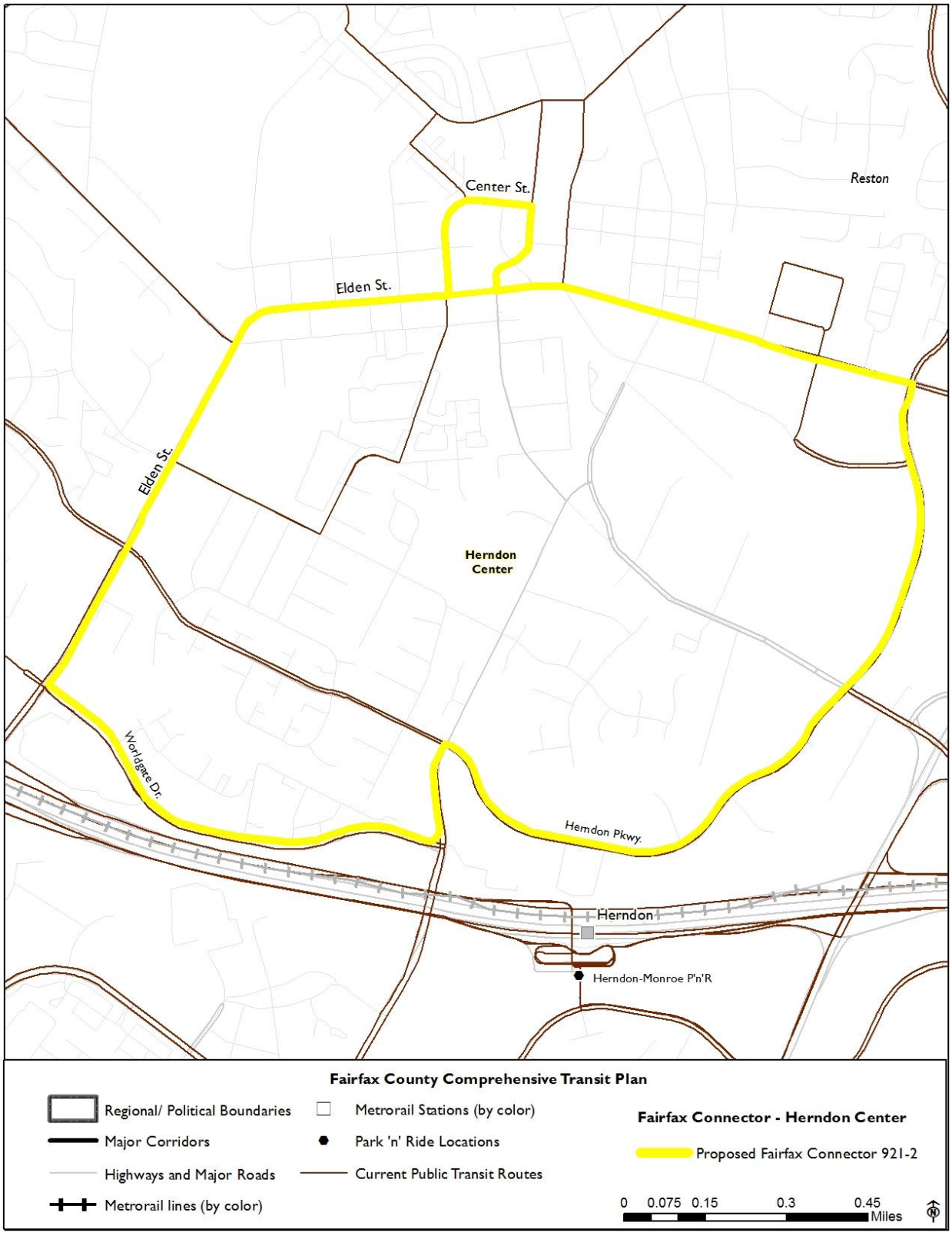
As shown in Figure 7.17, the proposed new service would be a bidirectional circulator loop that serves the north side of the Herndon Metrorail station. In the clockwise direction, the route would serve employment on Worldgate Drive and then head into the commercial center of Herndon on Elden Street. It would loop through the historic downtown on Center and Station streets, returning to Elden Street. Finally the route would return to the station via the southeastern quadrant of Herndon Parkway. The counterclockwise direction would trace the same path, except that it would traverse Center and Station streets in the same direction as the clockwise loop. The tentative numbering for this route pair is 921 and 922.

The round-trip running time of these routes would be between 20 and 25 minutes depending on the time of day. Combined with service on the 950 and the 937, there would be very frequent connections between the Herndon Metrorail station and the downtown area of Herndon.

Table 7-15: Route 921/2 Proposed Service Levels

		Route 921 (Counterclockwise)	Route 922 (Clockwise)
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	5:15 AM – 11:00 PM	5:15 AM – 11:00 PM
	Saturday	6:30 AM – 11:00 PM	6:30 AM – 11:00 PM
Headway (minutes)	**Weekday Peak**	30	30
	Weekday Off-Peak	25	25
	Saturday	25	25

Figure 7.17: Proposed Route 921/922



Create New Route 954 for Additional Coverage in Herndon

The current route structure provides good access to the regional transit system for most of the densely developed areas in the Town of Herndon. There is one residential area, however, that has high transit propensity but no direct access to a bus route. This neighborhood, at the eastern edge of Herndon north of the Herndon Centennial Golf Course and surrounding Sadlers Wells Drive and Clearview Elementary School, is well over a half mile from Route 924 (on Herndon Parkway) due to poor street connectivity.

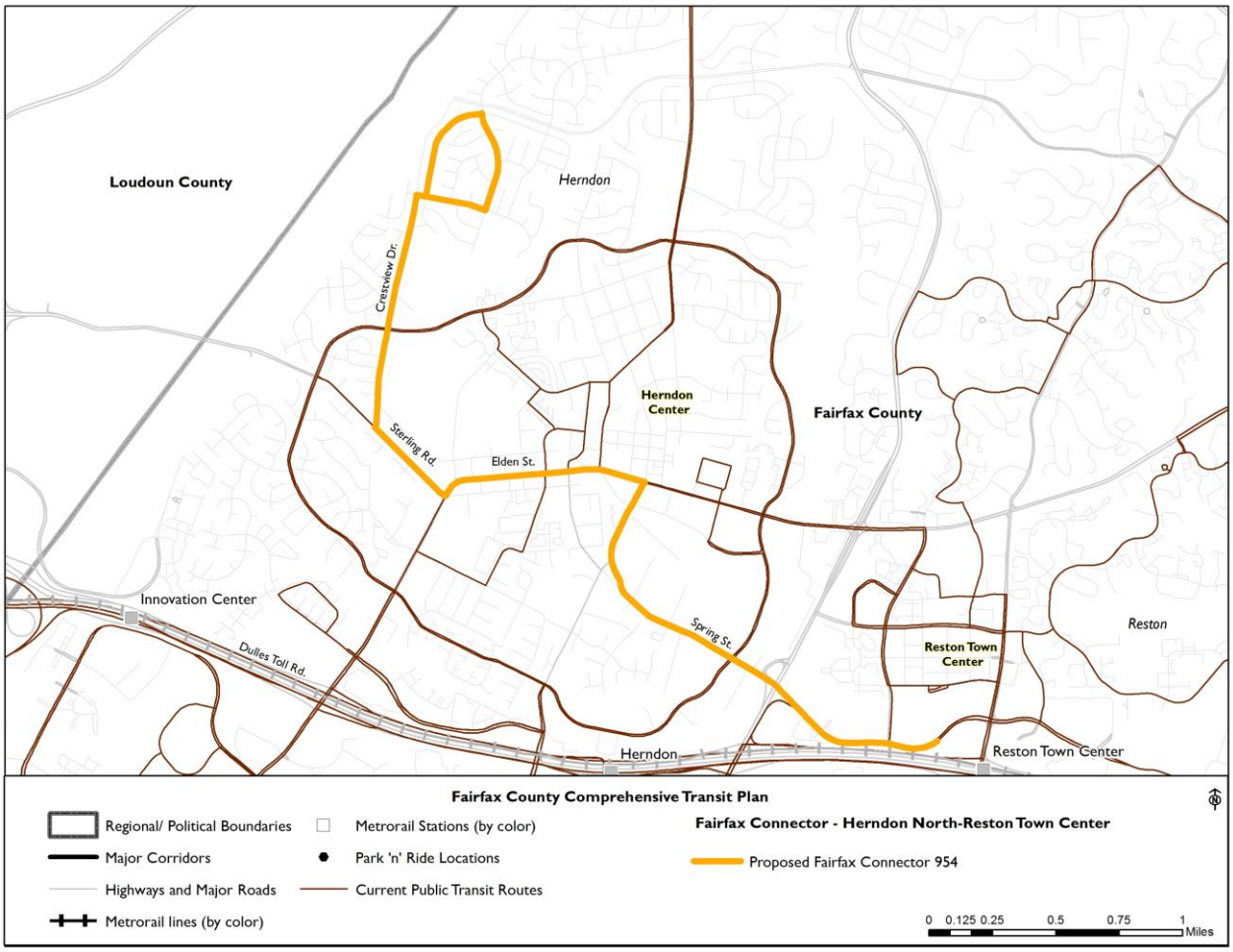
As shown in Figure 7.18, a new route, tentatively numbered 954, is proposed to circulate through this neighborhood on Sadlers Wells and Fantasia and then use Crestview and Sterling to reach the center of Herndon. Opposite the golf course on Crestview just north of Herndon Parkway is a neighborhood of townhomes that would likely generate ridership as well. From the center of Herndon, the route would travel via Spring Street to the Reston Metrorail Station. Spring Street currently has no bus service.

This route would be implemented in conjunction with the opening of Silver Line Phase 2. For the initial service period, it would operate only during peak periods at a 24 minute headway. If demand justifies additional service, midday and evening service could be provided in the more distant future. The service would operate in both directions in both peak periods.

Table 7-16: Route 954 Proposed Service Levels

		Route 954
	Operator	Fairfax Connector
Span	**Weekday AM**	5:30 AM – 9:00 AM
	Weekday PM	3:30 PM – 7:00 PM
Headway (minutes)	**Weekday Peak**	24
	Weekday Off-Peak	Future

Figure 7.18: Proposed Route 954



7.2.4. Herndon Area Route Recommendations Summary

Table 7-17 provides a summary of the service enhancement recommendations for the Herndon area.

Table 7-17: Herndon Route Recommendations

Route	Improvement	Service Purpose
Existing Routes		
924	Truncate to Herndon Station/improve frequency	Enhance feeder service from Dranesville Road corridor
926	Eliminate	Replace with new 921/2
927	Restructure/enhance service	Distributor service in south Herndon
929	Truncate to Herndon Station/improve frequency	Enhance feeder/distributor service to/from Centreville Road corridor
937	Monitor service	
950	Absorb 505/truncate to Herndon Station/improve frequency	Enhance major Reston-Herndon connection
951	Convert to circulator loop	Enhance connectivity
952	Convert to circulator loop	Enhance connectivity
980	Eliminate	Replaced by Silver Line
981	Eliminate	Replaced by Silver Line
983	Restructure	Connection to Udvar-Hazy and Dulles Discovery
985	Eliminate	Replaced by extension of Route 585
5A	Eliminate	Replaced by Silver Line
Route Proposals		
921/922	New Herndon Circulator	Connection between new Metrorail station and downtown Herndon
954	New coverage	Connection between community with poor transit access and Metrorail

7.3.1. Background

Service Area

The Reston Service Area is mostly within the Hunter Mill Magisterial District in northwestern Fairfax County, but has some routes that touch the Dranesville and Sully Districts. Fairfax Connector provides bus service within this region in Reston, the Town of Herndon, and in a portion of northern Chantilly. As shown in Figure 7.19 rough service area boundaries include Route 7 to the north, Fairfax County Parkway (VA-286) to the west, Lawyers Road (VA-673) to the south, and Hunter Mill Road (VA-674) to the east. Major bisecting corridors include Reston Parkway (VA- 602) and Wiehle Avenue (VA-828), which run from north to south, and the Dulles Access Road (VA-267), which carries east-west traffic from Tysons Corner to Dulles Airport. Wiehle-Reston East Metrorail Station, the current Silver Line terminus, is located along the Dulles Toll Road in the eastern portion of the Reston Service Area.

Current Services

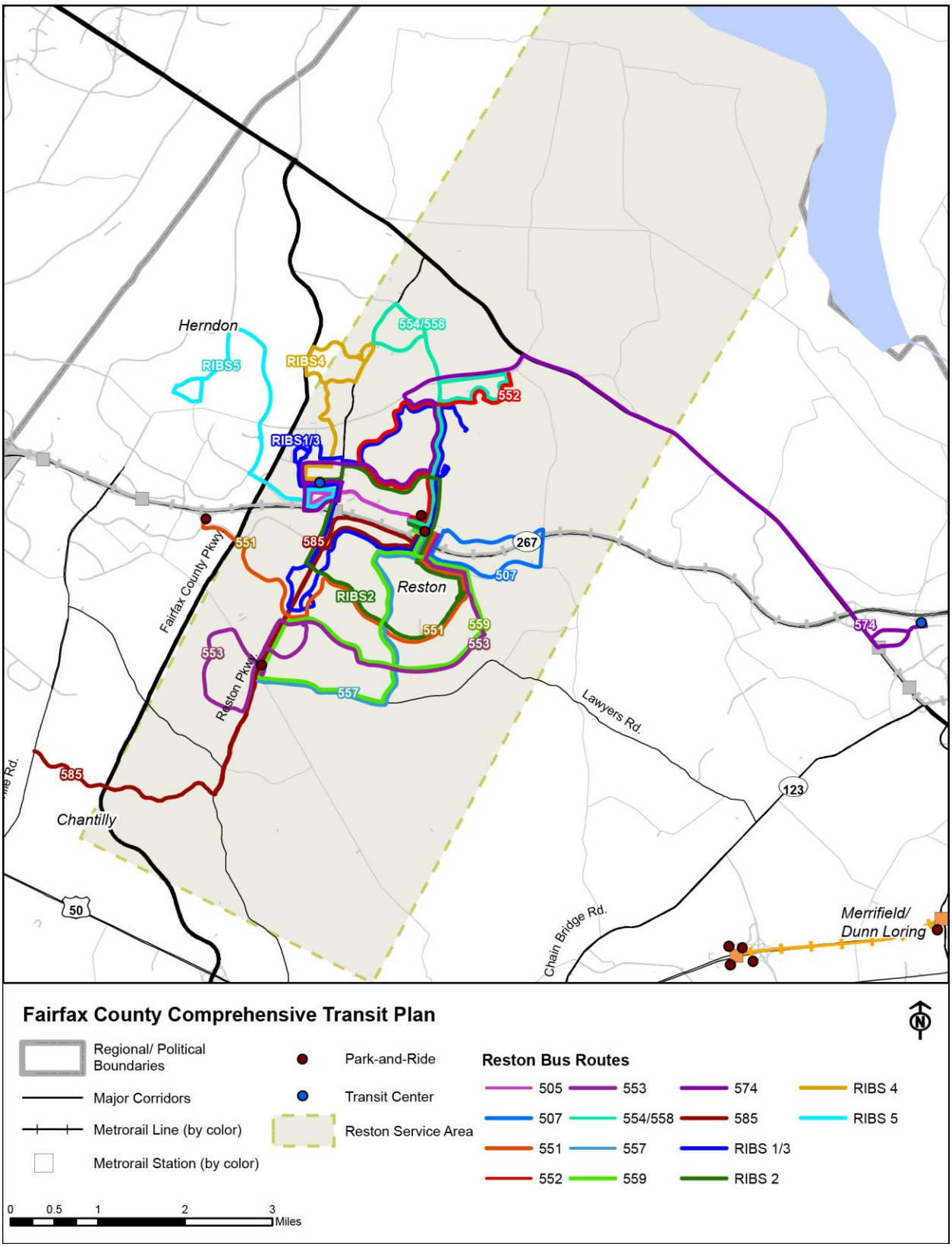
Seventeen Fairfax Connector bus routes, listed in Table 7-18, operate within the Reston Service Area. With the exception of RIBS 5, all routes connect to the Metrorail Silver Line. Route 574 connects at Spring Hill Station, and all other routes link to the Wiehle-Reston East Station. Route 599 does not serve Wiehle-Reston East Station directly, but serves the Reston North Park-and-Ride lot, which is only a short walk from the station. Each of the routes serving the Wiehle-Reston East station was diverted from its original terminus in 2014 to take advantage of the arrival of Metrorail service in Reston. As outlined in Table 7-18, the majority of Reston Service Area routes provide seven day, all day service, with the following exceptions:

- Routes 507 and 585 provide weekday only service; and
- Routes 552, 553, 554, 557, and 599 provide peak period service on weekdays only.

Fairfax Connector Route 507 provides service from the Wiehle-Reston East Metrorail station to Hunter Mill Road via Sunrise Valley Drive and Sunset Hills Road, and Route 585 from Wiehle-Reston East to Franklin Farm via Reston Parkway. Route 505 is s short feeder route connecting the Reston Town Center and the Wiehle-Reston East Metrorail station, and Route 551provides a connection between the Herndon-Monroe Park and Ride and the Wiehle-Reston East station via Glade Drive, Hunters Woods Village Center, and South Lakes Village Center. Route 574 provides service along Route 7, Leesburg Pike, connecting the Reston Town Center Transit Station with the Silver Line at the Spring Hill Station and to Tysons West*Park Transit Station.

Connecting the northern portion of the region with the Wiehle-Reston East station, Routes 552 and 554 providing peak-only service north from Wiehle-Reston East station to Lake Anne and Lake Fairfax Drive (Route 552) and to Reston Parkway via Baron Cameron Park and Ride (Route 554). Route 558 covers the majority of the 552 and 554 during weekday midday and evening periods and on weekends, without the diversion to Lake Anne Village Center along North Shore Drive. Routes 553, 557, and 559 run in a series to cover southern Reston, with Routes 553 and 557 providing peak only service to the Reston South Park and Ride along Soapstone Drive and Lawyers Road (557) and along Twin Branches Road, Glade Drive and Viking Drive (553). Route 559 covers the majority of the 553 and 557 during weekday midday and evening periods and on weekends, without the 553's loop on Viking Drive and Pinecrest Road.

Figure 7.19: Reston Service Area-Existing Service



Route 599 connects Reston to Pentagon and Crystal City via an express alignment, and has a higher express fare which is intended to pay for all of the operating expenses of the route. The County has considered eliminating this route at various times, but has preserved it because of the strong advocacy of the 599 riders.

This area of the County is also served by five Reston Internal Bus System, or RIBS, routes. Altogether, these five routes provide significant local service in the Reston area, connecting various communities within Reston with, depending on the route, the Reston Town Center Transit Station, Herndon-Monroe Park and Ride, and the Wiehle-Reston East Metrorail station. RIBS 5 connects the Reston Town Center to Herndon, and RIBS 4, Reston Town Center – North Point, has a slightly different routing during the peak than off-peak service. RIBS 2, 4, and 5 are slated to be restructured in May 2015.

Of the routes operating seven days per week, Routes 505, 551, and each of the RIBS routes operate on headways ranging from 20-30 minutes during the week. Routes 558, 559, and 574 each run on schedules with headways ranging from 30-40 minutes during the week. Weekday service on seven-day routes begins as early as 4:30 AM and generally ends between10:30 PM and, in the case of most routes, 1:00 AM. On weekends, the headways for these services, which often begin slightly later and ends slightly earlier, generally remain the same, with the exception of the RIBS routes, which run on an hour-long headway at times on Sundays.

Weekday only service on Routes 507 and 585 begins at 5:00 AM and ends at about 9 PM. Route 507's headway ranges from 20 to 30 minutes; Route 585's headway ranges from 20 minutes to one hour. Each of the four routes that operate in the weekday peak period only commences service between 5:00 and 5:40 AM and ends between 7:20 and 7:45 PM, running on a consistent headway of 18-20 minutes during peak periods.

Routes 551, RIBS 1, RIBS 2, and RIBS 3 each have the highest average weekday boardings, as reported for September 2014. In contrast, with less than 100 average boardings each, Routes 507 and 559 are the lowest ridership routes.

Table 7-18: Reston Connector Bus Services

Route	Name	District	Metrorail Station Served	Average Weekday Boardings
505	Reston Town Center – Wiehle-Reston East	Hunter Mill	Wiehle - Reston East – Silver	**463**
507	Sunrise Valley - Sunset Hills – weekday only	Hunter Mill	Wiehle - Reston East – Silver	**90**
551	Reston South - Glade - South Lakes	Hunter Mill	Wiehle - Reston East – Silver	**553**
552	North Shore - Lake Fairfax – peak only	Hunter Mill	Wiehle - Reston East – Silver	**160**
553	Reston South - Viking – Pinecrest – peak only	Hunter Mill	Wiehle - Reston East – Silver	**130**
554	Wiehle-Reston East - Center Harbor – peak only	Hunter Mill	Wiehle - Reston East – Silver	**179**
557	Reston South – Soapstone – peak only	Hunter Mill	Wiehle - Reston East – Silver	**134**
558	Center Harbor - Lake Fairfax	Hunter Mill	Wiehle - Reston East - Silver	**36**
559	Reston South - Glade – Soapstone	Hunter Mill	Wiehle - Reston East - Silver	**61**
574	Reston Town Center – Tysons	Dranesville, Hunter Mill	Spring Hill - Silver	**381**
585	Franklin Farm - Reston South - Wiehle-Reston East – weekday only	Hunter Mill, Sully	Wiehle - Reston East - Silver	**267**
599	Reston North – Pentagon/Crystal City	Hunter Mill	Pentagon - Blue/Yellow	**248**
RIBS 1	Lake Anne - Hunter Woods	Hunter Mill	Wiehle - Reston East - Silver	**504**
RIBS 2	South Lakes Drive	Hunter Mill	Wiehle - Reston East - Silver	**528**
RIBS 3	Hunters Woods - Lake Anne	Hunter Mill	Wiehle - Reston East - Silver	**580**
RIBS 4	North Point	Hunter Mill	Wiehle - Reston East - Silver	**186**
RIBS 5	Herndon	Dranesville, Hunter Mill	-	**164**
Total Weekday Passenger Boardings				**4,664**

Table 7-19 shows how the bus routes in Reston relate to the Metrorail system and the degree to which they serve as feeder routes. The ridership totals in this table may not match those shown in the previous table because the figures in the first table represent the monthly average from farebox counts, while the figures in the second one come from a single day count from the ridecheck data collection. Routes 505, 507, 55x series (other than Route 551), and Route 585, serve almost exclusively as feeders to the Silver Line. Route 551 overlaps almost completely with the current RIBS 2 (although that will change with the May 2015 service change) and thus carries a significant amount of local traffic in the southern part of Reston. Route 574 carries a significant amount of local traffic within Reston as well as to destination in Tysons. Finally, the vast majority of trips on the RIBS routes do not involve transfers to the Silver Line, as these routes have always been oriented toward serving local trips within Reston.

Table 7-19: Metrorail Station Passenger Activity

Route	Total Weekday Boardings	Metrorail Station Weekday Boardings	Metrorail Station Weekday Alightings	Trips Not Involving Metrorail (Percent of Route Ridership)
505	529	246	237	46 (9%)
507	88	54	32	2 (2%)
551	578	109	238	231 (40%)
552	146	73	67	6 (4%)
553	149	74	65	10 (7%)
554	194	93	96	5 (3%)
557	142	95	45	2 (1%)
558	43	21	19	3 (7%)
559	28	17	7	4 (14%)
574	373	141	53	179 (48%)
585	249	91	143	15 (6%)
RIBS 1	524	9	50	465 (89%)
RIBS 2	595	110	36	449 (75%)
RIBS 3	602	54	53	495 (82%)
RIBS 4	173	28	40	105 (61%)

Service Productivity

Route productivity is presented in Table 7-20. The 17 routes serving this region average 11.2 boardings per revenue hour and 7.6 boardings per trip. Boardings per revenue hour is perhaps the best measure of productivity. Routes 558 and 559, each seven day off-peak circulator services, are the lowest performers in this regard, with only 3.5 and 3.3 boardings per revenue hour. This performance is understandable given that they are brand new routes and operate only at off-peak times. At 19 boardings per hour, Route 505, a seven day all day service, has the highest measure for boardings per revenue hour. Route 599, the Reston-Pentagon express, has the highest number of boardings per trip, at nearly 18.

Table 7-20: Reston Bus Service Productivity

Route	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings/ Trip
505	Seven Day, all day service	Feeder	19.0	3.4
507	Weekday	Feeder	5.3	2.1
551	Seven Day, all day service	Feeder	10.6	5.4
552	Weekday Peak Period only	Feeder	11.9	6.9
553	Weekday Peak Period only	Feeder	9.8	6.2
554	Weekday Peak Period only	Feeder	13.5	7.7
557	Weekday Peak Period only	Feeder	14.8	6.0
558	Seven Day, all day service	Circulator	3.5	1.9
559	Seven Day, all day service	Circulator	3.3	2.6
574	Seven Day, all day service	Local	7.4	5.0
585	Weekday	Feeder	13.7	8.8
599	Weekday Peak Period only	Express	14.6	17.7
RIBS 1	Seven Day, all day service	Circulator	14.0	13.9
RIBS 2	Seven Day, all day service	Circulator	14.8	14.6
RIBS 3	Seven Day, all day service	Circulator	16.3	16.0
RIBS 4	Seven Day, all day service	Circulator	8.2	4.9
RIBS 5	Seven Day, all day service	Circulator	9.6	6.6
Reston Service Area Average			11.2	7.6

Note: Productivity values based on farebox data for September 2014 and service provided at that time, while the service characteristics described for the Reston area routes reflects service current as of January 24, 2015.

Status of 2009 TDP Recommendations

Table 7-21 presents the current (2015) status of the implementation of the 2009 TDP recommended service modifications. This table provides a summary of Changes implemented by route, indicating whether or not those changes are the same as the 2009 recommendations.

Table 7-21: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
505	Reston Town Center - Wiehle	Eliminate with Silver Line opening	Changed into RTC – Wiehle shuttle
507	Sunrise Valley - Sunset Hills	Part of 959 Circulator	Implemented as standalone smaller loop
551	Reston South - Glade - South Lakes	Eliminate with Silver Line opening	Preserved and expanded
552	North Shore - Lake Fairfax	Truncate to Wiehle/Reston East; improve service	Implemented
553	Reston South - Viking - Pinecrest	Truncate to Wiehle/Reston East; improve service	Implemented but with altered alignment
554	Wiehle Avenue - Center Harbor	Truncate to Wiehle/Reston East; improve service	Implemented
557	Reston South - Soapstone	Truncate to Wiehle/Reston East; improve service	Implemented but with altered alignment
558	Center Harbor - Lake Fairfax	Not in TDP	Part of post-TDP initiative to expand off-peak service
559	Reston South - Glade - Soapstone	Not in TDP	Part of post-TDP initiative to expand off-peak service
574	Reston Town Center - Tysons	Adjust routing; improve service	Implemented but with different routing in Tysons
585	Franklin Farm - Reston South - Wiehle-Reston East	Restructure/extend to Dulles Discovery	Implemented
595/7	Reston-Pentagon Express	Eliminate	Combined into 599 route
RIBS 1	Lake Anne - Hunter Woods	Adjust alignment with Phase 2 Silver Line	N/A
RIBS 2	South Lakes Drive	Adjust alignment with Phase 2 Silver Line	N/A
RIBS 3	Hunters Woods - Lake Anne	Adjust alignment with Phase 2 Silver Line	N/A
RIBS 4	North Point	Improve frequency	Restructured
RIBS 5	Herndon	Not in TDP	N/A

7.3.2. Recommendations for Existing Service

Monitor Service on Most Reston Feeder Routes

As mentioned above, rail feeder service in Reston was extensively restructured in July 2014 in response to the Silver Line opening, and further adjustments were made to the service effective January 2015 and May 2015. For most of the Reston feeder routes, no adjustment in service will be necessary to accommodate Phase 2 of the Silver Line. Thus, the recommendation for the group of routes listed below is simply to monitor ridership and operations (reliability) and adjust service levels as necessary. If ridership on the off-peak routes (558 and 559) does not improve after two years of service over its current levels, consideration should be given to reducing or eliminating them.

- Route 507
- Route 551
- Route 553
- Route 554
- Route 556
- Route 557
- Route 558
- Route 559

Route 556, which will be implemented in May 2015, should be monitored just as with the other Reston feeder routes listed above. The new alignment for Route 556 is shown in Figure 7.20. Route 551 is planned to receive a service upgrade in May 2015 in conjunction with the RIBS 2 restructuring. Route 505 is not included in this list because it is recommended to be absorbed into a restructured 950 with the opening of Silver Line Phase 2 (see Herndon section for more details). Until then Route 505 should be monitored for ridership and reliability. A composite map of all of these services with their Phase 2 alignments is shown in Figure 7.21.

Figure 7.20: Route 556

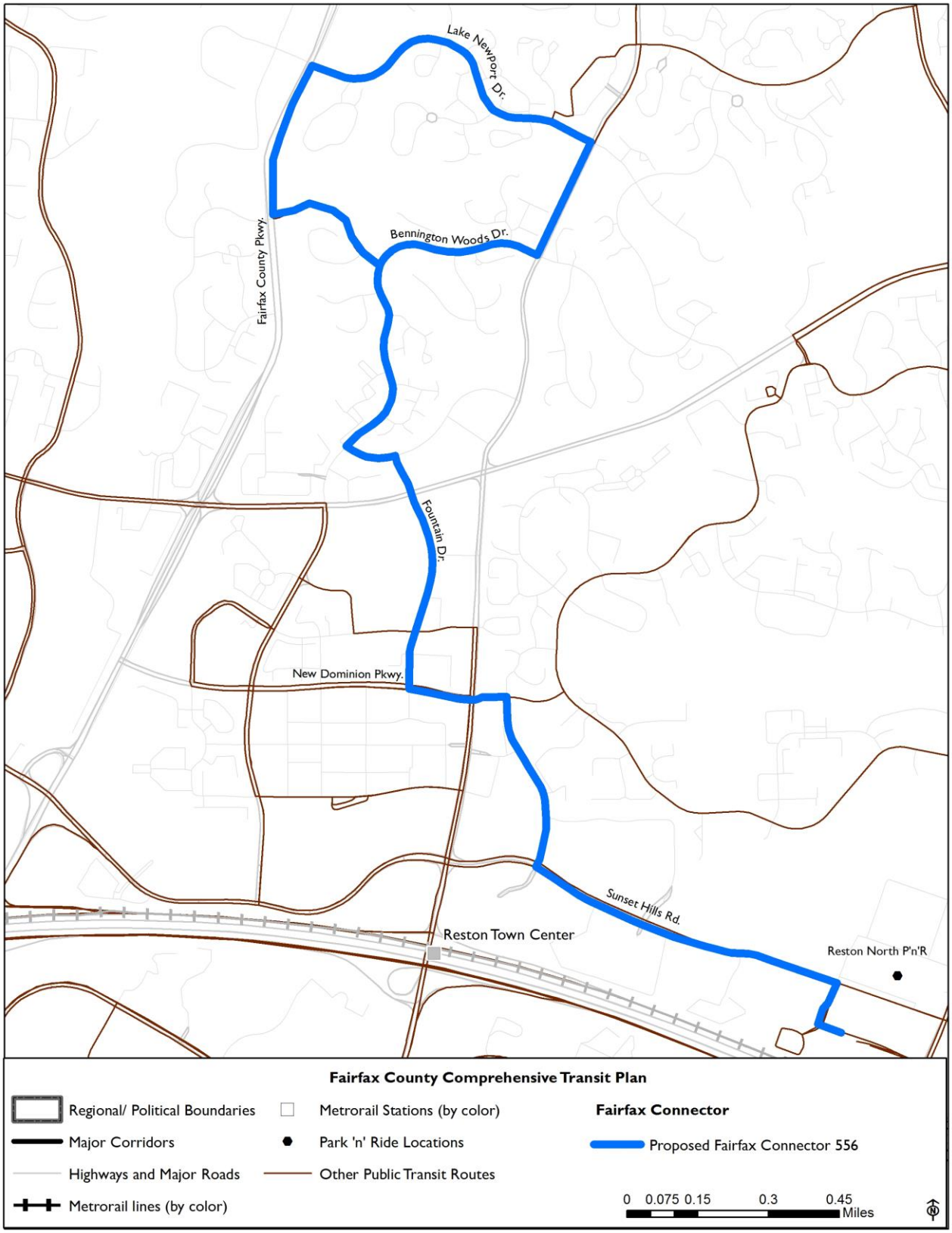
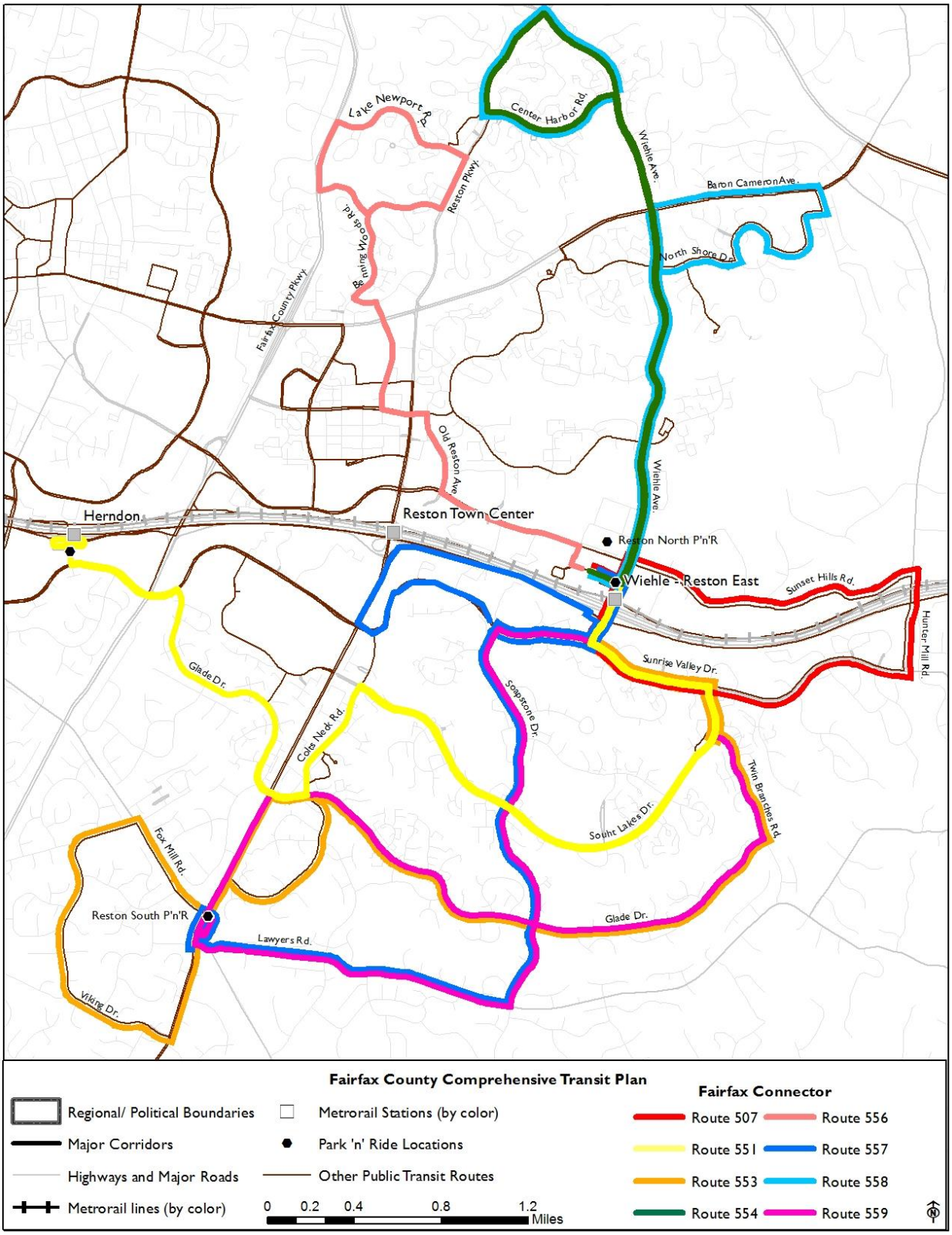


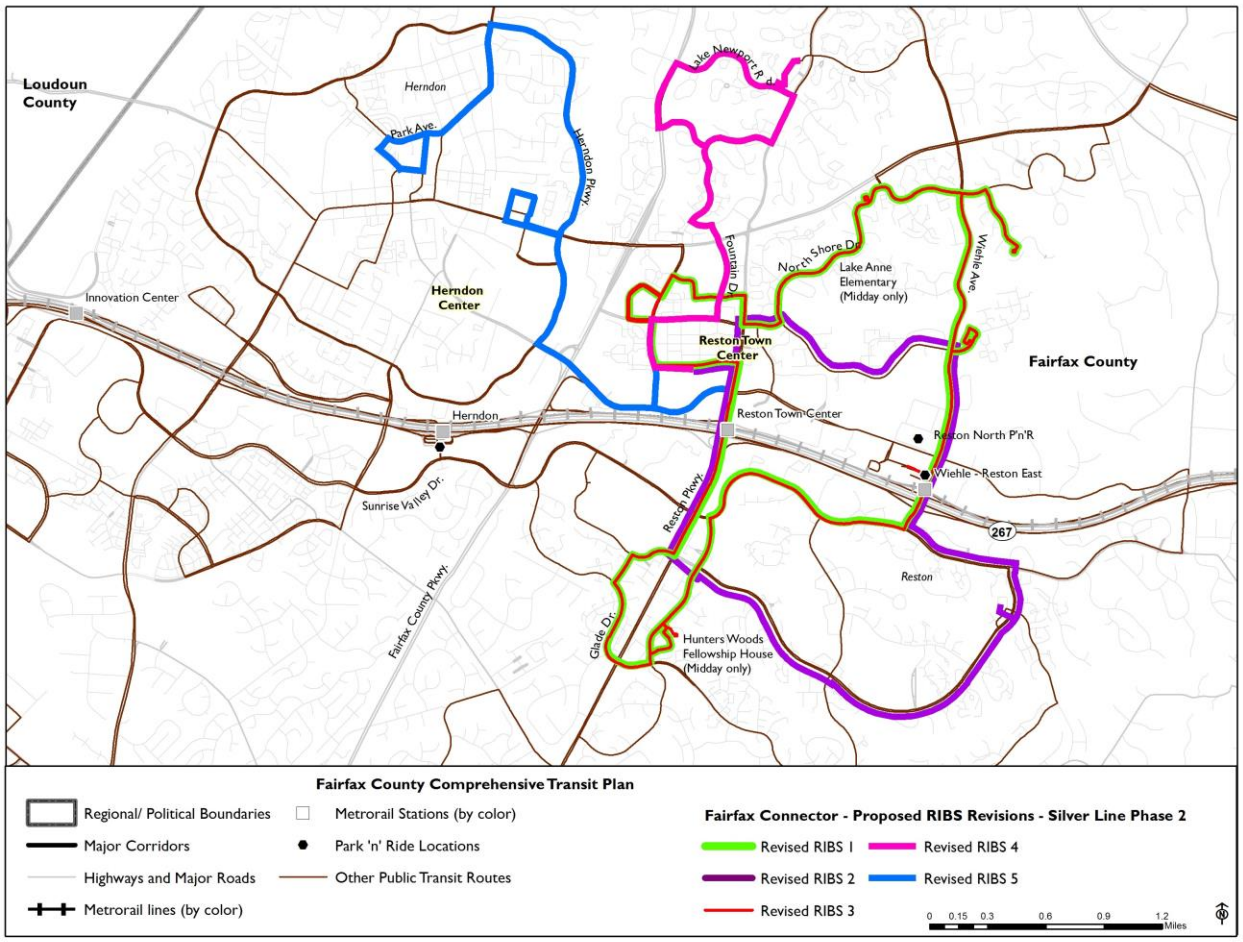
Figure 7.21: Phase 2 Reston Feeder Routes



Monitor Service on New RIBS Structure; Adjust Alignments to Accommodate Reston Metrorail Station

All of the RIBS routes will be changed in May 2015; their new alignments are shown in Figure 7.22. RIBS 1 and 3 will have relatively minor adjustments to their alignments, running times and service levels, while RIBS 2, 4, and 5 will be extensively restructured. Moving forward after May 2015, RIBS 2, 4, and 5 will not need any further adjustment to accommodate Silver Line Phase 2. However, RIBS 1 and 3 will both be changed upon opening of Silver Line Phase 2 to include a short diversion from Reston Parkway north of the Dulles Toll Road into the Reston Metrorail Station via Sunset Hills Road. At the time of implementation, the service levels and running times should be examined to determine if additional resources are necessary.

Figure 7.22: Phase 2 RIBS Service



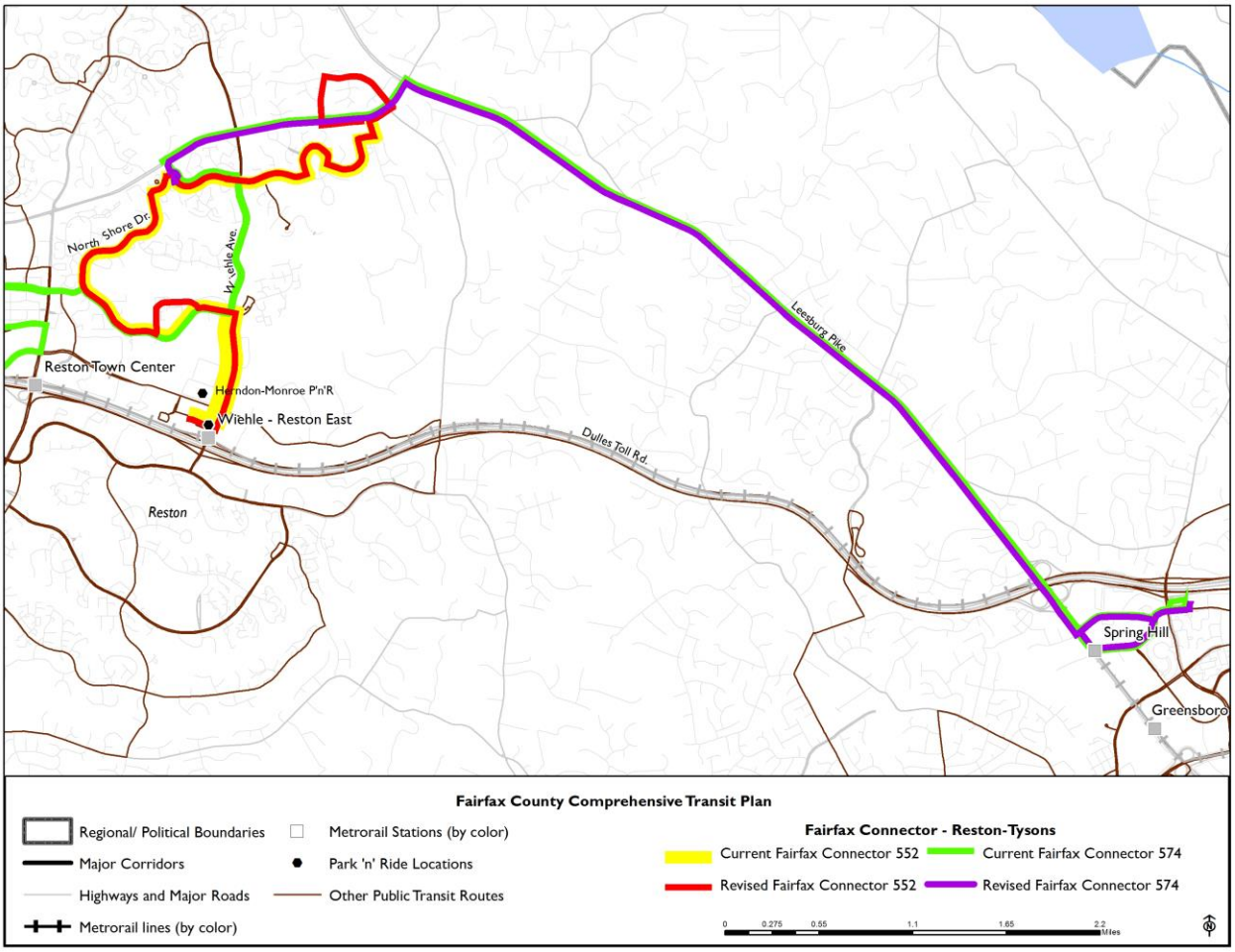
Restructure Route 574; Extend Route 552

With the extension of the Silver Line to Reston Town Center in 2019, part of the rationale for Route 574 will disappear. The route currently provides a one-seat ride from Reston Town Center to Tysons, but the Silver Line will be able to serve that market more effectively. The route also serves local travel along various roads in Reston and connects Leesburg Pike both to Reston and Tysons. Within Reston, there is other overlapping local service, but on Leesburg Pike, Route 574 is the only local service available.

To reduce the duplication in Reston and focus resources where they are most needed, it is recommended to truncate Route 574 so that the Lake Anne Village Center becomes its western terminal. It would use the rest of its current alignment into Tysons, terminating at Tysons West*Park Transit Station. Potential park-and-ride locations along Leesburg Pike should be revisited to determine if any of them can serve as remote parking locations for the Spring Hill Metrorail station in Tysons.

To maintain service from the northeast corner of Reston into the Town Center area, it is recommended to extend Route 552 to a loop north of Baron Cameron Drive on Hunter Gate Way and Gates Meadow Drive. In addition, a small alignment change for Route 552 is recommended for the portion of the route on North Shore Drive. In response to comments heard at a public meeting, Route 552 should follow Links Drive to better penetrate the residential area north of North Shore Drive. These alignment changes are shown below in Figure 7.23.

Figure 7.23: Proposed Routes 574 and 552



The service level on Route 574 would improve as a result of the route truncation. Recommended service statistics are shown in Table 7-22. Peak service on Route 574 should be operated at 30 minutes, unless new park-and-ride opportunities are available, in which case a 20 minute headway would be recommended. Route 552 would maintain essentially the same service that is operated presently, though the headway would increase from 18 minutes to 20 minutes to accommodate the extra route mileage.

Table 7-22: Route 574/552 Proposed Service Levels

		Route 574	Route 552
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	4:50 AM – 12:15 AM	5:00 AM – 9:00 AM/ 4:00 PM – 7:20 PM
	Saturday	6:00 AM – 12:15 AM	--
	Sunday	6:00 AM – 8:30 PM	--
Headway (minutes)	**Weekday**	30 (20 peak with new park-and-rides)	20
	Saturday	30	
	Sunday	30	

Extend Route 585

Before the Silver Line opened, Route 585 was a simple feeder service from Reston South park-and-ride into West Falls Church via Reston Parkway. With the Silver Line opening, it was extended to the southwest via Franklin Farm Road to cover some of the territory formerly covered by Route 929. This extension has proved popular with passengers.

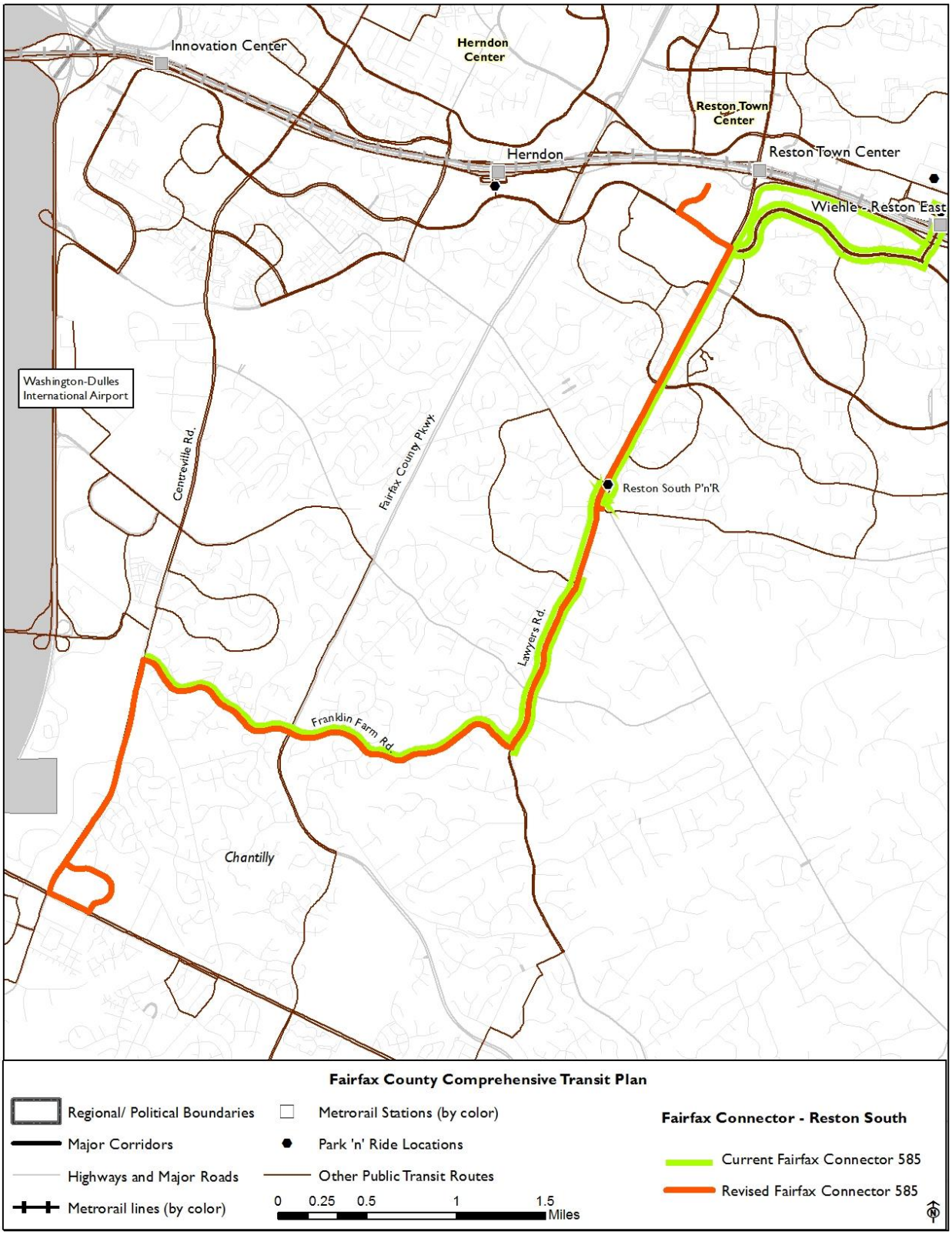
When Phase 2 of the Silver Line opens, this route, unlike the other Reston feeder services, will be rerouted from Wiehle-Reston East Station into the south side of the new Reston Metrorail Station. This change will save a few minutes of running time for the route and get passengers onto the faster-moving Silver Line sooner. In response to requests for better service to Chantilly, it is proposed to extend the route further to the southwest to a loop at Metrotech Drive, serving the cluster of development at the intersection of Centreville Road and US 50, as shown in Figure 7.24.

With this extension, instead of operating in the peak direction only (paired with the reverse-peak Route 985), the new 585 would operate in both directions, thereby offering job access to Reston residents and other people arriving in Reston on the Silver Line to the employment in Chantilly. It would also offer direct access to Reston for people living along the stretch of Centreville Road south of Kinross, who currently have no service other than the 652, which travels only to Vienna Metrorail station.

Table 7-23: Route 585 Proposed Service Levels

		Route 585
	Operator	Fairfax Connector
Span	**Weekday**	5:00 AM – 10:00 PM
Headway (minutes)	**Weekday Peak**	20
	Weekday Midday	30
	Weekday Evening	60

Figure 7.24: Proposed Route 585



Monitor Route 599

The initial months of operation for Route 599 following the opening of Wiehle-Reston East station were difficult, both because of running time issues in the Pentagon area and because of the lack of available parking spaces at the Reston North park-and-ride. That lot, which had formerly been used primarily by 595/597 riders, was seen by many new Silver Line commuters as a free alternative to the Metro lot at Wiehle-Reston East and thus filled up significantly earlier. As a result, later trips on the new 599 carried few riders as the people who used to take the later trips were forced to come to the lot earlier in order to find a parking space.

The future is uncertain for Route 599 because the Reston North lot is owned by the Virginia Department of Transportation, and thus not under the control of FCDOT. If that lot were to be closed for redevelopment, a new terminal for Route 599 would have to be established. If that terminal were within the Wiehle-Reston East station, requiring Route 599 riders to pay for parking, then some adjustment to the fare policy on Route 599 may be advisable.

This CTP has no specific recommendations for Route 599 other than to continue to monitor ridership and adjust service in response to external factors as appropriate.

7.3.3. Reston Area Route Recommendations Summary

The following Table 7-24 provides a summary of the service enhancement recommendations for the Reston service area.

Table 7-24: Reston Route Recommendations

Route	Improvement	Service Purpose
Existing Routes		
505	Eliminate route	Absorbed into new 950
507	Monitor service	
551	Monitor service	Upgraded service in May 2015
552	Extend and reroute	Accommodated proposed change in Route 574
553	Monitor service	
554	Monitor service	
556	Monitor service	New service in May 2015
557	Monitor service	
558	Monitor service	
559	Monitor service	
574	Truncate and improve	Focus service on Leesburg Pike corridor; reduce duplication
585	Extend to Chantilly	Operate in both directions
599	Monitor service	
RIBS 1	Serve new Reston Metrorail	Enhance connectivity
RIBS 2	Monitor service	New alignment in May 2015
RIBS 3	Serve new Reston Metrorail	Enhance connectivity
RIBS 4	Monitor service	New alignment in May 2015
RIBS 5	Monitor service	New alignment in May 2015

7.4 Centreville/Chantilly Area Services

7.4.1. Background

Service Area

The Centreville/Chantilly service area is a triangular region that includes much of the Centreville and Chantilly communities as well as portions of the Fair Lakes neighborhoods. The area west of Stringfellow Road is part of the Sully Magisterial District with the area east part of the Springfield District. The Centreville/Chantilly service area is roughly bounded by the Lee Jackson Memorial Highway (US-50) to the north, Sully Road (VA-28) to the west and Lee Highway (US-29) and New Braddock Road to the South as shown in Figure 7.25. I-66 bisects this area running west to east near the middle of Centreville/Chantilly serving vehicular traffic between points west and the District of Columbia toward to the east. The Fairfax Government Center and the Fair Oaks Mall are within the eastern portion of this service area.

Current Services

Several portions of the ten miles of I-66 between the Lee Highway interchange in Centreville and the Nutley Road interchange adjacent to the Vienna Metrorail station are used by most Centreville/Chantilly bus services. Only Route 605 currently does not provide a direct Metrorail connection[7] since it runs cross-county perpendicular to I-66 in a generally northerly direction terminating at Reston Town Center. Weekday ridership as reported by FCDOT farebox data for all Centreville/Chantilly bus routes combined totals 4,291 riders (see Table 7-25). Other than Route 605, the routes are presented in groups (the 620, 630, 640, and 650 series). Within each series, some routes operate in the peak only and some in the off-peak only, as noted in Table 7-25. The off-peak alignments are generally a composite of multiple peak-period routes within each series.

The 630, 640 and 650 series routes were initiated by Fairfax Connector in June 2009 upon the County's take-over of WMATA's former Metrobus 12 and 20 lines which at the time operated during peak periods only.[8] The new service schedules responded to public comments to the extent possible within the available budget at the time. Minor adjustments were incorporated into the route schedules in the following years with expectation of more significant service expansion in future years. The new routes, which were integrated into the Connector's Centreville/Chantilly network that had previously consisted of just the 620 series, brought the following service improvements:

- Expanded span of service with earlier morning and later evening trips;
- More frequent peak-period service with added reverse-commute trips;
- Initiation of midday services using composite routes;
- Refined schedules to improve service reliability.

[7]It is recommended that Route 605 serve the new Reston Town Center Metrorail station upon completion of the Silver Line Phase 2 expected in 2018.

[8]*Approved Bus Service Plan Affecting: Metrobus Routes 2W, 12A, 12C, 12D, 12E, 12F, 12G, 12L, 12M, 12R, 12S, 20W, 20X and 20Y*, FCDOT internal staff document, October 2007.

Figure 7.25: Centreville/Chantilly Service Area-Existing Service

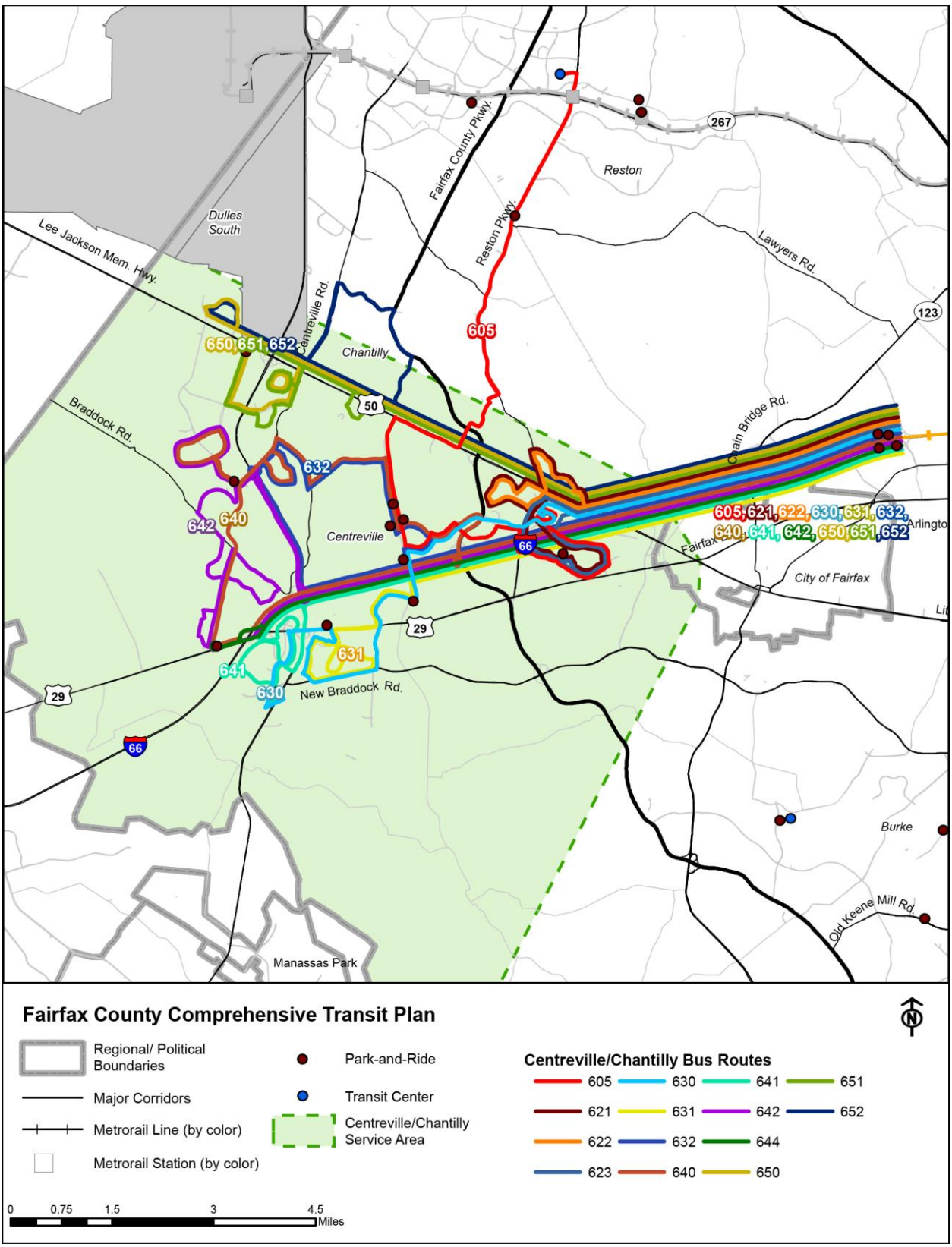


Table 7-25: Centreville/Chantilly Connector Bus Services

Route	Name	District	Metrorail Station Served (2015)	Average. Weekday Boardings
605	Fair Oaks – Reston Town Center	Hunter Mill Sully Springfield	--	**402**
621	Penderbrook – Government Center - Off-Peak	Providence Springfield	Vienna – Orange	**175**
622	Penderbrook - Peak only	Providence Springfield	Vienna – Orange	**201**
623	Penderbrook – Government Center - Peak only	Providence Springfield	Vienna – Orange	**367**
630	Centreville-Vienna Metro - Off-Peak	Sully Springfield	Vienna – Orange	**178**
631	Little Rocky Run/Stringfellow P&R – Vienna Metro - Peak only	Sully	Vienna – Orange	**440**
632	Westfields/Stringfellow P&R – Vienna Metro - Peak only	Sully Springfield	Vienna – Orange	**507**
640	Centreville North/Westfields – Vienna Metro - Off-Peak	Sully	Vienna – Orange	**151**
641	Centreville South – Vienna Metro - Peak only	Sully	Vienna – Orange	**299**
642	Centreville North/Sully Station – Vienna Metro - Peak only	Sully	Vienna – Orange	**383**
644	Centreville/Stone Road P&R – Vienna Metro - Peak only	Sully	Vienna – Orange	**416**
650	Chantilly – Vienna Metro - Off-peak	Sully	Vienna – Orange	**201**
651	Chantilly/Brookfield – Vienna Metro - Peak only	Sully	Vienna – Orange	**278**
652	Chantilly/Franklin Farm – Vienna Metro - Peak only	Sully	Vienna – Orange	**293**
Total Weekday Passenger Boardings				4,291

As shown in Table 7-26, nine routes operate in the peak only: routes 622, 623, 631, 632, 641, 642, 644, 651, and 653. Service is operated on these routes between 4:45 AM and 9:00 AM weekday mornings and between 4:00 PM and 8:30 PM weekday evenings. Scheduled headways range between 25 and 35 minutes. The four off-peak composite routes (621, 630, 640, and 650) operate midday (9:00 AM to 4:00 PM) and in the evening approximately between 8:30 PM and 10:00 PM (except Route 621 operates until 11:30 PM). Midday headways are 60 minutes and evening headways range between 30 and 60 minutes. Route 605 is the only one among the Centreville/Chantilly services that operates an all-day schedule,

seven days a week. Weekdays, Route 605 service operates[9] with a 45-minute headway during the day and 60 minutes in the evening with a span of service from 5:00 AM to 10:00 PM. Weekend Route 605 service operates with a 70-minute headway with Saturday service between 7:00 AM and 8:00 PM and Sunday between 8:00 PM and 7:00 PM.

As presented in Table 7-26, each route series consist of a single off-peak routing and two or three more direct, peak-period routes all terminating at the Vienna Metro Station. The off-peak routings are composites of the corresponding peak period routes. However, not all segments of all peak routings are covered (e.g., the outer end of the 631). The composite routes operate during times of the day with reduced demand and account for only 18 percent of total ridership. Because these routes primarily serve commuters, they function largely as feeders to the Vienna Metro Station where commuters can transfer to WMATA regional bus, Metrorail, other Connector local routes, or City of Fairfax CUE local routes.

Table 7-26: Centreville/Chantilly Bus Route Boardings Grouped by Series

Route Series	Peak Period Routes	Peak Period Boardings	Off Peak Period Routes	Off-Peak Period Boardings
620s	622, 623	568	621	175
630s	631, 632	947	630	178
640s	641, 642, 644	1098	640	151
650s	651, 652	571	650	201
Total (% of all Boardings)		3,184 (82%)		705 (18%)

Table 7-27 shows that 91percent of the total weekday passenger activity for these four route series consists of travel to or from Vienna Station. Excluding the 620 series (which predates the County's take-over of WMATA routes), the former Metrobus 12 and 20 lines served some 2,330 weekday passengers in 2009. The restructured services, the 630s, 640s, and 650s, now serve a total of 2,616 peak riders and 530 off-peak riders for a daily ridership increase of 35 percent. Partially offsetting this growth has been a decline in the 620 series ridership by 100 boardings. Some of these riders may have switched to one of the newer routes.

[9] A new schedule was implemented on January 24, 2015 as discussed later in this section. Ridership data used in this report is based on service operated under the previous schedule.

Table 7-27: Vienna Station Passenger Activity

Route Series	Total Weekday Boardings	Vienna Station Weekday Boardings	Vienna Station Weekday Alightings	Trips Not Involving Vienna Station (Percent of Route Ridership)
620s	907	419	457	31 (3%)
630s	1,232	453	648	131 (11%)
640s	1,400	590	692	118 (8%)
650s	773	375	298	100 (13%)
	4,312	1,837	2,095	380 (9%)

Source: Ridecheck Survey Fall 2013 Load Profile Reports[10]

The 620, 630 and 640 series routes serve six park-and-ride lots and also provide limited circulation within contiguous residential neighborhoods. These park-and-ride lots offer more than 1,200 spaces free of charge (see Table 7-28). The daily inbound bus boardings at these lots observed from the ridecheck survey exceeded 900 riders, the vast majority of whom parked a motor vehicle. The information provided by Table 7-27 and Table 7-28: suggests that route ridership is divided equally among those boarding at park-and-ride lots and those boarding at bus stops along neighborhood streets. The Stringfellow, Sully, and Centreville-Stone Road lots are often at or near capacity. FCDOT has begun preliminary site construction work to expand the capacity of the Stringfellow lot by 300 spaces, with completion and availability for use expected as soon early 2016.

Table 7-28: Centreville/Chantilly Park and Ride Lot Feeder Bus Services

Park and Ride Lot – Community Location	Peak Period Routes	Off-Peak Period Routes	Spaces	Utilization
Government Center – Fairfax	623	621	170	26%
St Paul Chung Church – Fairfax	632	640	100	0%
Stringfellow – Centreville	631, 632	630	385	100&
United Methodist Church – Centreville	641	630	144	30%
Stone Road - Centreville	642, 644	640	372	98%
Sully Station – Chantilly	642	640	38	100%
		Total	1,209	

Source: Internal FCDOT staff Park and Ride inventory report

The 650 series routes, unlike the others, do not serve any official park-and-ride lot, although it is likely that some riders use local retail or commercial parking lots for this purpose. These routes operate primarily along the Lee Jackson Memorial Highway (US-50), diverting from the highway to serve residential communities north of US-50 between Stringfellow and Centreville Roads (Route 652) and commercial complexes south of US-50 between Centreville and Lee Roads (Routes 650 and 651). Land use along US-50 consists of a mix of dense townhouse residential complexes, single-family housing, shopping plazas, commercial uses and office buildings. This diverse development, combined with a lack of

[10] Ridecheck observations reflect a composite day which cannot be expected to match the farebox data, and the latter cannot provide the required breakdown by time periods or bus stop.

an official park-and-ride lot to concentrate passenger activity, accounts for the relatively high 13 percent of passenger trips on the 650s that do not ride to or from the Vienna Metro station in comparison to the other three route series.

Of the 14 Centreville/Chantilly/Fair Oak Connector bus routes, only Route 605 operates on weekends, both on Saturday (340 boardings) and on Sunday (234 boardings). Route 605 is the only cross-county route operated within this service area; it connects to employment, civic, medical, and shopping destinations in the Fair Oaks and Reston areas.

Service Productivity

Route productivity is presented in Table 7-29. These 14 Connector routes average 17.0 boardings per revenue-hour, 13.5 boardings per trip and 0.95 boardings per revenue-mile. While boardings per revenue-hour is the most commonly used measure of productivity, boardings per trip is often employed as the best measure to evaluate commuter routes (those that operate closed-door for significant distances along a major highway and with most riders going to the same destination). For commuter routes, a measure of boardings per trip that approaches or exceeds the bus capacity suggests the need to add trips, particularly since a maximum of a seated load is most appropriate for high-speed, longer-distance passenger trips. With little local ridership and significant miles along I-66, all routes in this sector except Route 605 fit into the commuter category. As would be expected for commuter services, the off-peak service (621, 630, 640, and 650) for each route series exhibits lower productivity than its peak-period counterparts. Only one peak-period route, Route 641, has productivity within the same range as the off peak services, all of which average fewer than 12 boardings per trip. Route 641 serves the United Methodist Church Park and Ride, one of the smaller lots, which partly explains the lower producitivity of this route compared to those that serve the larger park-and-ride lots. Routes 623, 631, 632, and 644 are the four strongest performing routes, all with weekday ridership exceeding 400 passengers, boardings per revenue-hour above 20 and boardings per trip ranging between 16 and 26. The figures for average boardings per trip suggests that excess capacity is available on most trips to accommodate ridership growth (since these buses can carry 40 passengers) as the population increases over the next decade. However, the ridecheck found that several morning peak trips on Routes 631 and 632 have volumes near or in excess of seated capacity, indicating that additional trips at the peak times may be needed.

Table 7-29: Centreville/Chantilly Bus Service Productivity

Route	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings/ Trip	Boarding/ Rev-Mile
605	Seven day, all day service	Local	13.0	13.4	0.85
621	Weekday off peak only	Local	10.3	9.2	0.58
622	Weekday peak periods only	Feeder	16.8	13.4	0.98
623	Weekday peak periods only	Feeder	24.5	18.4	1.44
630	Weekday off peak only	Local	11.1	11.1	0.67
631	Weekday peak periods only	Feeder	27.5	25.9	1.77
632	Weekday peak periods only	Feeder	26.7	16.9	1.37
640	Weekday off peak only	Local	12.6	7.5	0.48
641	Weekday peak periods only	Feeder	14.2	8.3	0.66
642	Weekday peak periods only	Feeder	16.6	13.7	0.82
644	Weekday peak periods only	Feeder	20.8	18.1	1.59
650	Weekday off peak only	Local	14.4	9.6	0.71
651	Weekday peak periods only	Feeder	15.5	12.1	0.94
652	Weekday peak periods only	Feeder	16.3	12.2	0.93
Centreville/Chantilly Service Area Average			**17.0**	**13.3**	**0.95**

Note: Productivity values based on farebox data for September 2014

Status of 2009 TDP Recommendations

Table 7-30 presents the current status of the implementation of the 2009 TDP recommended service modifications. This table provides a summary of FCDOT actions by route and whether these actions were identical to the 2009 recommendations, evolved from these recommendations or are more recent initiatives.

Table 7-30: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
605	Fair Oaks – Reston Town Center	No change until Phase 2, then serve Reston Parkway station	No change
621	Penderbrook – Government Center	Reduce peak and off-peak headways (future)	Added Legato Road; extended to Meadow Field Drive; later evening service
622	Penderbrook	Extend route to Meadow Field Drive	Route extension implemented; more peak trips
623	Penderbrook – Government Center	Improve headway to 15-20 minutes	Peak trips added
624	Fair Lakes – Vienna Metro	New peak period reverse commute service to replace Fair Lakes HOA shuttle	Not implemented
625	Fair Lakes – Vienna Metro	New peak period commuter service to replace Fair Lakes HOA shuttle	Not implemented
630	Centreville-Vienna Metro	Reduce midday headway (future)	Not implemented
631	Little Rocky Run/ Stringfellow P&R – Vienna Metro	Reduce peak headway (future)	Not implemented
632	Westfields/Stringfellow P&R – Vienna Metro	Reduce peak headway (future)	Not implemented
640	Centreville North/ Westfields – Vienna Metro	Reroute to serve Fair Lakes Circle	Not implemented
641	Centreville South – Vienna Metro	Reduce peak headway (future)	Not implemented
642	Centreville North/Sully Station – Vienna Metro	Reduce peak headway (future) Restructure to revise 642 routing with new Route 646	Not implemented
644	Centreville/Stone Road P&R – Vienna Metro	Reduce peak headway (future)	Not implemented
646	Stonecroft – Vienna Metro	Create new express route	Not implemented
650	Chantilly – Vienna Metro	Reduce midday headway (future)	Not implemented
651	Chantilly/Brookfield – Vienna Metro	Reduce peak headway (future)	Not implemented

Route	Name	2009 TDP Recommendation	2015 Implementation Status
652	Chantilly/Franklin Farm – Vienna Metro	Reduce peak headway (future) Extend to Lafayette Center and create new Route 653	Not implemented
653	Greenbrier – Vienna Metro	Create new express route	Not implemented
New	Centreville to GMU	Create new route to connect Centreville with County civic services and GMU	Not implemented
New	Centreville to Tysons Express	Create new peak period route connecting to growing employment center	Not implemented
New	Centreville to Reston Express	Create new peak period route connecting to growing employment center	Not implemented

The 2009 TDP recommended the following new peak-period routes to supplement the existing I-66 commuter services:

- Route 625 Fair Oaks – Vienna Metro
- Route 646 Stonecroft – Vienna Metro
- Route 653 Greenbriar – Vienna Metro

In the time since the last 2009, these routes were not implemented and they are no longer recommended. Instead, FCDOT should concentrate resources on improving the level of service of the existing routes as described in the following section.

7.4.2. Recommendations for Existing Service

During the current CTP outreach activity, comments received from local official and the public strongly urged FCDOT to expand transit services throughout the Centreville/Chantilly area. As County population and employment continue to grow, interest in enhanced local and cross-county transit services will also grow. The following additional services are recommended:

- Add capacity during the peak periods to the I-66 express routes;
- Operate weekend service via I-66 to Vienna Metro on off-peak routes 621, 630, 640, 650;
- Provide new North County connections to Silver Line Phase 2 Stations;
- Create new services to connect the Centreville/Chantilly area with GMU and City of Fairfax as well as other South County locations;
- Establish new Centreville circulators.

These recommendations are discussed in detail the following sections.

Improve Peak Headways on Routes 631/632 or Add New Route 624/634

In the short-term, no changes are needed to the routings and weekday schedules of the existing 620s, 630s, 640s and 650s services with one exception as noted below. Overall ridership has grown on these routes by about 800 passengers per weekday since the 2009 TDP. Meanwhile the Centreville/Chantilly population is projected to grow over the next decade, which will likely lead to further gains. There is enough capacity to absorb new demand on most routes in Centreville/Chantilly through at least 2020.

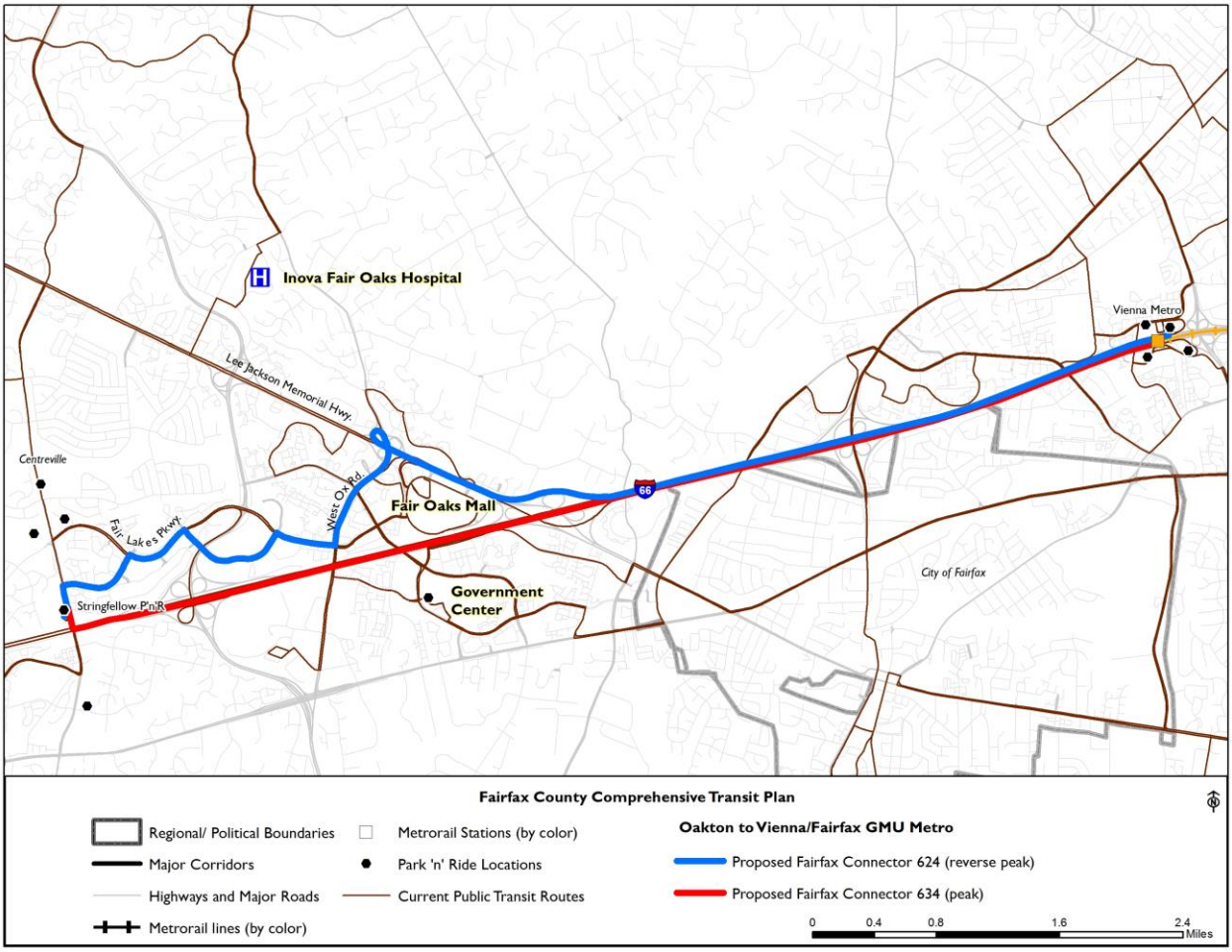
However, the amount of service on Routes 631 and 632 will become inadequate in the near term. These routes, which already have some trips with standing loads, serve the popular Stringfellow Park and Ride lot, which will nearly double in size by early 2016. Currently the combined peak frequency for the 631/632 service is five trips per hour (i.e., an average 12 minute headway).

Two alternatives are presented to address this need. Under Option 1, the schedule for Routes 631 and 632 would be increased incrementally to as many as eight trips per hour in the near term. Under Option 2, a new short-turn variant, designated as Route 634, would be created, operating between Stringfellow Park and Ride and Vienna Station with service levels as shown in Table 7-31. This route would use the Stringfellow Road HOV ramps to I-66 to provide direct, non-stop service to Vienna, as shown in Figure 7.26. Option 2 is currently preferred by FCDOT staff. The Route 634 schedule must be synchronized with the existing 631/632 schedules in order to use this added capacity effectively. Reverse peak direction trips should run in revenue service as Route 624 Fair Lakes –Vienna Metro rather than as deadhead moves to Stringfellow. Given the configuration of the I-66 ramps, these return trips would exit I-66 at US-50 and would follow US-50 to West Ox Road to Fair Lakes Parkway then to Fair Lakes Circle to serve the Fair Lakes Shopping Center (as shown in the same figure). The route would turn back onto Fair Lakes Parkway and then onto Fair Lakes Boulevard to proceed to Stringfellow Road and the Stringfellow Park and Ride lot. Although ridership is not expected to be high on these reverse peak trips, for only a minor increase in operating cost, the route would serve reverse commute riders traveling to job sites in the Fair Lakes area.

Table 7-31: Stringfellow-Vienna Improvement Options

		Routes 631/632 Option 1	New Route 634 Option 2	New Route 624 Option 2
	Operator	Fairfax Connector	Fairfax Connector	Fairfax Connector
Span	**AM Peak**	4:15 AM – 9:20 AM	4:30 AM – 9:00 AM	5:00 AM -8:30 AM
	PM peak	3:30 PM – 8:30 PM	3:30 PM – 8:30 PM	3:00 PM – 8:00 AM
Headway (minutes)	**AM Peak**	7.5	15	15
	PM Peak	7.5	15	15

Figure 7.26: Proposed Routes 624/634



Improve Weekday Off-peak Service via I-66 to Vienna Metro on Routes 621, 630, 640, 650

In addition to the proposed improved peak period service on the I-66 Vienna Metro routes, FCDOT plans to improve off-peak service on Routes 621, 630, 640 and 650, which currently operate hourly midday and early evenings. FCDOT budget plans anticipate improving the headway on each of these routes during these hours to 30 minutes as shown in Table 7-32.

Table 7-32: I-66 Route Proposed Weekday Off-peak Service

		Routes 621, 630, 640 and 650
	Operator	Fairfax Connector
Span	**Midday**	9:15 AM – 3:15 PM
	Early Evening	8:30 PM – 11:00 PM
Headway (minutes)	**Midday**	30
	Early Evening	30

Initiate Weekend Service via I-66 to Vienna Metro on Off-peak Routes 621, 630, 640, 650

Connector service to the Vienna Metro should be expanded to weekends as was envisioned when the original CCO plan was implemented. During outreach events, local officials and riders have stated interest and need for weekend service in a region currently largely void of weekend transit services.

The weekend schedules for Routes 621, 630, 640 and 650 should be instituted as summarized in Table 7-33. FCDOT plans to implement weekend service on all four routes in FY2016 to provide a transit options to local residents who would use weekend services for work, shopping or recreational trip purposes. A link to the Vienna Metro Station would facilitate travel to many points within the region. The Saturday schedule should be initiated consistent with FCDOT guidelines, with a base headway of 30 minutes and 60 minutes during fringe hours. The guidelines support Sunday service with 60 minute headways and a span of service for both days as shown in the following table.

Table 7-33: I-66 Route Proposed Weekend Service

		Routes 621, 630, 640 and 650
	Operator	Fairfax Connector
Span	**Saturday**	7:00 AM – 8:00 PM
	Sunday	8:00 AM – 8:00 PM
Headway (minutes)	**Saturday**	30/60
	Sunday	60

Route 605 Headway Improvement and Routing Change

On January 24, 2015, Route 605 was modified to address public suggestions collected during the CTP outreach and from other sources. The following routing and schedule changes were made:

- The southern terminal was changed from Government Center to the Fair Oaks Mall, reducing running time by one minute and providing a safer layover location.
- Weekday service frequency was improved from a 60-minute headway to a 45-minute headway between the start of service and 5:15 PM. The 2014 ridecheck surveys confirmed that this route was running late all day. Therefore, in addition to providing more frequent trips, this change added more time in the schedule to improve reliability.
- The northbound service span was extended, with service starting nearly two hours earlier at 5:07 AM to allow residents to reach jobs with early start times.
- The weekend schedules were modified by extending the 60 minute headway to 70 minutes throughout the day to improve service reliability because the route was also frequently running late on weekends.

Route 605 should be rerouted so that it serves the north side of the new Reston Metrorail station then loops around to serve the Reston Town Center Transit Station. At that time, the peak- period headway should be improved to 30 minutes as shown in Table 7-34. In addition, weekend headways should be improved to 40 minutes since the connection to the Silver Line will attract more riders to this cross-county route. Otherwise the routing between the Fair Oaks Mall and Reston should remain unchanged.

Table 7-34: Route 605 Proposed Service Level

		Route 605 (Future)
	Operator	Fairfax Connector
Span	**Weekday**	5:00 AM – 11:00 PM
	Saturday	6:00 AM – 9:00 PM
	Sunday	7:00 AM – 8:00 pm
Headway (minutes)	**Weekday Peak**	30
	Weekday Midday	45
	Weekday Evening	60
	Saturday	40
	Sunday	40

7.4.3. Recommendations for New Service

New Cross-County Routes with Connections to Silver Line

Development plans for the Dulles Corridor and Tysons Corner will expand employment, shopping, social and recreational opportunities for county residents over the next decade and beyond. In July 2014, service started on Silver Line Phase 1 and restructured North County bus routes, enhancing local and regional transit along the Silver Line corridor for Tysons, Reston, and Herndon residents. Centreville/Chantilly residents would benefit from improved cross-county transit connections to the growing opportunities along the Silver Line corridor. Silver Line Phase 2 is expected to open in 2018

with two new Metrorail stations in Herndon. With new routes connecting to these stations, Centreville/Chantilly residents would have public transit access to both the Silver Line and other North County bus routes for travel to Dulles, Herndon, and Reston.

Two new cross-county routes are recommended in conjunction with the opening of the Silver Line Phase 2, as described below and mapped in Figure 7.27. Comments received from residents noted that the current Routes 929 and 652 come close to connecting, since both serve portions of Centreville Road; commenters suggested a desire to transfer between these two routes to travel between Chantilly and Herndon. The proposed Route 901 not only provides expanded cross-county services for Centreville and Chantilly residents but makes through travel possible without requiring a transfer. Additional transfer options will be possible between the proposed Route 901 and the existing Routes 929 and 652. (A change to the alignment of Route 929 is separately recommended in conjunction with the opening of the Herndon Metrorail station, as described in section 7.2.2.) Table 7-35 provides a summary of the service levels for these two new routes, which are proposed as follows:

- *Route 607 – Fair Oaks Mall to Herndon Metro Station.* This route would proceed from the Fair Oaks Mall along Fair Lakes Parkway, to Monument Drive around Government Center Parkway to return onto Monument Drive, then onto West Ox Road and continuing to the Ox Trail entrance to the Fair Oaks Hospital. The route would depart the hospital on to Fairfax County Parkway to West Ox Road then turn northerly onto Monroe Street to Sunrise Valley Road to a terminal at the Herndon Metro Station. The proposed route is 14 miles long and would require a run time of about 60 minutes, varying by time of day. This route would connect the Fair Oaks Mall, Government Center, Fair Oaks Hospital, Chantilly High School, office parks along Sunrise Valley Road and the Silver Line at the future Herndon Station located adjacent to the existing Herdon-Monroe transit center. At Herndon Station passengers can make connections to local Herndon bus routes.
- *Route 901 – Centreville United Methodist Church to Herndon Metro Station.* This route would proceed from the Church Park and Ride on Centreville Drive, then follow Lee Highway, Sully Road, Willard Road, Lee Road, US 50, Centreville Drive, Centreville Road, Sunrise Valley Drive, to a terminal at the Hendon Station (see Figure 7.27.) This route is more than 13 miles long and would require a one-way run time of about 50 minutes, varying by time of day. This route would serve the Centreville retail district, the Chantilly Crossing Shopping Center, the office and hotel development along Centreville Drive in Chantilly, McLearen Square, and, joining with Route 607, would also serve office parks along Sunrise Valley Road and the Silver Line at the future Herndon Station located adjacent to the existing Herdon-Monroe transit center.

Express Routes to Reston and Tysons No Longer Recommended

The 2009 TDP recommended the creation of two new commuter express routes from Centreville, one destined for Reston and the other for Tysons. With the opening of Silver Line Phase 2, cross-county connections via the proposed routes 607 and 901 will offer residents suitable transit options to reach the Tysons and Reston communities, since both are served by the Silver Line Metrorail. Therefore the 2009 TDP express route proposals are no longer recommended.

Express Routes from Vienna Metrorail Station No Longer Recommended

The 2009 TDP also recommended four other express routes from Vienna Metrorail to various destinations. None of these are currently recommended, for the reasons explained below.

Vienna Metrorail to Dulles via Fair Oak The primary purpose of this route was to provide a connection to Dulles Airport. However, this will be accomplished in a few years with the completion of Phase 2 of the Silver Line, at which point this route would be superfluous.

Vienna Metrorail to Reston and Herndon This route would also become unnecessary with the completion of Silver Line Phase 2. Given that the Silver Line completion is expected relatively early in the current planning period, it is not recommended to initiate this service.

Vienna Metrorail to Ft. Belvoir Although this service would provide a faster trip for some people going to Fort Belvoir, it would be infrequent at the 30-minute peak headways proposed. The potential small travel time savings would not be worth the risk of missing a connection for most potential riders.

Vienna Metrorail to Prince William County via I-66 This proposal may be worth carrying forward. However, it should be considered as part of the current study of transit options on I-66. The recommendations from that study can be incorporated into the final CTP.

Figure 7.27: Proposed Cross-County Routes 607 and 901

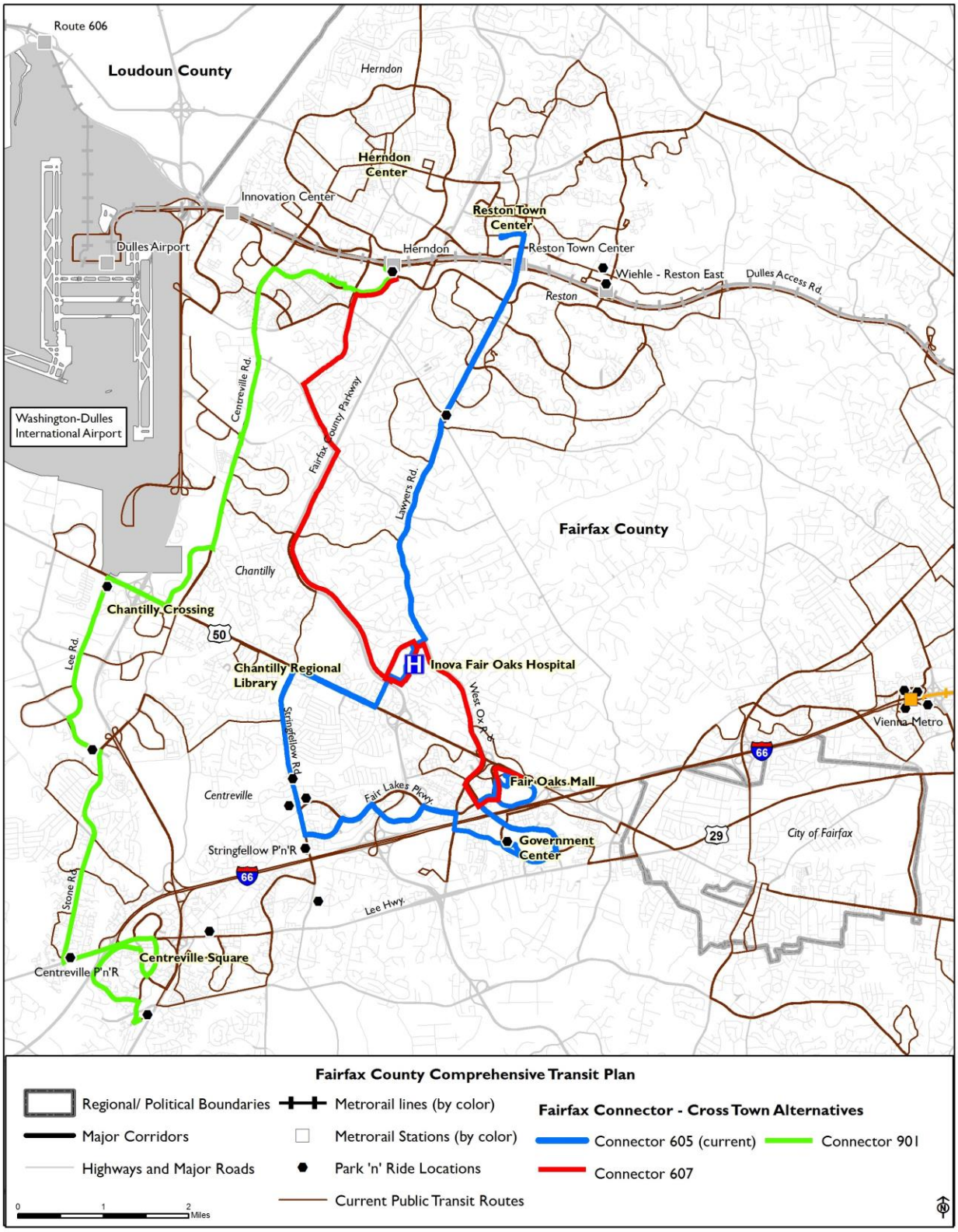


Table 7-35: Routes 607 and 901- Proposed Service Levels

		Route 607 Fair Oaks Mall – Herndon Metro Station (future)	Route 901 Centreville – Herndon Metro Station (future)
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	5:00 AM – 10:00 PM	5:00 AM – 10:00 PM
	Saturday	7:00 AM – 8:00 PM	7:00 AM – 8:00 PM
	Sunday	None	None
Headway (minutes)	**Weekday Peak**	30	30
	Weekday Midday	45	45
	Weekday Evening	60	60
	Saturday	60	60
	Sunday	None	None

New Route 610 Centreville - GMU and City of Fairfax

Transit trips between the Centreville/Chantilly area and points within the City of Fairfax (such as George Mason University) and the South County areas currently are circuitous and require at least one transfer. The GMU campus continues to expand, providing educational, social and recreational programs to students and area residents. Centreville/Chantilly residents find it difficult to reach county government offices by transit

The 2009 TDP, following a suggestion from the County's 2008 Centreville/Chantilly/Oakton Plan, recommended a new route to connect Centreville with the George Mason University area with service passing through the Government Center complex. This recommendation has not yet been implemented, and it is again recommended for the current CTP. The proposed Route 610, shown in Figure 7.28, would begin at the Centreville Park and Ride at Lee Highway (US-29) and Stone Road and then proceed through the Centreville Square area along Machen Road and Centrewood Drive and return to US-29. It would then follow Lee Highway easterly to Centreville Farms Road to Stringfellow Road and the Stringfellow Park and Ride. The route would reverse course and return to the Lee Highway and follow US-29 to Legato Road, Post Forest Drive, and Government Center Parkway, providing direct access to residential and retail areas and civic services. Upon leaving this area the route would travel east on US-29 to VA-123 (Main Street) to the center of the City of Fairfax, turning onto Judicial Drive to pass though the County's judicial campus. The route would continue southerly on VA-236 to a terminal at the GMU campus. Table 7-36 presents a summary of the service levels recommended to be implemented over a ten-year horizon for the proposed Route 610 Centreville to GMU campus.

Figure 7.28: Proposed Route 610

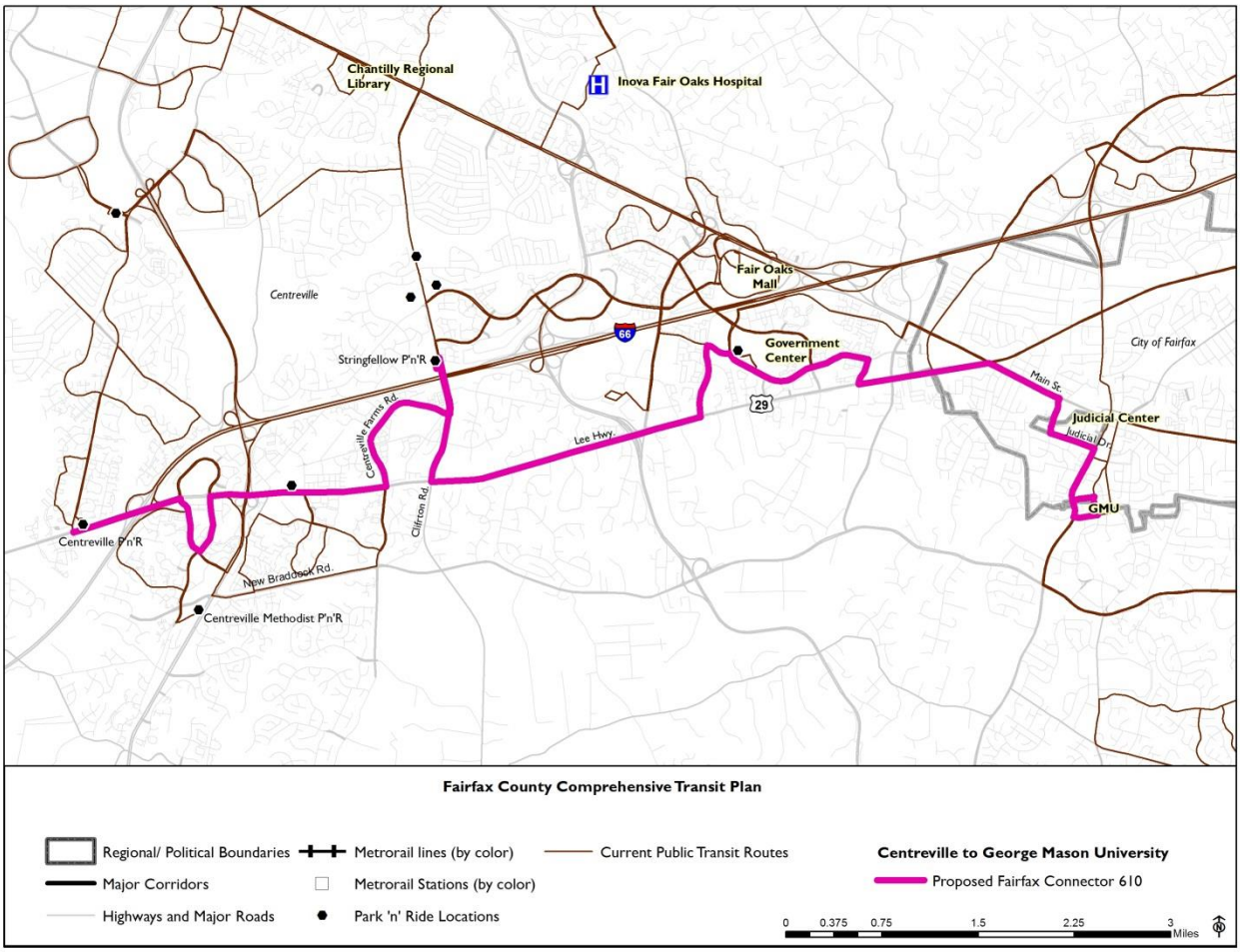


Table 7-36: Route 610 Centreville to GMU Proposed Service Levels

		610 Centreville - GMU (Initial)	610 Centreville – GMU (Future)
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	5:00 AM – 10:00 PM	5:00 AM – 11:00 PM
	Saturday	None	7:00 AM – 8:00 PM
	Sunday	None	None
Headway (minutes)	**Weekday Peak**	30	20
	Weekday Midday	30	30
	Weekday Evening	60	60
	Saturday	None	30/60
	Sunday	None	None

New Centreville Circulators

Although Centreville and Chantilly have large residential areas, they have high auto ownership and relatively few low-income households.[11] The 2009 TDP concluded that the amount of transit demand from these areas during non-commuting hours was likely to be low, so fixed-route transit did not appear to be an effective option for this area during the ten-year timeframe. However the 2009 TDP also suggested that local circulator services be considered in the next TDP as the area develops.

Significant population growth, due to both aging in place and employment growth, is expected to occur in Centreville over the next decade, which will spur additional commercial and retail development. Local transit, including reverse peak service, should be added to provide improved transit connections for travel within Centreville and to adjacent areas. Circulators or flexible service routes using small buses, as described in the introduction to this technical memorandum, can better penetrate neighborhood streets and should be implemented in this area. FCDOT has an interest in developing flexible service routes within the region.

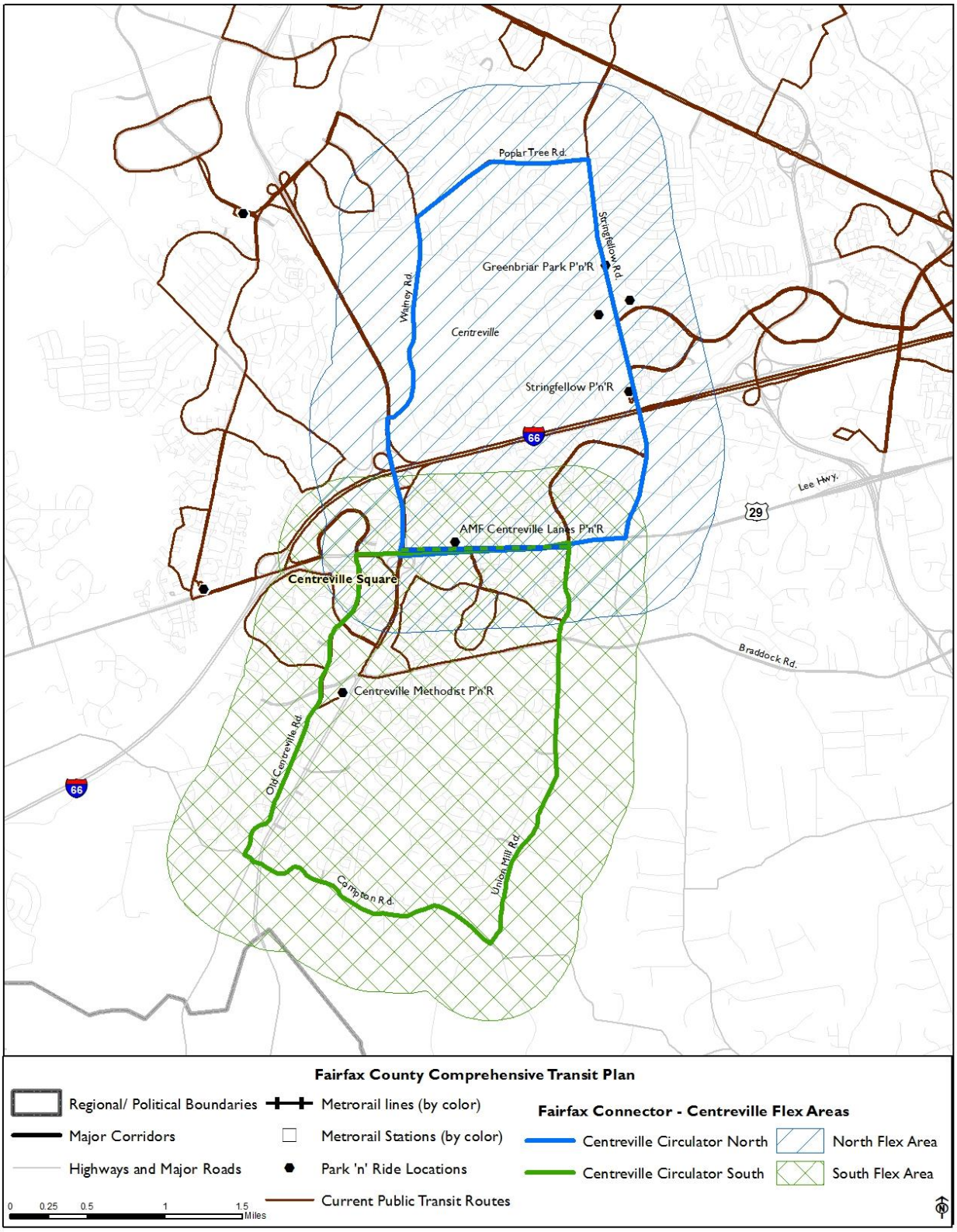
As proposed, these routes will have a primary alignment with the ability to deviate to pick-up or discharge passengers by request within a defined service area. Two service areas are suggested as candidates for flexible service (see Figure 7.29:), each with a common terminal at Centreville Square that would serve as a pulse point:

- Centreville South - This service area would be bounded by Lee Highway to the north, Centreville Drive/Old Centreville Rd to the west, Compton Road to the south and Union Mill Road to the east. The route would generally operate in a clockwise direction around this eight-mile loop and would serve riders anywhere within this area as well as vary up to one-half mile in the territory surrounding this general service area. Bi-directional service could be operated during the peak periods to expedite connections to those routes that serve park-and-ride lots and support connections to I-66 commuter and cross-county routes**.**
- Centreville North - This service area would be bounded by Lee Highway to the south, Stringfellow Road to the east, Poplar Tree Road to the north and Walney/Sully Roads to the west with a short extension to the Centreville Square. This route would generally operate in a counter-clockwise direction around the eight-mile loop and serve riders both within this area as well as up to one-half mile in the territory surrounding it. As with the Centreville South route, peak-period service could be operated in both directions to facilitate quicker connections to cross county or I-66 commuter services.

Both flexible service routes would bring commuters to local park-and-ride lots or to Centreville Square where they could transfer to I-66 routes to Vienna, to future cross-county routes, or to local routes for service to Centreville commercial destinations. Routes would operate between 6:00 am and 8:00 pm to serve both commuter and local trips. The current bus service provider contract does not support the provision of flexible service. The lead time to establish the framework for such service, select a contractor to provide it, and actually field it, is likely to be several years.

[11] Per Fairfax County's Title VI program, low-income is defined as household income of less than $53,650 per year, or 50 percent of median household income for a family of four (a typical measure).

Figure 7.29: Proposed Centreville Flexible Service Areas



7.4.4. Centreville/Chantilly Area Route Recommendations Summary

The following Table provides a summary of the service enhancement recommendations for the Centreville/Chantilly area.

Table 7-37: Centreville/Chantilly Route Service Recommendations

Route	Improvement	Service Purpose
Existing Routes		
605	Improve Headways and Serve New Reston Town Center Metrorail Station	Provide Connections to Silver Line Phase 2
621	Improve Off-peak and Establish Weekend Service	Improve weekday off-peak and provide weekend connections to Vienna Metrorail station
622	Improve Peak Period Headway	Add future capacity to maintain load levels
623	Improve Peak Period Headway	Add future capacity to maintain load levels
630	Improve Off-peak and Establish Weekend Service	Improve weekday off-peak and provide weekend connections to Vienna Metrorail station
631	Improve Peak Period Headway	Add future capacity to maintain load levels
632	Improve Peak Period Headway	Add future capacity to maintain load levels
640	Improve Off-peak and Establish Weekend Service	Improve weekday off-peak and provide weekend connections to Vienna Metrorail station
641	Improve Peak Period Headway	Add future capacity to maintain load levels
642	Improve Peak Period Headway	Add future capacity to maintain load levels
644	Improve Peak Period Headway	Add future capacity to maintain load levels
650	Improve Off-peak and Establish Weekend Service	Improve weekday off-peak and provide weekend connections to Vienna Metrorail station
651	Improve Peak Period Headway	Add future capacity to maintain load levels
652	Improve Peak Period Headway	Add future capacity to maintain load levels
Route Proposals		
607	Create Cross County Route Between Fair Oaks, Centreville and Herndon Metrorail Station	Create Cross County route between Dulles and I-66 Corridors
901	Create Cross County Route Between Centreville, Chantilly and Herndon Metrorail Station	Create Cross County route between Dulles and I-66 Corridors
610	Create Route between Centreville and GMU	Satisfy demand for connections to County civic services, Fairfax City and GMU
634	Create Stringfellow-Vienna via I-66 peak period route	Provide supplemental capacity to Route 631/632 to serve expanded park and ride
624	Create Fair Lakes - Vienna reverse peak route	Provide reverse peak direction service to bring employees to job sites (interline with 634)
n/a	Establish Flexible Service routes in Centreville	Provide intra-community transit

7.5 Tysons Area Services

7.5.1. Background

Service Area

The Tysons service area consists of the Tysons, McLean and Pimmit Hills communities and is centered around the I-495/Dulles Toll Road (VA-267) interchange. The area is primarily located within the Providence and Dranesville Magisterial Districts, with western portions also covered by the Hunter Mill Magisterial District. The service area is roughly bounded by VA-123 to the north, Arlington County and Montgomery County, MD to the east, and VA-7 to the south and the west. The eastern portion of the service area is primarily residential, with the exception of the commercial area of central McLean near the intersection of Old Chain Bridge Road and Old Dominion Drive (VA-309).

Current Services

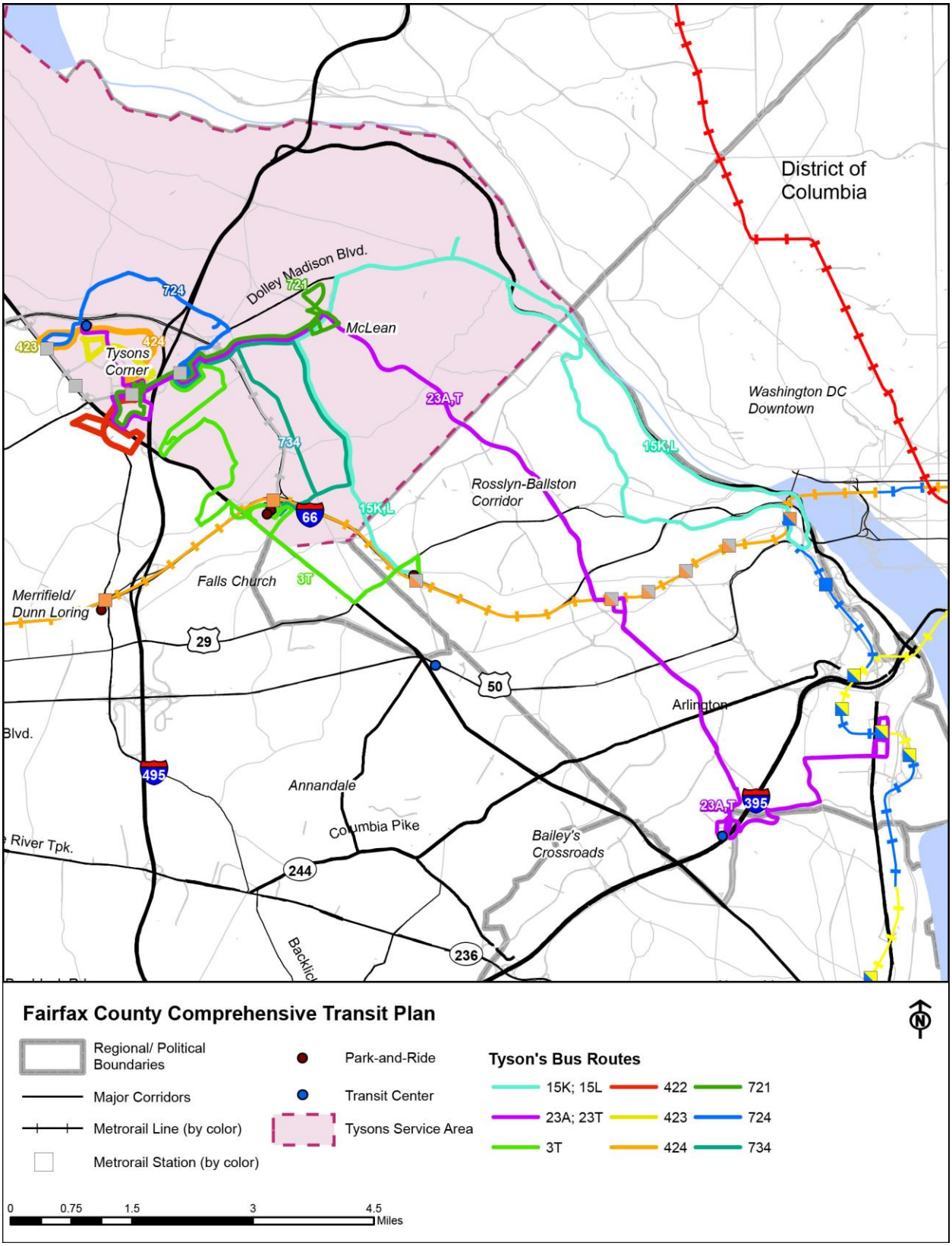
Current services in the Tysons Area are displayed in Figure 7.30. Fairfax Connector routes 422, 423 and 424 all operate solely within the core of Tysons as one-way circulators. Route 422 connects southern portions to Greensboro Station, Route 423 connects central portions to Tysons Corner Station, and Route 424 connects northern portions to the Spring Hill Metrorail Station and the Tysons West*Park Transit Station. All of these routes are new routes that were implemented in 2014 to provide feeder/distributor service to the Silver Line that opened in July 2014. Based on the experience of operating these routes, along with public input, the routes will be modified in May 2015, largely to provide more direct, bi-directional service with shorter bus travel times. As currently proposed, beginning in May 2015 the Route 422 will operate to and from the Tysons Corner Metrorail station via International Drive and Gallows Road to Tower Crescent Drive, with a loop providing a more direct connection to stops along Boone Boulevard, Howard Avenue, and Towers Crescent. Route 423 will also provide connections to and from the Tysons Corner Metrorail station, providing a more direct connection to residential communities and businesses along Westpark Drive and Park Run Drive east of International Drive. Route 424 will provide connections between the Tysons Corner and Spring Hill Metrorail stations via Jones Branch Drive, providing service to the northern portion of Tysons.

Routes 721, 724 and 734 connect eastern portions of the service area to McLean Station. Route 721 provides a connection between central McLean and the McLean and Tysons Corner Metrorail stations. Route 724 connects Lewinsville Road (north of the Dulles Toll Road) to the Spring Hill and McLean Metrorail Stations. Route 734 connects areas of McLean east of the Dulles Toll Road to the McLean and West Falls Church Metrorail stations during peak periods.

The three Metrobus lines in this sector of the county all connect the Tysons area with points south and east in Arlington County. The 15K,L line connects Chain Bridge Road to East Falls Church Station and Rosslyn Station in Arlington during peak periods only. The 3T connects Pimmit Hills to the McLean Metrorail Station and the West Falls Church and East Falls Church Stations via VA-7. The 23A,T line connects Tysons Corner Center to the McLean, Ballston, and Crystal City Metrorail Stations in Arlington via Old Dominion Drive (VA-309).

Among the Tysons circulators, routes 422 and 424 operate on weekdays only, while Route 423 operates seven days per week. Each route operates with a 10 minute peak headway and a 12 to 15 minute off-peak headway. Route 423 has the highest ridership, with nearly 800 average weekday boardings.

Figure 7.30: Tysons Service Area-Existing Service



The McLean routes generally operate at lower frequencies than the Tysons circulators: Route 721 has a 15 minute peak headway and routes 724 and 734 have 30 minute peak headways. Additionally, routes 724 and 734 operate during weekday peak periods only. Route 721 operates all day on weekdays. Of the Tysons area Fairfax Connector Routes that are not circulators, Route 721 has the highest weekday ridership.

Table 7-38: Tysons Bus Services

Route	Name	District	Metrorail Station Served	Average Weekday Boardings
Fairfax Connector Routes				
422	South Tysons - Greensboro Station – weekday only	Providence	Greensboro - Silver	**79**
423	Central Tysons - Tysons Corner Station	Providence	Tysons Corner - Silver, Spring Hill - Silver	**787**
424	North Tysons - Spring Hill Station – weekday only	Providence	Spring Hill - Silver	**231**
721	Chain Bridge Road - McLean	Dranesville, Providence	McLean - Silver	**181**
724	Lewinsville Road – peak only	Dranesville, Hunter Mill, Providence	McLean - Silver, Spring Hill - Silver	**57**
734	McLean - West Falls Church – peak only	Dranesville, Providence	McLean - Silver, West Falls Church - Orange	**20**
Total Fairfax Connector				**1,355**
WMATA Metrobus Routes				
3T	Pimmit Hills - Falls Church – weekday and Saturday	Dranesville, Providence	McLean - Silver, West Falls Church - Orange, East Falls Church – Orange and Silver	**814**
15K,L	Chain Bridge Road – peak only	Dranesville	East Falls Church – Orange and Silver, Rosslyn – Orange, Silver and Blue	**567**
23A,T	McLean-Crystal City	Dranesville, Providence	McLean - Silver, Ballston – Orange and Silver, Crystal City – Blue and Yellow	**3,809**
Total Metrobus				5,190

The Metrobus lines in this sector vary in overall service levels. The 15K,L has the lowest level of service and operates during weekday peak periods only, with 30 minute headways. Route 23A operates between 8:00 AM and 3:00 PM and then after 7:00 PM on weekdays, with 30 minute peak headways. Route 23T operates during weekday peak periods only with a 24 minute headway and replaces 23A service between Tysons Corner Center and Shirlington. Route 23A operates all day on Saturdays with 30 minute headways and all day on Sunday with 60 minute headways. The 23A,T line has the highest ridership (approximately 3,800 weekday boardings), since much of this line traverses denser areas in Arlington County. Route 3T and the 15K,L have 814 and 567 average weekday boardings, respectively.

The Tysons Connector routes largely serve as neighborhood circulators that connect commercial activity centers with a few residential neighborhoods and the four Metrorail stations on the Silver Line in the area. The Metrobus routes largely serve as feeders between residential neighborhoods and activity centers or Metrorail Stations in Falls Church or Arlington County. Route 23A,T is more of a linehaul service on Old Dominion.

Service Productivity

Route productivity is presented in Table 7-39. Fairfax Connector routes in the Tysons sector average 5.8 boardings per revenue hour and 2.8 boardings per trip. Route 423 has the highest productivity overall, due to its higher ridership and higher service levels. This route performs above the area average in boardings per revenue mile and boardings per revenue hour. The Tysons circulator routes (400 series) generally outperform the McLean feeder routes (700 series), which are longer and serve more residential areas. Boardings per trip are particularly low on the 700 series routes, averaging two passengers or less. However, all of the Connector routes in the area are essentially new services, and ridership may grow.

Table 7-39: Tysons Bus Service Productivity

Route	Service Pattern	Service Type	Boardings/Rev-Hour	Boardings/ Trip
Fairfax Connector				
422	Weekday	Circulator	2.1	1.0
423	Seven Day, all day service	Circulator	15.7	8.4
424	Weekday	Circulator	6.0	2.9
721	Seven Day, all day service	Feeder	4.1	1.9
724	Weekday Peak Period only	Feeder	4.6	2.0
734	Weekday Peak Period only	Feeder	2.3	0.8
Fairfax Connector Weekday Average			**5.8**	**2.8**
Metrobus				
3T	Weekday and Saturday	Local	28.1	12.2
15K,L	Weekday Peak Period only	Commuter	39.4	23.6
23A,T	Seven Day, all day service	Major	30.1	37.4
Metrobus Weekday Average			32.5	24.4

Note: Productivity values are based on farebox data for September 2014

The Metrobus routes in Tysons are longstanding services serving higher density areas and established commuting corridors. These lines average 32.5 boardings per revenue hour and 24.4 boardings per trip. The 15K,L has the highest boardings per revenue hour because this route has a limited span of service (peak period only). The 23A,T has the highest boardings per trip, since it traverses more densely-populated areas of Arlington County and serves many local trips.

During the current CTP outreach activity, comments received from local officials and the public strongly urged FCDOT to expand transit services throughout the Tysons area. Specifically:

- Extend Metrobus Route 3T to Tysons Corner Center and increase its frequency during off-peak periods;
- Implement a new route between Pimmit Hills and Tysons Corner Center to supplement the 3T.

Status of 2009 TDP Recommendations

Table 7-40 presents the current (2015) status of the implementation of the 2009 TDP recommended service modifications. This table provides a summary of Changes implemented by route, indicating whether or not those changes are the same as the 2009 recommendations.

Table 7-40: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
Fairfax Connector			
422	South Tysons - Greensboro Station	Implement Tysons Link routes	Implemented on changed alignment
423	Central Tysons - Tysons Corner Station	Implement Tysons Link routes	Implemented on changed alignment
424	North Tysons - Spring Hill Station	Implement Tysons Link routes	Implemented
425/7	West Falls Church – Tysons	Eliminate with Silver Line opening	Implemented
721	Chain Bridge Road - McLean	New route: McLean Connector	Implemented
722	Northern McLean Connector	New route	Not implemented
724	Lewinsville Road	Implement Tysons Link routes	Implemented on adjusted alignments
734	McLean - West Falls Church	Kirby Road Route	Great Falls service implemented as alternative to Kirby Rd.
New	Wolf Trap Shuttle	New route	Not implemented
New	Leesburg Pike Shuttles	New routes	Not implemented
Metrobus			
3T	Pimmit Hills - Falls Church	Transfer Magarity Rd segment to 28T	Not implemented; route extended to East Falls Church
15K,L	Chain Bridge Road	Replace with shuttle to Rosslyn	Not implemented as proposed; extended to East Falls Church to replace 24T

Route	Name	2009 TDP Recommendation	2015 Implementation Status
23A,C	McLean-Crystal City	Eliminate 23C	Implemented, 23T added as overlay between Shirlington and Tysons Corner Center during certain periods
24T	East Falls Church – Tysons	Restructure	Route eliminated; replaced by 15K,L
28T	Leesburg Pike – Tysons	Restructure in conjunction with 3T	Not implemented; route eliminated

7.5.2. Recommendations for Existing Service

Monitor Service on New Tysons routes

As mentioned above, bus service in Tysons was extensively expanded in July 2014 in response to the Silver Line opening, and further adjustments were made in January 2015. Indeed, the three Tysons circulator routes (422, 423, and 424) will be completely revised in May 2015. For all of the Tysons and McLean routes, no adjustment in service will be necessary to accommodate Phase 2 of the Silver Line. Future route changes in Tysons are more likely to be triggered by changes in the roadway network as the County moves toward making Tysons more of an urban and walkable area, with more residential development and street connectivity. Therefore, the short-term recommendation for routes 422, 423, 424 and 721 is simply to monitor ridership and operations (reliability) and adjust service levels as necessary until new road connections make more efficient bus operations possible.

In 2012, Fairfax County completed a study of longer-term options for transit service in Tysons. The *Tysons Circulator Study* considered service options for 20-30 years in the future when the roadway network and development patterns will be significantly changed. One of the routes proposed in that study connected the Spring Hill and McLean Metrorail stations via Jones Branch Road and a new bridge over the Beltway providing access to Scott's Crossing (currently in design). When this new roadway link is available, the new (as of May 2015) Route 424 could be diverted from Tysons Corner Metrorail to McLean Metrorail (to replicate the route proposed in the Tysons Circulator Study), or a new route, Route 425, could be introduced to provide the Spring Hill-McLean connection. This second option would entail a realignment of the current (as of May 2015) Route 424 to avoid excessive duplication on Jones Branch Road.

Truncate Route 724

Service on Lewinsville Road in McLean, surrounding Tysons on the north side, has historically been provided by Metrobus Route 24T. With the Silver Line opening, that route became Fairfax Connector Route 724. The portion of the 24T that is now Route 724 has always had modest ridership due to low residential density. Service has been maintained in this area because of the Farm Credit Bureau and other federal agencies off of Lewinsville Road.

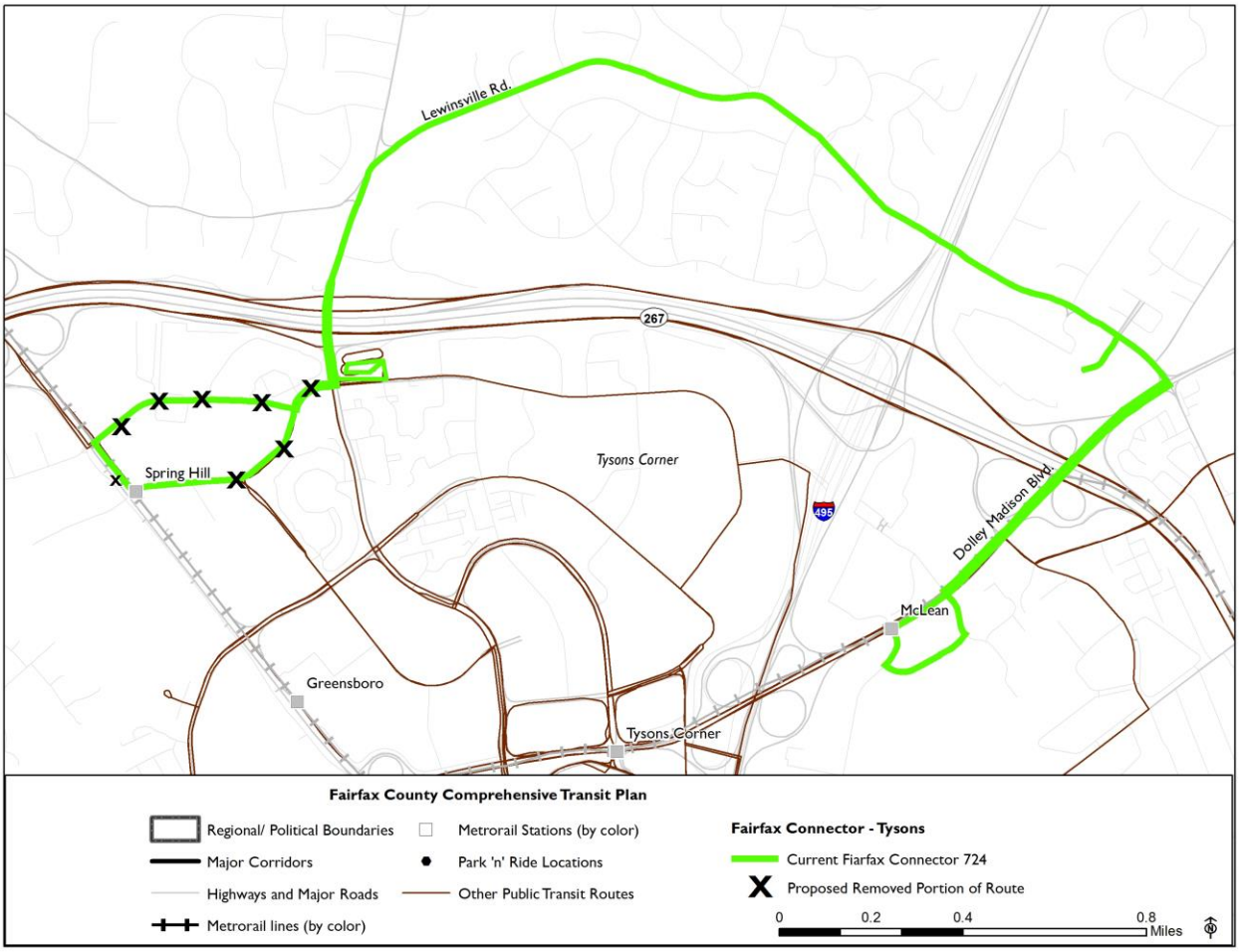
The bus bays at Spring Hill Metrorail station are currently overburdened. Given that Route 724 continues to perform poorly in terms of ridership and productivity, it is a good candidate to reduce bus congestion at Spring Hill. It is recommended to truncate the route at Tysons West*Park Transit Station,

but otherwise keep the route in its current form and service level.
Figure 7.31 shows the proposed revision to Route 724.

Table 7-41: Route 724 Proposed Service Levels

		Route 724
	Operator	Fairfax Connector
Span	**Weekday**	5:30 AM – 7:30 PM
	Saturday	--
	Sunday	--
Headway (minutes)	**Weekday Peak**	30
	Weekday Midday	60
	Saturday	--
	Sunday	--

Figure 7.31: Proposed Route 724



Restructure and Improve Metrobus 3T

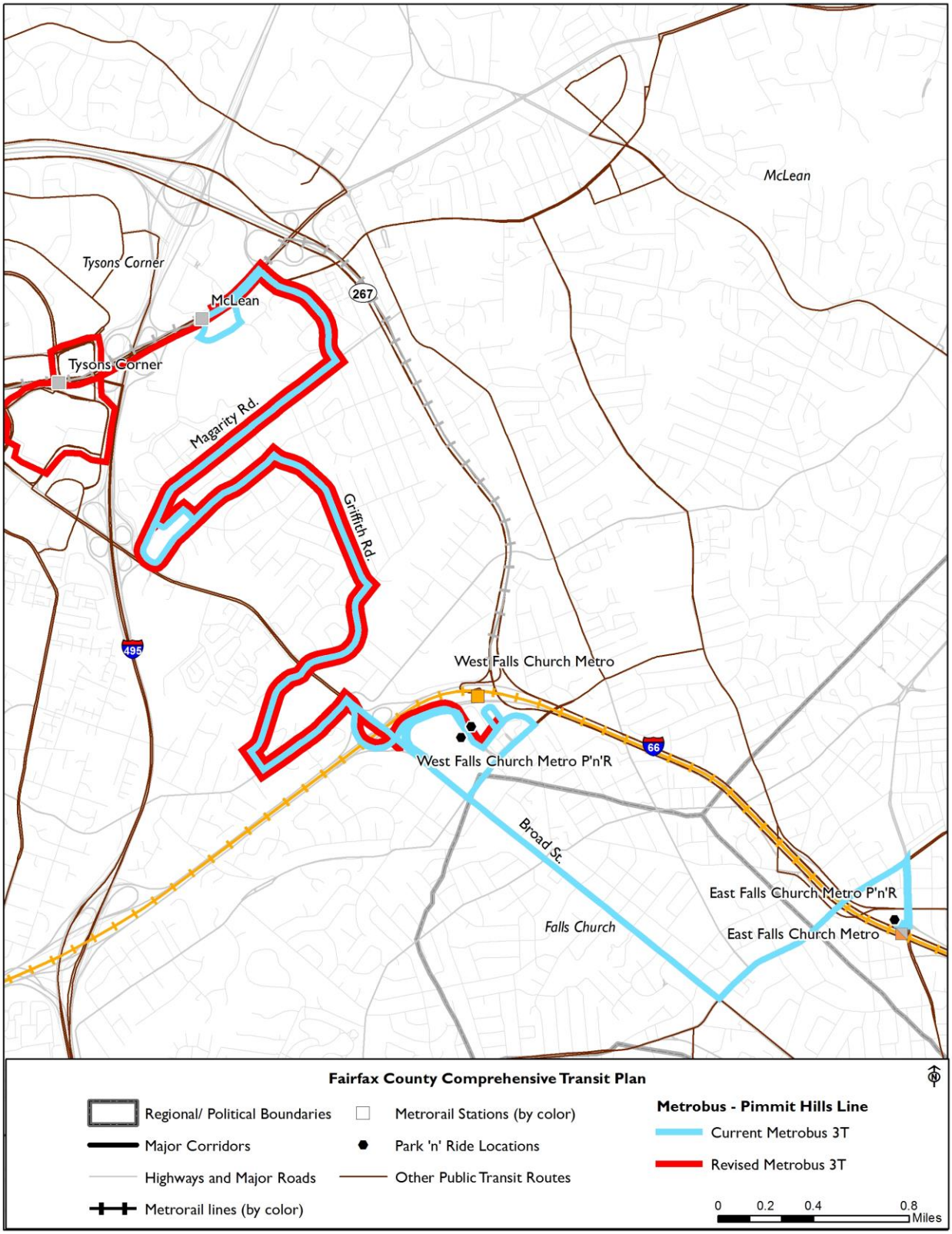
Under this proposal, Route 3T would be extended to Tysons Corner Center (the old transit station on Fashion Boulevard) to provide better access to Tysons than the current terminal at McLean Metrorail station, as well as freeing up space at McLean. After stopping at McLean, the route would proceed to West Falls Church Metrorail station via its current alignment, as shown in Figure 7.32. It is proposed to terminate the route at West Falls Church rather than to continue to operate the extension to East Falls Church that was added in December 2013 when Metrobus 3B was eliminated. Both Leesburg Pike and N. Washington Street have a significant amount of other bus service available, although there is no route that serves both of those roads as the 3T does now. With this proposed change, riders along Leesburg Pike who want to get to the Orange Line will need to take another bus route into West Falls Church, rather than the 3T into East Falls Church.

The proposed service levels for the restructured Metrobus 3T are shown below in Table 7-42. Responding to the public comments mentioned above, the proposed headways for the 3T represent an upgrade over current service, which has 20 minute peak headways and 60 minute off-peak headways. The streamlining of the alignment will allow for the higher service level without requiring significantly more resources. It may make sense to convert the Metrobus 3T to Connector operation at some point in the future.

Table 7-42: Route 3T Proposed Service Levels

		Route 3T
	Operator	Metrobus
Span	**Weekday**	5:30 AM – 11:30 PM
	Saturday	6:30 AM – 11:30 PM
	Sunday	8:00 AM – 7:00 PM
Headway (minutes)	**Weekday Peak**	15
	Weekday Midday	30
	Saturday	30
	Sunday	60

Figure 7.32: Proposed Route 3T



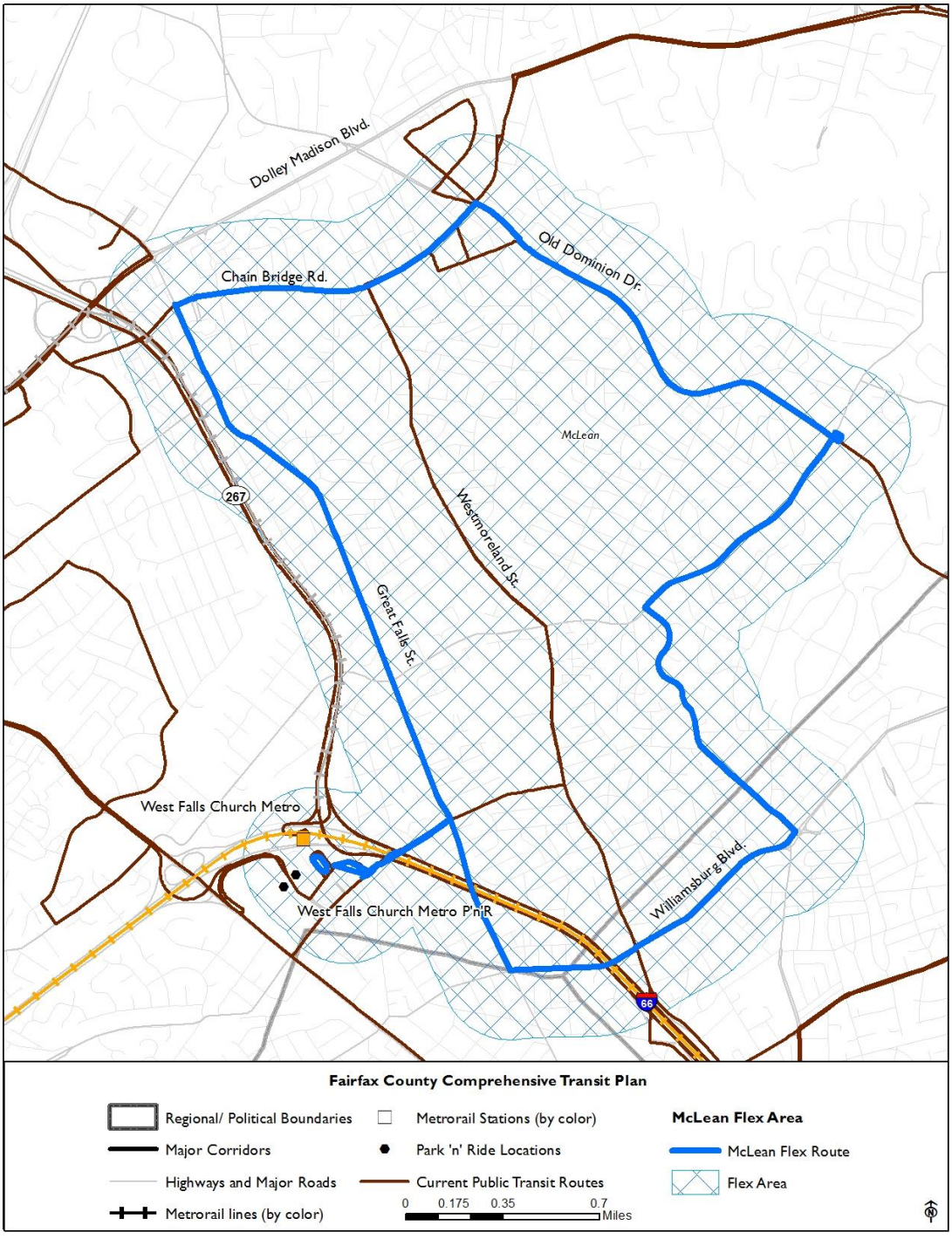
Convert Route 734 into Flexible Service

Connector Route 734 was developed after the 2009 TDP when it was determined that a route on Kirby Road–an east-west road in McLean–was not feasible. Service on Great Falls Road would represent new territory for Connector buses, and Westmoreland Street was due to lose service with the discontinuance of the Metrobus 24T. Separately, WMATA decided to reroute the 15KL line along Westmoreland into East Falls Church station. Thus, Route 734 now competes with the 15KL for riders while also serving a street that has never had transit service before. The large loop structure of the route means that both of these roads see only half of the service, making the route relatively unattractive. It is not surprising that Route 734 has the lowest ridership of any route in the system (other than Route 928, which will be merged with RIBS 5 in May 2015).

While it is true that new routes need time to mature and build their ridership base, given the competition of the Metrobus 15KL and the suburban nature of the part of McLean served by the 734, it is appropriate to consider conversion of this route into a flexible service route in the short term. As shown in Figure 7.33, a zone of flexible service can be defined in southern McLean. The route could operate along the outer boundary of the service area shown and deviate into neighborhoods upon request (24-hour advance request for pickups and on-board requests for dropoffs). There are other flexible service models available as well, such as defining a set of stops that the route will serve but allowing it to take any path between those defined stops. As FCDOT explores the viability of alternative service models, this area of McLean would seem to be a good candidate for a pilot project.

A specific level of service is not provided here since the target market for this service has not been defined. Peak period service is not necessarily the most appropriate for flexible routes because time-sensitive commuters would find route deviations to be unworkable. Midday service may be the best option to complement service on the 15KL. The current bus service provider contract does not support the provision of flexible service. The lead time to establish the framework for such service, select a contractor to provide it, and actually field it, is likely to be several years.

Figure 7.33: Proposed McLean Flexible Service Area



No recommendations for Metrobus 15KL and 23AT

In June 2015, WMATA implemented a new schedule for the 15KL to improve reliability. As shown in Table 7-39, the Metrobus 15KL and 23AT lines are strong performers. Especially in the case of the 23AT, much of that performance comes from outside of Fairfax County. Nonetheless, these routes have efficient alignments and serve their markets adequately. Thus, the CTP has no recommendations for these lines.

7.5.3. Recommendations for New Service

Re-Establish Connection from Tysons to Bethesda

In the late 1990s, WMATA initiated a series of routes branded as "SmartMover" connecting Tysons Corner to Bethesda and other locations in Montgomery County, Maryland. These routes were operated until December 2003 when they were discontinued due to poor performance. In spite of the failure of that service initiative, there is still a significant travel market between Northern Virginia and Montgomery County. Tysons and Bethesda are the two most significant nodes of activity. The transit connection between these areas is currently long and circuitous via Metrorail through downtown DC. A bus connection via the Beltway would be much faster and more direct.

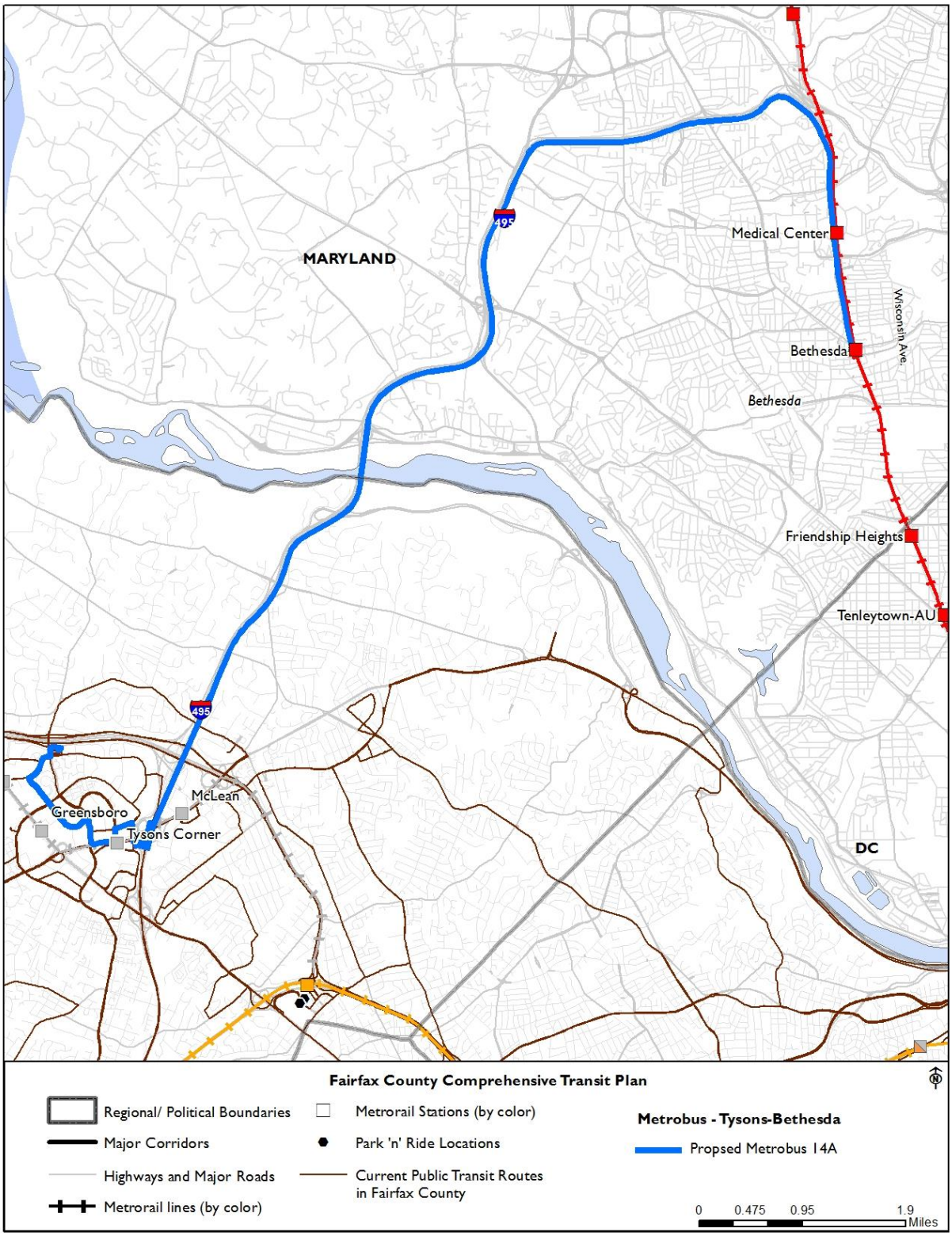
Compared to 15 years ago, Tysons now has Silver Line service and a better local distribution system in Routes 422, 423, and 424. Northern Virginia also has the Express Lanes which extend just north of Tysons, easing travel for buses into and out of the Tysons area. What has not changed is the bottleneck presented by the American Legion Bridge and the fact that without HOV lanes or a bus-on-shoulder policy for the stretch between the northern terminus of the I-495 Express Lanes and the I-270 split, buses would not be able to move faster than general traffic. Therefore, dialogue with Maryland DOT aimed at resolving this problem will be an important element in making this route a success. Another factor that must be addressed is providing park-and-ride opportunities at both route terminals.

As Tysons becomes more urbanized and pedestrian-friendly over time, a transit route connecting Tysons to Bethesda will become more attractive. This CTP proposes a simple connection between the two, as shown in Figure 7.34. The proposed route does not attempt to cover as many destinations as the former SmartMover, which consisted of four different bus routes. It is hoped that a simpler and more focused service would be more attractive than SmartMover, even though its potential market is more limited. The initial implementation of the route would be focused on peak service, with limited midday and evening service so that users would feel they have some flexibility in case of emergency or working late. The proposed span and headway is shown in Table 7-43.

Table 7-43: Proposed Route 14A Service Levels

		Route 14A
	Operator	Metrobus
Span	**Weekday**	5:30 AM – 7:30 PM
Headway (minutes)	**Weekday Peak**	20
	Weekday Midday/Evening	60

Figure 7.34: Proposed Metrobus 14A



Discard Recommendations for Northern McLean Connector, Wolf Trap Shuttle and Leesburg Pike Shuttles

In the 2009 TDP, it was recommended to implement three services into Tysons to improve access from the northeast and northwestern sectors. FCDOT encountered strong resistance from neighborhoods in northern McLean to the proposed Route 722 and thus dropped it from further consideration. If FCDOT had worked out a remote commuter parking arrangement with Wolf Trap, the Wolf Trap Shuttle would have served as the connection to the Silver Line. Because no such arrangement was created, and because there does not seem to be significant demand for remote parking, the proposed shuttle is unnecessary. The proposed change to Route 574 discussed earlier would fulfill the need that the Leesburg Pike Shuttles were intended to address, and thus these shuttles are no longer needed. (As mentioned in the Vienna section below, no change is recommended for the existing Route 480, Wolf Trap Express.)

7.5.4. Tysons Area Route Recommendations Summary

The following Table 7-44 provides a summary of the service enhancement recommendations for the Tysons area.

Table 7-44: Tysons Route Recommendations

Route	Improvement	Service Purpose
Existing Routes		
422	Monitor service	
423	Monitor service	
424	Monitor service	
721	Monitor service	
724	Truncate from Spring Hill to Tysons West*Park Transit Station	Operational considerations at Spring Hill
3T	Extend to Tysons Corner Center Transit Station; improve service level	Improve access to Tysons
734	Convert to flexible service area	Avoid competition with 15KL; provide broader access
Route Proposals		
14A	Connect Tysons to Bethesda	Provide faster transit connection between major activity nodes

7.6 Vienna Area Services

7.6.1. Background

Service Area

Fairfax County's North County Vienna service area includes the Oakton community, the incorporated town of Vienna and the area south of I-66 including Dunn Loring and Merrifield. The town of Vienna is part of the Hunter Mill Magisterial District, and the rest of the area is part of the Providence District. The North County Vienna service area is roughly bounded by US-50 to the south, I-495 to the east, Leesburg Pike to the north and Hunter Mill Road to the west, as shown in Figure 7.35. Chain Bridge Road (VA-123), bisects the service area as it runs northeast to southwest serving vehicular traffic between Tysons Corner and points in central Fairfax County. In downtown Vienna, VA-123 becomes Maple Avenue, with a roughly two-mile stretch of commercial businesses. The Vienna and Dunn Loring Metrorail stations are in the median of I-66, a major corridor connecting Washington DC and points west.

Current Services

Seven bus routes, five Fairfax Connector and two Metrobus, operate within the Vienna service area. All seven routes provide a direct Metrorail connection: one route serves the Spring Hill station, two routes serve the Vienna and Tysons Corner stations, two routes serve the Tysons Corner and Dunn Loring stations, and two routes serve the Vienna station only. Route 463 provides seven-day service, while Routes 432, 461, 462 and 466 provide only peak service. Route 480 is a special purpose express shuttle from West Falls Church Metrorail Station to Wolf Trap that operates only when there are events at the venue. There are no changes recommended for this service and it is not discussed further in this chapter. Metrobus routes in this section are Route 15M, which provides only peak service connecting the City of Fairfax and George Mason University with the Vienna Metrorail Station, the Town of Vienna, and Tysons Corner Metrorail station; and Route 2T, which provides seven-day service connecting Merrifield and the Dunn Loring Metrorail station with Tysons and the Tysons Corner Metrorail station.

Most of these routes were substantially restructured with the opening of Silver Line Phase 1. At that time routes 462 and 463, which formerly traveled between Vienna and Dunn Loring stations, were both extended to Tysons Corner. Route 461 was instituted as a new route so that segments that were no longer part of the reconfigured Route 463 would not lose service. Route 432 is a brand new service offering a connection to the Silver Line for an area with no previous bus service. Metrobus 2T was restructured in conjunction with the Connector route changes. Route 466 is the former Metrobus 2W, which was taken over by the Connector in 2009. It did not change during the Silver Line restructuring. Finally, Metrobus 15M used to be part of the 15K line stretching all the way to Rosslyn, but that line was split in 2009.

As shown in Table 7-45, five routes operate peak period service only: 432, 461, 462, 466 and 15M. Service is operated on these routes between approximately 5:00 AM and 9:30 AM weekday mornings and between 4:00 PM and 8:00 PM weekday evenings. Scheduled headways range between 30 and 35 minutes. Route 463 and 2T operate a full day schedule, seven days a week. Weekday service is currently scheduled with a headway between 20 and 30 minutes with a span of service from approximately 5:30 AM to 12:00 AM. Weekend routes 463 and 2T operate with 60 minute headways, with Saturday service between approximately 6:00 AM and 11:00 PM and Sunday service between approximately 8:00 AM and 8:30 PM.

Figure 7.35: Vienna Service Area-Existing Service

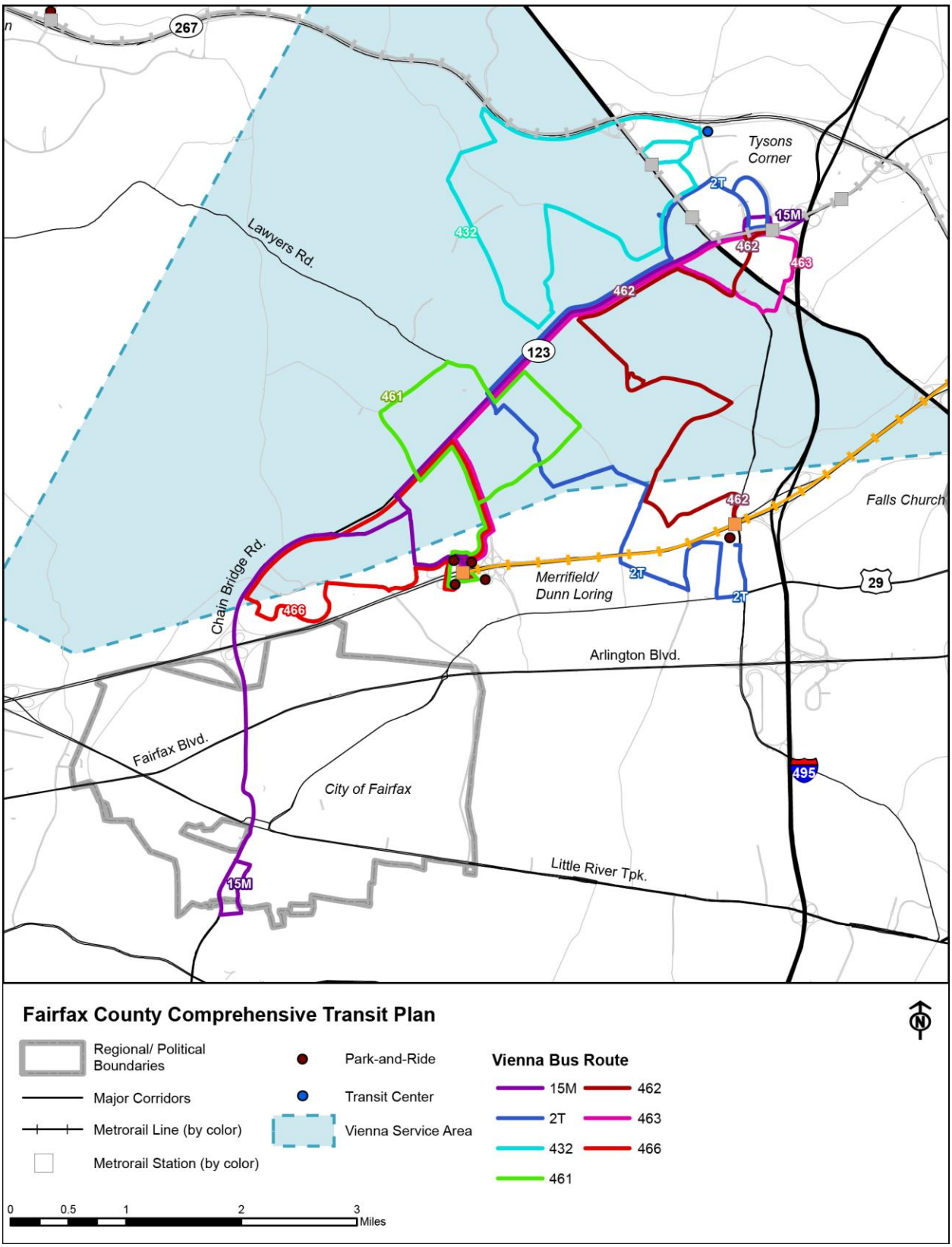


Table 7-45: Vienna Bus Services

Route	Name	District	Metrorail Station(s) Served	Average. Weekday Boardings
Fairfax Connector Routes				
432	Old Courthouse – Beulah – Peak only	Hunter Mill, Providence	Spring Hill	**31**
461	Vienna - Flint Hill Tapawingo – Peak only	Hunter Mill, Providence	Vienna - Orange	**65**
462	Dunn Loring - Tysons - Navy Federal- Peak only	Hunter Mill, Providence	Tysons Corner - Silver, Dunn Loring - Orange	**84**
463	Vienna-Tysons-Maple Avenue	Hunter Mill, Providence	Vienna - Orange, Tysons Corner - Silver	**353**
466	Vienna – Oakton – Peak Only	Hunter Mill, Providence	Vienna - Orange	**193**
480	Wolf Trap Express	Hunter Mill, Providence	West Falls Church	**N/A**
Total Connector Weekday Passenger Boardings				**726**
WMATA Metrobus Routes				
2T	Tysons Corner-Dunn Loring	Hunter Mill, Providence	Dunn Loring - Orange, Tysons Corner - Silver	**574**
15M	George Mason-Tysons Corner – Peak Only	Hunter Mill, Providence	Tysons Corner - Silver, Vienna - Orange	**320**
Total Metrobus Weekday Passenger Boardings				**894**

Service Productivity

Weekday route productivity is presented in Table 7-46. These four Connector routes and two Metrobus routes average 11.1 boardings per revenue-hour and 7.0 boardings per trip. Boardings per revenue-hour is the most commonly used measure of productivity. Routes 432, 461 and 462, all weekday peak-only routes, and Route 463, a seven-day service route, have relatively low productivity with fewer than 10 boardings per revenue hour and fewer than 5 boardings per trip . The former 462 and 463 were historically poor performers, and the revised versions, as of the time the data were gathered, had very little time to develop new ridership markets in response to the Silver Line opening. Route 432 is a brand new service. Route 466 and 15M, both peak-only routes, are the strongest performing routes in the service area with approximately 20 boardings per revenue hour. These were the routes least affected by the Silver Line opening.

Table 7-46: Vienna Bus Service Weekday Productivity

Route	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings /Trip
Fairfax Connector				
432	Weekday Peak Period only	Circulator	4.7	3.1
461	Weekday Peak Period only	Circulator	5.1	3.3
462	Weekday Peak Period only	Local	4.2	2.8
463	Seven day, all day service	Local	5.9	4.2
466	Weekday Peak Period only	Feeder	19.6	10.7
Metrobus				
2T	Seven day, all day service	Local	15.9	11.7
15M	Weekday Peak Period only	Commuter	22.5	13.3
	Vienna Area Average		**11.1**	**7.0**

Note: Productivity values based on farebox data for September 2014 (Fairfax Connector) and APC data for Metrobus

Status of 2009 TDP Recommendations

Table 7-47 presents the current (2015) status of the implementation of the 2009 TDP recommended service modifications.

Table 7-47: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
461	Vienna - Flint Hill Tapawingo	New route to replace segments of old 463	Implemented
462	Dunn Loring - Tysons - Navy Federal	Restructure to serve Silver Line; improve service	Implemented
463	Vienna-Tysons-Maple Avenue	Restructure to serve Silver Line; improve service	Implemented
464	Vienna South Feeder	New route	Not implemented
466	Vienna - Oakton	Restructure route to reduce duplication	Not implemented
451	Merrifield Circulator	New route	Not implemented
2T	Tysons Corner-Dunn Loring	Restructure to serve Silver Line	Implemented
15M	George Mason-Tysons Corner	Minor rerouting in Tysons Corner	Implemented

7.6.2. Recommendations for Existing Service

Monitor Ridership and Operations for Connector 432, 461, 462, and 463

With the opening of the Silver Line in July 2014, Fairfax Connector restructured most of its service in the Vienna area, extending existing routes 462 and 463 to Tysons and creating routes 432 and 461 to serve new areas and preserve service on road segments dropped by the other routes. As of September 2014, barely two months into the new service pattern, none of these routes was performing well, all with fewer than 6 boardings per hour. It is standard in the transit industry to allow new routes to operate for at least a year before drawing strong conclusions about their viability, except in extreme cases. Further, the routes were initiated with more than minimal levels of service so that they would have the best chance possible to attract new passengers. This relatively high level of service helps to depress the productivity figures, since it increases the denominator in the calculation.

The recommendation of the CTP is to monitor the ridership on these routes and adjust service levels as appropriate once the routes have had a chance to establish themselves. In some cases, public comments have requested more service on these routes (such as weekend service on Route 432). Service increases cannot be justified at this point, but may be appropriate in the future.

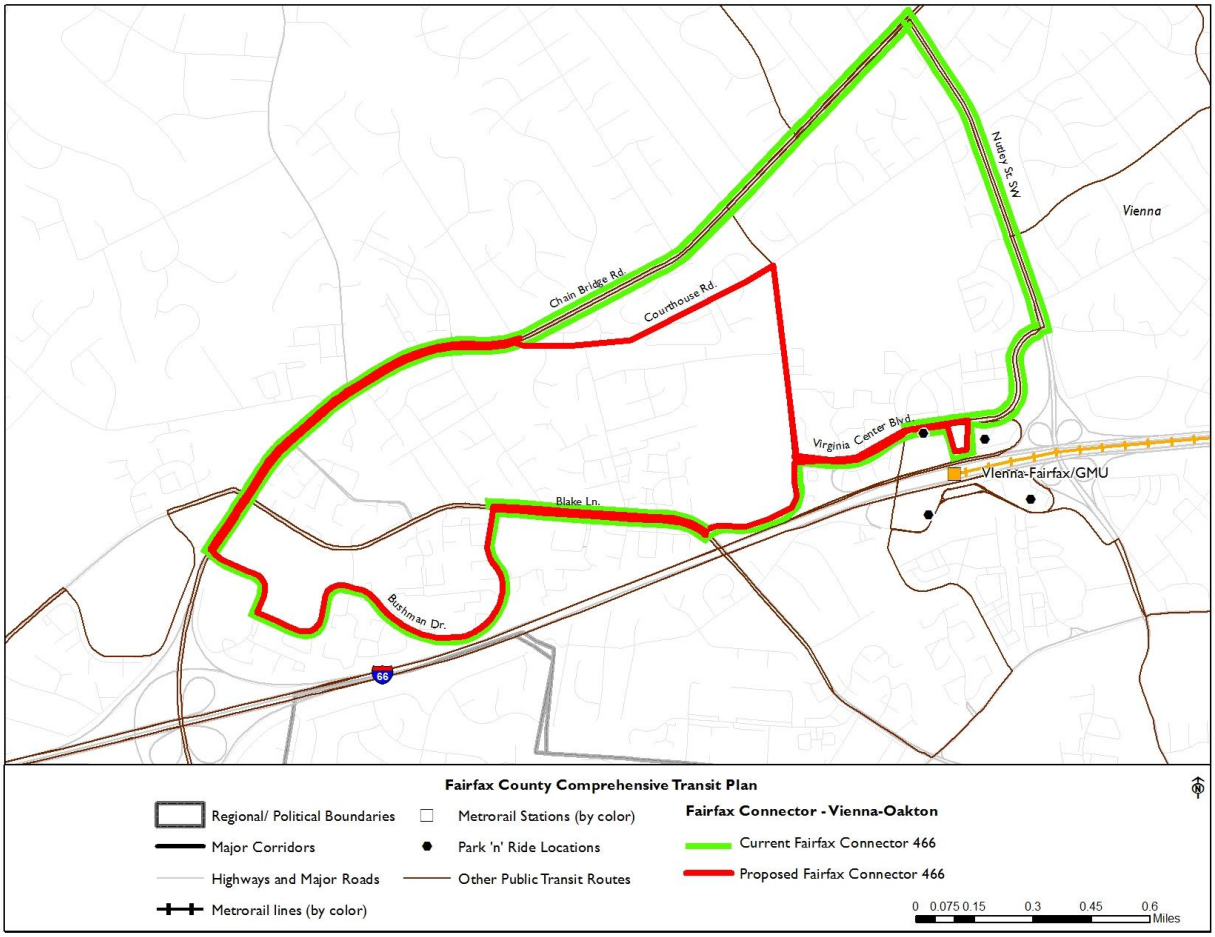
Restructure Route 466

The 2009 TDP recommended a realignment of Route 466 in order to reduce duplication with other services, better penetrate residential neighborhoods, and reduce the cycle time to allow for a 30 minute headway with a single bus in service. Since that time, the alignment of Metrobus 15M was changed so that it diverts from VA-123 into the Vienna Metrorail station using some of the streets proposed for Route 466. This CTP recommends eliminating the 15M and altering Route 466 to use the alignment proposed in the 2009 TDP and shown in Figure 7.36 to accomplish these goals. The proposed service levels for this restructured route are shown in Table 7-48.

Table 7-48: Route 466 Proposed Service Levels

		Route 466
	Operator	Fairfax Connector
Span	**AM Peak**	5:00 AM – 10:00 AM
	PM peak	4:00 PM – 8:45 PM
Headway (minutes)	**AM Peak**	30
	PM Peak	30

Figure 7.36: Restructured Route 466



Eliminate Metrobus 15M

Metrobus 15M was created in 2009 to allow for a lower level of service on the weaker portion of the former 15K, which ran from Rosslyn to Fairfax City. The current 15M runs only during peak periods. While it provides a one-seat ride between George Mason University/Fairfax City and Tysons Corner, the route has almost no unique mileage. The connection it provides between Fairfax City/GMU and Vienna Metrorail Station is also provided (with a better service level) by the City of Fairfax's CUE system. The connection it provides between Vienna Station and Tysons via Chain Bridge Road is also provided by Connector 463 (again, with a better service level). The productivity and ridership of the 15M is poor compared to other Metrobus services. The resources it consumes could likely be put to better use, since other routes make the same connections. While there is potential for more people to travel between GMU and Tysons, that pattern has not established itself yet, and riders could still accomplish the trip with a transfer between CUE and Connector 463 at Vienna station.

Eliminating the 15M and moving Route 466 to the alignment recommended above would leave a small segment of Maple Avenue with no service. Ridechecks from Fall of 2014 showed fewer than 5 boardings per day at all of the stops combined on the segment that would be dropped, and other service would be a short walk away.

No Recommendation for Metrobus 2T

Metrobus 2T is a moderately successful route which was just restructured in conjunction with the Silver Line opening. It might be appropriate to convert this route to Connector operation at some time in the future. This CTP has no recommendations for the 2T.

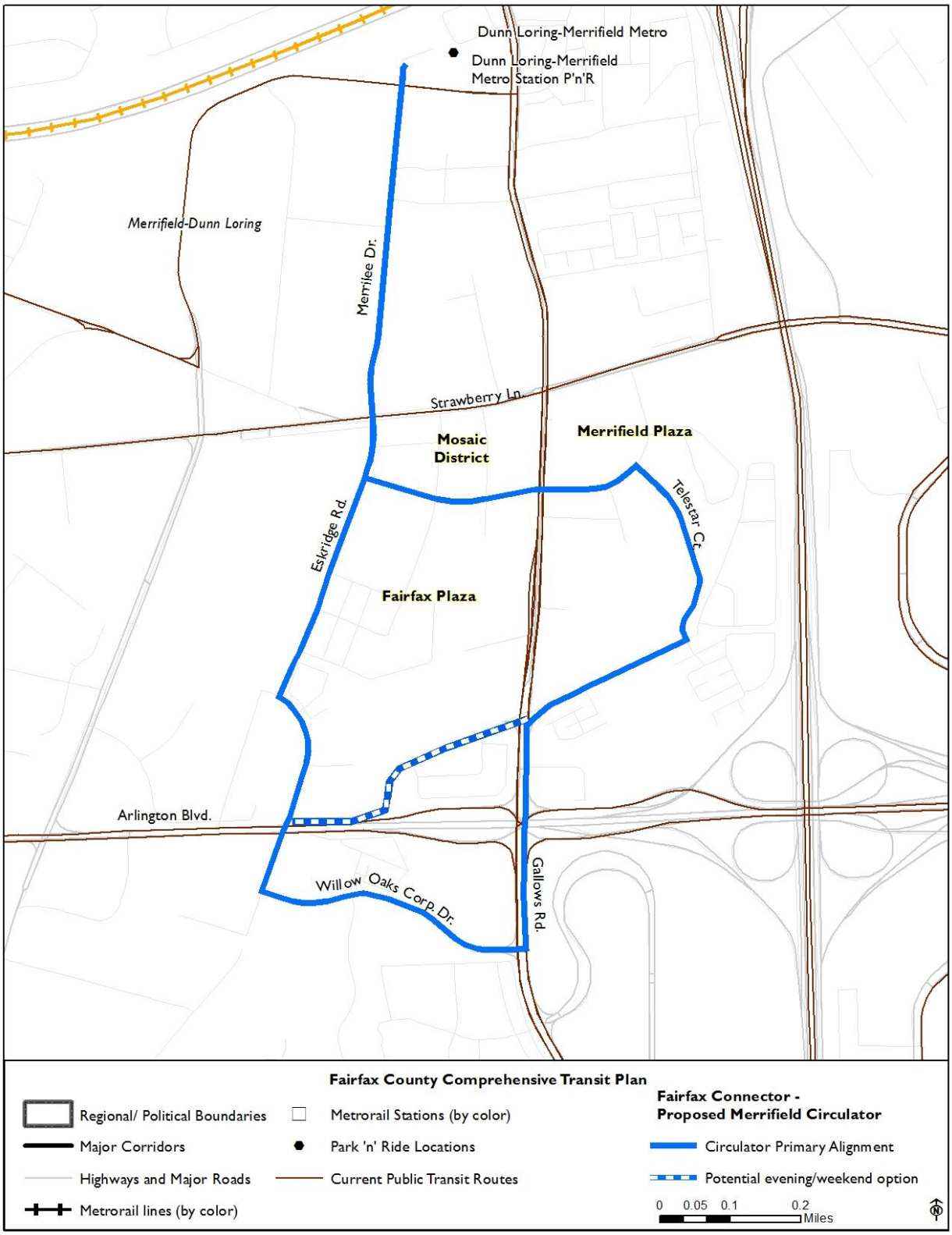
7.6.3. Recommendations for New Service

Establish Merrifield Circulator (Route 451)

The 2009 TDP recommended that a Merrifield Circulator route be established to serve the large amount of new development occurring in the area south of Dunn Loring Metrorail station. At that time, the road network was not yet complete, which hindered the efficient operation of a new circulator service. New roadway connections have now been completed, making the implementation of a new route more feasible.

The current CTP has a recommendation that is somewhat different from that of the 2009 TDP. Figure 7.37 shows the recommended alignment for a proposed new Route 451. The route is designed to be both distributor and feeder route; that is, in the morning carry both employees to jobs in Merrifield from the Metrorail station as well as DC/Arlington commuters to the station. The area along Eskridge and Willow Oaks Corporate Drive has a significant number of jobs, while the area to the east of Gallows Road (Telestar Court) has very high density housing. An optional extension to Inova Fairfax Hospital is also shown, though the hospital already has a high level of service with the 401/402 and Metrobus 1C connecting it to Dunn Loring-Merrifield Metrorail Station and additional service from the Metrobus 1A and 1Z. Redevelopment of the Exxon/Mobil offices across Gallows Road from the hospital should be monitored to determine if future service is warranted there, either by an extension of the Merrifield Circulator, or by another route.

Figure 7.37: Proposed Route 451



The initial service level should include peak and midday service, since Merrifield is an active and growing area. Weekend service would only be justified after the route has established a strong ridership base during weekdays. A shorter alignment is shown for potential future evening and weekend service when the businesses and County Social Services Center on Willow Oaks Corporate Drive are closed.

Table 7-49: Route 451 Proposed Service Levels

		Route 451
	Operator	Fairfax Connector
Span	**Weekday**	6:00 AM – 8:00 PM
Headway (minutes)	**Peak**	15-25 (depending on alignment)
	Midday	30

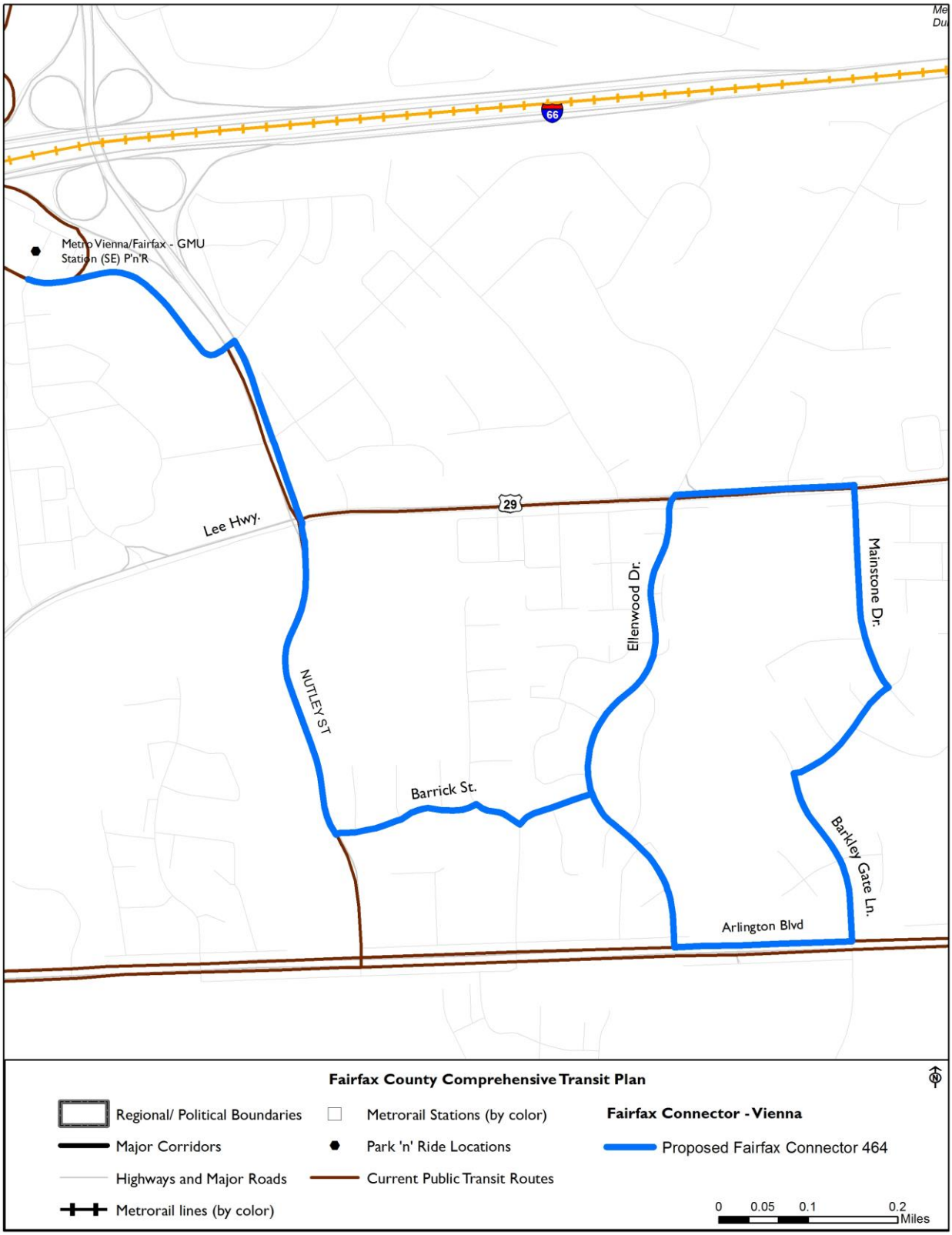
Establish Vienna South Feeder Route 464

The 2009 TDP recommended that a short feeder route into Vienna Metrorail station be established in the southern part of Vienna. The CTP recommends carrying forward this recommendation. This route would provide better access to the station from the area between Lee Highway and Arlington Boulevard which has high residential density. Currently, people living in this area need to walk to one of the major arterials to catch a bus, meaning that they must cross the arterial on one end of the trip. This new route, shown in Figure 7.38, would serve residences in the area between Lee Highway and Arlington Boulevard east of Nutley Street. The proposed service level is shown below in Table 7-50.

Table 7-50: Route 464 Proposed Service Levels

		Route 464
	Operator	Fairfax Connector
Span	**AM Peak**	5:00 AM – 9:00 AM
	PM peak	4:00 PM – 7:30 PM
Headway (minutes)	**AM Peak**	30
	PM Peak	30

Figure 7.38: Proposed Route 464



7.6.4. Vienna Area Route Recommendations Summary

Table 7-51 provides a summary of the service enhancement recommendations for the Vienna area.

Table 7-51: Vienna Route Recommendations

Route	Improvement	Service Purpose
Existing Routes		
432	Monitor ridership	
461	Monitor ridership	
462	Monitor ridership	
463	Monitor ridership	
466	Restructure and improve headway	Streamline service
2T	No recommendation	
15M	Eliminate route	Free resources that could be better used on other routes
Route Proposals		
451	New Merrifield Circulator	Better service to growing area
464	Vienna South Feeder	Better access to Metrorail

7.7 Bailey's Crossroads Area Services

7.7.1. Background

Service Area

Fairfax County's Bailey's Crossroads service area includes the Culmore, Skyline and Seven Corners communities. The service area is part of the Mason Magisterial District, although several of the routes in this area also serve the Providence District. The North County Bailey's Crossroads service area is a relatively narrow corridor following VA-7 from Tysons to Bailey's Crossroads, as shown in Figure 7.39. VA-7, Leesburg Pike, bisects the service area as it runs north to south serving vehicular traffic between Leesburg and Alexandria. VA-244, Columbia Pike, bisects the service area as it runs east to west serving vehicular traffic between Arlington and Annandale. Bailey's Crossroads Shopping Center is located at the intersection of VA-7 and VA-244. The Skyline commercial district is located in the southern portion of this service area.

Current Services

Six Metrobus lines comprising 11 routes operate within the Bailey's Crossroads Service Area. Fairfax Connector does not operate any bus service in the service area. Various portions of Leesburg Pike (VA-7) and the Columbia Pike (VA-244) are used by all Bailey's Crossroads bus services. All bus routes provide a direct Metrorail station connection, with three connecting two Arlington County Metrorail Stations, one connecting two Fairfax County Metrorail stations, one connecting a Fairfax County Metrorail station to an Arlington Metrorail Station, and one connecting a Fairfax County Metrorail Station to an Alexandria Metrorail Station. All six routes are bundled into three line groups, the 4, 25, and 28, with service patterns varying between the peak and off peak periods as noted in Table 7-52. The peak-only routes are a supplement to the all-day service provided within each line. The 25A,C,D,E routes were replaced by a rerouted 22A and new peak-only routes 22C and 22F as of June 2015; however the data collected are for the older version of this service and thus the older route names have been retained in the tables showing route ridership and productivity.

As shown in Table 7-52, routes 28F,G and 28X operate peak-period service only. Service is operated on these routes between approximately 5:45 AM and 9:00 AM weekday mornings and between 3:00 PM and 7:00 PM weekday evenings. Scheduled headways range between 15 and 25 minutes. Route 25B provides weekday and Saturday service. On weekdays, this route operates between 6:00 AM and 10:30 PM with 15 minute peak headways and 30 minute midday headways. Saturday service operates with a 30 minute headway with service between 6:00 AM and 9:00 PM. Lines 4, 22, and 28A operate a full-day schedule, seven days a week. Weekday service is currently scheduled with a 15 to 25 minute headway during the day and a 15 to 30 minute headway in the evening with a span of service from about 5:00 AM to 1:00 AM. Weekend service operates for the 4 line and the 28A with a 20 to 40 minute headway with Saturday service between 6:00 AM and 12:00 AM and Sunday between 6:00 AM and 12:00 AM. Weekend service for 25A,C,D,E operates from approximately 8:00 AM to 9:00 PM on Saturday and Sunday with a headway of 60 minutes.

The Bailey Crossroads area bus routes do not serve any official park-and-ride lot. This area's routes operate primarily along Leesburg Pike (VA-7) and Columbia Pike (VA-244), with some routes operating along Carlin Springs Road. Land use along these routes consists of a mix of high-rise residential complexes, shopping plazas, commercial uses, and office developments.

Figure 7.39: Bailey's Crossroads Service Area-Existing Service

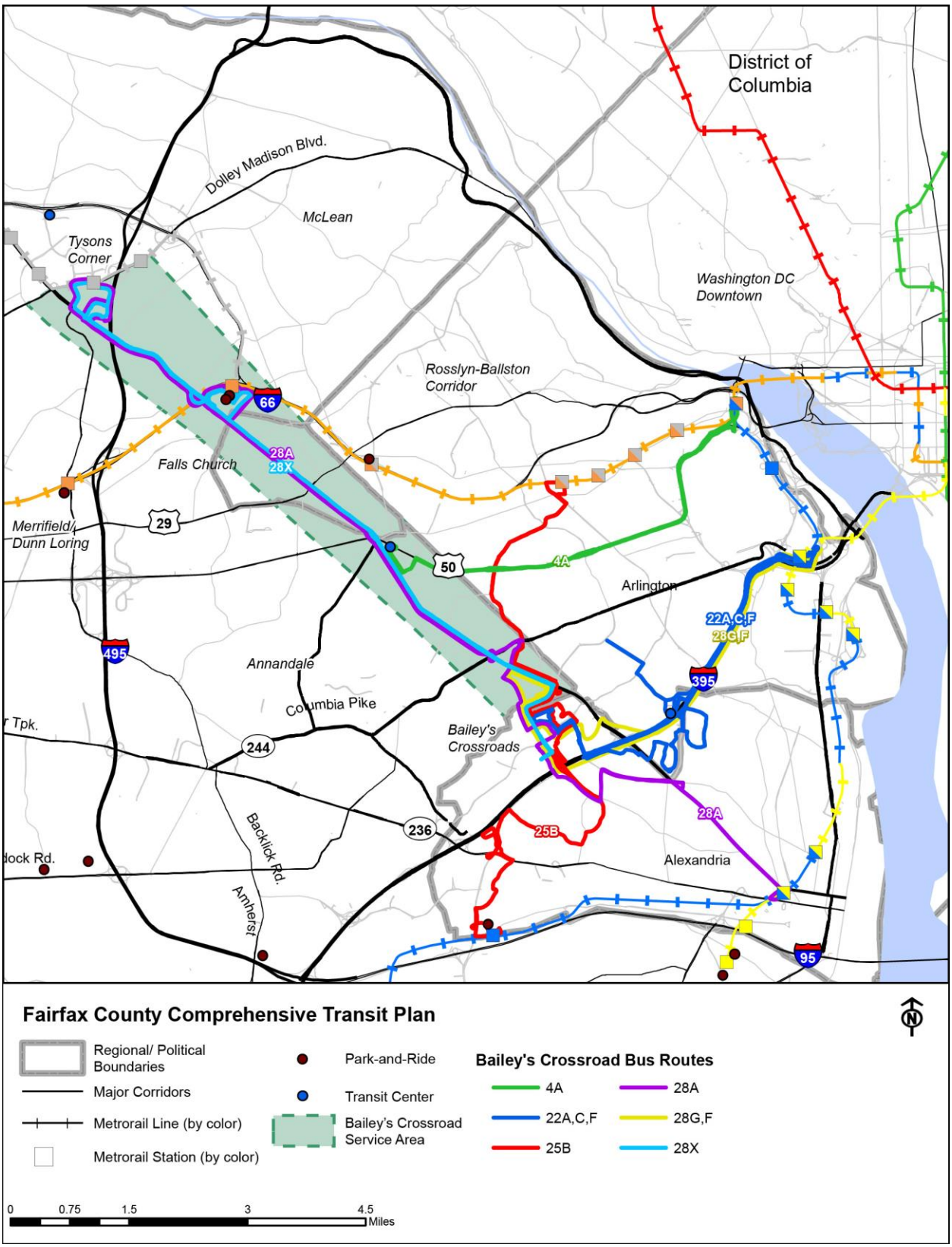


Table 7-52: Bailey's Crossroads Metrobus Bus Services

Line	Name	District	Metrorail Station Served	Average Weekday Boardings
4A,B	Pershing Drive-Arlington Boulevard	Mason, Providence	Courthouse – Orange and Silver, Rosslyn – Orange, Silver and Blue	**1,875**
25A,C,D,E (now 22A,C,F)	Ballston-Bradlee-Pentagon Line	Mason	Ballston – Orange and Silver, Pentagon – Blue and Yellow	**1,357**
25B	Landmark-Ballston Line – Weekday and Saturday	Mason	Van Dorn Street – Blue and Yellow (Peak Only), Ballston – Orange and Silver	**1,386**
28A	Leesburg Pike	Mason, Providence	Tysons Corner - Silver, King St - Old Town – Blue and Yellow, West Falls Church - Orange	**5,128**
28F,G	Skyline City – peak only	Mason	Pentagon – Blue and Yellow	**479**
28X	Leesburg Pike Limited – peak only	Mason, Providence	Tysons Corner - Silver, West Falls Church - Orange	**1,200**
Total Weekday Passenger Boardings				**11,425**

Service Productivity

Route productivity is presented in Table 7-53. These six lines average 36.7 boardings per revenue-hour, 28.6 boardings per trip and 2.7 boardings per revenue-mile. Boardings per revenue-hour is the most commonly used measure of productivity. Each of the routes in the service area has boardings per revenue hour exceeding 26 passengers. Route 28F,G and 28X, which provide peak-only service, are high performing with above 36 boardings per revenue hour, 14 boardings per trip, and above 2 boardings per revenue mile. Route 28A, which provides seven day, all day service, is the strongest performing route.

Table 7-53: Bailey's Crossroads Bus Service Productivity

Line	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings/ Trip	Boardings/ Rev-Mile
4A,B	Seven Day, all day service	Local	29.8	15.9	2.3
25A,C,D,E	Seven Day, all day service	Local	28.1	17.2	2.2
25B	Weekday and Saturday	Local	27.0	30.1	2.5
28A	Seven Day, all day service	Major	53.8	66.6	4.2
28F,G	Weekday peak periods	Commuter	44.7	14.1	2.0
28X	Weekday peak periods	MetroExtra	36.9	27.9	3.0
Bailey's Crossroads Service Area Average			**36.7**	**28.6**	**2.7**

Note: Productivity values based on APC data from Spring 2014

Status of 2009 TDP Recommendations

Table 7-54 presents the current (2015) status of the implementation of the 2009 TDP recommended service modifications. This table provides a summary ofchanges implemented by route, indicating whether or not those changes are the same as the 2009 recommendations.

Table 7-54: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
4A,B	Pershing Drive-Arlington Boulevard	Remove 4A from Culmore	Implemented
25A,C, D,E	Ballston-Bradlee-Pentagon Line	No recommendations	Replaced as of June 2015 by routes 22A, 22C, 22F and additional 25B service
25B	Landmark-Ballston Line	No recommendations	Increased frequency as of June 2015
28A	Leesburg Pike	Overlay with Limited Stop BRT-type service	Implemented; peak frequency increased as of March 2015
28F,G	Skyline City	No recommendations	As of March 2015, 28G rerouted along former 7B alignment
28X	Leesburg Pike Limited	Limited-Stop overlay on 28 line	Implemented

7.7.2. Recommendations for Existing Service

No recommendations for 4A,B; 22A,C,F; 25B; 28A; and 28F,G

Most of the Metrobus services in the Bailey's Crossroads area spend relatively little time in Fairfax County. The 4A,B line mainly serves Arlington, crossing into Fairfax County on Arlington Boulevard and terminating at the Seven Corners transit center. As of June 2015, the 25A,C,D,E lines were replaced with a re-routed 22A and new peak-only Routes 22C and 22F and additional 25B service. These lines serve Bailey's Crossroads on the way between Arlington and Alexandria, but have few stops in Fairfax County. The 28F,G is a moderately successful peak-period service connecting Skyline City to Pentagon. As of March 2015, the 28G was rerouted to include the alignment of the former 7B. The productivity of these routes is good, but not so high that overcrowding is a problem. Because of their minimal mileage in Fairfax County and adequate performance, there are no recommendations for these services.

Route 28A is a very important line for Fairfax County, connecting Tysons Corner to Alexandria via Leesburg Pike. It is the most successful of the routes in this area. The primary recommendation for the 28A line in the last TDP was to establish a limited-stop overlay to provide faster service in the corridor. WMATA implemented this recommendation with Metro Extra line 28X (discussed below). Even with the 28X in place, the 28A continues to perform well. In March 2015 the peak headway of the 28A was improved to 20 minutes. The 28A alignment is relatively streamlined and there are no obvious service problems to address, and therefore there are no recommendations for further improvements to the 28A.

Adjust service on the 28X to match demand

The 28X Metro Extra line serves 17 stops between Tysons Corner Metro station and the Mark Center in Alexandria plus a few additional stops in the Tysons Corner area. By avoiding the other stops served by the 28A, the 28X saves about 7 minutes of running time end to end, reducing a 62 minute trip from Tysons to Southern Towers to a 55 minute trip from Tysons to the Mark Center (which is across Seminary Road from Southern Towers).

Another adjustment that should be considered is operating better service in the westbound direction in the AM peak period. Currently, service is oriented for commuters to the Mark Center with 15 minute peak service eastbound in the morning and westbound in the afternoon. Service operates with a 20 minute headway in the other direction in each period (though the route does operate at a 15 minute headway during the 6:00 AM hour in the westbound direction). The current AM ridership is 244 passengers in the eastbound (supposedly peak) direction, but 357 passengers in the westbound direction. PM peak ridership is also stronger in the westbound direction. This directional imbalance is likely due to the fact that the 28X runs to the same terminal as the 28A in the westbound direction, but stops short (at the Mark Center) in the eastbound direction. For riders at the stops served by the westbound 28X, the routes may be equivalent and so they take whichever comes first. For eastbound riders, though, anyone traveling past the Mark Center would wait for the 28A. To better align service with demand, it is recommended to operate AM peak service (essentially the departures in the 7:00 AM hour) in the westbound direction at a 15-minute headway instead of the current 20-minute headway.

Monitor VA- 7 Transit Alternatives Analysis Study

In parallel to the CTP, Northern Virginia Transit Commission is conducting a "Route 7 Transit Alternatives Study" that is considering higher-capacity transit alternatives such as express bus, rapid bus, BRT, and light rail that might include elements such as separate running ways, improved stops, off-board fare collection, real-time information, and transit priority. Among the routes being studied are linkages between Van Dorn Metrorail Station, the Mark Center, Seven Corners, the City of Falls Church, the East Falls Church Metrorail Station (one alternative routing), the West Falls Church Metrorail Station, and Tysons. The study held public meetings in 2013 and began phase II of the analysis in November 2013. FCDOT will monitor the progress of the study, review its recommendations, and propose modifications to those routes serving Fairfax County that are expected to be affected by the project as it is implemented.

7.7.3. Bailey's Crossroads Area Route Recommendations Summary

The following Table 7-55 provides a summary of the service enhancement recommendations for the Bailey's Crossroads area.

Table 7-55: Bailey's Crossroads Route Recommendations

Route	Improvement	Service Purpose
Existing Routes		
4A,B	No recommendation	
22A, C, F	No recommendation	
25B	No recommendation	
28A	No recommendation	
28F,G	No recommendation	
28X	Eliminate three stops; improve AM peak westbound headway	Reduce travel time; align service better with demand
28A, 28X and others	Monitor ongoing "Route 7 Transit Alternatives Study"	Examine capital investments that could improve transit service

7.8 Dunn Loring Area Services

7.8.1. Background

Service Area

The Dunn Loring service area largely follows the I-66 corridor. Local transit service operates along US-29 and US-50 between West Ox Road in Fairfax County and the Ballston-MU Metro station in Arlington County. This west-east corridor serves portions of Fairfax County and passes through the cities of Fairfax and Falls Church, with the last segment within Arlington County, as shown in .

Current Service

The Dunn Loring service area includes four Metrobus lines, all of which serve the Dunn Loring Metrorail station located within the Providence Magisterial District. Two routes, the 1C and 2B, originate in the Springfield district and provide service to the Fairfax County Government Center, the Fair Oaks Mall and surrounding areas. These routes operate along parallel corridors: the 1C along US-50 and the 2B along Jermantown Road and Lee Highway. Two other routes serve the eastern part of the county. The 2A operates on US-29 to Washington Boulevard in Arlington County. The 1ABEZ follows US-50 until it turns onto Wilson Boulevard at Seven Corners. These two routes terminate at the Ballston-MU Metro.

Ridership for these four Metrobus lines is summarized in Table 7-56. Together these lines serve 9,200 boardings on a typical weekday. Ridership exceeds 5,500 on Saturdays and 3,200 on Sundays, bringing typical seven-day weekly ridership to nearly 55,000 boardings. The 1C and the 2B lines operate fully within Fairfax County. An estimated 70 percent of boardings for the 1ABEZ line occur within Fairfax County, and 40 percent of the 2A boardings occur within Fairfax County.

These lines serve as feeder routes to four Metrorail stations as noted in Table 7-56. As detailed in Table 7-56, 60 percent of all passenger activity on these routes occurs at one of these stations. The remaining activity happens along the routes; the more active stops include Fairfax Hospital, Seven Corners, Loehmann's Plaza, Gallows Road, and the Fair Oaks Mall.

Figure 7.40: Dunn Loring Service Area-Existing Service

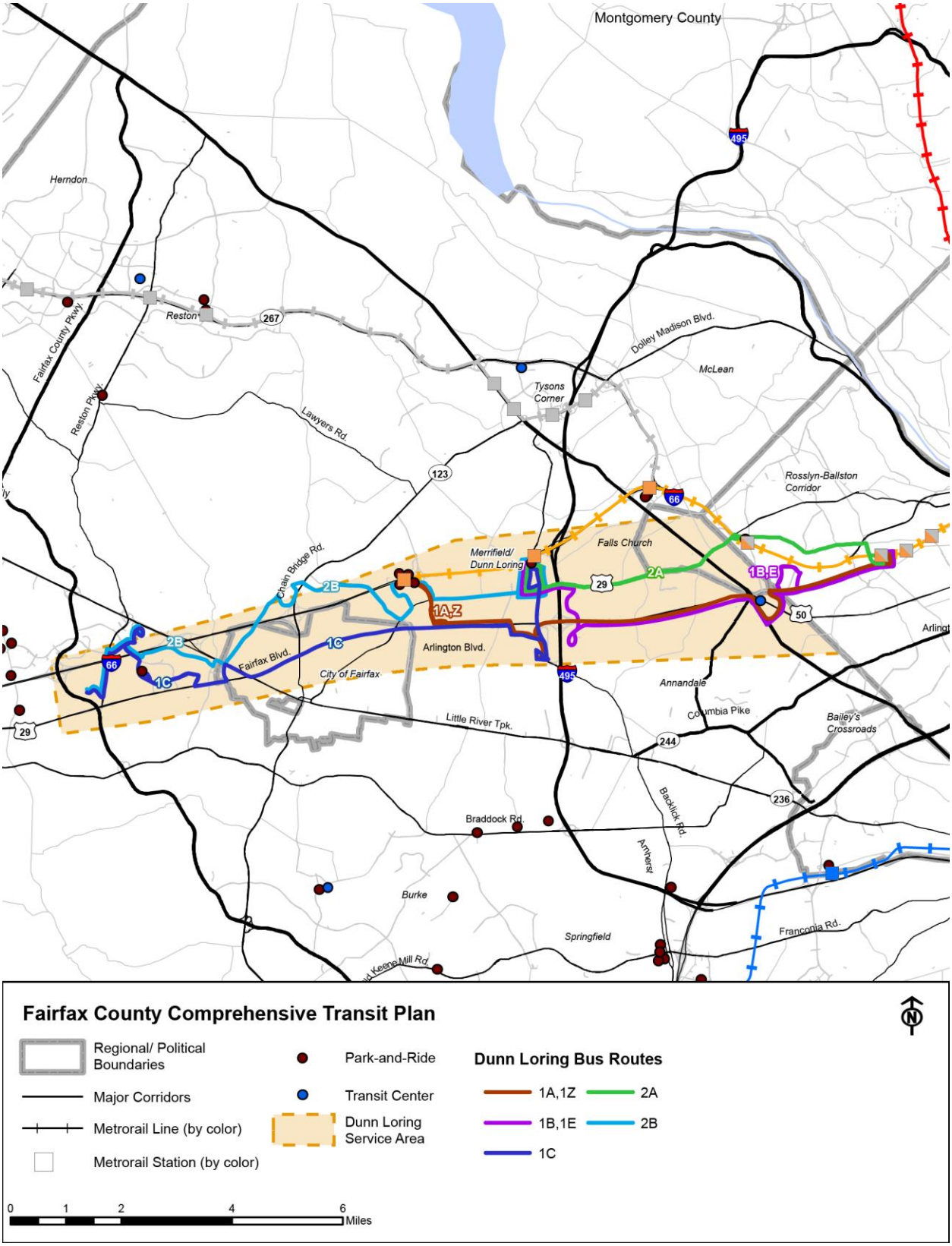


Table 7-56: Dunn Loring Area Bus Services.

Route	Name	District	Metrorail Station Served	Average. Daily Riders
1C	Fair Oaks – Fairfax Boulevard Line	Springfield Providence	Dunn Loring – Orange Line	**1,066**
1ABEZ	Wilson Boulevard – Vienna Line	Providence Mason	Vienna - Orange Line Dunn Loring – Orange Line Ballston-MU – Orange Line	**4,343**
2A	Washington Boulevard – Dunn Loring Line	Providence	Dunn Loring – Orange Line East Falls Church – Orange Line Ballston-MU – Orange Line	**2,783**
2B	Fair Oaks – Jermantown Road Line	Springfield Providence	Vienna – Orange Line Dunn Loring – Orange Line	**1,015**
WMATA Metrobus Total Boardings				**9,207**

Table 7-57: Metrobus Passenger Activity Summary at Regional Transit Hubs

		Passenger Boardings and Alightings as a Percent of Total Ridership at Regional Transit Hubs			
Route	Name	Vienna Station	Dunn Loring Station	Ballston – MU Station	East Falls Church Station
	Metrobus Local Routes				
1C	Fair Oaks – Fairfax Boulevard Line		26%		
1ABEZ	Wilson Boulevard – Vienna Line	17%	4%	35%	
2A	Washington Boulevard – Dunn Loring Line		21%	31%	25%
2B	Fair Oaks – Jermantown Road Line	46%	24%		

Service Productivity

Route productivity estimates are presented in Table 7-58. The four Metrobus lines average 28.1 boardings per revenue-hour, 28.6 boardings per trip and 2.62 boardings per revenue-mile. The lines solely within Fairfax County (1C and 2B) perform well for a suburban operation, but the cross-county lines do better since they serve denser communities with a greater number of retail and commercial trip attractions.

Table 7-58: Dunn Loring Area Bus Service Weekday Productivity

Route	Service pattern	Service Type	Boardings /Rev-Hour	Boardings /Trip	Boarding/ Rev-Mile
Metrobus					
1C	Seven day, all day service	Local	16.5	19.7	1.36
1ABEZ	Seven day, all day service	Local	33.8	39.5	3.40
2A	Seven day, all day service	Local	36.1	27.0	3.51
2B	Six day, all day service	Local	18.6	20.7	1.55
	Dunn Loring Area Average		**28.1**	**28.6**	**2.62**

Status of 2009 Recommendations

Table 7-59 presents the current (2015) status of the implementation progress of the 2009 TDP recommended service modifications. This table provides a summary of changes implemented by route, indicating whether or not those changes are the same as the 2009 recommendations.

Table 7-59: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
Metrobus Routes			
1C	Fair Oaks – Fairfax Boulevard Line	Restructure plan	Routing revised to serve Government Center
1ABEZ	Wilson Boulevard – Vienna Line	Overlay a limited stop BRT-type service	Former route 1F eliminated
2A	Washington Boulevard – Dunn Loring Line	Restructure plan	Former 2ABCG restructured with 2C eliminated and 2A truncated to originate at Dunn Loring
2B	Fair Oaks – Jermantown Road Line	Restructure plan	Former route 2G eliminated and 2B spilt as a separate line with terminal at Dunn Loring

7.8.2. Recommendations for Existing Service

No Change to the Metrobus 1C Fair Oaks – Fairfax Boulevard Line

Route 1C was modified to provide direct service to the Fairfax County Government Center, as had been recommended in the 2009 TDP. Route 1C operates with 30-minute headways during peak periods and with 60-minute headways during all off-peak periods (weekday midday and evenings, Saturday, and Sunday). Riders on this route are predominantly minority (68%), with low family income (78%), and with only 18 percent reporting an automobile available. More than half (57%) the riders use this route at least five days per week. As shown in Table 7-56, 26 percent of the boardings and alightings for this route occur at the Dunn Loring Metrorail station. The remaining 74 percent use this route to ride locally along the 1C line corridor.

This route provides a basic level of service consistent with minimum service standards for a local route which operates a seven-day schedule. Although productivity is lowest among the routes in this service area, riders are highly dependent on the availability of this service. Therefore it is recommended that the Metrobus 1C Fair Oaks – Fairfax Boulevard Line continue with its existing schedule and routing.

Add Sunday Service to the Metrobus 2B Line Fair Oaks-Jermantown Road Line

Metrobus 2B offers six-day service and has more than 1,000 weekday riders and nearly 600 Saturday riders. WMATA should add Sunday service, identical to the current Saturday schedule. This line serves a highly transit-dependent ridership community. The other three lines in this service area operate seven-day service, with the 2B line the only exception. The passenger survey shows that the US – 29/Jermantown corridor has many customers who use transit frequently over the course of the week. Nearly 65 percent of Route 2B riders are African-American or Latino, and a similar percent are low-income.

No Change to Metrobus 2A Washington Boulevard – Dunn Loring Line

Route 2A has high ridership and serves three Metrorail stations which are used by more than 75 percent of the line's riders to transfer to Metrorail, other Metrobus service, Connector and other jurisdictional transit services. The line's routing is direct, and given its high productivity, there is no reason to make changes to this service at this time. Service should be monitored to insure its reliability.

Revise the Schedule for the Metrobus 1ABEZ Wilson Boulevard –Vienna Line

The 1ABEZ Wilson Boulevard-Vienna Line has about 4,300 weekday boardings and provides connections to three Metrorail stations—Vienna, Dunn Loring and Ballston-MU—and also to the Seven Corners Transit Center. More than half of all riders use this line to access one of the three Metrorail station; most transfer to other transit services at these locations, as reported in the rider survey. The complete route is long, with end-to-end running times of approximately one hour. However, not all of the scheduled trips run the long pattern. The various patterns can be summarized as follows:

- 1A - operates between Ballston-MU and Vienna Metro stations at all times except the peak period in the peak flow direction. Scheduled running time ranges between 45 and 60 minutes, depending on the time of day.
- 1B – operates a short-turn pattern between Ballston-MU and Dunn Loring Metro stations, bypassing the10th Rd at Madison St diversion (which is served by the 1E only). Trips operate in the weekday peak period, in both directions. Scheduled running time ranges between 55 and 60 minutes. The 1B does not operate on weekends.
- 1E – operates a short-turn pattern between Ballston-MU and Seven Corners during the peak period in the peak direction only with trips times of less than 30 minutes.

- 1Z – operates peak period peak direction trips between Ballston-MU and Vienna Metro in place of the 1A but by-passes the Seven Corner Transit Center, resulting in trip times of less than one hour.

The primary route is the 1A with the 1BEZ patterns operating in its place during the peak period to better meet passenger travel needs with faster and more convenient schedules. Like the other routes in this service area, the 1ABEZ line serves a transit-dependent population. About 60 percent of passengers surveyed report using this service five days or more each week. The survey results show that only about one-quarter of the riders have a car available and 67 percent are low-income.

The 2009 TDP suggested a future introduction of a limited-stop BRT-type service to add a faster service options for some riders. Fairfax County residents and commuters would benefit from improved speeds through the addition of bus priority treatments on the Wilson Boulevard corridor in Arlington County.

WMATA is considering the elimination of the1Z with modifications to the operation of both the 1A and1B to simplify the combined schedule. Given the limited use of the1Z pattern (peak period, peak direction only) WMATA is encouraged to pursue this concept. With this change the 1A would serve the Seven Corners Transit Center area, allowing the 1B to skip this stop during peak periods. This rerouting should not apply during the off-peak, in order to maintain existing connections via Seven Corners. Otherwise no additional changes to this route are recommended.

7.8.3. Dunn Loring Area Route Recommendations Summary

Table 7-60 provides a summary of the service enhancements recommended for the Dunn Loring Area of the South County.

Table 7-60: Dunn Loring Area Route Service Recommendations

Route	Improvement	Service Purpose
Existing Routes		
1ABEZ	Replace 1Z pattern with 1A; modify the 1B pattern during peak periods.	Simplify schedule to reduce passenger confusion with different pattern arrangements at varied times of the day.
1C	No change recommended	
2A	No change recommended	
2B	Add Sunday Service	To serve latent transit demand and provide consistency with other area services.

7.9 Annandale Area Services

7.9.1. Background

Service Area

The Annandale service area largely follows the Annandale community boundary lines as shown in Figure 7.41. The area is roughly defined by Braddock Road to the south, Prosperity Avenue (VA-699) and Guinea Road (VA-651) to the west, Arlington Boulevard (US-50) to the north, the city of Falls Church and the Holmes Run stream to the northeast and Sleepy Hollows and Lincolnia Roads (both VA-613) to the east. The Capital Beltway (I-495) runs north-south and intersects near the geographic center of Annandale with Little River Turnpike (VA-236), which runs east-west. Primarily a residential community, retail and commercial development is centered along Little River Turnpike, which does not have large-scale development. Major shopping centers such as the Landmark Center and Bailey's Crossroads are located in neighboring communities accessible by Metrobus routes that cross through Annandale.

Current Services

The Annandale service area includes one Fairfax Connector bus route and 10 Metrobus lines as listed in Table 7-61. Most of these bus lines pass through Annandale, either originating or terminating or both in contiguous service areas. Fairfax Connector Route 401/402 Backlick – Gallows runs north to south along these two roadways passing through John Marr Drive where the route crosses Little River Turnpike about one mile east of I-495. The Metrobus lines in the area, except the 3A Lee Highway – Falls Church Line, generally run in an east-west direction connecting Annandale with surrounding areas.

Daily ridership on the Connector Route 401/402 exceeds 4,600 riders, making it the highest ridership route in the Connector network. The route connects South County with North County, from the Franconia-Springfield Metrorail station to the Tysons West*Park Transit Station. Along the way it serves major trip generators such as Fairfax Hospital and the Dunn Loring Metrorail station.

The Metrobus routes as a group transport nearly 24,000 weekday passengers with a mix of local and express services. More than 70 percent of these passengers board outside of Fairfax County. The Metrobus 7, 16 and 29 Lines have variants that offer both local and express trips. Most express trips terminate at the Pentagon Metrorail station, although some terminate at the Pentagon City station. Two lines, the 7Y and the 16X, provide express service into the District of Columbia. The 3A Line connects Annandale with both the city of Falls Church and Rosslyn in Arlington County. The 29KN Line provides all day local service along Little River Turnpike into the city of Alexandria. The 29CEGHX Line operates peak period service to the Pentagon. The 7CHPWX Line operates peak period express service to the Pentagon Metrorail, while the 7AF operates a full day service, also to the Pentagon Metrorail station. The Columbia Pike Lines (16 series), branded as "PikeRide," serve more than 11,000 weekday riders and provide seven-day service between Annandale and multiple destinations within Arlington County. More than 82 percent of all "PikeRide" passenger boardings occur outside Fairfax County. The recently established 26A Line operates between Northern Virginia Community College (NVCC) in Annandale and the East Falls Church Metrorail station.

Figure 7.41: Annandale Service Area-Existing Service

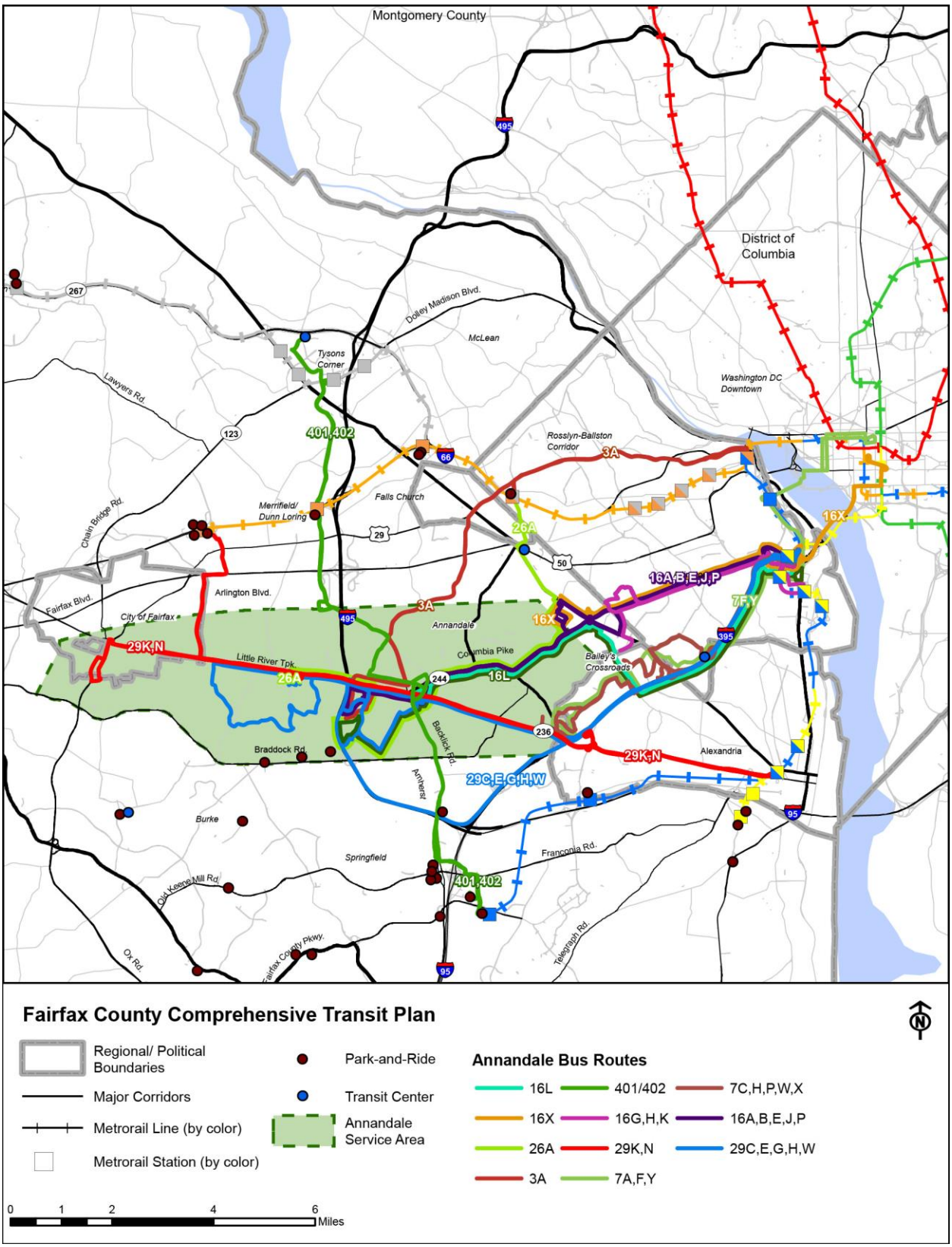


Table 7-61: Annandale Area Bus Services.

Route	Name	District	Metrorail Station Served	Average. Daily Riders
401/402	Backlick - Gallows	Springfield Providence Mason	Franconia-Springfield – Yellow/Blue Lines Dunn Loring – Orange Lines Tysons Corner – Silver Line	**4,629**
Fairfax Connector Total Boardings				**4,629**
3A	Lee Highway – Falls Church Line	Mason	East Falls Church – Orange/Silver Line Rosslyn – Blue/ Orange/Silver Lines	**2,465**
7AFY	Lincolnia – North Fairlington Line	Mason	Pentagon – Blue/ Yellow Lines*	**3,723**
7BCHPWX	Lincolnia – Park Center – Pentagon Line	Mason	Pentagon – Blue/ Yellow Lines	**1,573**
16ABDEJP	Columbia Pike Line	Mason Braddock	Pentagon and Pentagon City – Blue/ Yellow Lines	**6,344**
16GHK	Columbia Heights West – Pentagon City Line	Mason	Pentagon, Pentagon City and Crystal City – Blue/ Yellow Lines	**4,416**
16L	Annandale – Skyline City - Pentagon City Line	Mason	Pentagon – Blue/ Yellow Lines	**155**
16X	Columbia Pike – Federal Triangle Line	Mason	Pentagon – Blue/ Yellow Lines*	**838**
26A	Annandale – East Falls Church Line	Mason Braddock	East Falls Church – Orange/Silver Line	**460**
29CEGHX	Annandale Line	Mason	Pentagon – Blue/ Yellow Lines	**1,099**
29KN	Annandale – Fairfax Line	Mason Providence	Vienna – Orange Line King St - Old Town Blue/Yellow Lines	**2,693**
WMATA Metrobus Total Boardings				**23,765**

* These lines also serve Metrorail stations within the District of Columbia

All of the 11 Annandale-area bus lines serve one or more Metrorail stations. Passenger activity at Virginia Metrorail stations as a percent of bus route ridership is presented in Table 7-62. Approximately 45 percent of all passengers board or alight at a Metrorail station, and approximately half of these passengers travel to the Pentagon Metrorail station. Boardings and alightings at Metrorail stations range from a low of 14 percent for the 26A Line to a high of 78 percent for the 7AFY Line. The cross-county Connector Route 401/402 serves three Metrorail stations along its routes with about equal activity observed at each station. The Route 401/402 data comes from ridechecks taken before the recent

extension of this route to the Tysons West*Park Transit Station. The reported activity at the Tysons Corner Metrorail station (the former route terminal) has likely declined significantly as riders benefit from the route extension as it circulates beyond the Tysons Corner station through the Tysons community. The route extension eliminates the need to transfer to a local Tysons Circulator bus or to walk from the Tysons Corner station; however, some passengers are still likely transferring at Tysons Corner to Metrorail service.

Table 7-62: Passenger Activity Summary at Regional Transit Hubs

		Passenger Boardings and Alightings as a Percent of Total Ridership at Regional Transit Hubs			
Route	**Name**	**Franconia/ Springfield Station**	**Dunn Loring Station**	**Tysons Corner Station**	
	Fairfax Connector Local Routes				
401/402	Backlick - Gallows	14%	14%	17%	
Route	**Name**	**Vienna Station**	**East Falls Church Station**	**Pentagon or Pentagon City Station**	**Other Virginia Stations**
	WMATA Metrobus Routes				
3A	Lee Highway – Falls Church Line		21%		45%
7AFY	Lincolnia – North Fairlington Line			53%	25%
7BCHPWX	Lincolnia – Park Center – Pentagon Line			68%	
16ABDEJP	Columbia Pike Line			23%	
16GHK	Columbia Heights West – Pentagon City Line			53%*	
16L	Annandale – Skyline City - Pentagon City Line			42%	
16X	Columbia Pike – Federal Triangle Line			27%	
26A	Annandale – East Falls Church Line		14%		
29CEGHX	Annandale Line			70%	
29KN	Annandale – Fairfax Line	7%			35%

* During weekdays the 16GHK serves the Pentagon City Metrorail station.

Service Productivity

A summary of the service productivity for the Annandale area routes is presented in Table 7-63. The productivity of Connector Route 401/402 ranks number one among all South County routes and second among all Connector routes— bettered only by North County Connector Route 980. The 401/402 operates all day, seven days a week while the 980 operates only in the peak periods. (The 980 will be eliminated upon the completion of Silver Line Phase 2.)

The 10 Metrobus Lines that serve the Annandale area account for 41 percent of all boardings in the Metrobus Virginia network. The average productivity of the Annandale routes nearly matches the Virginia Metrobus productivity for two of the measures shown and exceeds it for boardings per trip. The Columbia Pike routes (16 series) exhibit the best overall productivity among both the Annandale area services and the Metrobus' Virginia area services, with more than 42 boardings per revenue hour, nearly 30 boardings per trip, and 4.3 boardings per revenue mile. The 7B-X and 29C-X Lines average fewer than 20 boardings per trip, suggesting that these services are operating with excess capacity. The 26A Line, established in 2013, also exhibits relatively low service productivity. The productivity of the 29CEGHX Lines, largely a peak-period express service to the Pentagon Metro, is on the order of half the area average. Meanwhile the local 29KN productivity exceeds the average for boarding per trip.

Table 7-63: Annandale Area Bus Service Weekday Productivity

Route	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings/ Trip	Boarding/ Rev-Mile
Fairfax Connector					
401/401	Seven day, all day service	Local	26.6	35.6	2.31
WMATA Metrobus					
3A	Seven day, all day service	Local	28.5	23.5	2.73
7AFY	Seven day, all day service	Major	33.0	25.2	3.23
7BCHPWX	Peak periods only	Major	35.5	19.0	3.04
16ABDEJP	Seven day, all day service	Major	43.4	34.5	4.15
16GHK	Seven day, all day service	Major	39.9	20.9	4.55
16L	Peak periods only	Commuter	38.4	31.1	2.90
16X	Peak periods only	MetroExtra	46.0	44.1	4.30
26A	Weekdays, all day service	Local	17.9	16.4	1.70
29CEGHX	Peak periods only	Commuter	17.7	15.9	1.23
29KN	Seven day, all day service	Local	30.7	39.6	2.47
WMATA --- Annandale Service Area Average			**34.0**	**25.8**	**3.14**

Status of 2009 Recommendations

Table 7-64 presents the current (2015) status of the implementation progress of the 2009 TDP recommended service modifications. This table provides a summary of changes implemented by route, indicating whether or not those changes are the same as the 2009 recommendations.

Table 7-64: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
Fairfax Connector			
401/402	Backlick - Gallows	Terminate route at new Tysons Corner Metrorail station, improve headways, and create limited-stop overlay (future)	Route terminal changed and headways improved upon opening of the Silver Line Phase I. Route recently extended to the West*Park Transit Station with a revised schedule to enhance on-time performance. A limited-stop route has not been implemented
WMATA Metrobus			
3A	Lee Highway – Falls Church Line	Split 3A at East Falls Church Station into two routes, 3A and 3B	No Change
7AFY	Lincolnia – North Fairlington Line	Revise route to bypass Quantrell and Lincolnia streets.	No Change
7BCHPWX	Lincolnia – Park Center – Pentagon Line	No change recommended	As of March 2015, 7B extended to Skyline City and rebranded 28G
16ABDEJP	Columbia Pike Line	Extend former 16F to Fair Oaks mall as limited-stop route. Increase frequency of 16A and 16D. Extend 16D to NVCC	Route 26A created to serve the NVCC. Other recommendations not implemented. Route 16D replaced by extended 16L as of March 2015.
16GHK	Columbia Heights West – Pentagon City Line	No change recommended	No Change
16L	Annandale – Skyline City - Pentagon City Line	No change recommended	Extended along route of former 16D as of March 2015.
16X	Columbia Pike – Federal Triangle Line	-	New MetroExtra route
26A	Annandale – East Falls Church Line	-	New route
28E	East Falls Church – Skyline Towers Line	Establish new route 28E	New 26A covers portion of proposed 28E.
29CEGHX	Annandale Line	Decrease Frequency	29E, 29H, and 29X replaced by 29W
29K,N	Annandale – Fairfax Line	Extend 29N to Vienna Station and add Sunday service. Improve headways all day.	29N now terminates at Vienna and operates on Sundays. Midday headways have been improved.

7.9.2. Recommendations for Existing Service

Future Capacity Enhancement for the Connector Route 401/402 Backlick-Gallows

Route 401/402 connects South County with North County as it serves heavily populated areas of the county and provides access to major generators such as Metrorail stations, Fairfax Hospital, the recently redeveloped Springfield Town Center, and Tysons Corner, with its significant and growing retail, commercial and residential properties. With the opening of the Silver Line in 2014, the frequency of Route 401/402 service was increased. Since this route has one-way peak trip times as great as 100 minutes, improving headways further, as may become necessary, is costly. For example, improving the peak headway from the existing 15 minutes to 12 minutes (i.e., increasing frequency from four trips per hour to five) will require four additional buses. Some options, which could be applied to the peak period and possibly the midday period, include:

- Limited-stop service, as recommended in the 2009 TDP. Reverse-peak direction trips could use I-495 for a portion of the return trips between Tysons and Springfield.
- A short-turn route operating between John Marr Drive and Dunn Loring Metrorail station. Approximately 40 percent of all passenger boardings and alightings and the maximum load occur within this segment.
- Split the route into two overlapping routes operating between Franconia-Springfield and Dunn Loring Metrorail stations and between John Marr Drive and Tysons West*Park Transit Station.

The limited-stop service option has the most potential to provide supplemental capacity to the entire route. The other two options, although they would not require as many additional buses, may not be as effective a means to add capacity due to the potential to increase the number of transfers required to complete some trips. A comprehensive assessment of Route 401/402 origin-destination patterns is required to better understand the trade-offs.

As noted previously, FCDOT implemented a new schedule for Route 401/402 on January 24, 2015. The first months of operation went well and several service problems previously experience were adequately addressed. However, a concern with weekend service has surfaced. Although Saturday and Sunday service have the same number of scheduled trips, Saturday ridership is about one-third greater than Sunday ridership (2,750 boardings compared to 2,100.) This extra volume on Saturdays results in higher loads and slower trips due to the greater amount of passenger activity. Continued ridership growth may lead to crowding and poor reliability. It is recommended that FCDOT monitor ridership and be prepared to improve the Saturday base headway from the existing 30 minutes to 20 minutes. Proposed future service levels for Route 401/402 are summarized in Table 7-65.

Table 7-65: Route 401/402 Proposed Service Levels

		Route 401/402 Backlick – Gallows Line (Existing)	Route 401/402 Backlick – Gallows Line (Future)
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	3:30 AM – 2:00 AM	3:30 AM – 2:00 AM
	Saturday	4:30 AM – 2:00 AM	4:30 AM – 2:00 AM
	Sunday	4:30 AM – 2:00 AM	4:30 AM – 2:00 AM
Headway (minutes)	**Weekday Peak**	15	20/20*
	Weekday Midday	20	20
	Weekday Evening	30	30
	Saturday	30/60	20/60
	Sunday	30/60	30/60

*Weekday peak service level should be increased in the future with supplementary limited-stop service; both the regular and limited trips should have 20 minute headways with a combined headway of 10 minutes.

No Change to Metrobus 3A Lee Highway – Falls Church Line

The 3A Line is scheduled with two patterns, a long line between Annandale and Rosslyn Metrorail and a short line between East Falls Church and Rosslyn Metrorail stations. The route operates seven days with service on the long line until 9:30 PM and on the short line until approximately midnight each day. Only the long line serves Fairfax County, and it accounts for 500 boardings per weekday (20 percent of total route boardings). The existing 30 minute peak headways and 60 minute off-peak headways on the long route are sufficient to serve the demand, so no changes to this route are recommended.

No Change to Metrobus 7AFY and 7BCHPWX Lincolnia Lines

These lines provide local and express services from the Lincolnia area of Fairfax County to the Pentagon Metrorail station. The 7AF operates seven days providing local service between Lincolnia and Alexandria before entering I-395 for the short trip to the Pentagon Metro station. The other Metrobus 7 Line variants provide more limited coverage before entering I-395 where they operate as express routes. The 7AF and 7W variants originate in the Lincolnia Road area, providing service to a small part of Fairfax County. This area accounts for 150 boardings a day, less than three percent of all Metrobus Line 7 riders. No changes are recommended at this time to the 7 Lines.

Further Study of the Columbia Pike Lines

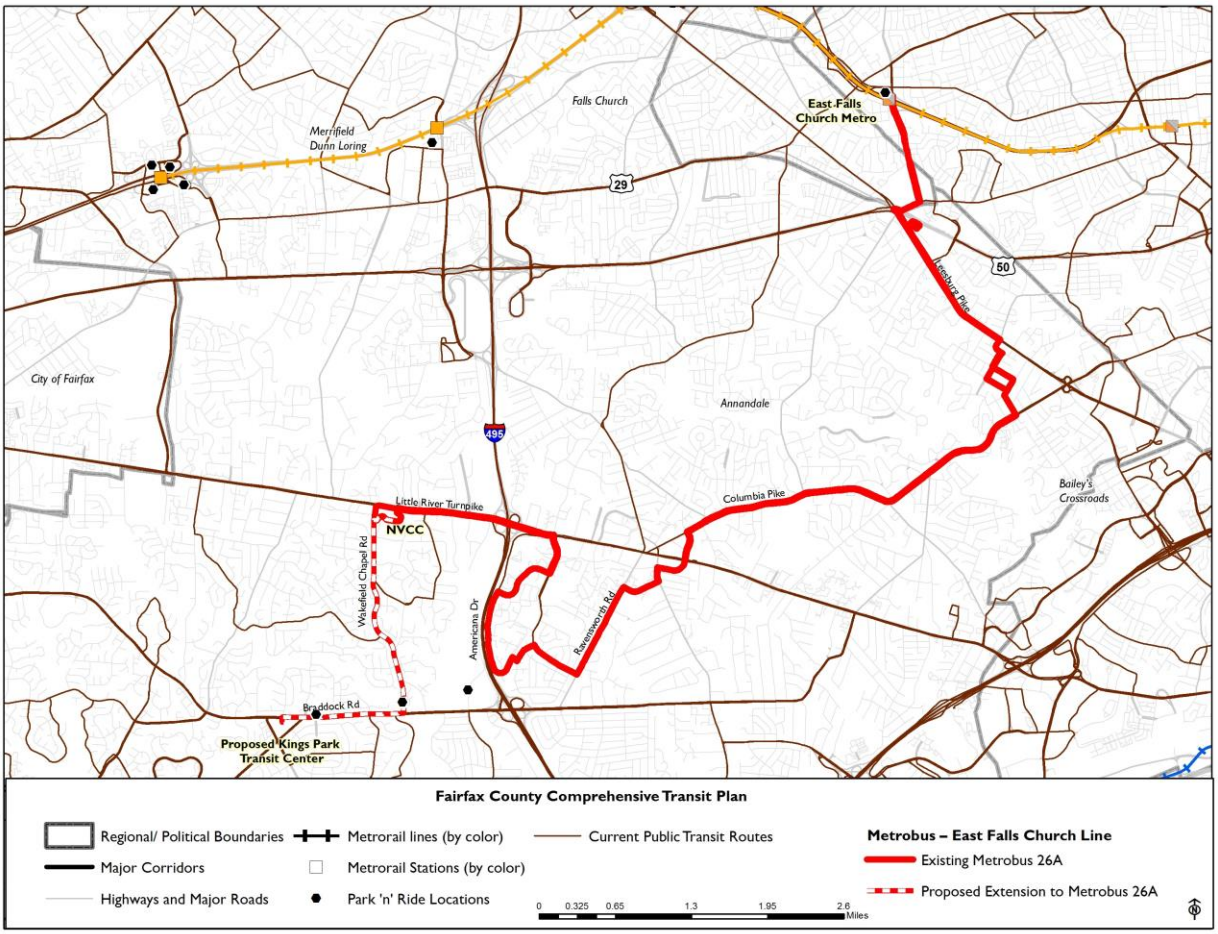
As mentioned above, the Metrobus 16 Lines rank first among the Metrobus Virginia network routes in both ridership and overall performance, transporting about 11,000 daily riders. On March 29, 2015 WMATA replaced the 16D with a rerouted 16L. In addition, at the same time the 26A was rerouted through the Heritage Drive and Americana Drive area to offer an alternative for residents of this area to access the Seven Corners Transit Center and the East Falls Church Metrorail station. In the fall of 2014, longstanding plans to build a streetcar along Columbia Pike from Pentagon City to Bailey's Crossroads were terminated. The streetcar was intended to provide high-capacity service along this heavily traveled corridor. In light of this change, Fairfax County will be working with Arlington County over the next year to better define the bus service that will be provided instead. The County supports additional service on this corridor and will incorporate the appropriate recommendations coming out of the Arlington-led study into the CTP when they are completed.

Extend Metrobus 26A Annandale – East Falls Church Line

The 26A Line was established in 2013 to connect NVCC to the East Falls Church Metrorail station. The 26A should be extended to the planned Kings Park Transit Center when it opens, currently projected to be no earlier than 2021. From NVCC the extension should be routed along Wakefield Chapel Road (VA-710) and then turn onto Braddock Road for about one mile to the site of the planned transit center near the intersection of Rolling Road. Service to this transit center will provide Annandale residents with a connection to both West and South County bus routes as recommended in this CTP. Figure 7.42: shows a map of the proposed route extension. As mentioned in the discussion for the Columbia Pike services, WMATA rerouted the 26A in March 2015 to serve the Americana and Patriots Drive area. This rerouting should be reviewed in the future to determine if this change is compatible with the proposed extension to Kings Park Transit Center.

The 2009 TDP had recommended a new Route 28E, the East Falls Church Metrorail Station – Skyline Towers route. Route 28E has not been implemented, but Route 26A service covers a portion of the proposed 28E between East Falls Church and the Seven Corners Transit Center. Therefore Route 28E is no longer recommended.

Figure 7.42: Proposed Metrobus 26A Route Extension



Revise Metrobus 29 Lines Service Levels

WMATA partially addressed the recommendations in the 2009 TDP. As recommended, service levels on the local 29K,N were improved during off-peak periods and Sunday service was added to Vienna station (29N). Following the changes implemented in March 2015, the Metrobus 29 lines currently include the following:

- 29K,N Alexandria-Fairfax Line, King Street-Old Town Station to Vienna Station (29N) or George Mason University (29K)
- 29C,G Annandale Line, Pentagon to NVCC/Lake Drive via I-395 and Little River Turnpike, charging a local fare. The 29G trips are peak trips; the 29C trips are less frequent reverse-peak trips.
- 29W Braeburn Drive-Pentagon Express Line, operating via I-395 and charging an express fare, peak period, peak direction only. These replace the former 29E and 29X trips.

Based on data collected prior to the March 2015 changes, local 29K,N trips experience higher demand than the express trips during the peak period when both are operated. The 29KN trips averaged 40 boardings per trip while the express averaged only 16 boardings per trip. On segments where local and express trips make the same stops, riders may avoid express buses because of the fare differential. WMATA addressed this problem in March 2015 by reducing the fare on express route 29C,G to the local fare. At the same time, the express trips on 29E,H,X were replaced by fewer 29W trips. The service and fare changes implemented after data collection for this study was complete may partially address the observed service level discrepancy between the 29 express and the 29 local lines. However, no additional trips were added to the local 29KN, and lowering the 29C,G fare may not be sufficient to balance the loads. Therefore it is recommended to improve the 29K,N peak-period headways from 30 minutes to 20 minutes and to provide the resources to do this by reducing service on the 29G (specifically, peak headways should be lengthened from 15 minutes to 20 minutes). These changes will result in more balanced loads, fewer occurrences of over-crowded local buses, and faster and more reliable service on the 29K,N while at the same time maintaining reasonable service frequency and loading on the express routes.

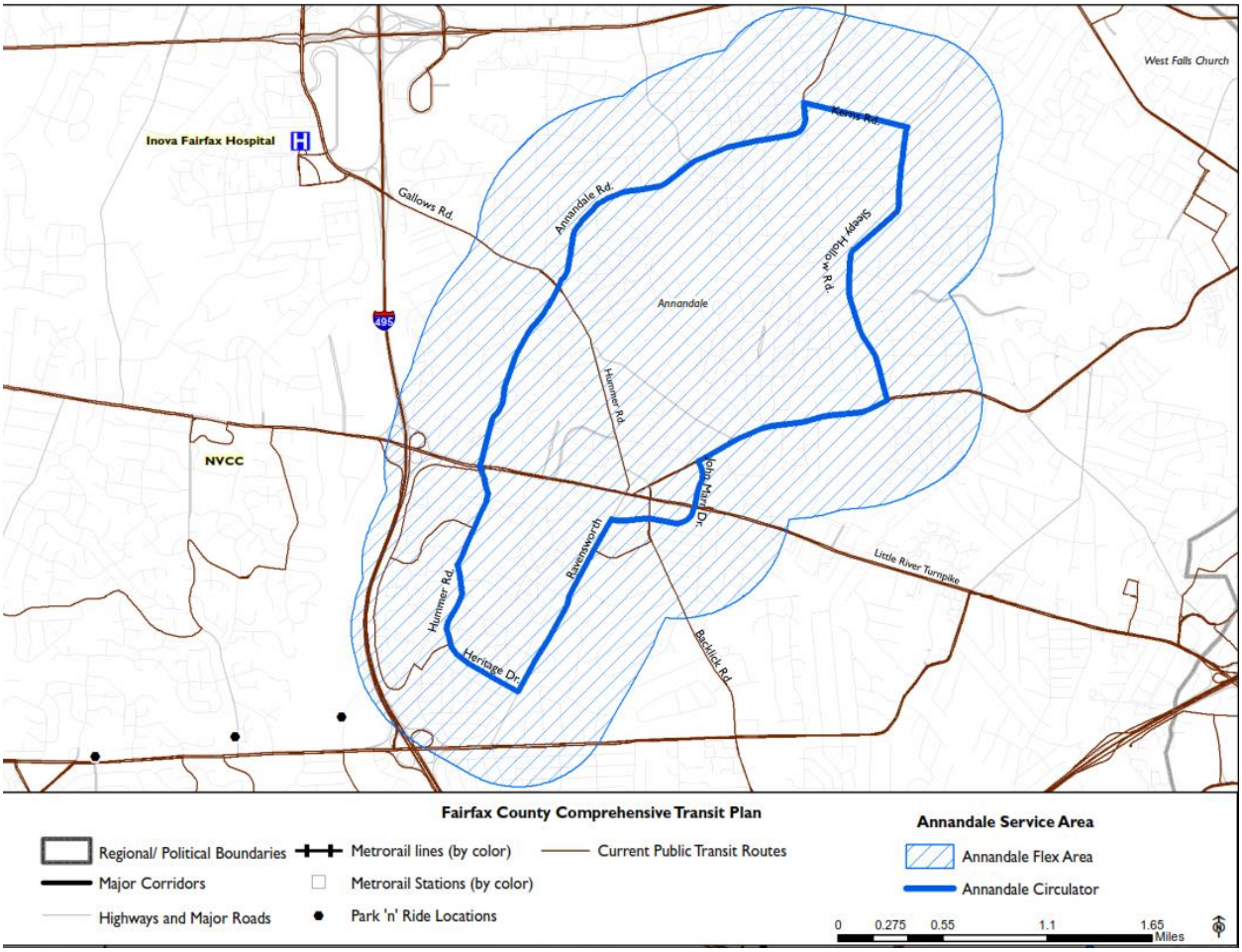
7.9.3. Recommendations for New Service

Create new Annandale Circulator

As recommended in the 2009 TDP, FCDOT should create a circulator service to provide better walk-up transit access for residents of Annandale neighborhoods that are a long walk to major arterials, which currently have the nearest transit routes. The circulator should be operated as a flexible route, anchored at the John Marr Drive stop where passengers can connect to other transit routes. The proposed flexible service area, shown in Figure 7.43: , includes neighborhoods within the bounds created by Columbia Pike, Sleepy Hollow Road, Kerns Road, Annandale Road, Hummer Road, Heritage Drive, Ravenworth Road, and John Marr Drive. This flexible route would provide service to K-Mart Plaza, Little River Shopping Center and Annandale High School.

The current bus service provider contract does not support the provision of flexible service. The lead time to establish the framework for such service, select a contractor to provide it, and actually field it, is likely to be several years.

Figure 7.43: Proposed Annandale Flexible Service Area



7.9.4. Annandale Area Route Recommendations Summary

The following Table 7-66 provides a summary of the service enhancements recommended for the Annandale area of the South County.

Table 7-66: Annandale Area Route Service Recommendations

Route	Improvement	Service Purpose
Existing Routes		
401/401	Weekday peak service: either add trips or a limited stop overlay. Saturday base: improve headway to 20 min.	Provide necessary capacity to maintain reasonable load volumes per trip and enhance on-time performance.
3A	No recommendations.	
7AFY and 7BCHPWX	No recommendations.	
16 Lines - Columbia Pike	Further study.	Following decision not to build streetcar, work with Arlington to plan bus improvements.
26A	Extend route to the future Kings Park Transit Center.	Provide connections to West and South County routes to facilitate transfer toward Centreville and Springfield.
29K,N	Increase peak period service frequency.	Reduce crowding and improve reliability
29G	Reduce frequency.	Reduce express service allowing buses to be reallocated to the 29K,N.
Route Proposals		
Flexible Service	Create new flexible service route to circulate through Annandale neighborhoods.	Provide transit option for residents located too far to walk to access transit services along arterials.

7.10.1. Background

Service Area

The Burke area is served by the Metrobus 17 and 18 Lines and Fairfax Connector routes 306 and 495. The area served by the 17 and 18 Lines includes much of the Springfield, Burke, and Fairfax Station communities, as shown in Figure 7.43. The Braddock Magisterial District covers the majority of the western portion of the service area. The Springfield and Lee Magisterial Districts cover much of the southern and eastern portions of the service area. The 17 Line routes generally serve residential areas of Burke. Routes 17A, 17B, 17M, and Fairfax Connector 306 also serve residential areas of North Springfield along Braddock Road, and the commercial area of Lincolnia on Duke Street (VA-236). The 18 Line routes generally serve residential areas of Burke and Springfield as well as the commercial area of Old Keene Mill Road (VA-644) near I-95. Route 18E, however, also serves industrial and residential areas just north of the I-395/I-495 interchange, and Route 18F also serves the west side of the city of Alexandria near Landmark Mall.

Current Services

The Metrobus 17 Line (mostly peak only) and Fairfax Connector Route 306 (midday) provide service to the Pentagon Metrorail Station in Arlington, while the 18 Line provides service to both the Pentagon and the Franconia-Springfield Metrorail stations. Individual routes under the 17 Line are grouped into local and express series, while individual routes under the 18 Line are grouped into three series serving different areas. Routes 17A, 17B, 17F, 17M, and 306 provide local service while routes 17G, 17H, 17K, and 17L provide express service. Routes 18E and 18F are the Springfield series and provide express service to the Pentagon. Routes 18G, 18H, and 18J are the Orange Hunt series and also provide express service to the Pentagon. Routes 18P, 18R, and 18S are the Burke Centre series and provide service to either the Franconia-Springfield Metrorail Station (18R and 18S), or the Pentagon (18P). All of the 17 Line routes and Route 306 travel along I-395 to the Pentagon, with some express routes also traveling along I-495 between Braddock Road (VA-620) and I-395. Individual 18 Line routes generally serve either the Pentagon via I-395 or the Franconia-Springfield Metrorail Station via Old Keene Mill Road or Franconia-Springfield Parkway. Several major generators are located within the 17 and 18 Line service area, including George Mason University, the Rolling Valley Mall, Springfield Plaza, Landmark Mall and the Pentagon. Fairfax Connector Route 495 provides service between the Burke VRE Station and the Spring Hill Metrorail Station in Tysons via I-495. Weekday ridership on the 17 and 18 Lines totals 2,853 riders, as listed in Table 7-67.

Figure 7.44: Burke Area Service Area-Existing Service

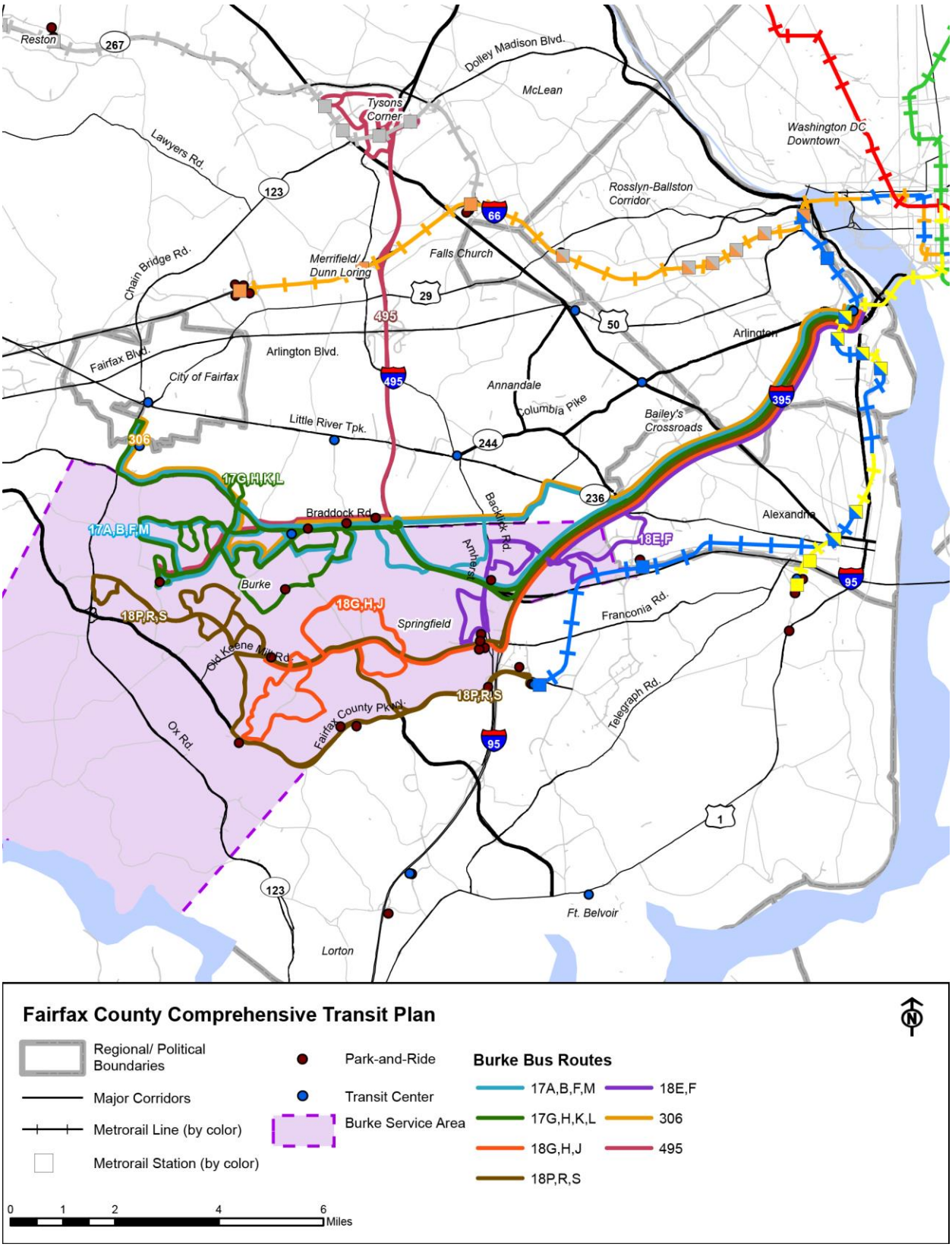


Table 7-67: Burke Area Services

Route Series	Name	District	Metrorail Station Served (2015)	Average. Weekday Boardings
306	GMU – Pentagon	Braddock, Mason	Pentagon Metro Station – Blue/Yellow	168
495	Burke Centre VRE – Tysons	Braddock, Mason, Providence	Spring Hill - Silver	54
Fairfax Connector Total Boardings				**222**
17A,B,F,M	Kings Park	Braddock, Mason	Pentagon Metro Station – Blue/Yellow	403
17G,H,K,L	Kings Park Express	Braddock, Mason	Pentagon Metro Station– Blue/Yellow	936
17 Line Total Weekday Passenger Boardings				**1,339**
18E,F	Springfield	Lee, Mason	Pentagon Metro Station– Blue/Yellow	209
18G,H,J	Orange Hunt	Lee, Mason, Springfield	Pentagon Metro Station– Blue/Yellow	627
18P,R,S	Burke Centre	Braddock, Lee, Mason, Springfield	Franconia Springfield Metro Station– Blue/Yellow, Pentagon Metro Station– Blue/Yellow	677
18 Line Total Weekday Passenger Boardings				**1,513**

Source: WMATA APC Data, Fall 2014,

Table 7-68, Table 7-69, and Table 7-70 summarize the percentage of weekday passenger trips that begin or end at Franconia-Springfield Station, Pentagon Station, and Spring Hill Station, showing that the major role of these routes is to feed Metrorail. Overall, 83 percent of 18R,S series trips involve Franconia-Springfield Station, 77 percent of 17 Line, Route 306, and 18E,F, 18G,H,J and 18P series trips involve Pentagon Station, and 17 percent of Route 495 trips involve Kings Hill Station.

Table 7-68: Franconia-Springfield Station Passenger Activity

Route Series	Total Weekday Boardings	Franconia-Springfield Station Weekday Boardings	Franconia-Springfield Station Weekday Alightings	Trips Not Involving Franconia-Springfield Station (Percent of Route Ridership)
18R,S	179	102	47	30 (17%)

Source: WMATA APC Data, Fall 2014

Table 7-69: Pentagon Station Passenger Activity

Route Series	Total Weekday Boardings	Pentagon Station Weekday Boardings	Pentagon Station Weekday Alightings	Trips Not Involving Pentagon Station (Percent of Route Ridership)
17A,B,F,M	424	179	73	172 (41%)
306	177	42	43	92 (52%)
17G,H,K,L	949	546	283	120 (13%)
18E,F	209	86	92	32 (15%)
18G,H,J	645	334	100	211 (33%)
18P	521	387	80	54 (10%)
Total	**2,926**	**1,575**	**671**	**681 (23%)**

Source: WMATA APC Data, Fall 2014, Fairfax County Fall 2013 APC data

Table 7-70: Kings Hill Station Passenger Activity

Route Series	Total Weekday Boardings	King Hill Station Weekday Boardings	King Hill Station Weekday Alightings	Trips Not Involving King Hill (Percent of Route Ridership)
495	54	4	5	45 (83%)

The 17 and 18 Lines and Routes 306 and 495 serve 14 park-and-ride lots as well as provide circulation within contiguous residential neighborhoods and limited service to major activity centers. These park-and-ride lots offer nearly 4,000 spaces with no daily fee, and are summarized in Table 7-71. Several lots are at capacity, particularly those served by the 18 Line and located adjacent to I-95 in Springfield. Three lots are adjacent to VRE stations, all of which are typically 60 to 100 percent full. Every individual route on the 17 and 18 Lines serves at least one park and ride lot. The Rolling Valley, Wakefield Park, Canterbury Woods and Burke Centre VRE lots have the highest number of inbound boardings on the 17 and 18 Lines.

Table 7-71: Burke Area Park and Ride Lot Service

Park & Ride Lot – Community Location	Peak Period Routes	Off-Peak Period Routes	Spaces[12]	Use	Inbound Boardings
American Legion – Springfield	18E, 18G, 18H, 18J, 18P	18E, 18G, 18H, 18P	100	100%	12
Backlick Road VRE Station - Springfield	18E	18E	220	83%	2
Burke Centre VRE Station – Burke	17B, 17L	17B, 17L	1,510	60%	19
Canterbury Woods – Annandale	17A, 17B, 17F, 17G, 17H, 17K, 17L, 306	17A, 17B, 17F, 17H, 17K, 17L, 306	0	0%	23
Gambrill Road – Springfield	18R	18R	225	100%	2
Old Keene Mill Road – Springfield	18E, 18G, 18H, 18J, 18P	18E, 18G, 18H, 18P	278	100%	12
Parkwood Baptist Church – Annandale	17A, 17F, 17H, 17K, 306	17A, 17F, 17H, 17K, 306	30	0%	10
Rolling Road VRE Station - Burke	17L	17L	368	97%	2
Rolling Valley – Burke	18P, 18R, 18S	18P, 18R, 18S	664	63%	40
South Run – Springfield	18H, 18R	18H, 18R	52	0%	0
Springfield Plaza - Springfield	18E, 18G, 18H, 18J, 18P	18E, 18G, 18H, 18P	254	100%	12
Springfield United Methodist Church – Springfield	18E, 18G, 18H, 18J, 18P	18E, 18G, 18H, 18P	53	100%	12
Sydenstricker Road - Springfield	18R	18R	170	100%	0
Wakefield Park - Annandale	17A, 17F, 17G, 17H, 17K, 17L, 17M, 306	17A, 17F, 17H, 17K, 17L, 17M, 306	50	0%	26

Source: Internal FCDOT staff Park and Ride inventory report, WMATA Fall 2014 APC data, FCDOT Fall 2013 APC Data

Service Productivity

Route productivity is presented in Table 7-72. The 17 and 18 Line series average 19.8 boardings per revenue-hour, 13.8 boardings per trip and 0.8 boardings per revenue-mile. While boardings per

[12] http://www.fairfaxcounty.gov/connector/parkandrides/

revenue-hour is the most commonly used measure of productivity, the boardings per trip measure is often employed as the best gauge to evaluate routes that operate closed-door for significant distances along a major highway and have the vast majority of their riders destined for one endpoint. In such cases, a measure that indicates the utilization of the bus capacity is valuable to determine if frequency changes are required. A boarding per trip value that approaches or exceeds the bus capacity clearly indicates the need to add trips to a route. With little local ridership and significant miles along I-395, all but routes 18R and 18S would fit into this category. Boardings per trip on the remaining routes, however, are well below the capacity of about 40 seated passengers per bus.

Overall, the 18G,H,J series has the highest productivity in each measure. Routes 18G and 18J both begin at the Rolling Valley Mall Park and Ride, the busiest of those served by the 17 and 18 Lines. Route 18H has strong ridership (258 average weekday boardings) in West Springfield, particularly along Greeley Boulevard. The 18P,R,S series also has high productivity, particularly in boardings per revenue hour and boardings per revenue mile. Routes 18R and 18S are among the shorter routes in the 17 and 18 Lines, terminating at Franconia-Springfield Station instead of Pentagon Station. Route 18P is a longer route serving the Pentagon; however, it has the highest individual route ridership in the 17 and 18 Lines, at 521 average weekday boardings. The poorest performing series is the 17A,B,F,M. This series has the fourth lowest ridership of any series in the 17 and 18 Lines in addition to having some of the longest routes that extend all the way out to George Mason University and the Burke Centre VRE Station.

Table 7-72: Burke Area Service Productivity

Route	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings/ Trip	Boarding/ Rev-Mile
17A,B,F,M	Weekday Peak Plus Evening	Commuter	12.6	8.8	0.5
17G,H,K,L	Weekday Peak	Commuter	19.4	16.4	0.8
18E,F	Weekday Peak	Commuter	17.8	11.6	0.8
18G,H,J	Weekday Peak	Commuter	28.7	20.9	1.2
18P,R,S	Weekday Peak Plus Evening	Commuter	20.3	11.3	0.9
306	Weekday Non-Peak	Local	14.2	14.0	0.7
495	Weekday	Express	2.2	2.8	0.2

Note: Productivity values based on farebox data for September 2013

Status of 2009 TDP Recommendations

Table 7-73 presents the current (2015) status of the implementation progress of the 2009 TDP recommended service modifications. At this point, no service changes that were recommended in the previous TDP have been enacted by WMATA.

Table 7-73: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
17A	George Mason University to Pentagon Metro	No change	No change
17B	Twinbrook Road to Pentagon Metro	No change	No change
17F	Twinbrook Road to Pentagon Metro (reverse peak only)	No change	No change
17M	Leesville Blvd to Pentagon Metro	Replace with C & D routes, service extension to Rolling Road/Parliament and Rolling Rd/Burke Lake Rd	No change
17G	GMU to Pentagon Metro (via I-495/I-395)	New segments	No change
17H	Twinbrook Rd to Pentagon Metro	Discontinue, transfer services to C, D, G & K	No change
17K	Twinbrook Rd to Pentagon Metro (via I-495/I-395)	New segments	No change
17L	Twinbrook Rd to Pentagon Metro (via I-495/I-395)	No change	No change
18E	Commercial Dr to Pentagon Metro	Discontinue	No change
18F	Commercial Dr to Pentagon Metro	Discontinue	No change
18G	Rolling Valley Park & Ride to Pentagon Metro	Realign onto Greeley Blvd	No change
18H	Huntsman Blvd to Pentagon Metro	No change	No change
18J	Rolling Valley Park & Ride to Pentagon Metro	Route along the current 18F	No change
18P	Burke Centre to Pentagon Metro	Originate at Rolling Valley Park & Ride	No change
18R	Burke Centre to Franconia-Springfield Metro	Discontinue, transfer services to new A	No change
18S	Burke Centre to Franconia-Springfield Metro	Discontinue, transfer services to new B	No change
306	GMU – Pentagon	Run 17A service all day and discontinue the 306	No change
495	Burke Centre VRE – Tysons	Implement new I-495 HOT lane service from Burke to Tysons	Implemented

7.10.2. Recommendations for Existing Service

Defer Recommendations Pending WMATA 17/18 Line Study

WMATA is currently conducting a separate study of the 17 and 18 Lines that will consider improvements to these routes in depth. Therefore, no recommendations are being made for the 17 and 18 Lines in the current TDP pending the outcome of that study. Route 306 recommendations will also be developed as part of the 17/18 Line Study.

Route 495 Recommendations

Fairfax County is currently proposing to modify scheduled running times and reduce service on Route 495 in the Spring of 2015. These reductions should be monitored and adjusted according to ridership demands.

7.11.1. Background

Service Area

The Huntington service area is roughly bounded by the City of Alexandria to the north, the Potomac River to the east and south and I-95 to the west as shown in Figure 7.45. The Fort Belvoir Military Reservation, located near the southwest corner of this service area, borders the Huntley Meadows Park which comprises 1,500 acres of natural resources and wetlands located within the Hybla Valley section of the Lee district.

The service area includes ten Fairfax Connector and two Metrobus routes that terminate at the Hungtington Metrorail station. A thirteenth route, Metrobus Route 11Y, serves the near-by Fort Hunt area with direct commuter service into the District of Columbia. These routes serve both the Mount Vernon and Lee Magisterial Districts. Connector routes 151, 152, 159, 161, 162 and 171 and Metrobus REX operate along the Richmond Highway US-1 corridor. The REX continues beyond Huntington to serve the Eisenhower Avenue and King Street Stations in the City of Alexandria. Richmond Highway serves as the boundary line between the two magisterial districts located south of Huntley Meadows Park. Several routes leave Huntington Station in a westerly direction north of Huntley Meadows Park towards the center of the Lee district, including Connector routes 109, 301, and 310. Connector Route 101 serves the Fort Hunt community terminating at George Washington's Mount Vernon Estate. Routes 151 and 152 also terminate at the Mount Vernon Estate. Metrobus 9A leaves Huntington station in a northerly direction travelling through neighboring Alexandria to a terminal at the Pentagon Metrorail station.

Current Services

All but one of the13 area bus routes listed in Table 7-74: serve the Huntington Metrorail station. The table presents average daily riders for each Connector route as extracted from agency farebox reports from September 2014. Connector ridership from this source totals 9,831 weekday riders, or approximately 25 percent of the total Connector system ridership. According to WMATA APC ridership reports, the three Metrobus routes carry about 5,915 weekday riders. The 2009 TDP reported ridership on these ten Connector routes as nearly 12,000 riders with the Metrobus routes serving at the time more than 7,000 riders. The drop in Metrobus riders can be attributed to a 1,000 passenger decline in REX riders. The decline in Connector ridership is attributed in part to a restructuring of the route 171 which resulted in the creation of the new 371/372/373 routes. These latter routes currently serve nearly 1,200 weekday riders. As occurred industry wide, both the Connector and Metrobus systems experienced a decline in ridership following the economic recession that occurred during 2008 and 2009 with unemployment reaching its low in October 2009. The American Public Transit Association reports that industry-wide transit ridership continued to decline reaching its low point in 2010; not all transit operators and services have yet returned to 2008 pre-recession levels.

Figure 7.45: Huntington Service Area-Existing Service

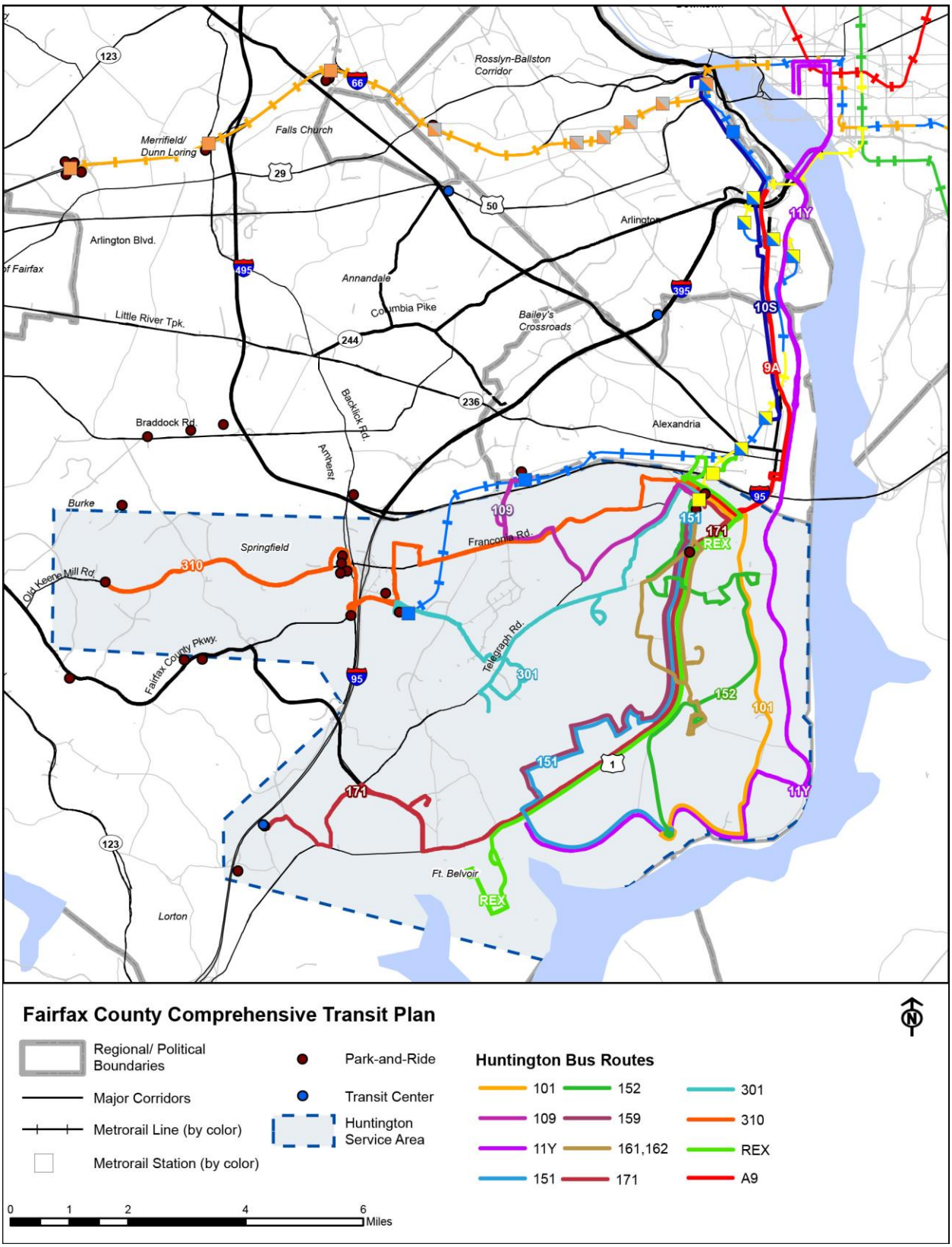


Table 7-74: Huntington Area Connector Bus Services

Route	Name	District	Metrorail Station Served	Average Daily Riders
101	Fort Hunt Line	Mt. Vernon	Huntington – Yellow	586
109	Rose Hill Line	Lee	Huntington – Yellow Van Dorn Street – Yellow/Blue	569
151	Engleside – Mt. Vernon	Mt. Vernon Lee	Huntington – Yellow	1,344
152	Groveton – Mt. Vernon	Mt. Vernon Lee	Huntington – Yellow	526
159	Engleside – Limited Stop	Mt. Vernon Lee	Huntington – Yellow	530
161/162	Hybla Valley Circulator	Mt. Vernon Lee	Huntington – Yellow	984
171	Richmond Highway Line	Mt. Vernon Lee	Huntington – Yellow	3,211
301	Telegraph Road Line	Mt. Vernon Lee	Huntington – Yellow Franconia-Springfield – Yellow/Blue	274
310	Franconia Road – Rolling Valley Line	Lee Springfield	Huntington – Yellow Franconia-Springfield – Yellow/Blue	1,808
Fairfax Connector Total Boardings				9,831
9A	Huntington – Pentagon Line	Mt. Vernon	Huntington – Yellow Pentagon – Yellow/Blue	1,704
11Y	Mt. Vernon Express Line	Mt. Vernon	Farragut West – Blue/Orange	503
REX	Richmond Highway Express	Mt. Vernon Lee	Huntington/Eisenhower Avenue – Yellow King Street – Yellow/Blue	3,708
Metrobus Total Boardings				5,915

The Huntington area routes largely serve as feeder routes connecting to several Metrorail stations and the Connector Lorton VRE transit center, as presented in Table 7-74: . These stations offer connections to Metrorail, Metrobus and Connector buses to allow riders to transfer between services to reach destinations both outside and within the service area. The rider survey revealed that other transfers occur at local bus stops within the area. A portion of the passenger activity at the transit hubs listed in Table 7-75 may not transfer to another transit service but rather access or leave these hubs via other means such as walking or driving.

Nearly half of the total Connector boardings and alightings for the 10 routes listed in Table 7-75 occur at the Huntington Metrorail station. Another 17 percent of the Connector boardings and alightings occur at the other locations such as at the Lorton VRE Transit Center. The data for routes 109 and 301 suggest that some riders use these routes to travel between two Metrorail stations, (i.e., boarding at one and alighting at another). In total an estimated 64 percent of all Connector passenger activity in this service area takes place at the four transit hubs displayed in Table 7-75.

Approximately half of the Metrobus 9A Line riders either board or alight at one of two Metrorail stations, with more than 30 percent at Huntington and 20 percent at Pentagon. Approximately 72 percent of all REX riders transfer to and from the REX at one of three Metrorail stations as presented in Table 7-75. Only 28 percent of REX riders travel between local stops along the Richmond Highway corridor, reflecting its limited-stop operation. Connector routes 151/152, 161/162 and 171 complement the REX along Richmond Highway and serve a greater percent of local ridership.

Table 7-75: Passenger Activity Summary at Regional Transit Hubs

		Passenger Boardings and Alightings as a Percent of Total Ridership at Regional Transit Hubs			
Route	**Name**	**Huntington Station**	**Van Dorn Station**	**Franconia/ Springfield Station**	**Lorton VRE Transit Center**
Fairfax Connector					
101	Fort Hunt Line	86%			
109	Rose Hill Line	47%	49%		
151	Engleside – Mt. Vernon	39%			
152	Groveton – Mt. Vernon	50%			
159	Engleside – Limited Stop	72%			
161/162	Hybla Valley Circulator	75%			
171	Richmond Highway Line	35%			13%
301	Telegraph Road Line	54%		60%	
310	Franconia Road – Rolling Valley Line	34%		40%	
Route	**Name**	**Huntington Station**	**Eisenhower Station**	**King Street Station**	**Pentagon Station**
WMATA Metrobus					
9A	Huntington – Pentagon Line	31%			20%
REX	Richmond Highway Express	37%	10%	25%	

Sources: Connector Ridecheck Survey Fall 2013 Load Profile Reports, WMATA Metrobus APC internal data report

Service Productivity

Figures for route productivity are presented in Table 7-76. The ten Connector routes average 18.2 boardings per revenue-hour, 17.7 boardings per trip, and 1.51 boardings per revenue-mile. The same measures for the three Metrobus routes average 26.8 boardings per trip, 36.7 boardings per revenue-hour, and 2.44 boardings per revenue-mile. For all three measures, the Connector Huntington service area routes as a group are slightly below the South County averages. The Huntington area averages are influenced by the Richmond Highway routes, particularly the 151, 159, 161 and 171, which carry more than 56 percent of the Connector ridership within the entire service area.

Table 7-76: Huntington Area Bus Service Weekday Productivity

Route	Service Pattern	Service Type	Boardings /Rev-Hour	Boardings /Trip	Boarding/ Rev-Mile
Fairfax Connector					
101	Seven day, all day service	Local	15.4	9.6	1.00
109	Six day, all day service	Local	13.2	9.0	1.41
151	Seven day, all day service	Local	21.3	20.4	1.73
152	Seven day, all day service	Local	9.7	9.1	0.73
159	Weekday peak period only	Express	16.1	17.1	2.12
161/162	Seven day, all day service	Local	18.0	17.3	1.58
171	Seven day, all day service	Local	25.7	31.5	2.09
301	Weekday peak period only	Local	11.4	9.4	0.83
310	Seven day, all day service	Local	17.2	20.5	1.41
	Huntington Service Area Average		**18.2**	**17.7**	**1.51**
	South County Average		**20.9**	**21.1**	**1.57**
WMATA Metrobus					
9A	Seven day, all day service	Local	32.8	17.6	2.44
11Y	Weekday peak period only	Commuter	35.9	38.7	2.21
REX	Seven day, all day service	Major	39.0	33.4	2.47
	Huntington Service Area Average		**36.7**	**26.8**	**2.44**

Status of 2009 Recommendations

Table 7-77 presents the current (2015) status of the implementation progress of the 2009 TDP recommended service modifications. This table provides a summary of changes implemented by route, indicating whether or not those changes are the same as the 2009 recommendations. WMATA and FCDOT have delayed making most of the recommended service improvements and routing changes, likely in response to ridership decline during the economic downturn and budget constraints. Some of the 2009 recommended improvements may be justified over the next ten year period (2025 CTP/TDP) with anticipated growth in transit use in this region of the County.

Table 7-77: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
Fairfax Connector			
101	Fort Hunt Line	No change	No change
109	Rose Hill Line	No change	No change
151	Engleside – Mt. Vernon	Reduce peak and off-peak headways on former 151/152 circulator, run alternate limited stop peak trips along route 151, rename to address rider confusion	Route 151 peak headway reduced to 20 minutes, New route names, route 159 limited-stop route created
152	Groveton – Mt. Vernon		
159	Engleside – Limited Stop	n/a	New route created to supplement route 151
161/162	Hybla Valley Circulator	Reduce peak headway to 20 minutes, rename to address rider confusion	New route name
171	Richmond Highway Line	Restructure route to terminate at Lorton VRE transit center, Improve peak, off-peak and weekend headways	Route terminates at the Lorton VRE Station, headways improved weekdays, Saturday and Sunday
301	Telegraph Road Line	Simplify route, lengthen PM peak span	PM peak period begins one hour earlier
310	Franconia Road – Rolling Valley Line	Improve weekday and Saturday headways	Weekday headways improved
WMATA Metrobus			
9A	Huntington – Pentagon Line	No Change	Route 9E trips terminated
11Y	Mt. Vernon Express Line	Modify AM peak schedule	Trip time adjustments
REX	Richmond Highway Express	Increase peak run times, improve peak headway, eliminate route segment through the South Post, extend route to Lorton VRE station	Increase peak run times

7.11.2. Recommendations for Existing Service

No Changes to Metrobus 9A Huntington – Pentagon Station

The Metrobus 9A Line formerly operated as the 9AE with the 9E trips serving as short-turns at the Braddock Road Metrorail station. This route largely serves Alexandria and Arlington County, with less than one route mile within Fairfax County. The Fairfax County segment along Richmond Highway and Huntington Avenue connects the route to the Huntington Metrorail Station. The route serves an estimated 1,700 daily passengers with an all-day service schedule operating at a 30-minute headway. Passenger loads appear reasonable throughout the day. The WMATA data suggests a need to improve reliability especially during the evening peak period. As of this writing, WMATA was planning to replace

the 9A Line with an extended10A Line to Huntington Station. WMATA attributes this service change to the implementation of the new Alexandria busway and BRT service that duplicates a portion of the 9A. The implementation date has not yet been established.

Modify the Metrobus 11Y Mount Vernon Express Schedule

The Metrobus 11Y provides direct service between suburban Virginia communities within Alexandria and the Fairfax County Mount Vernon communities and the District of Columbia (DC). The route operates toward DC in the morning peak and brings commuters back to Virginia during the evening peak. Most trips on the limited schedule operate near or at a full seated load during the morning peak with the first three trips equally loaded during the afternoon schedule. WMATA's data suggests that there are standees on some trips at times. Ridership is split approximately in half between Alexandria and Mount Vernon origins. Most riders, 70 percent, have an automobile available and only 10 percent are low-income. These riders are loyal to the 11Y: about 76 percent of the riders use the bus on a daily basis because, they report, it is a cost-effective and convenient means of travel into DC. These riders would like more frequent service and expanded service hours.

The morning schedule consists of eight trips, four originating at the Mount Vernon terminal and four short trips from Hunting Point. The evening schedule consists of six trips, five of which are routed through Mount Vernon. The loads on the morning trips from Mount Vernon suggest that there are frequently standees, in violation of WMATA express bus loading standards. The early evening return trips to Hunting Point and Mount Vernon also experience standees. The current lack of seats at some times may be discouraging ridership growth. The schedule should be revised to extend two morning short-trips to originate at Mount Vernon to better balance loads. In addition, WMATA should enhance route capacity with the addition of one trip in both the morning and evening schedules as suggested in Table 7-78 (morning) and Table 7-79 (evening). Like the 9A, the 11Y is prone to poor reliability, especially during the evening peak period. WMATA implemented a new schedule in March 2015 with adjustments to the scheduled run time to address run time variability.

Table 7-78: Route 11Y Mt Vernon Express Proposed Morning Peak Schedule

Existing Route 11Y Morning Schedule		Proposed Route 11Y Morning Schedule	
Leave Mount Vernon	Leave Hunting Point	Leave Mount Vernon	Leave Hunting Point
-	6:40	6:14	6:43
6:34	7:03	6:34	7:03
6:54	7:23	6:54	7:23
-	7:34	-	7:34
7:13	7:45	7:14	7:46
-	7:56	-	7:56
-	8:06	7:34	8:06
7:45	8:17	7:52	8:24
		8:10	8:42

Table 7-79: Route 11Y Mt Vernon Express Proposed Evening Peak Schedule

Existing Route 11Y Evening Schedule			Proposed Route 11Y Evening Schedule		
Leave DC	Arrive Hunting Point	Arrive Mount Vernon	Leave DC	Arrive Hunting Point	Arrive Mount Vernon
4:10	4:49	5:15	4:00	4:39	5:05
4:40	5:27	5:59	4:25	5:12	5:44
5:10	5:57	-	4:50	5:37	6:09
5:15	6:02	6:34	5:10	5:57	-
5:40	6:20	6:50	5:15	6:02	6:34
6:15	6:55	7:25	5:40	6:20	6:50
			6:20	7:00	7:30

Create a Summer Schedule for Route 101

Route 101 provides seven-day local service along the length of Fort Hunt Road serving the local community and terminating at George Washington's Mount Vernon Estate. Route 101's local service complements Metrobus 11Y's express service, giving Fort Hunt residents two transit options. Approximately 86 percent of Route 101 riders travel through Huntington Station, and two-thirds of them use the bus five or more days per week. Route 151 provides additional service along the northern segment of Fort Hunt Road.

Routes 101, 151 and 152 all terminate at the Mount Vernon Estate, a popular historical attraction. Many tourists use these routes; Route 101 provides the most direct and quickest transit trip. The ridecheck counted fall season Mount Vernon weekday, Saturday and Sunday daily boardings of approximately 80, 220 and 150 respectively on the three local routes. Summer ridership is reported by FCDOT and Huntington garage officials as higher especially on weekends. (Routes 151 and 152 are discussed in a separate section.)

Service productivity for Route 101 is not particularly strong, averaging 10 boardings per trip on weekdays and 7 per trip on weekends. In the peak period and peak direction the average is 22 boardings per trip, indicating that sufficient frequency is being offered. However, summer boardings are reportedly greater due to tourist ridership, with some trips experiencing standees. In addition, riders mentioned a need for better on-time performance. The ridecheck found significant run time variability which was confirmed by Connector operators, who noted that frequent delays occur during summer weekends when tourist use is high. In late 2014, FCDOT initiated a run time study of Route 101 with a goal of implementing schedule improvements. It is recommended that FCDOT develop a unique set of scheduled run times for summer operations for Route 101.

Adjust Route109 Rose Hill Line Schedule Run Time and Commence Sunday Service

Route 109 offers six-day service; most trips are interlined with the Route 101 schedule. Route 109 serves the Telegraph Road corridor before turning onto Rose Hill Drive to proceed to the Van Dorn Street Metrorail station. An estimated 96 percent of Route 109 riders start or end their trips at either the Huntington or Van Dorn Metrorail Station. Rose Hill residents rely on Route 109 as their primary

transit option and predominately use this route as the first leg of their trip for destinations outside of the immediate area, mostly for work purposes.

Ridership on this seven-mile route has remained constant since its inception, indicating service to a stable residential community. Service productivity is near or slightly below the South County average. The community has indicated a preference for expanded service. however, existing service has ample capacity; peak-period peak-direction boardings average about 20 passengers per trip and most off-peak trips have fewer than 10 passengers. It seems appropriate to experiment with Sunday service on an hourly schedule, as shown in Table 7-80, since ridership on Route 109 is of a similar volume as found on other area routes that have seven-day service (such as Route 161/162)

Sunday service can be interlined with Route 101, as it is for the remainder of the week, as a means to address reliability by moving some scheduled running time from Route 109 to Route 101. Route 109 run time data shows a large percent of early arrivals. This can cause prospective riders to miss scheduled trips. Because this route is interlined with Route 101, FCDOT should adjust Route 109 scheduled run times in conjunction with efforts to improve Route 101 on-time performance.

Table 7-80: 109 Rose Hill Line Service Levels

		Route 109 Rose Hill Line
	Operator	Fairfax Connector
Span	**Weekday**	5:00 AM – 12:00 AM
	Saturday	6:30 AM – 11:00 PM
	Sunday	7:30 AM – 8:00 PM
Headway (minutes)	**Weekday Peak**	30
	Weekday Midday	60
	Weekday Evening	45
	Saturday	60
	Sunday	60

No Change to Route 310 Rolling Valley Line

The Rolling Valley Line is a seven-day route originating from the Rolling Valley Park and Ride lot in the Burke community. The route follows Old Keane Mill Road to the Franconia-Springfield Station and then continues along Franconia Road to its terminal at Huntington Station. Route 310 is the third most used South County Connector bus route with nearly 1,800 average weekday passenger trips. More than 70 percent of boardings and alightings occur at either of the two Metrorail Stations. Nearly two-thirds of riders report that they use this route five or more days a week. Approximately 60 percent of passengers are African-American or Latino and about 65 percent are low-income.

As recommended in the 2009 TDP, in 2011 the peak headways were improved to 20 minutes and the allowed run time was increased to reduce crowding and improve on-time performance. As currently scheduled, the route has excess capacity that can accommodate further ridership growth. Maximum loads during various times of the day were observed to be about 25 passengers. Since this route very directly serves both significant feeder and local travel markets, no changes are required.

Richmond Highway US-1 Corridor Services

Recognizing that US-1 is an important transit corridor, the Virginia Department of Rail and Public Transit (DRPT) recently completed the "Route 1 Multimodal Alternative Analysis" to study transit and related land use improvement options for the Route 1 corridor between I-495 and Prince William County. The project "will clearly define the key transportation issues, establish a 'needs statement,' and consider a range of multimodal transportation solutions to address the needs. Initial alternative strategies will include bus rapid transit (BRT), light rail transit (LRT), extended Metrorail service, roadway widening, and restructured pedestrian/bicycle pathways and facilities."[13] FCDOT and WMATA are active stakeholders in this DRPT corridor initiative as it moves toward implementation. The study recommended implementation of the transit improvements as follows:

- Phase 1: BRT, Huntington to Hybla Valley; projected opening 2026
- Phase 2: BRT, Hybla Valley to Fort Belvoir; projected opening 2028
- Phase 3: BRT, Fort Belvoir to Woodbridge (VA-123); projected opening 2032
- Phase 4: Yellow Line, Huntington to Hybla Valley; projected opening 2040

The planned BRT line will require a widening of the roadway to provide median BRT lanes along with other transportation related enhancements. Recommendations for this 2015 CTP will focus on shorter term routing and schedule opportunities, particularly for the REX and Connector 171 (see following sections). The development of longer term bus service options will likely begin within the next few years. Some level of bus service planning for feeder routes to the BRT will be needed to assist with planning the infrastructure to support the new network of transit service in the Richmond Highway corridor.

Running Time Adjustments for Metrobus REX – Richmond Highway Express

REX is a limited-stop,[14] branded bus service that operates along US-1 between King Street Metrorail station in Alexandria and Fort Belvoir Military South Base with a stop at the Huntington Metrorail station. REX service along this section of US-1 is complemented by Connector routes 151, 152, 159, 161, 162, and 171. The first five directly serve neighborhoods contiguous to Richmond Highway while the 171 operates along the highway until the Fort Belvoir area, serving portions of the North Post before terminating at the Lorton VRE station. Together these Connector and Metrobus routes serve approximately 10,000 weekday passengers (refer to Table 7-74:), making US-1 the highest bus transit ridership corridor within the county.

Since the 2009 TDP, WMATA has adjusted the REX service schedule to extend run times because the route had been habitually running late, as noted in the previous TDP. Recent data provided by WMATA reports on-time performance of 81 percent. WMATA should identify performance by time of day to determine when and to what extent further run time adjustments are warranted. The BRT service that has been proposed under the multimodal study will likely use a routing different than currently followed by the REX. The new BRT alignment will also include a number of formal station stops that may vary from the stop locations used by the REX. Changes to the REX alignment, such as those considered in the 2009 TDP, are not currently recommended. Implementation planning for the proposed BRT is required, including decisions on maintaining access to local stops and whether to transfer the existing REX brand to the new BRT service.

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[13] http://route1multimodalaa.com/project-overview/

[14] REX serves 18 bus stops in each direction including terminal and Metrorail stations.

Revise Schedule for 151/152/159 Engleside or Groveton – Mt Vernon Lines

The Engleside and Groveton neighborhoods are served by the following routes:

- 151 Engleside – Mt Vernon: This route leaves the Huntington Station south busway onto North Kings Highway and proceeds along Richmond Highway for about three miles, complementing Route 171 service. At Ladson Lane the route turns to circulate through the Engleside neighborhood then rejoins Richmond Highway from Sacramento Drive continuing to Mount Vernon Highway to a terminal at the Mount Vernon Estate. Average weekday ridership exceeds 1,300 passengers.
- 159 Engleside Limited Stop: This limited-stop route operates only during the peak period in the peak direction to supplement Route 151. Route 159 makes all local stops within the Engleside neighborhood but only limited stops along Richmond Highway and serves approximately 600 daily passengers.
- 152 Groveton – Mt Vernon: This route serves the Groveton community as well as the neighborhoods along Fort Hunt Road and Sherwood Hall Lane on its approach to the Mount Vernon Hospital. The route then continues on Mount Vernon Highway to the Mount Vernon Estate terminal. The average weekday ridership for this route exceeds 500 riders.

Previously Routes 151 and 152 were designated as circulators, with Route 151 running a counter-clockwise loop and Route 152 clockwise. Following the 2009 TDP recommendations, they were separated into two bi-directional routes with distinct names, improved frequency on Route 151, and a new Route 159 with limited-stop service. Separate public schedules for each route have been distributed to clearly promote the current operation. The current vehicle schedules are constructed such that most 151 and 152 scheduled trips are interlined. The availability of a through ride is not promoted to the riding public as had been the case with the former circulator route configuration, although informed riders do take advantage of the through-ride. FCDOT should note on the public schedule which trips allow for a through-ride to accommodate passengers who wish to travel between Route 151 and Route 152 service areas without transferring.

These routes serve neighborhoods with a high level of transit dependency. Approximately two-thirds of riders use the bus five days or more per week, belong to minority groups and/or are low-income. Only some 30 percent have a car available for their use. Nearly 48 percent of the passenger boardings and alightings on these routes occur at the Huntington Street Metrorail station, indicating a level of transfer activity from these routes for destinations beyond the immediate area.

Reviews of the running times from the ridechecks showed problems with on-time performance during the morning peak on both the 151 and152. Several Huntington garage operators mentioned that these routes often run late especially in the morning hours. The ridecheck data shows that these routes operate well within acceptable passenger loads during these hours so existing headways can be maintained.

Weekend and midday services currently operate at 60 minute headways. Many of the midday and weekend trips especially on Route151 experience passenger boardings and maximum loads that are actually greater than those in the peak. Greater passenger activity may cause these off-peak trips to run behind schedule. It is recommended that headways be improved to 30 minutes on Route 151 as summarized in Table 7-81. Dwell times and running time should decrease with fewer boardings per trip, resulting in improved on-time performance. In addition, this headway improvement will increase the number of trips to serve Mount Vernon Estate visitors.

Table 7-81: Route 151 Engleside to Mount Vernon Service Level

		Route 151 Engleside to Mount Vernon
	Operator	Fairfax Connector
Span	**Weekday**	4:00 AM – 12:00 AM
	Saturday	5:30 AM – 12:00 AM
	Sunday	5:30 AM – 12:00 AM
Headway (minutes)	**Weekday Peak**	20
	Weekday Midday	30
	Weekday Evening	30
	Saturday	30
	Sunday	30

Increase Headway on the 161/162 Hybla Circulators

The 161/162 Hybla Circulators serve the Hybla neighborhood along Harrison Lane and Lockheed Boulevard before crossing Richmond Highway at Fordson Road as it proceeds to its Mount Vernon Hospital terminal. Like the 151/152/159 Engleside and Groveton Routes, the 161/62 circulators serve a transit-dependent, largely minority population. Nearly 70 percent of riders use these routes five days a week; more than 75 percent of all riders are destined for the Huntington Metrorail Station.

The ridechecks show excess capacity at all hours and days of service, which is available to support future ridership growth. However, as confirmed with Huntington garage drivers, the ridechecks showed that these routes frequently run late throughout the day. The operators mentioned a number of factors that slow the route including illegally parked cars blocking bus stops that make turns difficult; congestion on US-1 that impedes turns into the Mt Vernon Square Apartments; and traffic signal delays near the Mt Vernon Hospital campus. It is recommended that FCDOT investigate means of mitigating these operational difficulties in order to improve on-time performance. In the short term the scheduled headway may need to be lengthened to provide adequate run time and recovery time to enhance on-time performance, as presented in Table 7-82.

Table 7-82: 161/162 Hybla Valley Circulator Proposed Service Level

		Route 161/162 Hybla Valley Circulator
	Operator	Fairfax Connector
Span	**Weekday**	4:30 AM – 11:30 PM
	Saturday	6:30 AM – 11:00 PM
	Sunday	6:30 AM – 11:00 PM
Headway (minutes)	**Weekday Peak**	35
	Weekday Midday	70
	Weekday Evening	70
	Saturday	70
	Sunday	70

Add Alternate Route 172 to Peak Route 171 Service
See Route172 under Recommendations for New Service

Restructure Route 301

See Routes 105 and 308 under Recommendations for New Service

7.11.3. Recommendations for New Service

Add Alternate Route 172 to Peak Route 171 Service

Connector Route 171, the Richmond Highway Line, the most heavily used Connector service after Route 401/402, serves more than 3,200 weekday riders and approximately 2,300 riders on both Saturday and Sunday for a total exceeding 20,000 passenger trips weekly. The route complements the limited-stop REX along Richmond Highway by providing local service to nearly 50 stops in each direction. The route originates at the Huntington Metrorail station and continues along US Route 1 past the Fort Belvoir Pence gate where the REX turns into the Fort. Route 171 turns onto Fairfax County Parkway to serve the Defense Logistics Agency (DLA) complex and then continues along Telegraph Road and Pohick Road into Lorton to a terminal at the Lorton VRE transit center. One-third of Route 171 riders transfer at Huntington Station; the remainder make trips along the local portion of the route with destinations along the Richmond Highway corridor.

Recognizing the growth in ridership, FCDOT increased Route 171 service since the 2009 TDP, largely adhering to the TDP recommendations. Recent headway changes were:

- Weekday peak: from 30 minutes to 20 minutes
- Weekday midday: from 60 minutes to 30 minutes
- Weekday evening: from 60 minutes to 35 minutes
- Saturday and Sunday: from 60 minutes to 30 minutes

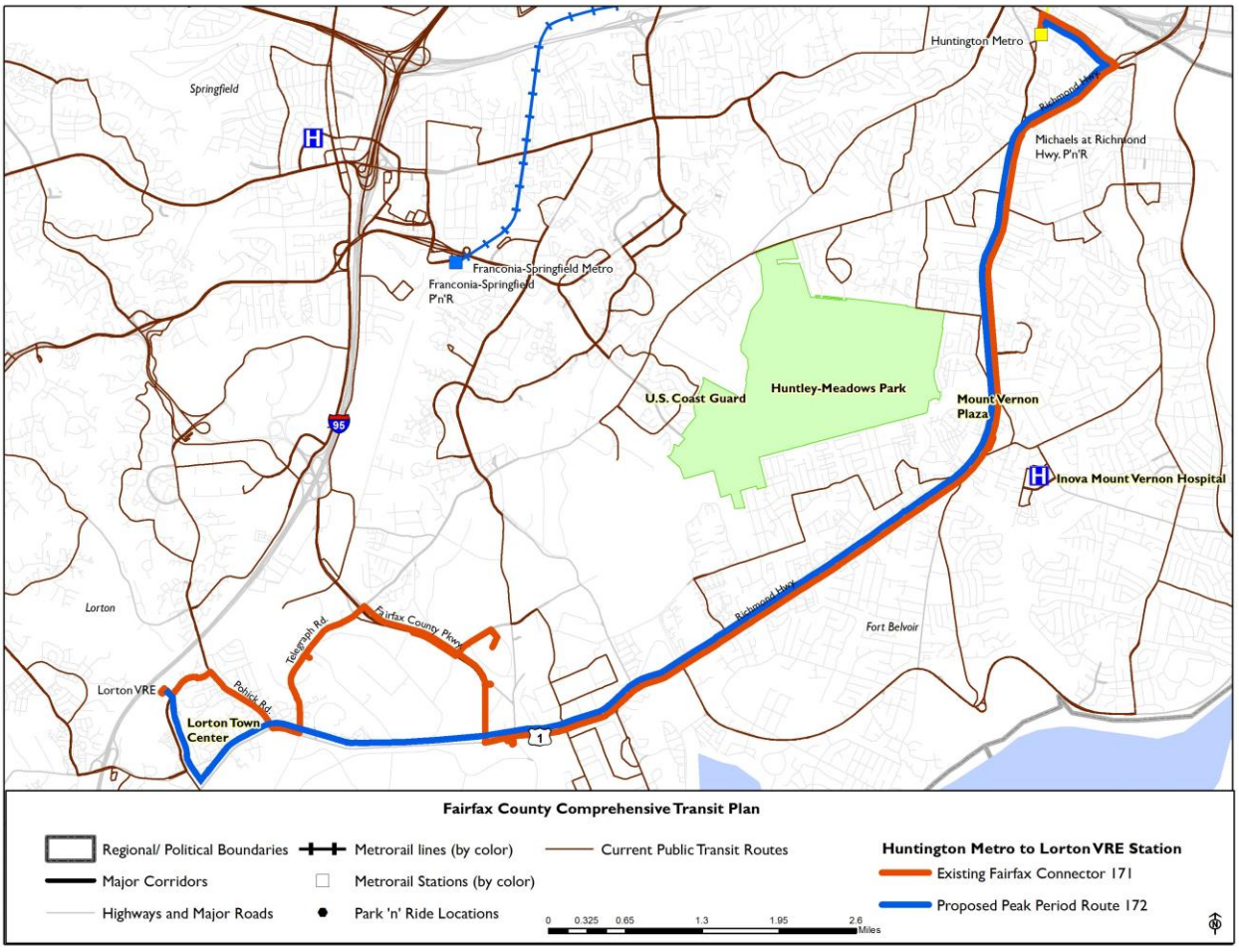
As a result of these headway improvements, scheduled weekday one-way trips increased from 67 to 102, Saturday trips increased from 41 to 80 and Sunday trips increased from 37 to 74. With these

increases there is now ample capacity to accommodate ridership growth, likely for at least the next five years.

As noted in the DRPT US Route 1 corridor study, land use changes along the corridor will cause an increase in transit demand. Although most of the development anticipated by this study will occur beyond the ten-year horizon of this 2015 CTP, the following change is recommended for the later part of the ten-year planning period:

Create a peak-period Route 172 that continues on Richmond Highway beyond Fairfax County Parkway and turns onto Lorton Road and then onto Lorton Station Boulevard for access to the Lorton VRE transit center, as shown in Figure 7.46**Error! Reference source not found.**. This new Route 172 will provide direct service to the Inlet Cove Drive community and several other townhouse complexes located along this length of Richmond Highway. Alternate service between the Route 171 and Route 172 routings so that they have a combined peak headway of 15 minutes (the existing route and the new route segment would each be served with 30-minute headways in the peak). In the portion of the alignment unique to each variant the peak-period headway would by 30 minutes, which would be a slight reduction from the existing 20 minute peak headway along Telegraph Road and Pohick Road.

Figure 7.46: Proposed Route 172, Peak-Period Pattern of Route 171



New Route 105 Huntington to Rolling Stone Circle and Route 308 Franconia-Springfield to Mt Vernon Hospital

It is recommended to eliminate Route 301 and replace it with two new routes. Over the past five years, service on Route 301 has been reduced to the point that it is now a weekday peak-only service. As a result ridership has declined to an average daily volume of 274 passengers. Productivity is much lower than the area average. Moreover, Route 301 has few unique functions. Nearly all riders use this route to connect to either the Franconia-Springfield or Huntington Metrorail stations. Riders along the eastern segment of the route (about 40 per day) can walk to either Route 109 on Telegraph Road or Routes 161/162 on South Kings Highway—as they currently do during hours when Route 301 does not operate. Riders along the western segment can walk to routes 231/232 and 321/322.

Two new services, Route 105 and Route 308 are recommended in place of the existing Route 301:

- **Route 308** would follow the existing 301 routing from the Metrorail station to the Kingman Building, but then proceed along Jeff Todd Road to Richmond Highway, Sherwood Road, and into the Mount Vernon Hospital campus (see Figure 7.47). The new routing would connect greater Springfield and the Kingstowne neighborhoods with the retail, commercial, medical and South County governmental services located along the Richmond Highway corridor.
- **Route 105** would provide limited peak-period service between Rolling Stone Way and the Huntington Metrorail station, to mitigate the elimination of Route 301 within the eastern portion. Route 105 would follow the existing Route 301 from the Huntington Metrorail station along Telegraph Road to The Parkway, onto South Kings Highway, and then turn into Vantage Drive to circle the Rolling Stone Way neighborhood as also shown in Figure 7.47.

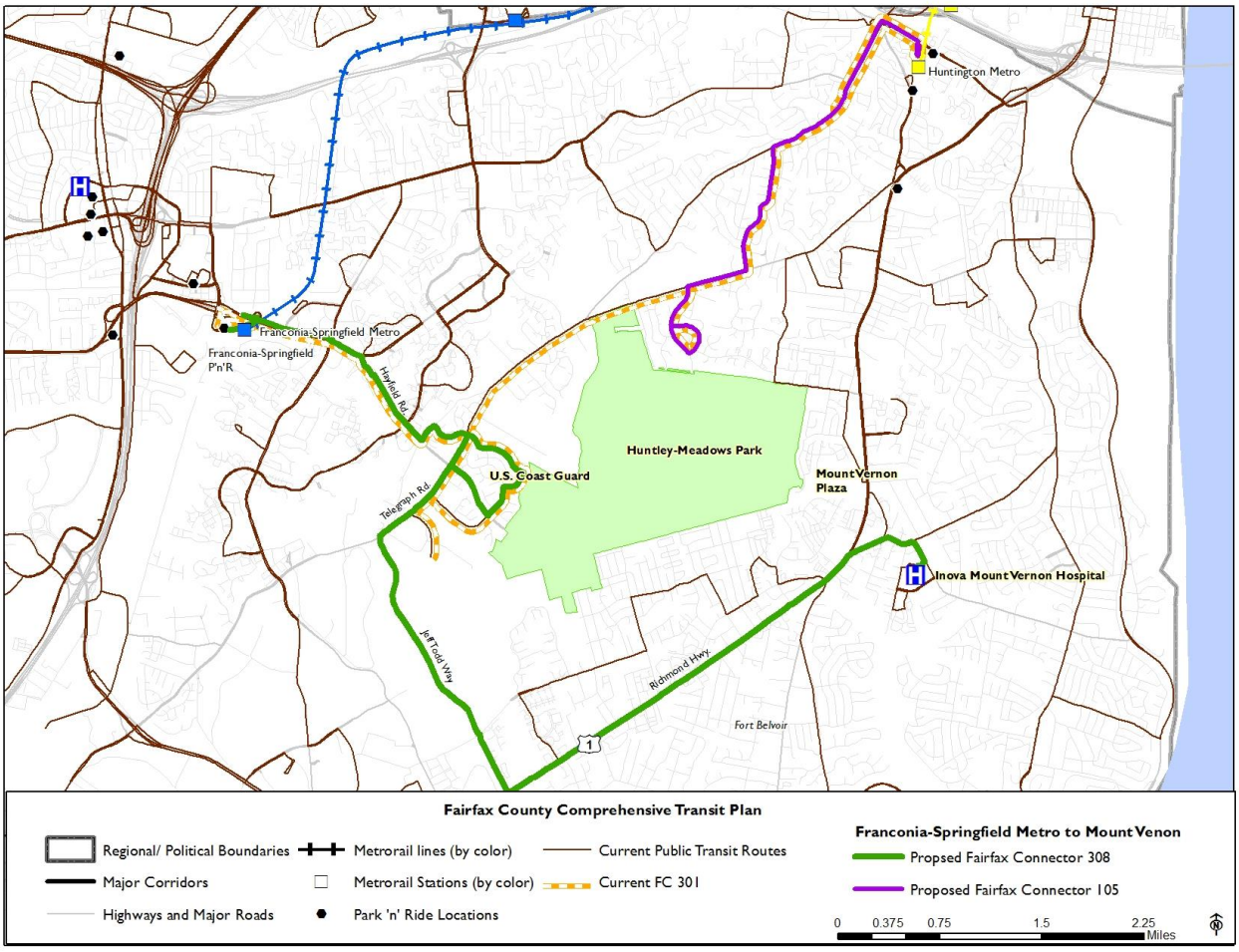
The projected travel time for the new 9.5-mile Route 308 would be 18 minutes from Springfield to the South County Government Center and 26 minutes to Mt Vernon Hospital (a few minutes longer during peak hours due to US-1 traffic). This projected travel time compares very favorably to the current transit travel time using existing transit, which would exceed one hour. The proposed service levels for Routes 105 and 308 are presented in Table 7-83.

The proposed routing for Route 308 is similar to the 2009 TDP proposal for Route 329 Franconia/Springfield to Fort Belvoir. This new proposal follows the same alignment as the former proposal from the Franconia/Springfield Metrorail station until reaching Richmond Highway. Rather than turning right to serve Fort Belvoir, the new Route 308 will turn left to service multiple destinations along the Richmond Highway before turning off to terminate at the Mount Vernon Hospital. Instead of implementing the proposed Route 329 as suggested, FCDOT established Route 335 Fort Belvoir "The Eagle" to connect the Metrorail station with the military post (refer to section 7.12 Springfield Area Services for further details.)

Table 7-83: Routes 105 and 308 Proposed Service Levels

		Route 105 Huntington to Rolling Stone Circle	Route 308 Franconia-Springfield to Mt. Vernon Hospital
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	5:30 AM – 8:30 AM	5:00 AM – 10:00 PM
	Saturday	4:00 PM – 7:00 PM	7:00 AM – 8:00 PM
	Sunday	None	None
Headway (minutes)	**Weekday Peak**	60	30
	Weekday Midday	None	60
	Weekday Evening	None	60
	Saturday	None	60
	Sunday	None	None

Figure 7.47: Proposed Routes 105 and 308



New Metrobus Route NH7 Huntington Station to National Harbor

Currently, travel between Fairfax County and the National Harbor complex located along the Potomac River in Maryland via transit requires a circuitous path passing through the center of the District of Columbia using Metrorail and Metrobus that takes 90 minutes or more. From Huntington Station to the center of the National Harbor complex by motor vehicle is a five-mile journey that can be completed in ten minutes during periods of light traffic by crossing the Potomac over the I-495 Wilson Bridge.

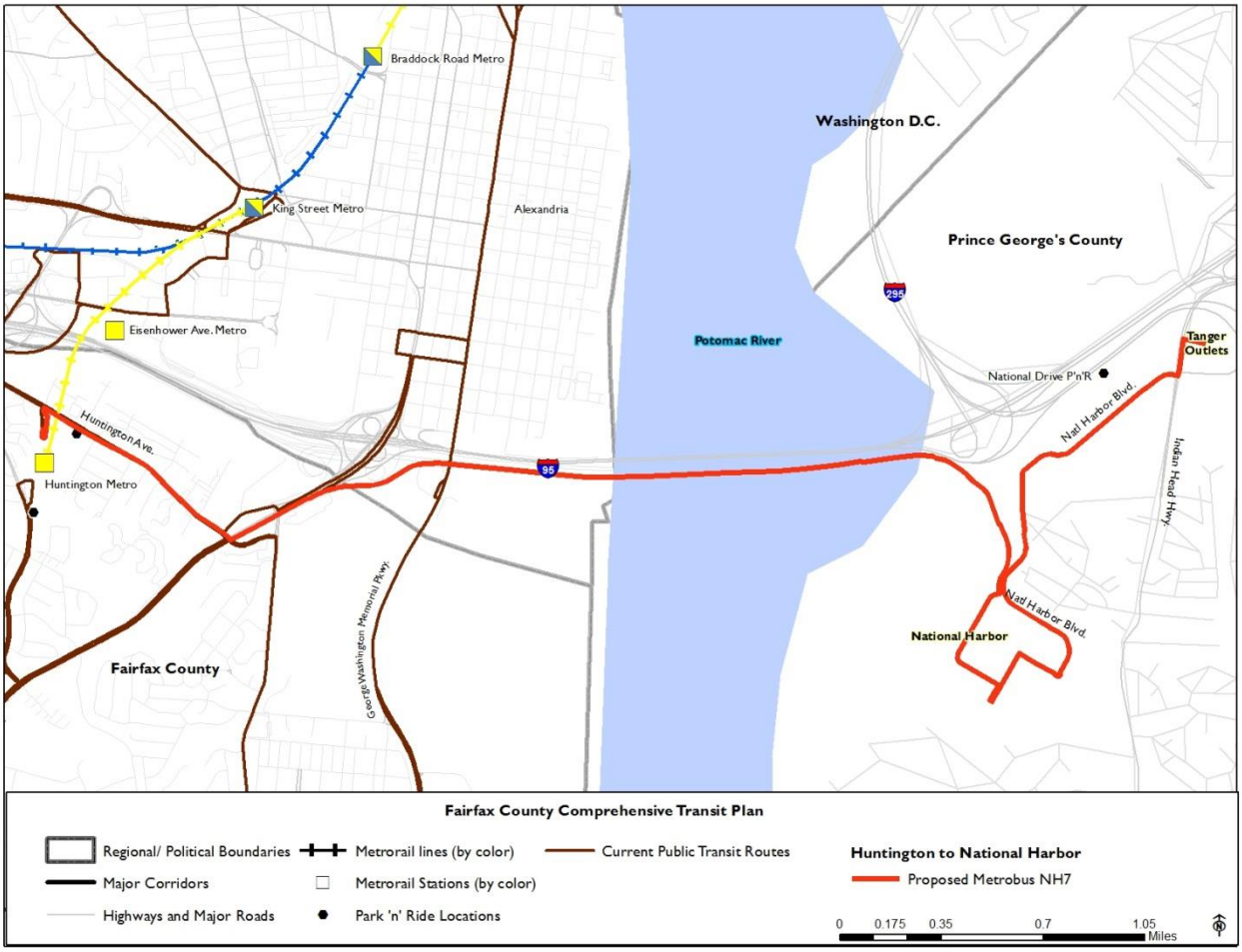
The National Harbor complex, a 300-acre waterfront site along the Potomac River in Prince George's County, is a 7.3 million square feet mixed-use development that includes a convention center, several hotels, retail, restaurants, and office and residential buildings. A casino is under construction and expected to open in 2016. The complex also includes Tanger Outlets, which contains almost 100 stores. The various occupants within the complex collectively provide a considerable number of jobs. Limited water taxi service connects National Harbor with Old Town, Alexandria.

During the public outreach, several comments were received noting the importance of creating a transit link to National Harbor to enable Fairfax County residents to reach the numerous opportunities there. In addition, employees of Fort Belvoir living in Prince George's County and even Charles County,

Maryland could use this service to access the REX and other US-1 corridor services. Figure 7.48 provides a map of a proposed NH7 Metrobus route between Huntington Station and National Harbor, which would become the only Virginia – Maryland cross-state Metrobus route. There were several previous Metrobus routes linking Virginia and Maryland via both the American Legion Bridge and the Woodrow Wilson Bridge. These services were terminated more than ten years ago, long before the National Harbor development.

The proposed NH7 route would start at the Huntington Street Metrorail station, follow Huntington Street to US-1, enter the Capital Beltway to cross over the Potomac River on the Wilson Bridge, take the first exit in Maryland to enter National Harbor Boulevard, and circulate the complex by passing through St. George's Boulevard and ending at the Tanger Outlets, where there will also be other transit services available.

Figure 7.48: Proposed Metrobus Route NH7



The proposed service levels for Route NH7 are presented in Table 7-84. The route should begin as a seven-day service. In time as route ridership matures, service levels can be expanded to lengthen the service day and improve headways.

Table 7-84: Metrobus Route NH7 Proposed Service Levels

		NH7 Huntington Station – National Harbor (initial)	NH7 Huntington Station – National Harbor (future)
	Operator	Metrobus	Metrobus
Span	**Weekday**	5:00 AM – 10:00 PM	5:00 AM –12:00 AM
	Saturday	7:00 AM – 8:00 PM	6:00 AM – 12:00 AM
	Sunday	8:00 AM – 8:00 PM	8:00 AM – 10:00 PM
Headway (minutes)	**Weekday Peak**	30	30
	Weekday Midday	45/60	30
	Weekday Evening	45/60	45/60
	Saturday	60	30/60
	Sunday	60	30/60

7.11.4. Huntington Area Route Recommendations Summary

Table 7-85 provides a summary of the service enhancements recommended for the Huntington area of the South County.

Table 7-85: Huntington Area Route Service Recommendations

Route	Improvement	Service Purpose
Existing Routes		
101	Adjust schedule run time and develop Summer seasonal schedule	Improve on-time performance and improve service quality during summer tourist season
109	Add Sunday Service	Satisfy demand for Sunday transit use
151/152	Improve off-peak headways; note interlining on schedules.	Address crowding and on-time performance
161/162	Adjust headways; investigate operational changes to reduce delay	Improve on-time performance
171	Add Route 172 to improve peak period frequency on most of the route	see Route 172 below
301	Restructure route	Improve use of resources; see Route 105 and 308 below
310	No recommendation	
9A	Monitor service	May be replaced by extended 10A.
11Y	Extend short trips and add peak service to Mt. Vernon	Eliminate standees and improve on-time performance
REX	Schedule adjustment	Improve on-time performance
Route Proposals		
105	Provide limited peak period service to the Huntington Metrorail station	Mitigate loss of Route 301
172	Alternate peak-period routing into Lorton VRE for existing Route 171	Extend Richmond Highway transit service beyond Inlet Cove neighborhood
308	Restructure Route 301 between Springfield and Mt. Vernon Hospital via South County Government Center	Provide direct transit service between Springfield area and Richmond Highway corridor
NH7	Establish new route between Huntington Station and National Harbor complex	Provide direct service for Fairfax County residents to National Harbor

7.12.1. Background

Service Area

The Springfield service area is bounded by Van Dorn Street to the east, Edsall Road to the north, the Fort Belvoir Military Reservation to the south and the Lee Magisterial District to the west as shown in Figure 7.49. The Fort Belvoir Military Reservation is located in the southeast corner of the service area. Several circulator routes, emanating from either the Van Dorn or Franconia-Springfield Metrorail stations, cover large portions of this service area. Route 231/232 Kingstowne Line and Route 321/322 Greater Springfield Circulator serve both Metrorail stations. Routes 333, 334, and 335 operate as circulators from Franconia-Springfield to serve DoD facilities and other destinations south of the Metrorail station located along either side of I-95. Route 305 provides coverage within the western section of the service area with local service to the Lorton and Newington communites. Routes 371/372/373 connects central Springfield with the Lorton VRE Transit Center. Several express routes operate from local park-and-ride lots with service to the Pentagon Metrorail station (Routes 394 and 395) and to Tysons along the I-495 express lanes (Routes 493 and 494.)[15]

Current Services

The service area includes 15 Fairfax Connector bus routes, most of which serve the Franconia-Springfield Metrorail station, as shown in Table 7.86. In addition, Metrobus provides two local routes under the auspices of the Transportation Association of Greater Springfield (TAGS) that terminate at the Franconia-Springfield Metrorail station. Route 305 also operates along a short segment of the Franconia-Springfield Parkway.

Weekday ridership for the 15 Connector routes totals 4,931 riders. According to WMATA ridership reports, the TAGS routes carry about 372 weekday riders, a considerable decline from the 940 reported in the 2009 TDP. The local Connector routes in this area other than Routes 231/232 and 321/322 were restructured in 2011 in large measure to better orient the local transit operations to serve the DoD sites that were expected at the time to add more than 12,500 personnel to the Fort Belvoir and the new NGA campus. However, private development abutting the DoD facilities especially near the NGA has been slower than had been anticipated. Although it is difficult to make a direct comparison due to the route restructuring, the local routes within Lorton and Newington that provide direct service to Fort Belvoir and NGA appear to have experienced a modest growth in riders. Ridership is expected to continue to grow as other DoD support developments (e.g., Patriot Ridge office complex) are completed and occupied over the next five to ten years.

[15] Route 493 and 494 are being consolidated as one route effective Spring 2015.

Figure 7.49: Springfield Service Area-Existing Service

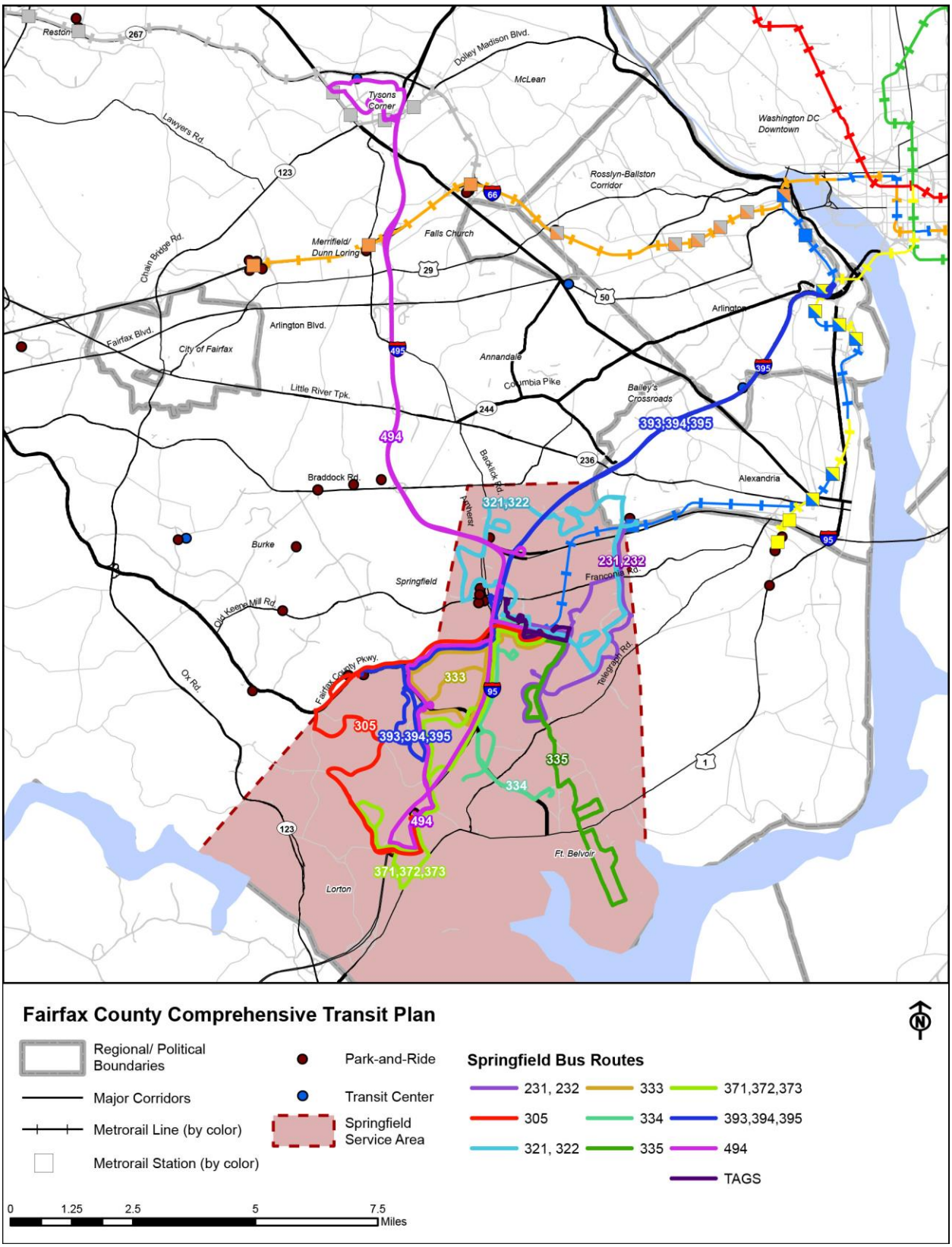


Table 7-86: Springfield Area Bus Services

Route	Name	District	Metrorail Station Served	Average. Daily Riders
231/232	Kingstowne Line	Lee	Franconia-Springfield – Yellow/Blue Van Dorn Street – Yellow/Blue	**489**
305	Newington Forest – Silverbrook Road Line	Lee	Franconia-Springfield – Yellow/Blue	**178**
321/322	Greater Springfield Circulator	Lee	Franconia-Springfield – Yellow/Blue Van Dorn Street – Yellow/Blue	**1,623**
333	Patriots Ridge / Saratoga Line	Lee Mt. Vernon	Franconia-Springfield – Yellow/Blue	**291**
334	DLA Circulator	Lee Mt. Vernon	Franconia-Springfield – Yellow/Blue	**150**
335	Fort Belvoir Direct Line "The Eagle"	Lee Mt. Vernon	Franconia-Springfield – Yellow/Blue	**185**
371/372/ 373	Lorton – Springfield	Lee Mt. Vernon	Franconia-Springfield – Yellow/Blue	**1,065**
394	Saratoga – Pentagon	Lee Mt. Vernon	Pentagon – Yellow/Blue	**116**
395	Gambrill – Pentagon	Lee Mt. Vernon	Pentagon – Yellow/Blue	**529**
493	Lorton VRE – Tysons via I-495	Lee Providence Mt. Vernon	Spring Hill – Silver	**63**
494	Franconia-Springfield – Tysons via I-495	Lee Providence	Franconia-Springfield – Yellow/Blue Spring Hill – Silver	**79**
Fairfax Connector Total Boardings				**4,931**
S80/S91	*TAGS* Springfield Circulator	Lee	Franconia-Springfield – Yellow/Blue	**372**
WMATA Metrobus Total Boardings				**372**

The Springfield area routes largely serve as feeder routes connecting to Metrorail stations and the Lorton VRE transit center as presented in Table 7-86. These places offer transit connections to Metrorail, Metrobus and Connector local buses to allow riders to transfer between services to reach destinations both outside and within the service area. Approximately 57 percent of the total Connector boardings and alightings for the 11 local routes listed in Table 7-87 occur at the Franconia-Springfield Metrorail station. (Some double counting may marginally inflate the reported percentages reflecting passenger transfers between Connector routes that meet at this Metrorail station.) Another 31 percent of the Connector boardings and alightings occur at other rail stations, as shown in Table 7-87. In total an estimated 88 percent of passenger activity (2,137 boardings and 1,937 alightings) takes place at the three transit hubs displayed in Table 7-87.

Table 7-87: Fairfax Connector Passenger Activity Summary at Regional Transit Hubs

		Passenger Boardings and Alightings as a Percent of Total Ridership at Regional Transit Hubs			
Route	**Name**	**Van Dorn Station**	**Franconia/ Springfield Station**	**Lorton VRE Transit Center**	**Other Metrorail Station**
	Fairfax Connector Local Routes				
231	Kingstowne Line (Counter-Clockwise Loop)	61%	53%		
232	Kingstowne Line (Clockwise Loop)	53%	53%		
305	Newington Forest – Silverbrook Road Line		70%	30%	
321	Greater Springfield Circulator (Counter-Clockwise Loop)	41%	24%		
322	Greater Springfield Circulator (Clockwise Loop)	44%	26%		
333	Patriots Ridge / Saratoga Line		100%		
334	DLA Circulator		100%		
335	Fort Belvoir Direct Line "The Eagle"		84%		
371/372/ 373	Lorton – Springfield		73%	25%	
	Total Local Routes	**24%**	**57%**	**7%**	
	Fairfax Connector Express Routes				
394	Springfield – Pentagon				100%
395	Springfield – Pentagon				98%
493	Lorton VRE – Tysons via I-495			75%	
494	Franconia-Springfield – Tysons via I-495		75%		

Note: For routes where total activity exceeds 100% it is presumed that there are some passenger trips between two transit hubs, with each end of the trip counted as occuring at one of the three rail stations.

Six park-and-ride lots located within the Springfield service area provide more than 1,400 spaces. Several local and express Connector routes serve these lots, as summarized in Table 7-88. About 900 cars park at these lots daily, but observed transit use at these locations adds up to about 330 daily boardings. Therefore most of the use of these lots is attributed to ridesharing, not transit. About 230 of the 330 bus boardings are on Routes 394 and 395 at the Backlick North and Gambrill lots, which are located near highway access ramps, minimizing travel time for commuters. FCDOT has attempted to increase the use of the Saratoga lot with the introduction of Route 493, an I-495 express route to Tysons, with disappointing results to date.

Table 7-88: Springfield Area Park and Ride Lot Feeder Bus Services

Park and Ride Lot – Community Location	Peak Period Routes	Off-Peak Period Routes	Spaces	Utilization
Backlick North – Springfield	394, 395, 310	310	264	70%
Gambrill Road – Springfield	305, 395, 18R		225	100%
Lorton Market Street – Lorton	372	371	65	15%
Lorton – Lorton	372	371	170	2%
Saratoga – Springfield	333, 394, 493	333, 493	535	10%
Sydenstricker Road – Springfield	305		170	100%
		Total	1,429	

Source: Internal FCDOT staff Park and Ride inventory report

Service Productivity

Figures for route productivity are presented in Table 7-89. The 15 Connector routes average 11.9 boardings per revenue-hour, 11.2 boardings per trip and 0.76 boardings per revenue-mile Considering only the local routes, the same measures are 13.7 boardings per revenue-hour, 12.3 boardings per trip, and 0.92 boardings per revenue-mile. Ridership on the I-495 express routes during its first year of operation has been slow to develop with an average of only 2.1 boardings per trip. FCDOT will be implementing changes to these routes that include consolidating Routes 493 and 494 into one route and reducing underused midday trips.

Table 7-89: Springfield Area Bus Service Weekday Productivity

Route	Service Pattern	Service Type	Boardings/ Rev-Hour	Boardings/ Trip	Boarding/ Rev-Mile
Fairfax Connector					
231/232	Weekday peak period only	Circulator	11.1	10.7	0.80
305	Weekday peak period only	Local	6.4	5.2	0.38
321/322	Seven day, all day service	Circulator	18.7	28.0	1.47
333	Weekday all day only	Local	13.2	9.1	0.97
334	Weekday all day only	Circulator	4.8	4.7	0.32
335	Weekday peak period only	Express	10.9	13.2	0.83
371/372/ 373	371 - Seven day, all day service 372/373 – Weekday peak period only	Feeder	14.6	10.0	0.89
394	Weekday peak period only	Express	9.5	11.5	0.61
395	Weekday peak period only	Express	23.0	24.0	1.54
493	Weekday all day service	Express	2.0	2.6	0.12
494	Weekday all day service	Express	2.6	1.7	0.10
Springfield Area Local Routes Average			**13.7**	**12.3**	**0.92**
Springfield Area Express Routes Average			**8.5**	**8.5**	**0.47**
Springfield Service Area Average			**11.9**	**11.2**	**0.76**
South County Average			**20.9**	**21.1**	**1.57**
S80/S91	*TAGS* Springfield Circulator	Circulator	12.2	5.1	0.86
Springfield Service Area Average			**12.2**	**5.1**	**0.86**

Status of 2009 Recommendations

Table 7-90 presents the current (2015) status of the implementation progress of the 2009 TDP recommended service modifications. This table provides a summary of changes implemented by route, indicating whether or not those changes are the same as the 2009 recommendations. As previously mentioned, the local Connector routes were significantly restructured to support the BRAC-related development that was completed in 2011. A major component of the restructuring plan was the construction of the Lorton VRE Transit Center where several routes meet to provide common access to facilitate transfers.

Table 7-90: Implementation Status of 2009 TDP Recommendations

Route	Name	2009 TDP Recommendation	2015 Implementation Status
Fairfax Connector			

Route	Name	2009 TDP Recommendation	2015 Implementation Status
231/ 232	Kingstowne Line	Lengthen peak period service spans by one hour. Terminate route 303 as a duplicating service.	Route 303 terminated
305	Newington Forest – Silverbrook Road Line	Restructure former Routes 305 and 307 to create new Route 309	Recommendation implemented as revised Route 305
321/ 322	Greater Springfield Circulator	Improve headways and adjust run times.	Not implemented
329	Franconia-Springfield Metro – Fort Belvoir	Create new local route for connecting service between Metrorail and Fort Belvoir	Route 335 "The Eagle" implemented instead of proposed Route 329
333	Patriots Ridge / Saratoga Line	Restructure former 331/332 circulator to enhance service options to BRAC DoD sites	New route 333 implemented to serve DoD NGA campus area
334	DLA Circulator	Restructure former 331/332 circulator to enhance service options to BRAC DoD sites	New route 334 implemented to serve DoD Fort Belvoir DLA building
335	Fort Belvoir Direct Line "The Eagle"	Proposed new local Route 329 Franconia-Springfield to Fort Belvoir	New route 335 "The Eagle" express implemented to serve Fort Belvoir
371/ 372/ 373	Lorton – Springfield	Restructure Route 171 to terminate at Lorton VRE and create new Route 371 from Lorton VRE to Franconia/ Springfield station also to cover segments of the former 307 route.	Restructure plan implemented to establish new Route 371 and related variations. Route 307 terminated.
394	Saratoga – Pentagon	Establish Pentagon express route from park-and-ride lots	Pentagon express route implemented as recommended
395	Gambrill – Pentagon	Establish Pentagon express route from park-and-ride lots replacing former route 380	Pentagon express route implemented as recommended
493	Lorton VRE – Tysons	Establish new I-495 express lane routes to Tysons	New routes commenced in 2013 with completion of Express Lane
494	Franconia-Springfield – Tysons	Establish new I-495 express lane routes to Tysons	New routes commenced in 2013 with completion of Express Lane
Metrobus			
n/a	BRAC Lorton VRE Shuttles	Create shuttle bus routes connecting VRE train service to both Fort Belvoir and the NGA campus	Not implemented
S80	*TAGS* Springfield Circulator	No change to TAGS routes	No change

Route	Name	2009 TDP Recommendation	2015 Implementation Status
S91	*TAGS* Springfield Circulator	No change to TAGS routes	No change

7.12.2. Recommendations for Existing Service

Convert Route 231/232 into New Routes 238 Beulah Line and 244 Kingstowne Village Line

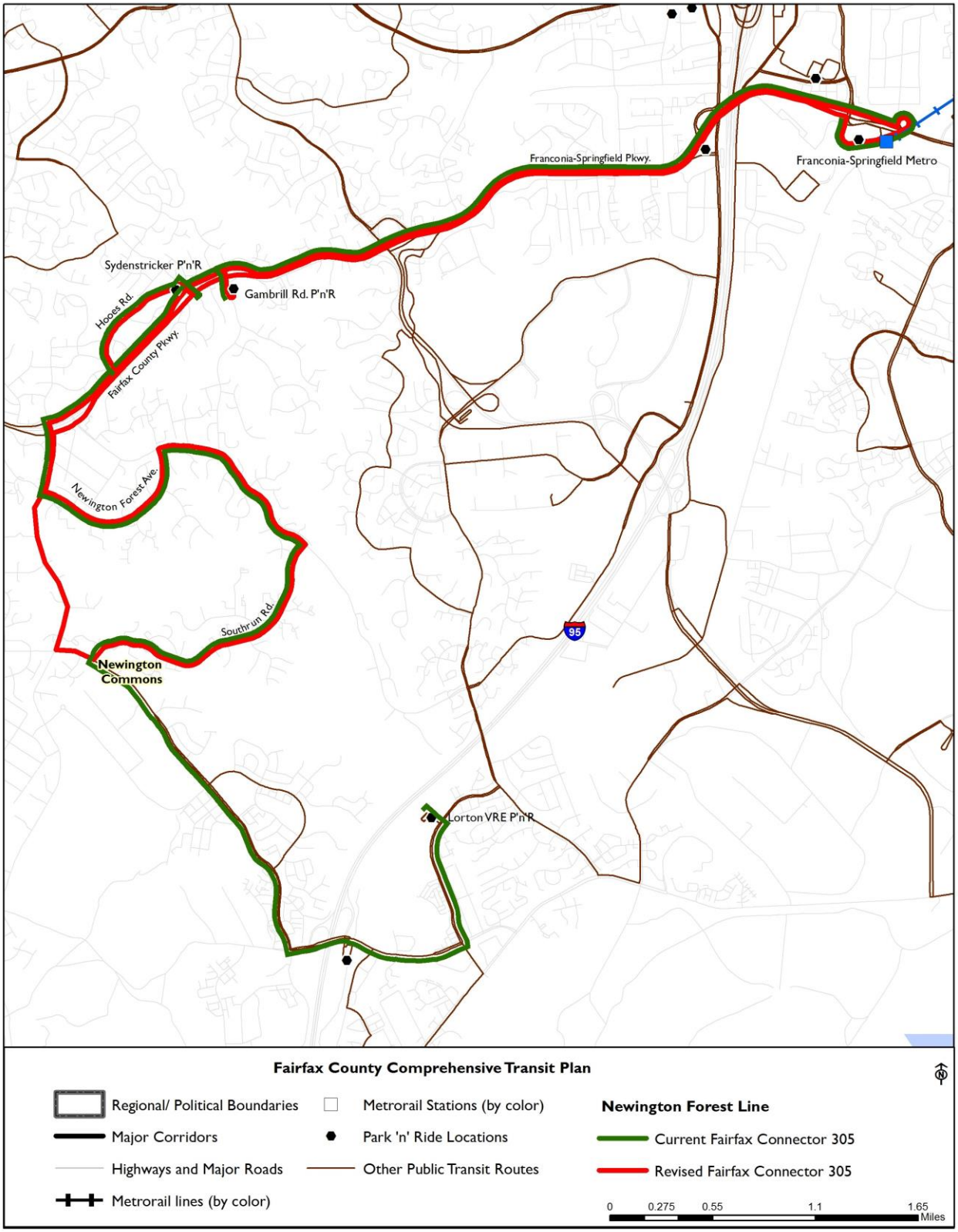
See description in Section 7.12.3, New Routes.

Modify Route 305 Newington Forest-Silverbrook Line

This route operates on a peak-only schedule serving less than 200 daily passengers and providing the only local bus service for much of the diverse Newington community and surrounding area west of I-95. Most riders (78 percent) use this service five days per week to access the Franconia-Springfield Metrorail station or the Lorton VRE station, primarily for home-based work trips. At these stations, riders can transfer to other Connector buses, Metrorail, or the VRE commuter train.

Although surveyed riders requested more frequent service, demand does not warrant an expanded schedule. The riders from the Lorton end of the route along the segment between Silverbrook Road and the Lorton VRE transit center are also served by the Route 371/373 with all day service, seven days a week. It is recommended that the current route be replaced with the former Route 305 Newington Forest Line but maintaining the 30 minute headway. The span of service should be lengthened by one hour for both peak periods, ending later in the morning and starting earlier in the afternoon. The existing route is operated with three peak buses; converting the alignment back to the former Route 305 will require only two peak buses to provide the current level of service. A map of the existing and former Routes 305 is presented in Figure 7.50.

Figure 7.50: Modified Route 305 Newington Forest – Silverbrook Line



Modify Route 321/322 Greater Springfield Circulator Service Schedule

Route 321/322 Greater Springfield Circulator is one of few routes in the area that operates a seven-day, all-day schedule. Weekday ridership exceeds 1,600 passengers with Saturday ridership greater than 900 and Sunday greater than 600. Weekday route productivity is high at more than 28 boardings per trip; within the South County region this figure is exceeded only by Routes 171 and 401/402. Weekend productivity is about 24 and 18 boardings per trip on Saturday and Sunday respectively. Nearly 70 percent of riders use these routes to access Metrorail stations to transfer to other buses or Metrorail.

These routes are over 19 miles long with a peak schedule run time of 80 minutes for an average operating speed of approximately 14 miles per hour. Observations shared by FCDOT staff and bus operators suggest that Route 321/322 operates within a challenging environment, contending with traffic entering and leaving two Metrorail stations. The basic routing diverts from the primary arterial roadways at seven places along the route to enter stations, to penetrate neighborhoods, and to serve commercial and shopping areas. Each one of these route diversions makes the scheduled trips longer and slower for through passengers. At least two of these diversions can be eliminated to make service more direct with minimal passenger impacts. Passengers affected by the routing change have alternate service options or will have a short walk to a remaining 321/322 bus stop. It is recommended as shown in Figure 7.49 that the Manchester Lakes and the Bland Street route diversions be eliminated, saving about six minutes of run time (three minutes per diversion) which should be used to improve on-time performance. The Manchester Lakes neighborhood will be served by the proposed new Route 244 as detailed in the following section on Recommendations for New Routes.

These routes operate with a 30 minute peak headway and a 60 minute headway during all off-peak hours. In fact, off-peak trips experience total boardings and maximum loads equivalent to and in some cases greater than peak period trips. This route is a very productive workhorse whose riders have requested more frequent service as documented in the rider surveys and by their daily use. In addition to streamlining the route, it is also recommended to expand the span of service to operate late evenings and improve headways as summarized in Table 7-91. Headway improvement, especially during the peak periods, is needed to compensate for the proposed route restructuring of the 231/232 line.

As FCDOT develops flexible services, staff may consider further streamlining of the 321/322 Circulator combined with the deployment of flexible services in neighborhoods eliminated from the route, such as the Indian Run Parkway neighborhood.

Figure 7.51: Modified Route 321/322 Greater Springfield Circulator

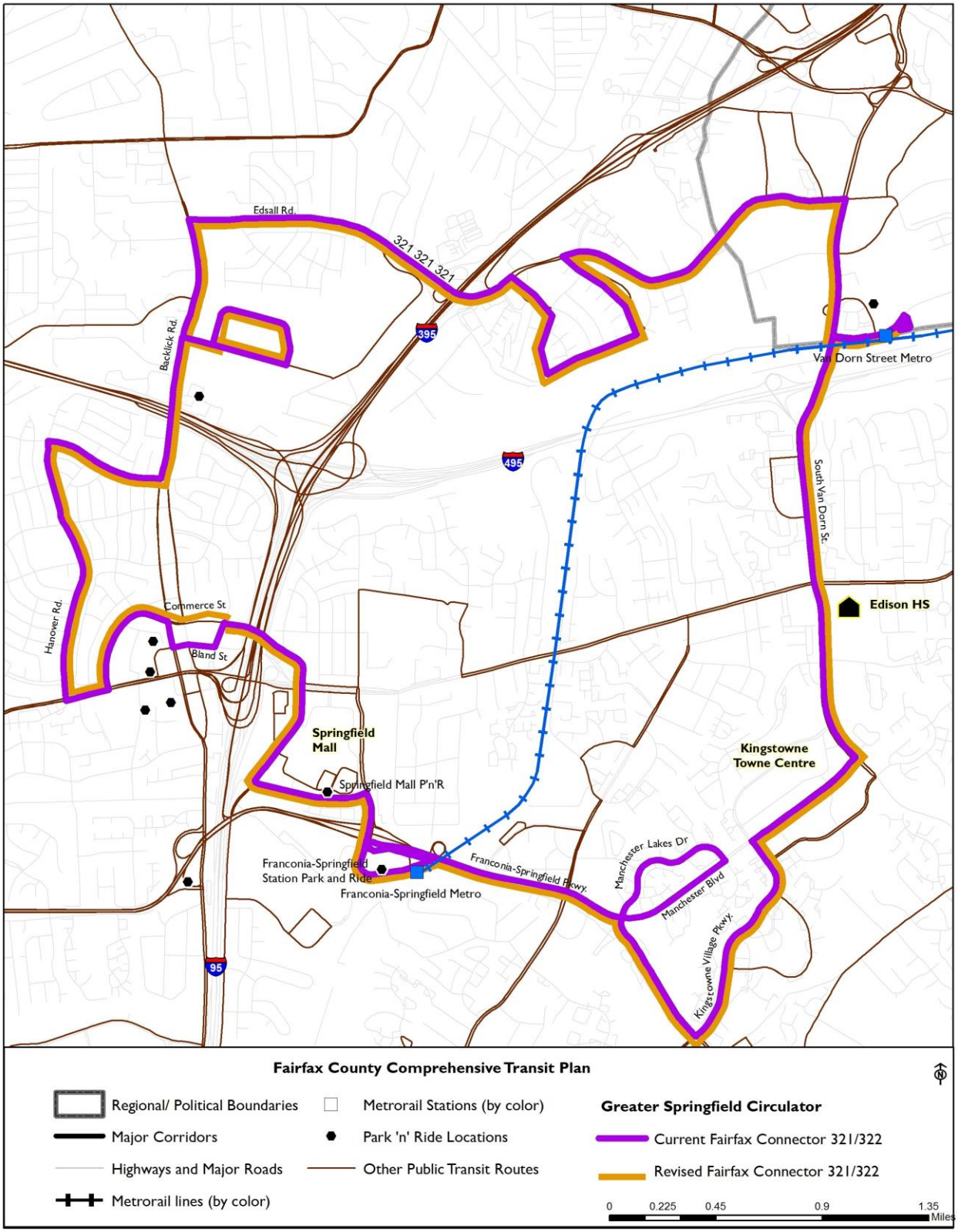


Table 7-91: 321/322 Greater Springfield Circulator Proposed Service Level

		Route 321/322 Greater Springfield Circulator
	Operator	Fairfax Connector
Span	**Weekday**	4:00 AM – 11:30 PM
	Saturday	5:30 AM – 11:30 PM
	Sunday	6:30 AM – 11:00 PM
Headway (minutes)	**Weekday Peak**	20
	Weekday Midday	30
	Weekday Evening	30
	Weekday Late Evening	60
	Saturday	30/60
	Sunday	60

Route 334: Reduce Evening Span, Add Weekend Service, Monitor Performance

Route 334 resulted from the 2011 restructuring of local bus services to accommodate expected changes in travel patterns in the area with the expansion of DoD facilities in this region. The route serves as a feeder to the Franconia-Springfield Metrorail station where riders transfer between Route 334 and the local and regional transit service options available at the Metrorail station. The Defense Logistics Agency (DLA) building on the Fort Belvoir reservation is the route's southern terminal. Besides transporting DLA personnel and visitors, the route also serves the Newington residential community east of I-95 and makes stops at the NVCC Medical Education Campus and the Gateway 95 commercial area.

The route serves fewer than 200 riders per day. Service operates between 5:23 AM and 11:15 PM. The performance of this route is fewer than five riders per trip, the lowest among all Connector local bus routes operating within the South County region. Reduced service on this route is warranted based upon current performance. In particular, evening trips after 8:00 PM carry few if any riders. The span of service should be adjusted to eliminate these last few trips. However, given that this route offers the only bus service east of I-95 in the Newington area connecting to important educational and employment sites, the existing service (except trips after 8:00 PM) should be maintained for a probationary two-year period. If ridership does not grow to approach original expectations, FCDOT should consider options to further reduce the level of service, such as eliminating all but peak period trips.

The U.S. Army is constructing a new National Museum of the U.S. Army on Fort Belvoir across from the DLA on Kingman Road. This museum is expected to be completed by 2017. The access drive into the museum site will be off of the Fairfax County Parkway which may limit bus access to the northbound trips only. Fort Belvoir and the U.S. Army officials expect this museum to become a very attractive tourist venue and have envisioned the need for a weekend transit connection. Although Route 334 serves the site, it does not currently operate on weekends. Thus it is recommended to add weekend service when the museum opens. For weekend operations, the 334 route should be simplified by bypassing the NVCC Medical Educational Campus and the Gateway 95 Industrial Park route segments. It is recommended that one bus be assigned to this route providing service between 10:00 AM and 6:00 PM on both weekend days as summarized in Table 7-92.

Table 7-92: Route 334 DLA Circulator Service Level

		Route 344 DLA Circulator
	Operator	Fairfax Connector
Span	**Weekday**	5:30 AM – 8:00 PM
	Saturday	10:00 AM – 6:00 PM
	Sunday	10:00 AM – 6:00 PM
Headway (minutes)	**Weekday Peak**	24
	Weekday Midday	45
	Weekday Evening	45
	Weekday Late Evening	ns
	Saturday	60
	Sunday	60

No Change to Route 335 Fort Belvoir Direct Line "The Eagle"

"The Eagle" was instituted in concert with the expansion at the Fort Belvoir south post and the Fort's request for a direct transit service for military personnel and visitors from the Franconia-Springfield Metrorail station. Route 335 runs express from the Metrorail station until it reaches the Fort Belvoir reservation, making stops within the military post. The route provides seven morning peak and seven afternoon peak trips and serves about 100 riders during each peak with an average performance of 11 passengers per trip. This special-purpose service should continue to operate as currently configured.

The 2009 TDP had recommended the implementation of a new local Route 329 Franconia-Springfield Metro – Fort Belvoir. With the operation of the Route 335 "The Eagle" the former proposal is no longer viable. Of note, the current proposed Route 308 Franconia-Springfield Metro – Mt. Vernon Hospital follows much of the previously proposed Route 329 alignment (until reaching Richmond Highway where the 308 turns northerly to travel to Mount Vernon Hospital).

Modify Routing and Schedule of Route 371/372/373 Lorton – Springfield Line

These routes were created as part of the restructuring of Route 171, which formerly operated between Franconia-Springfield and Huntington Metrorail stations. The current Route171 terminates at the Lorton VRE Transit Center, where it meets Routes 371/372/373 to enable transfers as needed. Where the former Route 171 used I-95 for a portion of its routing into Franconia-Springfield, Route 371/372/372 operates along local roads that parallel the interstate highway. The restructured routes provide service to Lorton-area neighborhoods as well as commercial and retail sites.

Routes 372 and 373 operate during the peak periods only. Route 371 is a hybrid of the other two that operates during off-peak periods including weekend services. These routes carry more than 1,000 weekday riders. Route 371 serves approximately 500 riders on Saturdays and 320 on Sundays. Service productivity averages 10 boardings per trip weekdays and about 8 on weekends. Riders are predominately Fairfax County residents connecting to Franconia-Springfield Metrorail or Lorton VRE stations. Some 80 percent of riders classified themselves as minority, with approximately 60 percent of all riders reporting low family income and use of the bus route five day per week. The riders have requested improved service reliability. The ridechecks found a high percent of trips operating ahead of

schedule, except for the afternoon trips on the Route 373 which tended to run late. Bus operators confirmed the need to adjust schedule times to improve on-time performance.

In concert with the proposed routing change to the existing Route 305, the peak headway on Route 372/373 should be improved. The bus that is saved by truncating the Lorton segment of Route 305 should be allocated to these routes to improve the service level to better accommodate the additional Lorton riders that are expected to use these routes. The proposed headways are presented in Table 7-93. In addition, Route 372/373 should be simplified by removing the Boston Boulevard and Patriot Ridge deviations, which would be served by the proposed Route 340/341 (described under Recommendations for New Service).

Table 7-93: Proposed Route 372/373 Lorton-Springfield Service Level

		Route 372 Lorton-Springfield	Route 373 Lorton-Springfield
	Operator	Fairfax Connector	Fairfax Connector
Span	**AM Peak**	6:00 AM – 10:00 AM	5:30 AM –9:30 AM
	PM Peak	3:30 PM – 8:00 PM	3:30 PM – 8:00 PM
Headway (minutes)	**AM Peak**	25	25
	PM Peak	25	25

Modify Schedule of Express Routes 394 Saratoga and 395 Gambrill

These routes provide express bus service from park-and-ride lots in Newington and Springfield west of I-95. Daily ridership exceeds 600 passengers; boardings per trip exceed 20 passengers on average. Between the two, the Route 395 is preferred by riders because it serves the more conveniently located 225-space Gambrill Park-and-Ride lot, which is typically filled to capacity. Riders on these routes are nearly all Fairfax County residents.

These routes provide a quick and direct connection to the interstate highway for travel to the Pentagon station in less than 30 minutes. No change in the routing is needed. The ridecheck observations indicated that later PM peak trips operate with standees. Therefore it is suggested to modify the peak schedules as follows:

- Since the later morning trips are lightly used, eliminate the 8:15 and 8:35 AM trips and replace them with a single 8:25 AM trip.
- Since the later afternoon trips are crowded, insert a trip at 6:30 PM and shift the 6:45 PM departure to 6:50 PM.

In addition, FCDOT has announced it will supplement the 394 and 395 services with new trips between the Saratoga Park and Ride and the Mark Center via Pentagon station. Given the configuration of the I-395 HOV lanes, these trips, designated as Route 393, will run from the park and ride to the Pentagon Station with a stop at the Mark Center on the reverse direction trips. The Route 393 schedule will consist of six trips during both peaks operating on 40 minute headways. This service is expected to

commence in May of 2015. The CTP recommends monitoring the performance of new Route 393, as well as existing routes 394 and 395.

No Additional Changes to Consolidated Route 494 (formerly Routes 493 and 494)

Upon completion of the I-495 Express Lanes in late 2013, the Connector established two new express routes: Route 493 – Lorton VRE – Tysons and Route 494 – Franconia-Springfield Metro – Tysons. Ridership during the first year of operation was disappointing with only 140 daily passengers. Each route operates with 25 minute peak headways and 60 minute midday service, resulting in an average of only two boardings per trip. The FCDOT implemented a revised service plan in May 2015 that made the following changes:

- Consolidate the two existing routes into one new Route 494 Lorton VRE via Franconia-Springfield – Tysons via I-495.
- Reduce service on the single combined route to provide a peak headway of 25 minutes and a midday headway of120 minutes.

FCDOT is optimistic that the existing riders will find the revised schedule convenient and that ridership will grow along with expected development in the Tysons area. No additional changes are recommended.

Maintain TAGS Service (Metrobus S80 and S91)

As reported in the 2009 TDP, the TAGS (Transportation Association of Greater Springfield) service provides frequent branded shuttle bus connections between the Franconia-Springfield Metrorail station and Metro Park, Springfield Mall, and the Springfield Hilton. Since the 2009 TDP, TAGS ridership has declined from more than 900 weekday riders to fewer than 400. The possibility of eliminating TAGS S91 was considered for this TDP. However given that TAGS routes use smaller specialty vehicles, eliminating the S91 might create crowding on peak trips on Route S80. In March 2015, WMATA implemented a revised schedule with trip time adjustments intended to improve on-time performance.

Approved plans to renovate the Springfield Mall and further develop its 80-acre site to include residential, hotel, and office buildings have progressed. Its location adjacent to the Franconia-Springfield Metrorail station and the Springfield Interchange for I-95 and I-495 makes the site attractive for both vehicular and transit access. The developers have committed to contribute funds to improve local roadways and transit service from the mall to the Metrorail station. FCDOT staff should work with the TAGS board to develop transit plans to complement the other local transit services.

7.12.3. Recommendations for New Service

New Routes 238 Beulah Line and 244 Kingstowne Village Line

Routes 231/232 serve the Kingstowne community with peak-period local circulator service that brings riders to both the Franconia-Springfield and Van Dorn Street Metrorail stations. Daily riders average slightly less than 500. Nearly every rider uses these routes to access the Metrorail stations where they transfer to other bus routes or to the Metrorail; there are very few local trips completed along the route. Many Route 231/232 passengers also use the Route 321/322 circulators, which duplicate portions of the 231/232 routing along Kingstowne Village Parkway and South Van Dorn Street to the Van Dorn Metrorail station. The service productivity of the 231/232 is low, approximately one-half the average for all South County Connector bus routes. A new shopping development including a Wegmans Food Market is scheduled to open in June 2015 about one-half mile south of the 231/232 service area at the corner of Beulah Street and Telegraph Road.

Two new bi-directional routes are recommended to replace the 231/232 Line, reducing duplication, expanding coverage, and restoring service along segments of Beulah Street and Telegraph Road that were served by the former Route 303. As shown in Figure 7.52, these two proposed routes would operate as follows:

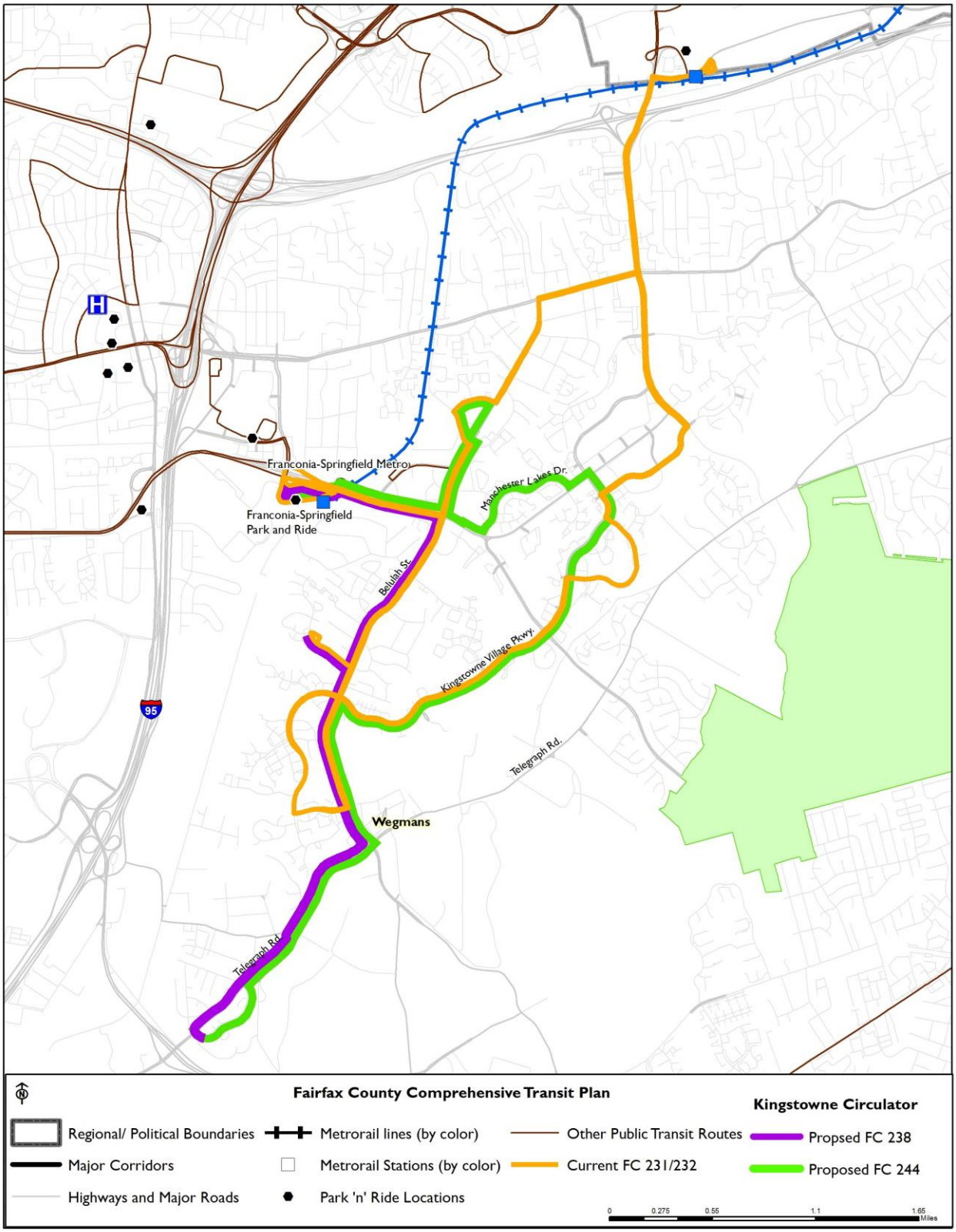
- *Route 238 Beulah Street Line* - Franconia-Springfield Metrorail station, Franconia-Springfield Parkway, Beulah Street, Crestleigh Way loop, Beulah Street, Wegmans shopping center, Telegraph Road, Mt Air Drive.
- *Route 244 Kingstowne Village Line* – Franconia-Springfield Metrorail Station, Franconia-Springfield Parkway, Manchester Boulevard, Manchester Lakes Drive, Manchester Boulevard, Kingstowne Village Parkway, Beulah Street, Wegmans shopping center, Telegraph Road, Mt Air Drive.

Each route would provide full day service weekdays and Saturdays. The proposed routes can be scheduled using the same four peak buses currently allocated to Routes 231/232. Two buses will be needed to operate off-peak service. The proposed service levels for these two routes are presented in Table 7-94.

Table 7-94: Routes 238 Beuluh and 244 Kingstowne Village Lines Proposed Service

		Route 238 Beulah Line	Route 244 Kingstowne Village Line
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	6:00 AM – 9:00 PM	6:00 AM – 9:00 PM
	Saturday	9:00 AM – 8:00 PM	9:00 AM – 8:00 PM
	Sunday	ns	ns
Headway (minutes)	**Weekday Peak**	30	30
	Weekday Midday	60	60
	Weekday Evening	60	60
	Saturday	60	60
	Sunday	ns	ns

Figure 7.52: Proposed Routes 238 and 244



New Route 313 Fair Oaks Mall – Springfield via Judicial Center

A new Route 313 Fair Oaks Mall to Springfield via Judicial Center is proposed as part of the County initiative to provide direct cross-county service. This route would allow County residents to reach points within the County that now require multiple transfers. As shown in Figure 7.53, the proposed route would begin at the Fair Oaks Mall in the Centreville/Chantilly region, leaving the mall via Fair Lakes Parkway. The route would turn on Monument Drive towards Lee Highway passing the Fairfax County Government Center and follow the proposed Route 615 along Lee Highway (US-29) to Main Street (VA-236) into the City of Fairfax where it would turn into Judicial Drive to serve the County Judicial complex. After preceding the length of Judicial Drive the route would follow VA-123 into the George Mason University (GMU) campus. The route would serve the campus along George Mason Boulevard and University Drive and return to VA-123 proceeding toward Braddock Road (VA-620.) The route would turn onto Braddock Road and then turn down Sideburn Road to Zion Road then onto Roberts Road continuing to the Burke Center VRE station. The route would continue on Roberts Parkway to Burke Center Parkway to Lee Chapel Road to Old Keene Mill Road (VA-644) into Springfield and continuing on Franconia Road to Frontier Drive to the entrance to the Franconia-Springfield Metro station busway. The proposed level of service for this nearly 19-mile route is presented in Table 7-95.

Figure 7.53: Proposed New Route 313 Fair Oaks Mall - Springfield via Judicial Center

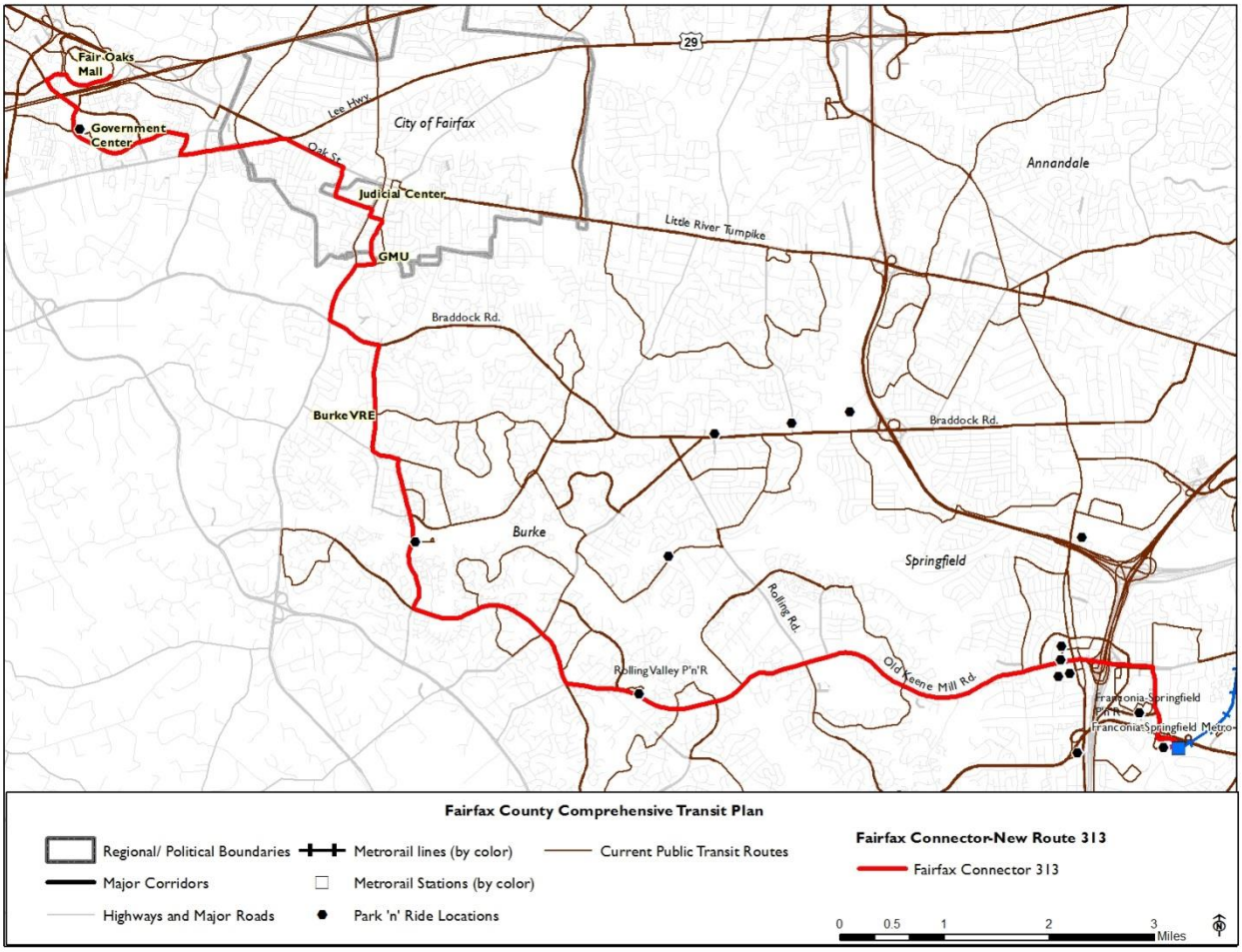


Table 7-95: Proposed Route 313 Fair Oaks Mall to Springfield Service Level

		313 Fair Oaks Mall to Springfield
	Operator	Fairfax Connector
Span	**Weekday**	5:00 AM – 10:00 PM
	Saturday	7:00 AM – 8:00 PM
	Sunday	none
Headway (minutes)	**Weekday Peak**	30
	Weekday Midday	60
	Weekday Evening	60
	Saturday	30/60
	Sunday	none

New Route 315 Vienna Metro – Springfield via GMU

A new Route 315, Vienna -Springfield via GMU, is also recommended to provide direct cross-county service. This route would begin at the Vienna Metrorail station. As shown in Figure 7.54, the route would leave the Metrorail station via I-66 to the Chain Bridge Road (VA 123) exit and follow Chain Bridge Road southerly to the George Mason University campus. The route would serve the campus along Armstrong St, George Mason Boulevard and University Drive and then return to VA-123 proceeding toward Braddock Road (VA-620). The route would turn east on Braddock and proceed to Guinea Rd (VA 652) to Lake Braddock Drive to Burke Lake Road (VA 645). The route would then follow Rolling Road (VA-638) to Franconia-Springfield Parkway into Springfield continuing to the entrance to the Franconia-Springfield Metrorail station busway. Service should be operated all day Monday through Saturday with the proposed level of service shown in Table 7-96. Upon completion of the Proposed Kings Park Transit Center near the intersection of Braddock and Rolling Roads, the route should pull into the transit center to facilitate transfers to other routes.

Figure 7.54: Proposed New Route 315 Vienna Metro - Springfield via GMU

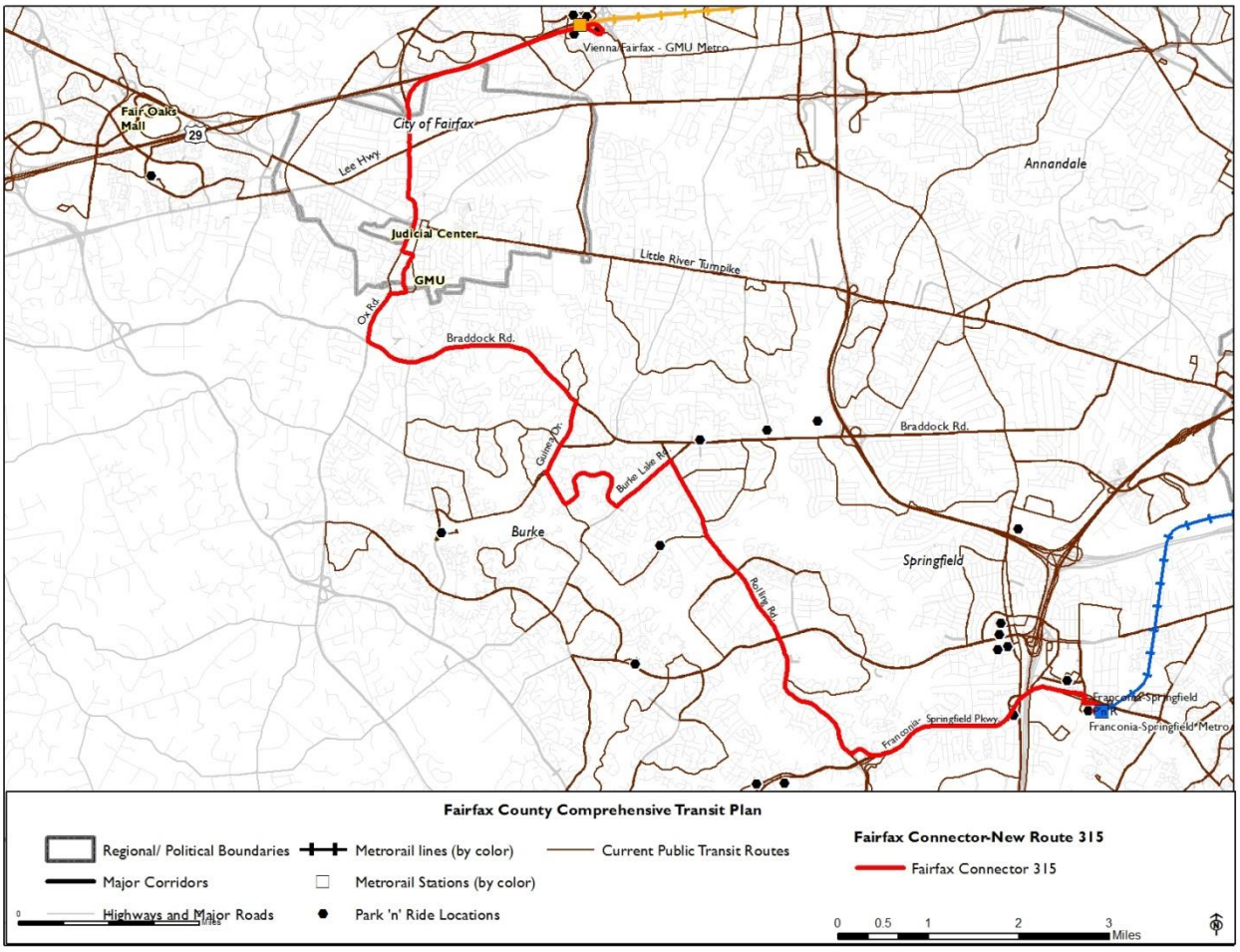


Table 7-96: Proposed Route 315 Vienna Metro - Springfield via GMU Service Level

		315 Vienna Metro - Springfield via GMU
	Operator	Fairfax Connector
Span	**Weekday**	5:00 AM – 10:00 PM
	Saturday	7:00 AM – 8:00 PM
	Sunday	none
Headway (minutes)	**Weekday Peak**	30
	Weekday Midday	60
	Weekday Evening	60
	Saturday	30/60
	Sunday	none

New Route 340/341 Based on Route 333 Patriot Ridge/Saratoga Line

Route 333 was established as part of the service restructuring that was implemented in September 2011 to support the Department of Defense (DoD) expansion. The route provides service to the DoD's new campus for the National Geospatial-Intelligence Agency (NGA) located at the Fort Belvoir North Area (FBNA.) Agency personnel access this route at the Franconia-Springfield Metrorail station as the last leg of their journey to work. An estimated 68 percent of riders reside outside of Fairfax County. The remaining 32 percent of riders are mostly local residents who use this bus as a feeder service from the Saratoga Park and Ride lot and nearby neighborhoods to access Metrorail. The route also connects the NGA campus with the Patriot Ridge office complex located on property contiguous to the DoD's FBNA, which houses the NGA campus. This connection is provided in the off-peak hours only and is intended to facilitate work-related travel between the private office complex and the NGA. The Patriot Ridge office complex is expected to grow to five buildings providing prime office space for government contractors that provide support services to the NGA's mission. Currently Route 333 serves 150 daily riders; as the area surrounding the DoD property is built-up and NGA activity increases, ridership on Route 333 is expected to grow. In conjunction with a proposal to revise the 372/373 to bypass the Patriot Ridge office complex and the Boston Boulevard industrial area, it is recommended to convert Route 333 into new Routes 340 and 341 with alignments described below and illustrated in Figure 7.55. Route 340 would operate during the midday and early evening hours while Route 341 trips would provide peak-period service, as summarized in Table 7-91.

Route 341 Boston Boulevard – Saratoga Morning Peak Routing

- Outbound: Franconia-Springfield Metrorail station to Franconia-Springfield Parkway westbound to Backlick Road southbound to Barta Road to bus loop at FBNA; return to Barta Road westbound to Fairfax County Parkway southbound to Boudinot Road to Fullerton Road westbound to Boston Boulevard to existing turnaround; return Boston Boulevard eastbound to Fullerton Road westbound to Rolling Road northbound to Saratoga Park-and-Ride.
- Inbound: Saratoga Park-and-Ride to Barta Road to Fairfax County Parkway northbound to Franconia-Springfield Parkway eastbound to Frontier Drive southbound to Franconia-Springfield Metrorail.

Route 341 Boston Boulevard – Saratoga Afternoon Peak Routing

- Outbound: Franconia-Springfield Metrorail station to Franconia-Springfield Parkway westbound to Fairfax County Parkway southbound to Saratoga Park-and-Ride.
- Inbound: Saratoga Park-and-Ride to Fairfax County Parkway southbound to Boudinot Road to Fullerton Road westbound to Boston Boulevard to existing turnaround; return Boston Boulevard eastbound to Fullerton Road eastbound to Backlick Road northbound to Barta Road to bus loop at FBNA; return to Barta Road westbound to Fairfax County Parkway northbound to Franconia-Springfield Parkway eastbound to Frontier Drive southbound to Franconia-Springfield Metrorail.

Route 340 Patriot Ridge – Saratoga Routing (off-peak only)

- Outbound: Franconia-Springfield Metrorail station to Franconia-Springfield Parkway westbound to Backlick Road southbound; divert to Patriot Ridge; return to Backlick Road northbound to Barta Road to bus loop at FBNA.
- Inbound: Bus loop at FBNA to Barta Road westbound to Saratoga Park-and-Ride to Fairfax County Parkway southbound to Boudinot Road to Fullerton Road eastbound to Backlick Road northbound; divert into Patriot Ridge; return to Backlick Road northbound to Franconia-Springfield Parkway eastbound to Frontier Drive southbound to Franconia-Springfield Metrorail.

Figure 7.55: Proposed Route 340/341

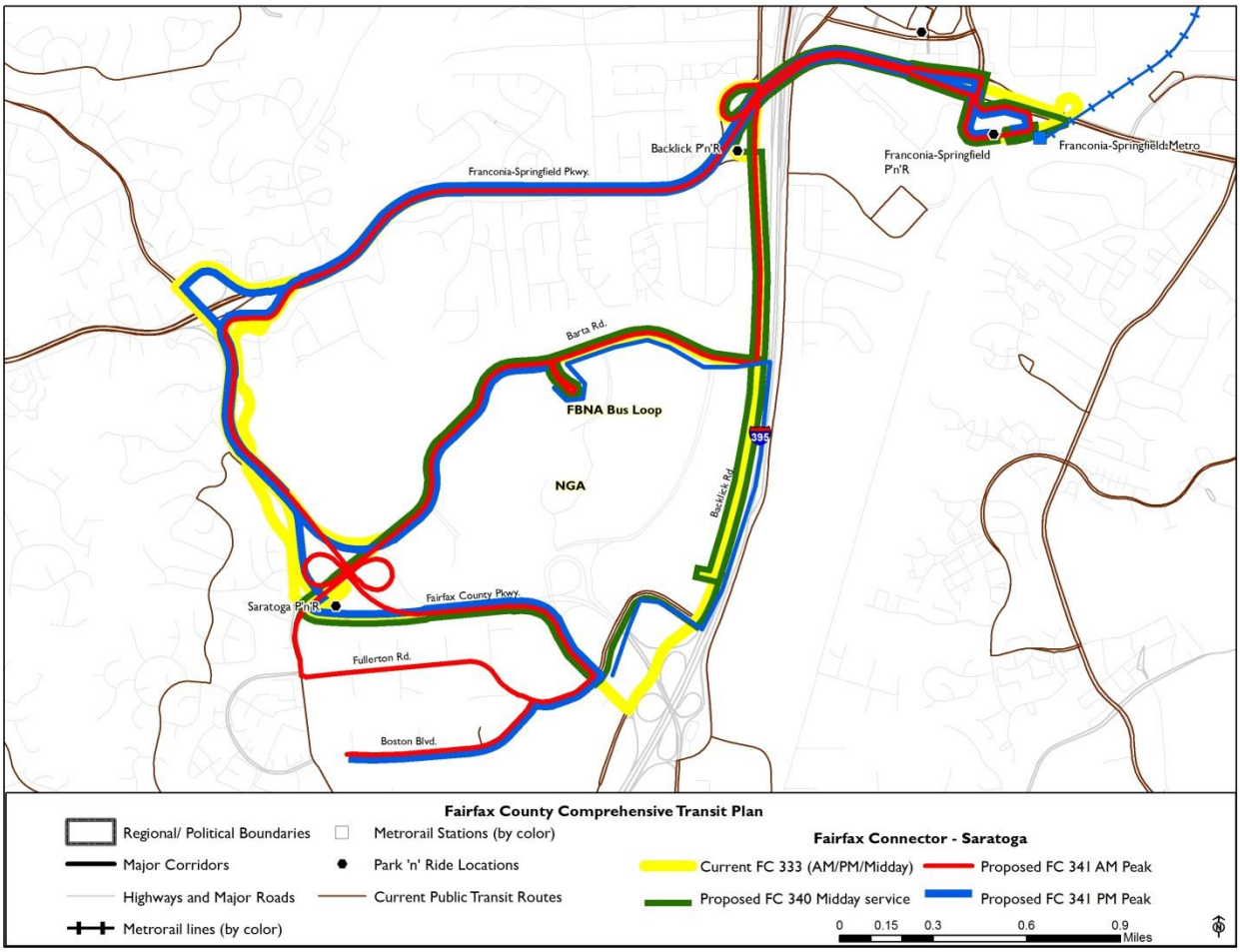


Table 7-97: 340/341 Saratoga Route Proposed Service Levels

		Route 340 Patriot Ridge - Saratoga	Route 341 Boston Boulevard - Saratoga
	Operator	Fairfax Connector	Fairfax Connector
Span	**Weekday**	10:00 AM – 2:00 PM 7:00 PM – 9:30 PM	5:30 AM – 9:30 AM 2:30 PM – 6:30 PM
Headway (minutes)	**Weekday Peak**	ns	25
	Weekday Midday	45	ns
	Weekday Evening	45	ns
	Weekday Late Evening	ns	ns

New Route 496: Herndon Station—Franconia-Springfield Station via Fairfax County Parkway

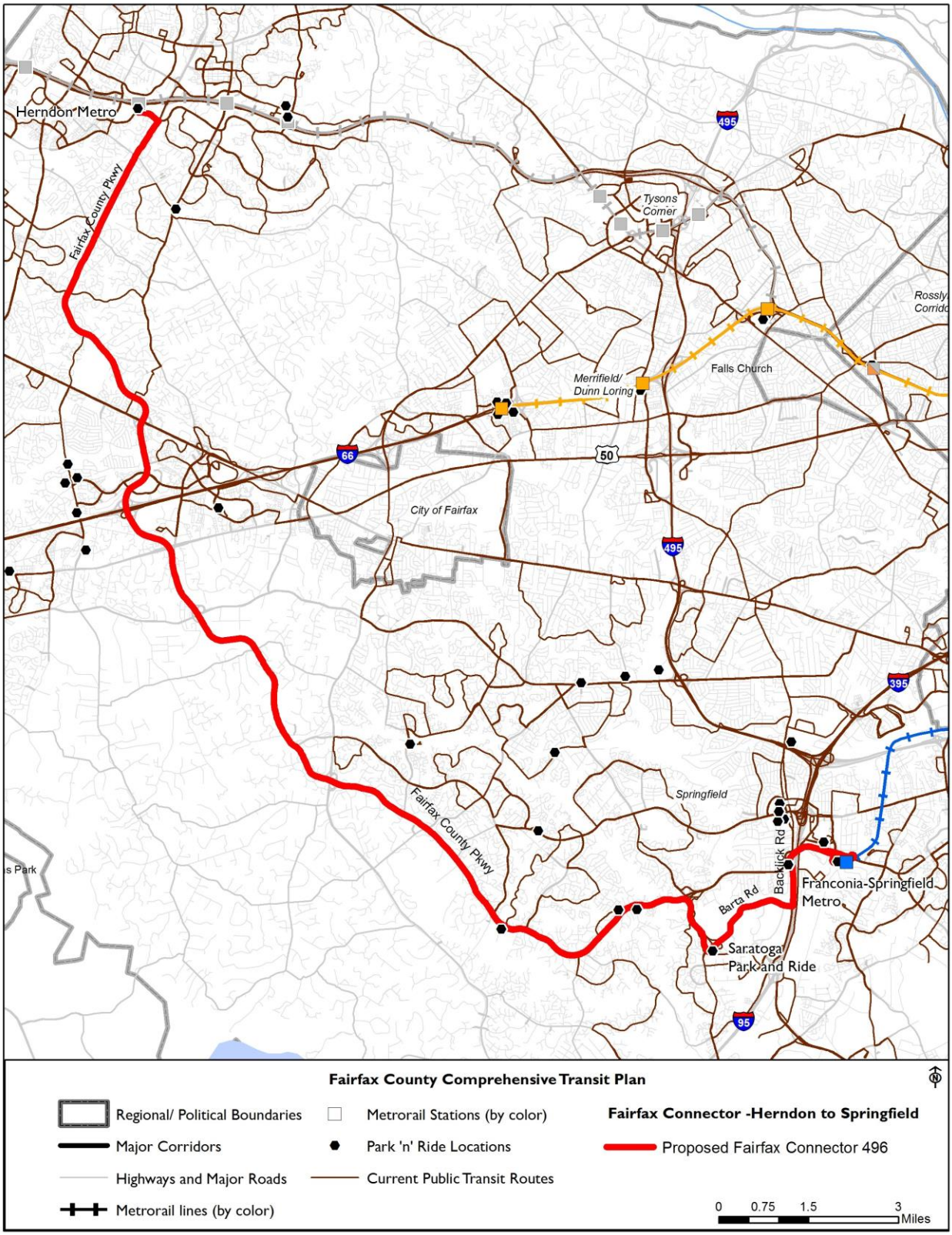
This proposal carries over a cross-county route proposal from the 2009 TDP. However, since the Fort Belvoir Transit Center was not created as proposed, the route would instead serve the Fort Belvoir North Area (National Geospatial Intelligence Agency) and then end at Franconia-Springfield Station. At the northern end, the service would begin at Herndon Station (to be completed as part of Phase 2 of the Silver Line). This route would provide a high-speed, long-distance connection between the two Metrorail lines. Fairfax County Parkway experiences significant peak-period delays. Therefore, this route would not be feasible without a strategy to minimize bus delays such as queue jump lanes, bus-only signals, or HOV lanes. In addition, significant investment is needed to provide safe passenger access to bus stations. Some major intersections (with flyovers or clover leafs) would require construction of on-line stations and pedestrian access points. Other stops can be made today where there is a shoulder and a crosswalk, or on an access road (and several are served by existing bus routes that use a portion of the parkway). Planning for this route should be coordinated with the planned study of Fairfax Parkway HOV lanes. It is not expected that this route would be opened for service until some years after the Silver Line is complete.

The potential stops on this route are Herndon Station (now Herndon-Monroe Park and Ride), Fox Mill Rd, West Ox Road , Franklin Farm Rd, Rugby Rd, US-50, Monument Drive/Fair Lakes Parkway, Lee Highway (US-29), Braddock Road, Burke Center Rd (VA-643), VA-123, Burke Lake Road (VA-645), Old Keene Mill Rd (VA-644), Lee Chapel Road (VA-643), Reservation Dr, Huntsman Blvd, Seabrook Lane/Hooes Rd, Sydenstricker Rd (VA-640), Rolling Road, Spring Village/Bonnie Mill, Saratoga Park and Ride, National Geospatial Intelligence Agency, Franconia-Springfield Station. The total one-way route distance is about 25 miles.

Table 7-98: Proposed Route 496 Fairfax County Parkway Service Level

		496 Fairfax County Parkway
	Operator	Fairfax Connector
Span	**Weekday**	6:00 AM – 10:00 PM
	Saturday	7:00 AM – 7:00 PM
	Sunday	None
Headway (minutes)	**Weekday Peak**	15
	Weekday Midday	30
	Weekday Evening	30
	Saturday	30/60
	Sunday	none

Figure 7.56: Proposed New Route 496 Herndon Station—Franconia-Springfield Station via Fairfax County Parkway



7.12.4. Springfield Area Route Recommendations Summary

The following table provides a summary of the service enhancements recommended for the Springfield Area.

Table 7-99: Springfield Area Route Service Recommendations

Route	Improvement	Service Purpose
Existing Routes		
305	Restore Route 305 to former routing as 305 Newington Line.	Improve productivity; Lorton segment also served by Route 371/373.
321/322	Extend span two hours, improve headways and eliminate two route diversions.	Ridership demand has grown to merit late evening service and higher frequency. Better on-time performance and faster trips via route simplification.
333	Redesignated as 340/341 (see below)	Make service easier to understand.
334	Reduce evening span, add weekend service, monitor performance.	Meet performance standards; serve new National Museum of the U.S. Army on Fort Belvoir opening in 2017.
335	No recommendation	
371/372/ 373	Adjust run times and improve peak headways. Eliminate service to Boston Boulevard and into Patriot Ridge Drive.	Improve on-time performance and accommodate increased Lorton riders losing access to Route 305
393	Monitor performance	New route created May 2015
394/395	Reduce AM peak departures by one and add one PM peak departure on the 395 route	To better balance loads as late evening peak trips often operate with standees
494	No recommendation	Routes 493 and 494 were recently consolidated
TAGS S80/S81	No change, monitor productivity	Circulator route with separate branding and small vehicles
New Route Proposals		
238 and 244	Create new routes to replace 231/232 circulators	Expansion of the service area to serve new retail at Beulah and Telegraph and outer segment of former Route 303
313	Provide new service to connect West and South County Service areas via Burke Centre VRE	Provide faster, one-seat ride across the county
315	Provide new cross county service between Vienna and Springfield	Provide faster, one-seat ride across the county
340/341	Separate existing Route 333 into peak and off-peak route number designations. Serve Boston Boulevard and Patriot Ridge.	Enhance service to Saratoga area including the NGA located on Ft. Belvoir North Area
496	New express route from Franconia-Springfield Station to Herndon Station via Fairfax County Parkway	Create express cross-county service

7.13 Appendix: Transit Suitability Methodology

The purpose of this analysis is to identify areas where transit need and demand exists and categorize service types by area. The results will consist of recommendations for different service types for areas in Fairfax County.

Step 1 - Develop Transit Suitability Analysis Maps

A transit suitability analysis will be utilized to identify areas where transit need and demand is highest. The analysis uses information from ACS, NAICS, CTPP and local data to calculate transit demand based on various different factors. The factors are related to demographics, commuting, and trip generation and will initially be measured at the census block group level (See **Table 1** for demand factors). Utilizing the accumulated demographic data, the following transit suitability layers will be developed based on how each equally-weighted measurement impacts transit need during the peak and full day periods:

- Peak: where commuters live and where people work
- Full day: where there is high population/household density, where transit oriented populations live, and where people make off-peak non-work trips

Table A-100: Demand Factors

Suitability Layer	Category	Measurement	Source
Full day	Population	• Population Density	2009-2013 ACS
Full day	Age	• Senior Density • Youth Density	2009-2013 ACS
Full day	Disabled Persons	• Disabled Persons Density	2009-2013 ACS
Full day	Households	• Household Density	2009-2013 ACS
Full day	Income	• Households in Low-Income Density[16]	2009-2013 ACS
Full day	Vehicle Ownership	• Zero-Car Household Density • One-Car Household Density	2009-2013 ACS
Full day	Retail	• Number of restaurant/retail jobs • Number of recreation jobs	2011 LEHD by NAICS code
Full day	Medical	• Number of medical jobs	2011 LEHD by NAICS code
Full day	School	• Number of educational jobs	2011 LEHD by NAICS code
Peak	Labor Force	• Labor Force Density • Employed Person Density	2009-2013 ACS
Peak	Employment	• Number of Employees	2011 LEHD
Peak	Commute Mode	• Commuter Density • Transit Commuter Density	2009-2013 ACS

[16] As defined by FCDOT in its Title VI program

Each of the measurements listed in the demand factors table represent a population, density, or aggregate sum of populations that utilize transit more frequently than other groups or, in the case of total population, households, or labor force, the sheer density of people. Each measurement also describes the likelihood of transit usage during a specific period of the day; for instance the labor force density and transit commuter density measurements help to represent transit need during the peak periods, while senior density and households with low-income density measurements represent transit dependent populations that require service all day long. These variables individually would not describe the transit suitability of any one given area, however when viewed together a pattern of transit need begins to appear. A general analysis will be conducted to determine where peak and off-peak transit demand is greatest. This will include ranking and scoring each of the demographic measurements individually but primarily focusing on the total ranking of each block group to develop a three categorical ranking schemes – a comprehensive scheme using all factors and full-day and peak schemes. This analysis will show what areas have overall transit needs or transit needs during just the peak period.

These layers will be used as a determinant of generators and attractors for different trip types according to their function. For instance, express bus and feeder route services provide needed transit service to commuters during the peak period, so the labor force, employment and commute mode measurements will detail the specific transit need for those types of services in any area.

Step 2 – Categorize by Service Types

This analysis will produce a thematic map (See **Figure 1**) that identifies areas with high peak period service transit suitability and high full day transit suitability, while also describing where full day service is needed along with enhanced peak hour service. The result of this analysis will be a definition of each block groups as either having the potential for peak period service only, having the potential for full day service only, having the potential for full day and enhanced peak period service or having the potential to support alternative services (e.g., deviated fixed route bus service). The block group level maps will be smoothed out using GIS raster functionality to be clear that service areas do not necessarily change at the block group line.

Figure A-57: Example of Service Types Thematic Map