

**Connections 2015:
Fairfax County
Comprehensive Transit Plan**

2. Fairfax County Metrobus Operations Analysis

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Prepared for:

Fairfax County Department of Transportation

By:



and



Table of Contents

2. Fairfax County Metrobus Operations Analysis

| | | |
|--------|---|------|
| 2.1 | Introduction..... | 2-1 |
| 2.2 | The System at a Glance | 2-2 |
| 2.3 | Basic Line Characteristics..... | 2-7 |
| 2.3.1. | Service Supplied..... | 2-7 |
| 2.3.2. | Service Operating Characteristics | 2-11 |
| 2.4 | Service Performance..... | 2-20 |
| 2.4.1. | Service Consumption and Financial Statistics..... | 2-20 |
| 2.4.2. | Service Effectiveness Measures | 2-25 |

List of Tables

| | |
|---|------|
| Table 2-1: Metrobus Lines Operating in Fairfax County | 2-4 |
| Table 2-2: Metrobus Annual Service Provided | 2-8 |
| Table 2-3: Metrobus Weekday Service Provided | 2-9 |
| Table 2-4: Metrobus Saturday Service Provided | 2-10 |
| Table 2-5: Metrobus Sunday Service Provided | 2-10 |
| Table 2-6: Metrobus Headways by Time Period..... | 2-11 |
| Table 2-7: Metrobus Operating Characteristics (Weekday)..... | 2-16 |
| Table 2-8: Metrobus Operating Characteristics (Saturday) | 2-17 |
| Table 2-9: Metrobus Operating Characteristics (Sunday) | 2-17 |
| Table 2-10: Metrobus Ridership and Financial Statistics (Annual) | 2-21 |
| Table 2-11: Metrobus Line Ridership and Financial Statistics (Weekday)..... | 2-22 |
| Table 2-12: Metrobus Line Ridership and Financial Statistics (Saturday) | 2-23 |
| Table 2-13: Metrobus Line Ridership and Financial Statistics (Sunday) | 2-24 |
| Table 2-14: Metrobus Line Productivity Statistics (Annual) | 2-26 |
| Table 2-15: Metrobus Line Productivity Statistics (Weekday) | 2-27 |
| Table 2-16: Metrobus Line Productivity Statistics (Saturday)..... | 2-28 |
| Table 2-17: Metrobus Line Productivity Statistics (Sunday) | 2-29 |

List of Figures

| | |
|--|------|
| Figure 2-1: Metrobus System Map (Fairfax County Lines) | 2-3 |
| Figure 2-2: Enhanced Public Transportation Corridors and Priority Corridor Network | 2-6 |
| Figure 2-3: Metrobus Lines by Peak Period Headway | 2-12 |
| Figure 2-4: Metrobus Lines by Midday Period Headway..... | 2-12 |
| Figure 2-5: Metrobus Lines by Evening Period Headway | 2-12 |
| Figure 2-6: Metrobus Peak Headway | 2-13 |
| Figure 2-7: Metrobus Midday Headway..... | 2-14 |
| Figure 2-8: Metrobus Evening Headway..... | 2-15 |
| Figure 2-9: Metrobus Lines by Operating Period..... | 2-18 |
| Figure 2-10: Metrobus Operating Periods..... | 2-19 |
| Figure 2-11: Weekday Passengers per Revenue Mile | 2-30 |
| Figure 2-12: Saturday Passengers per Revenue Mile | 2-31 |
| Figure 2-13: Sunday Passengers per Revenue Mile | 2-32 |
| Figure 2-14: Weekday Passengers per Revenue Hour | 2-33 |
| Figure 2-15: Saturday Passengers per Revenue Hour | 2-34 |
| Figure 2-16: Sunday Passengers per Revenue Hour | 2-35 |
| Figure 2-17: Weekday Passengers per Trip | 2-36 |
| Figure 2-18: Saturday Passengers per Trip..... | 2-37 |
| Figure 2-19: Sunday Passengers per Trip | 2-38 |

2.1 Introduction

The Washington Metropolitan Transit Authority (WMATA) provides Metrorail service and fixed-route Metrobus service to the Washington, DC metropolitan region. The WMATA Compact Zone consists of the District of Columbia, Montgomery and Prince George's Counties in Maryland, and Arlington, Fairfax, and Loudoun Counties as well as the cities of Alexandria, Falls Church, and Fairfax in Virginia.

WMATA's Metrobus is the sixth busiest bus agency in the United States, with a fleet of more than 1,500 buses operating on 325 lines. In Fairfax County, WMATA's 36 Metrobus lines provide approximately 45 percent of the total bus revenue hours in the county. Metrobus service does not cover the entirety of Fairfax County, rather it is regionally focused, and connects Fairfax riders to Metrorail stations and to other jurisdictions in northern Virginia as well as the District of Columbia. Fairfax County's locally owned and controlled fixed-route bus transit system, Fairfax Connector, provides service to large portions of the County which are not covered by Metrobus service.

Section 2.2 provides an overview of the Metrobus lines that serve Fairfax County. Section 2.3 describes the basic characteristics of each line, such as the revenue-hours and revenue-miles of service provided, both on an annual basis and for the weekday, Saturday and Sunday schedules. That section also presents and categorizes each line by both the frequency of service during each time period and the span of service and days of the week on which service is provided. Finally, Section 2.4 presents the current performance of each line, both in terms of ridership attracted and in terms of performance measures such as cost per passenger and passengers per revenue-hour and per revenue-mile.

2.2 The System at a Glance

Metrobus' Fairfax County service provides the major connections for Fairfax County residents into the District of Columbia and other Virginia jurisdictions to the east of Fairfax County. Metrobus' Fairfax County service radiates from downtown DC to points northwest, west, and southwest. Along those radials, Metrobus provides a variety of service types, from frequent seven-day a week service that runs on Virginia's major commercial roadways to local routes that service more residential streets and connect them to the commercial roadways.

Metrobus works along with Fairfax Connector to provide extensive bus service to the majority of the County. Metrobus service does not extend past Fort Belvoir in the South, Springfield in the Southwest, Fair Oaks in the West, and Tysons Corner/McLean in the North; the one exception being Route 5A to Dulles Airport. Fairfax Connector service reaches many parts of the County that Metrobus does not.

Metrobus' Fairfax County service consists of 36 lines that at least partially serve the County. These lines provide over 500,000 revenue hours of service annually, representing 45 percent of the total bus service in the County. On an average weekday, Metrobus lines serving Fairfax County carry nearly 55,000 passengers on 289 peak buses.¹ Metrobus' Fairfax County lines are shown in Figure 2-1.

WMATA currently operates five Metrorail stations in Fairfax County: West Falls Church, Dunn Loring-Merrifield and Vienna/Fairfax-GMU stations on the Orange Line; Franconia-Springfield on the Blue Line; and Huntington on the Yellow Line. Once Phase I of the Silver Line opens, WMATA will operate five additional Metro stations within Fairfax County (McLean, Tysons Corner, Greensboro, Spring Hill, and Wiehle-Reston East). Metrobus adjusted its service in December 2013 in preparation for the opening of the Phase I of the Silver Line in 2014.

Metrobus operations data, provided by WMATA for this analysis, consists of revenue miles, revenue hours, headway, and span as of the December 29, 2013 pick. Ridership and revenue data were based on September 2013 actual data. The operations data is tabulated as line-by-line annual totals, daily weekday averages, and Saturday and Sunday daily averages for each operation measure. There are 251 days classified as weekdays by WMATA within a year, 53 days classified as Saturdays, 57 days classified as Sundays, and four days classified as "Saturday-Supplemental" within a year. The additional Saturdays and Sundays beyond 52 weeks are holidays that fall on calendar weekdays, but receive Saturday or Sunday levels of service. Saturday-Supplemental is a special service level provided by WMATA on the four Federal holidays of Columbus Day, Veterans' Day, Martin L. King Junior Day, and Presidents' Day. The service provided on those days is somewhat more comprehensive than Saturday service, while still much less than what is provided on a normal weekday, recognizing that many employers do not include those holidays as paid time off for their employees.

Table 2-1 provides a broad overview of each Fairfax County Metrobus line, including magisterial district(s) served. Fairfax County contains nine magisterial districts that are defined by the United States Census Bureau as minor civil divisions that are not governments. The service type definitions are based on WMATA's classifications as follows:

¹ Data provided by WMATA reflecting September, 2013 service

Figure 2-1: Metrobus System Map (Fairfax County Lines)

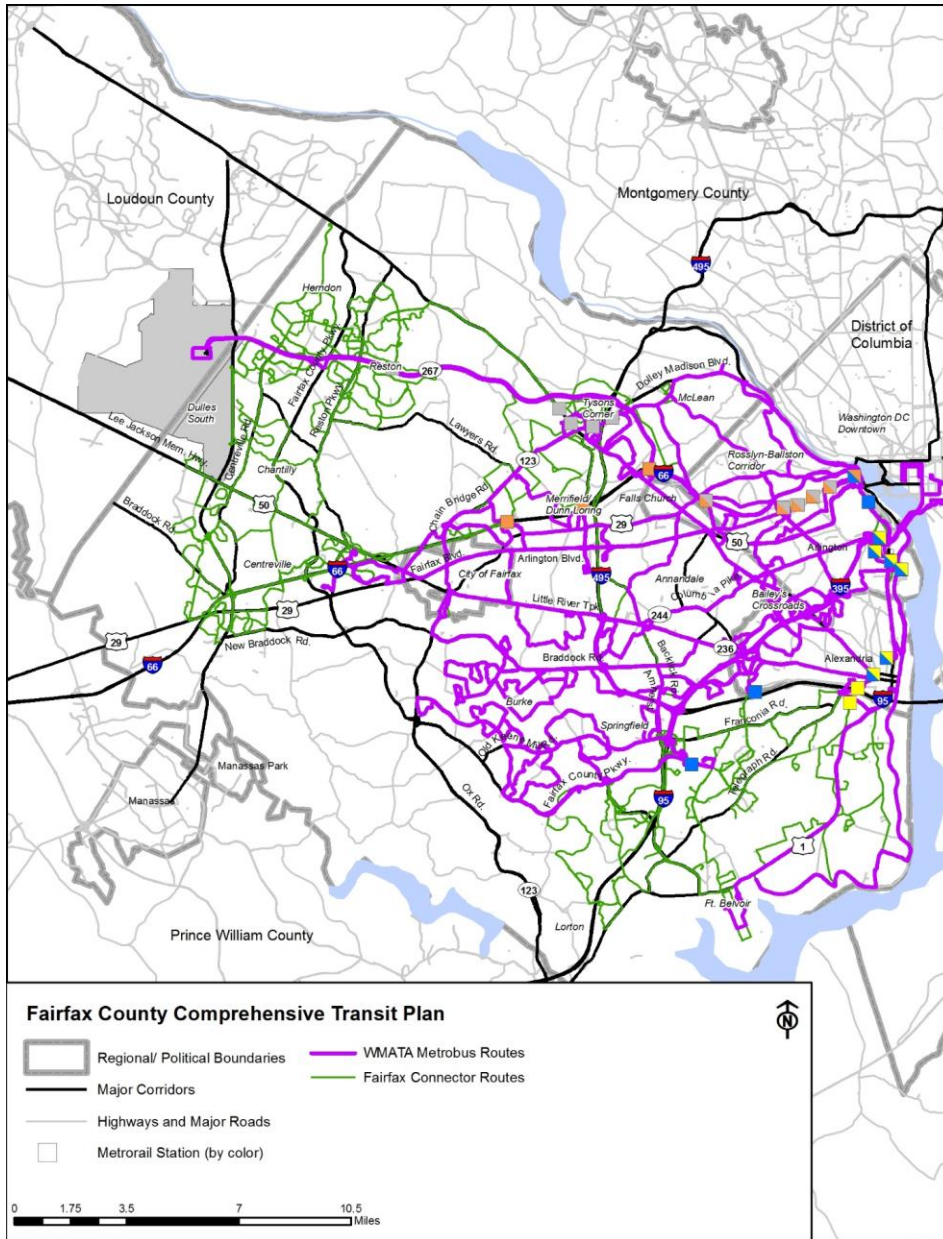


Table 2-1: Metrobus Lines Operating in Fairfax County

| Number | Name | Service Type | Magisterial District | EPTC | WMATA PCN |
|----------------------|-------------------------------------|-----------------|-----------------------------------|-------------------------------|---|
| 1A,B,E,Z | Wilson Boulevard-Vienna | Major | Providence | No | Leesburg Pike |
| 1C | Fair Oaks-Fairfax Blvd | Local | Providence, Braddock, Springfield | No | No |
| 2A | Washington Blvd - Dunn Loring | Major | Providence | I-66 | No |
| 2B | Fair Oaks-Jermantown Road | Local | Providence | No | No |
| 2T | Tysons Corner-Dunn Loring | Local | Providence, Hunter Mill | No | No |
| 3A | Lee Highway - Falls Church | Local | Mason, Providence | No | Little River Turnpike |
| 3T | Pimmit Hills - Falls Church | Local | Providence, Dranesville | No | No |
| 4A,B | Pershing Drive-Arlington Boulevard | Local | Mason | No | Leesburg Pike |
| 5A | DC-Dulles | Airport Express | Hunter Mill, Dranesville | Dulles Toll Road, I-66, I-395 | No |
| 7A,F,Y | Lincolnia-North Fairlington | Major | Mason | I-395 | No |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon | Major | Mason | I-395 | Little River Turnpike |
| 9A,E | Huntington-Pentagon | Local | Mont Vernon | Richmond Highway | Leesburg Pike, Richmond Highway |
| 11Y | Mt Vernon Express | Commuter | Mont Vernon | No | No |
| 15K,L | Chain Bridge Road | Commuter | Dranesville | No | No |
| 15M | George Mason-Tysons Corner | Commuter | Providence, Hunter Mill | No | No |
| 16A,B,D,E,J,P | Columbia Pike | Major | Mason, Braddock | Leesburg Pike | Columbia Pike, Leesburg Pike, Little River Turnpike |
| 16G,H,K | Columbia Heights West-Pentagon City | Major | Mason | No | Columbia Pike |
| 16L | Annandale-Skyline City-Pentagon | Commuter | Mason | I-395 | Columbia Pike |
| 16X | Columbia Pike-Federal Triangle | MetroExtra | Mason | I-395 | Columbia Pike, Leesburg Pike |
| 17A,B,F,M | Kings Park | Commuter | Mason, Braddock | I-395, I-495 | Little River Turnpike |
| 17G,H,K,L | Kings Park Express | Commuter | Mason, Braddock, Springfield | I-395, I-495 | No |
| 18E,F | Springfield | Commuter | Mason, Lee | I-395 | No |

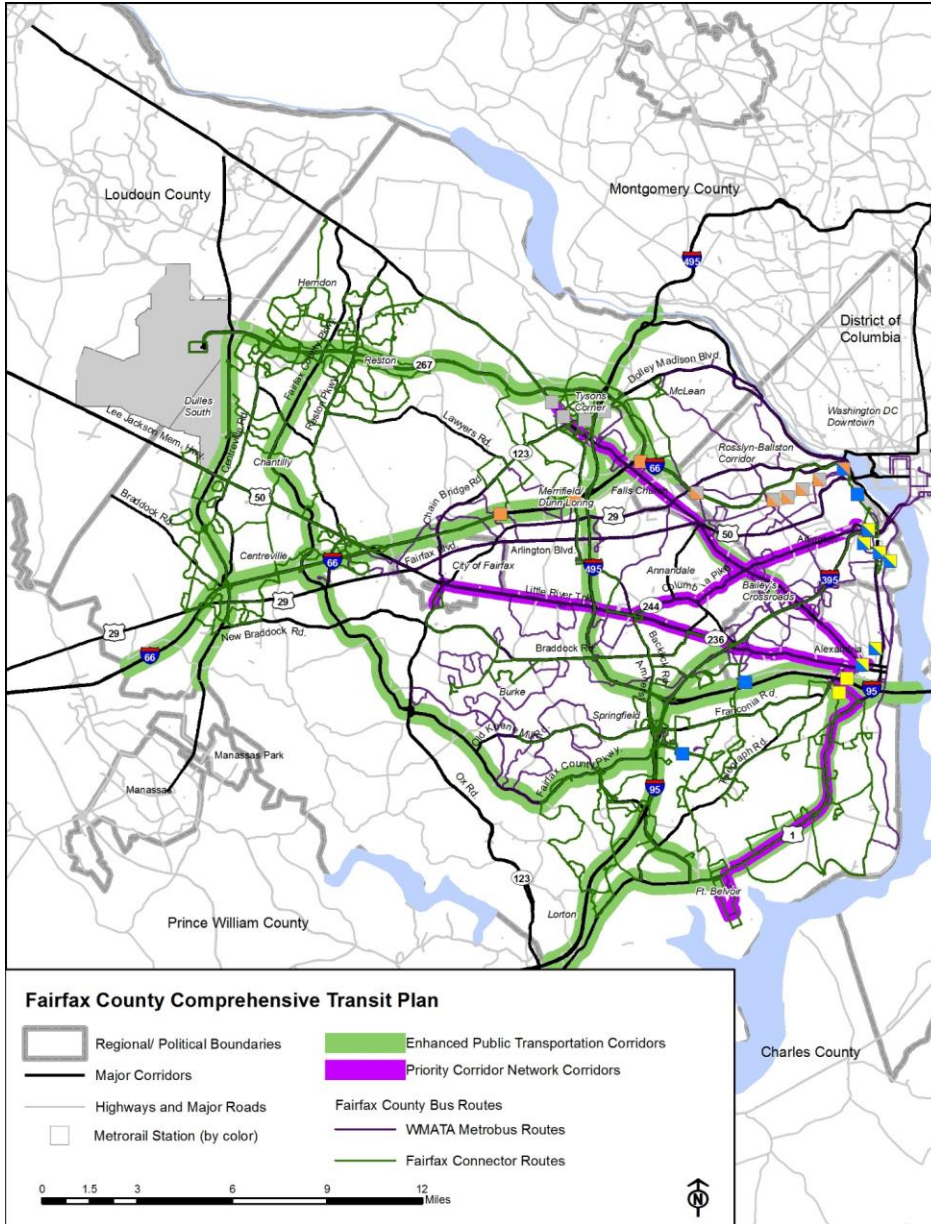
| Number | Name | Service Type | Magisterial District | EPTC | WMATA PCN |
|---------------|--------------------------------|--------------|-----------------------------------|------------------|---|
| 18G,H,J | Orange Hunt | Commuter | Mason, Lee, Springfield | I-395 | No |
| 18P,R,S | Burke Centre | Commuter | Mason, Lee, Braddock, Springfield | I-395 | Fairfax County Parkway |
| 21A,D | Landmark-Pentagon | Commuter | Mason | I-395 | No |
| 23A,C | McLean-Crystal City | Major | Providence, Dranesville | No | No |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | Local | Mason | Leesburg Pike | Leesburg Pike |
| 25B | Landmark-Ballston Line | Local | Mason | Leesburg Pike | Leesburg Pike |
| 26A | Annandale- East Falls Church | Local | Mason | No | Columbia Pike, Leesburg Pike, Little River Turnpike |
| 28A | Leesburg Pike | Major | Mason, Providence | Leesburg Pike | Columbia Pike, Leesburg Pike |
| 28F,G | Skyline City | Commuter | Mason | I-395 | Leesburg Pike |
| 28X | Leesburg Pike Limited | MetroExtra | Mason, Providence | Leesburg Pike | Leesburg Pike |
| 29C,E,G,H,X | Annandale | Commuter | Mason, Providence | I-395, I-495 | Little River Turnpike |
| 29K,N | Alexandria-Fairfax | Local | Mason, Providence | No | Little River Turnpike |
| REX (R99) | Richmond Highway Express | Major | Mont Vernon | Richmond Highway | Richmond Highway |
| TAGS (S80,91) | Springfield Circulator | Local | Lee | No | No |

Data as of December 29, 2013

- **Major Lines:** frequent, seven-day service on the core route, service levels vary on branch routes
- **Local Lines:** less frequent service, with some evening and weekend service
- **Commuter Lines:** weekday peak-hour service linking residential areas to Metrorail stations and employment centers
- **MetroExtra:** limited stops and service levels vary by line
- **Airport Express:** express service to Dulles International Airport

The table also shows whether each route serves a corridor that is part of Fairfax County's Enhanced Public Transportation Corridor (EPTC) or part of the WMATA Priority Corridor Network (PCN). Figure 2-2 shows the EPTC and PCN networks in detail. The EPTC network was identified in Fairfax County's Comprehensive Plan and is defined as road corridors that should receive major public transportation facilities such as rail transit, bus transfer stations, bus priority lanes, and/or high occupancy vehicle lanes. WMATA's PCN is a strategy to improve bus service by improving bus service travel times, reliability, capacity, productivity and system access along 23 corridors across the Washington region.

Figure 2-2: Enhanced Public Transportation Corridors and Priority Corridor Network



2.3 Basic Line Characteristics

The operating characteristics of Fairfax County Metrobus lines provide a starting point for analysis of existing service. The majority of the line characteristics data were obtained from WMATA's Fairfax County Comprehensive Transit Plan, and the bus line statistics are as of December 29, 2013. Span of service, headways, and one-way trips were calculated by WMATA staff based on December 2013 schedule data.

2.3.1. Service Supplied

Table 2-2 through Table 2-5 provide service supply data by line. The service measures are revenue miles, revenue hours, total miles, total hours, one-way trips, and number of vehicles. Each of the measures is defined as follows:

Revenue miles: The miles a vehicle travels while in service and available to passengers for transport on the routes. Revenue miles excludes "deadhead" miles (when the bus is traveling to or from the garage or moving from the endpoint of one route to the starting point of another route without carrying passengers).

Revenue hours: The measure of scheduled hours of service available to passengers for transport on the routes. Excludes deadhead hours, but includes layover and recovery hours.

Total miles: The miles a vehicle travels while in service when it is available to passengers for transport on the routes, plus non-revenue (deadhead) miles. Measures the total mileage from the time the bus leaves the garage to when it returns to the garage.

Total hours: The measure of scheduled hours of service available to passengers for transport on the routes as well as non-revenue hours. Measures the total time from when the bus leaves the garage to when it returns to the garage.

One-way trips: A one-way trip by a transit vehicle in revenue service is based on the start at the first point of a route and ending at the terminal point. A round trip is counted as two separate trips. In the case where the route is a pure loop and where there is no logical way to identify the terminal points, traversing of the loop is regarded as a one-way trip.

Revenue vehicles: Vehicles used in providing transit service for passengers. Metrobus also has non-revenue vehicles, used for transporting field supervisors and bus operators.

Peak vehicles: The number of revenue vehicles which operate during the weekday morning or afternoon time periods when transit ridership is heaviest. The number of peak vehicles determines the size of the fleet that WMATA needs to own and maintain.

Table 2-2: Metrobus Annual Service Provided

| Number | Name | Revenue Miles | Revenue Hours | Total Miles | Total Hours | One-way Trips |
|-----------------------|-------------------------------------|------------------|----------------|-------------------|----------------|----------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna* | 412,565 | 32,173 | 598,225 | 47,535 | 36,292 |
| 1C | Fair Oaks-Fairfax Blvd | 251,159 | 16,693 | 276,513 | 21,006 | 17,259 |
| 2A | Washington Blvd - Dunn Loring | 244,941 | 18,246 | 366,680 | 27,793 | 29,026 |
| 2B | Fair Oaks-Jermantown Road | 184,465 | 12,636 | 206,717 | 17,987 | 14,237 |
| 2T | Tysons Corner-Dunn Loring | 140,037 | 10,193 | 177,225 | 14,501 | 16,221 |
| 3A | Lee Highway - Falls Church* | 282,625 | 19,475 | 354,234 | 30,497 | 32,587 |
| 3T | Pimmit Hills - Falls Church* | 169,673 | 13,772 | 219,082 | 19,295 | 18,495 |
| 4A,B | Pershing Drive-Arlington Boulevard* | 215,228 | 16,216 | 281,250 | 26,770 | 34,430 |
| 5A | DC-Dulles | 549,001 | 17,263 | 603,958 | 24,178 | 19,164 |
| 7A,F,Y | Lincolnia-North Fairlington* | 354,391 | 30,844 | 462,225 | 36,259 | 43,399 |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon* | 144,615 | 10,890 | 215,056 | 14,264 | 22,467 |
| 9A,E | Huntington-Pentagon | 229,019 | 16,643 | 306,183 | 24,925 | 31,643 |
| 11Y | Mt Vernon Express | 57,140 | 3,472 | 105,937 | 6,074 | 3,263 |
| 15K,L | Chain Bridge Road | 96,926 | 4,439 | 110,335 | 6,313 | 7,279 |
| 15M | George Mason-Tysons Corner | 84,200 | 5,970 | 108,758 | 8,270 | 7,530 |
| 16A,B,D,E,J,P | Columbia Pike | 498,402 | 37,034 | 614,334 | 53,907 | 57,519 |
| 16G,H,K | Columbia Heights West-Pentagon City | 273,020 | 22,941 | 363,326 | 34,418 | 58,189 |
| 16L | Annandale-Skyline City-Pentagon | 16,531 | 916 | 34,171 | 1,832 | 1,506 |
| 16X | Columbia Pike-Federal Triangle* | 71,931 | 5,542 | 119,247 | 9,594 | 10,710 |
| 17A,B,F,M | Kings Park* | 207,375 | 8,084 | 313,111 | 13,760 | 11,642 |
| 17G,H,K,L | Kings Park Express* | 305,940 | 12,138 | 549,520 | 22,367 | 14,371 |
| 18E,F | Springfield | 64,638 | 2,907 | 86,068 | 4,568 | 4,518 |
| 18G,H,J | Orange Hunt | 137,438 | 5,484 | 223,066 | 9,312 | 7,530 |
| 18P,R,S | Burke Centre* | 191,785 | 8,456 | 395,282 | 17,553 | 15,208 |
| 21A,D | Landmark-Pentagon* | 54,121 | 2,652 | 105,965 | 5,511 | 5,610 |
| 23A,C | McLean-Crystal City | 520,339 | 38,673 | 619,211 | 49,667 | 31,074 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 179,821 | 14,423 | 220,119 | 19,859 | 22,133 |
| 25B | Landmark-Ballston Line | 153,246 | 13,288 | 192,681 | 18,697 | 13,085 |
| 26A | Annandale- East Falls Church | 35,062 | 4,777 | 54,198 | 7,526 | 7,028 |
| 28A | Leesburg Pike | 577,725 | 44,807 | 729,164 | 58,990 | 34,767 |
| 28F,G | Skyline City* | 60,971 | 2,732 | 77,151 | 5,040 | 8,666 |
| 28X | Leesburg Pike Limited | 127,490 | 10,237 | 274,260 | 16,612 | 10,793 |
| 29C,E,G,H,X | Annandale* | 271,177 | 14,978 | 459,293 | 22,988 | 18,766 |
| 29K,N | Alexandria-Fairfax* | 300,528 | 20,108 | 366,636 | 27,052 | 18,830 |
| REX (R99) | Richmond Highway Express | 456,520 | 28,568 | 569,054 | 41,061 | 33,732 |
| TAGS (S80,91) | Springfield Circulator* | 110,236 | 7,734 | 162,429 | 12,892 | 18,535 |
| METROBUS TOTAL | | 8,030,280 | 535,404 | 10,920,668 | 778,875 | 737,504 |

Data provided by WMATA effective as of December 29, 2013

* Data for these lines includes Saturday Supplemental Service

Table 2-3: Metrobus Weekday Service Provided

| Number | Name | Revenue Miles | Revenue Hours | Total Miles | Total Hours | One-way Trips | Peak Vehicles |
|-----------------------|-------------------------------------|---------------|---------------|---------------|--------------|---------------|---------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna | 1,280 | 101 | 1,914 | 152 | 116 | 11 |
| 1C | Fair Oaks-Fairfax Blvd | 809 | 55 | 838 | 66 | 54 | 9 |
| 2A | Washington Blvd - Dunn Loring | 792 | 60 | 1,212 | 96 | 103 | 7 |
| 2B | Fair Oaks-Jermantown Road | 647 | 45 | 703 | 63 | 49 | 5 |
| 2T | Tysons Corner-Dunn Loring | 440 | 33 | 551 | 46 | 51 | 7 |
| 3A | Lee Highway - Falls Church | 901 | 63 | 1,137 | 100 | 105 | 8 |
| 3T | Pimmit Hills - Falls Church | 605 | 49 | 795 | 69 | 66 | 6 |
| 4A,B | Pershing Drive-Arlington Boulevard | 735 | 56 | 966 | 95 | 118 | 10 |
| 5A | DC-Dulles | 1,719 | 54 | 1,894 | 78 | 60 | 6 |
| 7A,F,Y | Lincolnia-North Fairlington | 1,198 | 105 | 1,597 | 125 | 146 | 17 |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon | 574 | 43 | 854 | 57 | 89 | 9 |
| 9A,E | Huntington-Pentagon | 697 | 52 | 808 | 77 | 97 | 9 |
| 11Y | Mt Vernon Express | 228 | 14 | 422 | 24 | 13 | 6 |
| 15K,L | Chain Bridge Road | 386 | 18 | 440 | 25 | 29 | 3 |
| 15M | George Mason-Tysons Corner | 335 | 24 | 433 | 33 | 30 | 4 |
| 16A,B,D,E,J,P | Columbia Pike | 1,527 | 114 | 1,923 | 168 | 179 | 13 |
| 16G,H,K | Columbia Heights West-Pentagon City | 888 | 75 | 1,222 | 113 | 188 | 11 |
| 16L | Annandale-Skyline City-Pentagon | 66 | 4 | 136 | 7 | 6 | 2 |
| 16X | Columbia Pike-Federal Triangle | 282 | 22 | 468 | 38 | 42 | 7 |
| 17A,B,F,M | Kings Park | 820 | 32 | 1,237 | 54 | 46 | 8 |
| 17G,H,K,L | Kings Park Express | 1,213 | 48 | 2,179 | 89 | 57 | 15 |
| 18E,F | Springfield | 258 | 12 | 343 | 18 | 18 | 3 |
| 18G,H,J | Orange Hunt | 548 | 22 | 889 | 37 | 30 | 5 |
| 18P,R,S | Burke Centre | 755 | 33 | 1,557 | 69 | 60 | 13 |
| 21A,D | Landmark-Pentagon | 212 | 10 | 417 | 22 | 22 | 3 |
| 23A,C | McLean-Crystal City | 1,660 | 125 | 1,973 | 159 | 102 | 14 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 605 | 48 | 747 | 67 | 79 | 8 |
| 25B | Landmark-Ballston Line | 539 | 47 | 678 | 67 | 46 | 6 |
| 26A | Annandale- East Falls Church | 140 | 19 | 216 | 30 | 28 | 2 |
| 28A | Leesburg Pike | 1,637 | 130 | 2,106 | 171 | 99 | 9 |
| 28F,G | Skyline City | 239 | 11 | 303 | 20 | 34 | 3 |
| 28X | Leesburg Pike Limited | 508 | 41 | 1,093 | 66 | 43 | 9 |
| 29C,E,G,H,X | Annandale | 1,070 | 59 | 1,810 | 91 | 74 | 16 |
| 29K,N | Alexandria-Fairfax | 1,084 | 73 | 1,331 | 98 | 68 | 7 |
| REX (R99) | Richmond Highway Express | 1,502 | 95 | 1,907 | 137 | 111 | 13 |
| TAGS (S80,91) | Springfield Circulator | 433 | 30 | 638 | 51 | 73 | 5 |
| METROBUS TOTAL | | 27,333 | 1,823 | 37,736 | 2,675 | 2,531 | 289 |

Data provided by WMATA effective as of December 29, 2013

Table 2-4: Metrobus Saturday Service Provided

| Number | Name | Revenue Miles | Revenue Hours | Total Miles | Total Hours | One-way Trips | Vehicles |
|-----------------------|-------------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|
| IA,B,E,Z | Wilson Boulevard-Vienna | 905 | 67 | 1,138 | 94 | 71 | 7 |
| 1C | Fair Oaks-Fairfax Blvd | 453 | 30 | 585 | 44 | 35 | 6 |
| 2A | Washington Blvd - Dunn Loring | 554 | 39 | 699 | 35 | 19 | 5 |
| 2B | Fair Oaks-Jermantown Road | 389 | 24 | 533 | 37 | 34 | 3 |
| 2T | Tysons Corner-Dunn Loring | 293 | 19 | 426 | 31 | 34 | 0 |
| 3A | Lee Highway - Falls Church | 588 | 40 | 736 | 60 | 72 | 6 |
| 3T | Pimmit Hills - Falls Church | 303 | 24 | 332 | 33 | 33 | 2 |
| 4A,B | Pershing Drive-Arlington Boulevard | 357 | 23 | 428 | 33 | 56 | 2 |
| 5A | DC-Dulles | 1,031 | 31 | 1,123 | 40 | 36 | 3 |
| 7A,F,Y | Lincolnia-North Fairlington | 557 | 48 | 646 | 53 | 69 | 3 |
| 9A,E | Huntington-Pentagon | 571 | 40 | 1,412 | 61 | 77 | 4 |
| 16A,B,D,E,J,P | Columbia Pike | 1,321 | 94 | 1,492 | 130 | 144 | 9 |
| 16G,H,K | Columbia Heights West-Pentagon City | 582 | 47 | 665 | 70 | 128 | 6 |
| 23A,C | McLean-Crystal City | 1,214 | 86 | 1,466 | 122 | 64 | 8 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 241 | 21 | 283 | 28 | 13 | 3 |
| 25B | Landmark-Ballston Line | 316 | 25 | 393 | 33 | 27 | 4 |
| 28A | Leesburg Pike | 1,766 | 132 | 2,053 | 172 | 105 | 12 |
| 29K,N | Alexandria-Fairfax | 484 | 31 | 547 | 41 | 30 | 4 |
| REX (R99) | Richmond Highway Express | 947 | 58 | 1,012 | 79 | 70 | 3 |
| METROBUS TOTAL | | 12,873 | 877 | 15,966 | 1,196 | 1,117 | 90 |

Data provided by WMATA effective as of December 29, 2013

Table 2-5: Metrobus Sunday Service Provided

| Number | Name | Revenue Miles | Revenue Hours | Total Miles | Total Hours | One-way Trips | Vehicles |
|----------------------|-------------------------------------|---------------|---------------|--------------|-------------|---------------|-----------|
| IA,B,E,Z | Wilson Boulevard-Vienna | 676 | 49 | 896 | 70 | 53 | 5 |
| 1C | Fair Oaks-Fairfax Blvd | 390 | 22 | 578 | 34 | 30 | 3 |
| 2A | Washington Blvd. - Dunn Loring | 292 | 20 | 447 | 35 | 38 | 2 |
| 2T | Tysons Corner-Dunn Loring | 224 | 14 | 259 | 21 | 26 | 4 |
| 3A | Lee Highway - Falls Church | 396 | 24 | 462 | 34 | 36 | 2 |
| 4A,B | Pershing Drive-Arlington Boulevard | 180 | 13 | 248 | 19 | 28 | 2 |
| 5A | DC-Dulles | 1,031 | 32 | 1,132 | 43 | 36 | 3 |
| 7A,F,Y | Lincolnia-North Fairlington | 375 | 30 | 407 | 32 | 48 | 3 |
| 9A,E | Huntington-Pentagon | 377 | 25 | 402 | 36 | 51 | 3 |
| 16A,B,D,E,J,P | Columbia Pike | 697 | 54 | 817 | 76 | 76 | 5 |
| 16G,H,K | Columbia Heights West-Pentagon City | 297 | 26 | 329 | 36 | 65 | 3 |
| 23A,C | McLean-Crystal City | 607 | 41 | 709 | 51 | 32 | 4 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 245 | 20 | 284 | 26 | 27 | 3 |
| 28A | Leesburg Pike | 1,160 | 81 | 1,465 | 109 | 69 | 9 |
| REX (R99) | Richmond Highway Express | 446 | 25 | 574 | 38 | 33 | 3 |
| METROBUSTOTAL | | 7,394 | 476 | 9,009 | 661 | 648 | 54 |

Data provided by WMATA effective as of December 29, 2013

2.3.2. Service Operating Characteristics

Service operating statistics provide more detailed information on what kind of service a rider will experience on a particular route. The statistics answer questions such as when the service is available and how frequently the service operates.

Span of service: The span of hours over which service is operated. The start time indicates the scheduled departure time of the first bus of the day from the first stop on its route and the end time indicates the scheduled arrival time of the last bus of the day at the last stop on the route. Note that many Metrobus lines operate during peak periods only; thus the span provided in the table does not necessarily mean that buses are running on that route during the entire time from start to end. Peak only routes have a “NS” (no service) indication for the midday headway.

Headway: Time interval between vehicles moving in the same direction on a particular route. Peak headway is the interval between vehicles during morning and afternoon rush. Midday and evening headways capture off-peak headway information. As scheduled headways tend to vary even within one time period, the headways in the following tables are approximate averages unless the variation within a particular service period was ten minutes or greater, in which case the headway is given as a range. “NS” indicates no service during that time period.

Metrobus service in Fairfax County is by and large frequent service. Half of the Metrobus lines in Fairfax County (19 of 36 lines) have peak period headways of 20 minutes or less. Another ten lines have peak headways between 20 and 30 minutes, while only seven lines have headways longer than 30 minutes during the peak periods. Even during the midday period, the majority (13 of 21) lines have headways of 30 minutes or less. Service is markedly less frequent in the evening, with the majority of lines operating with headways over 30 minutes, and only 2 lines operating under 20 minute headways. Table 2-6 shows the number of Metrobus lines operating various service levels in Fairfax County. Figure 2-3 through Figure 2-5 break down the catalog of Metrobus lines by peak, midday and evening headways. This data is also shown on the map of Fairfax County in Figure 2-10 through [Error! Reference source not found.Figure 2-12.](#)

Table 2-7 shows the weekday span and headways for each line. Similarly, Table 2-8 and Table 2-9 show the Saturday and Sunday span and headways. Metrobus service has a wide range of service spans in terms of the hours and days service is offered. The majority of lines (19 of 36) offer weekend service, with 15 of those operating seven days per week. Of the 17 lines that do not operate on weekends, 13 are peak period-only commuter routes. Figure 2-10 and Figure 2-10 give full details on the operating spans of Metrobus service in Fairfax County.

Table 2-6: Metrobus Headways by Time Period

| Headways (min) | Weekday time periods | | | Saturday | Sunday |
|----------------|----------------------|--------|---------|----------|--------|
| | Peak | Midday | Evening | | |
| 20 or less | 19 | 5 | 2 | 2 | |
| 21-30 | 10 | 8 | 7 | 3 | 3 |
| 31-40 | 6 | 1 | 5 | 5 | |
| 41-50 | | | 3 | | 3 |
| over 50 | 1 | 6 | 4 | 9 | 9 |

| Headways (min) | Weekday time periods | | | Saturday | Sunday |
|-------------------|----------------------|--------|---------|----------|--------|
| | Peak | Midday | Evening | | |
| TOTALS | 36 | 20 | 21 | 19 | 15 |

Figure 2-3: Metrobus Lines by Peak Period Headway

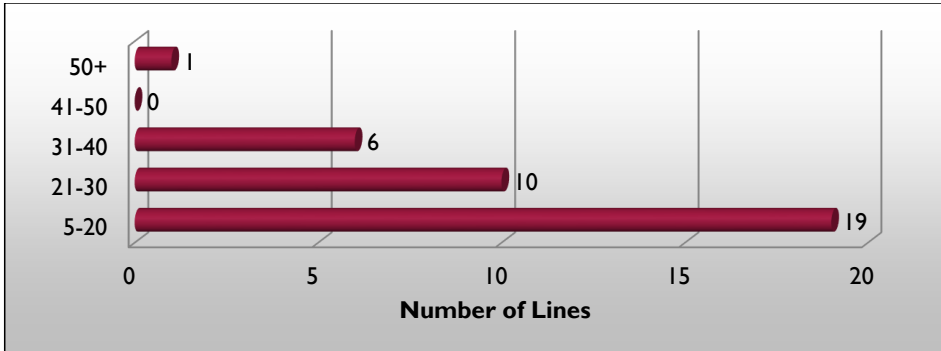


Figure 2-4: Metrobus Lines by Midday Period Headway

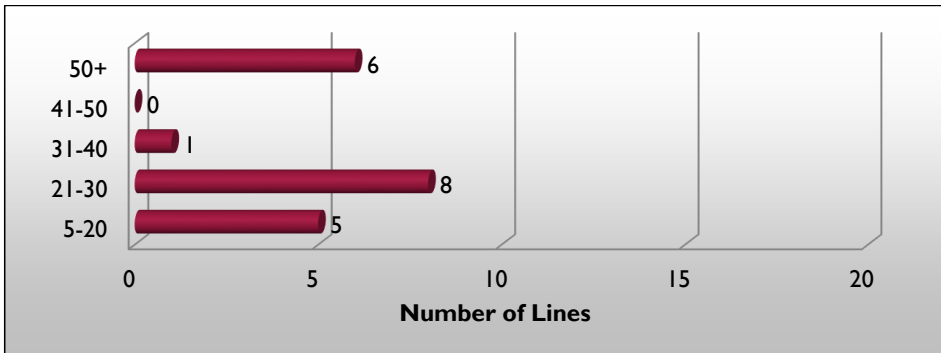


Figure 2-5 Metrobus Lines by Evening Period Headway

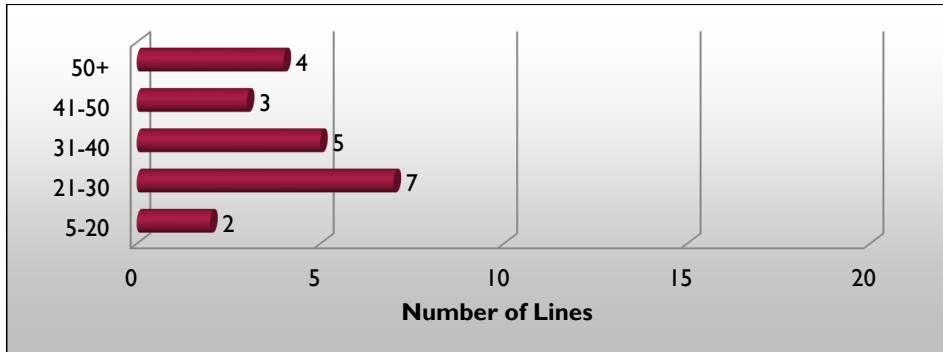


Figure 2-6: Metrobus Peak Headway

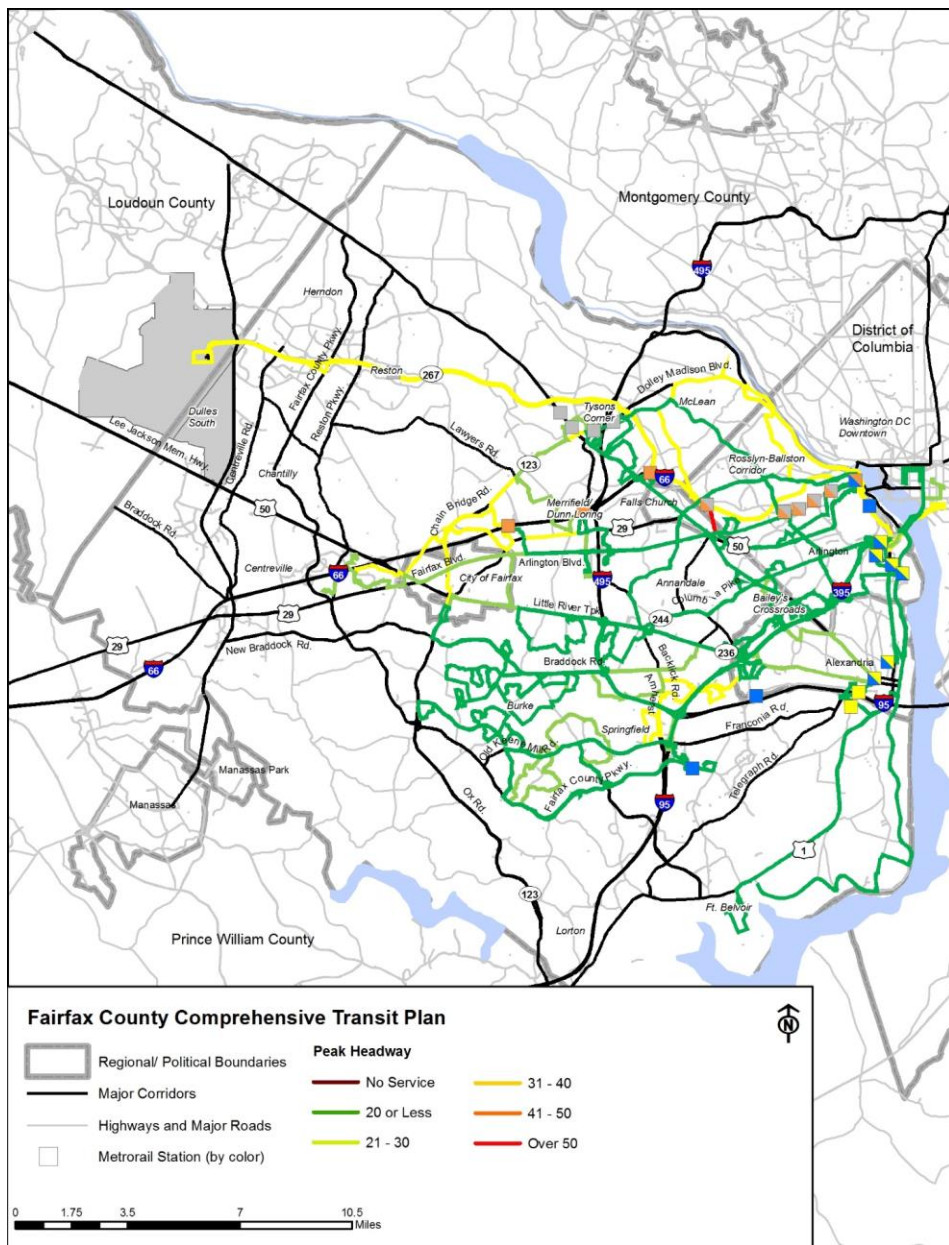


Figure 2-7: Metrobus Middy Headway

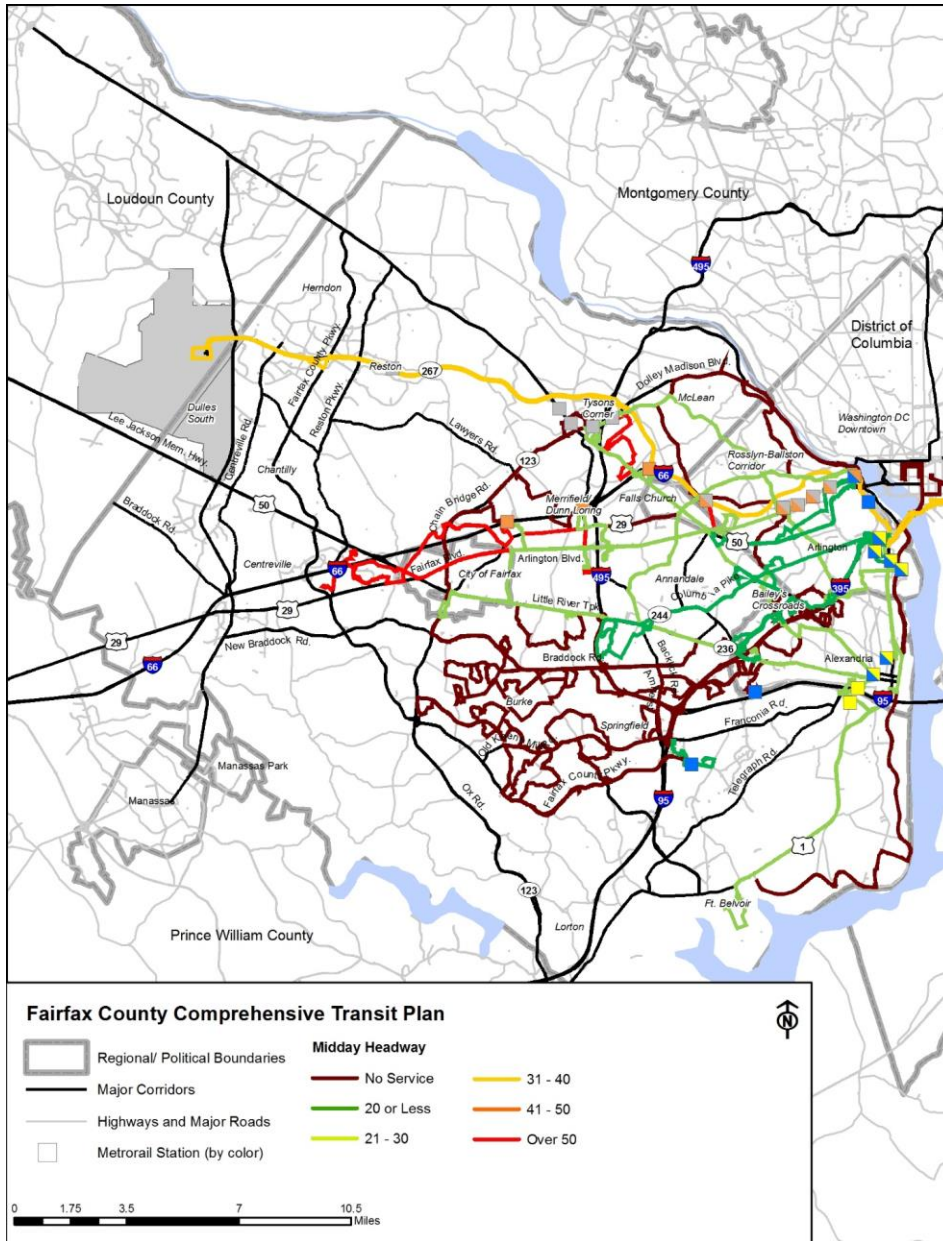


Figure 2-8: Metrobus Evening Headway

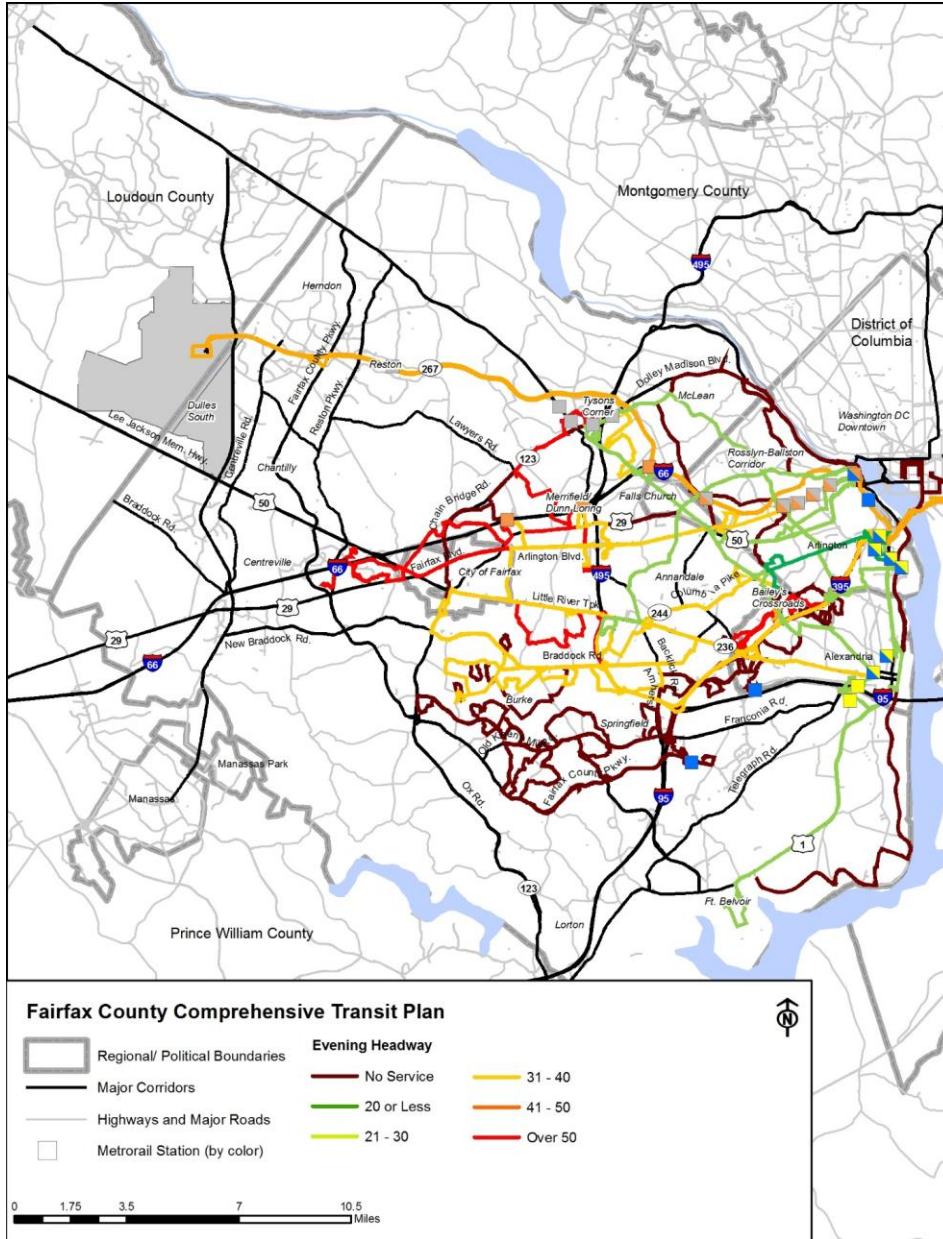


Table 2-7: Metrobus Operating Characteristics (Weekday)

| Number | Name | Span of Service | | Peak Headway Peak Direction | Midday Headway | Evening Headway |
|----------------------|--|--------------------|--------------------|--------------------------------|----------------|-----------------|
| | | Start | End | | | |
| 1A,B,E,Z | Wilson Boulevard-Vienna | 4:42 AM | 12:22 AM | 12 | 25 | 31 |
| 1C | Fair Oaks-Fairfax Blvd | 4:06 AM | 12:41 AM | 30 | 60 | 54 |
| 2A | Washington Blvd - Dunn Loring | 4:45 AM | 12:56 AM | 15 | 30 | 20 |
| 2B | Fair Oaks-Jermantown Road | 5:21 AM | 12:04 AM | 32 | 60 | 60 |
| 2T | Tysons Corner-Dunn Loring | 5:30 AM | 11:37 PM | 30 | NS | 60 |
| 3A | Lee Highway - Falls Church | 5:00 AM | 12:47 AM | 15 | 30 | 30 |
| 3T | Pimmit Hills - Falls Church | 5:45 AM | 10:27 PM | 20 | 60 | 37 |
| 4A,B | Pershing Drive-Arlington Boulevard | 5:30 AM | 12:50 AM | 15 | 20 | 26 |
| 5A | DC-Dulles | 4:50 AM | 12:28 AM | 35 | 35 | 46 |
| 7A,F,Y | Lincolnia-North Fairlington | 5:09 AM | 12:23 AM | 10 | 20 | 60 |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon | 6:05 AM | 8:57 PM | 5 - 18 | NS | NS |
| 9A,E | Huntington-Pentagon | 4:30 AM | 1:54 AM | 15 | 30 | 30 |
| 11Y | Mt Vernon Express NB Mt Vernon Express SB | 6:40 AM 4:10 PM | 9:03 AM 7:25 PM | 17 25 | NS | NS |
| 15K,L | Chain Bridge Road | 5:40 AM | 8:09 PM | 31 | NS | NS |
| 15M | George Mason-Tysons Corner | 5:18 AM | 8:00 PM | 31 | NS | NS |
| 16A,B,D,E,J,P | Columbia Pike | 4:41 AM | 3:59 AM | 10 | 15 | 35 |
| 16G,H,K | Columbia Heights West-Pentagon City | 4:53 AM | 11:57 PM | 7 | 15 | 16 |
| 16L | Annandale-Skyline City-Pentagon -EB Annandale-Skyline City-Pentagon- WB | 6:45 AM 4:55 PM | 8:21 AM 6:39 PM | 31 33 | NS | NS |
| 16X | Columbia Pike-Federal Triangle | 5:30 AM | 7:28 PM | 25 | NS | NS |
| 17A,B,F,M | Kings Park | 6:00 AM | 10:50 PM | 23 | NS | 36 |
| 17G,H,K,L | Kings Park Express -NB Kings Park Express- SB | 5:20 AM 3:55 PM | 8:58 AM 7:31 PM | 7 6 | NS | NS |
| 18E,F | Springfield | 6:00 AM | 6:59 PM | 32 | NS | NS |
| 18G,H,J | Orange Hunt | 5:38 AM | 7:46 PM | 15 - 30 | NS | NS |
| 18P,R,S | Burke Centre | 5:40 AM | 8:53 PM | 10 - 22 | NS | NS |
| 21A,D | Landmark-Pentagon | 4:00 AM | 9:04 AM | 18 | NS | NS |
| 23A,C | McLean-Crystal City | 5:37 AM | 12:45 AM | 14 | 30 | 41 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 5:50 AM | 11:02 PM | 15-30 | 60 | 15-30 |
| 25B | Landmark-Ballston Line | 6:00 AM | 10:23 PM | 30 | 60 | 30 |
| 26A | Annandale- East Falls Church | 6:09 AM | 7:57 PM | 60 | 60 | NS |
| 28A | Leesburg Pike | 5:09 AM | 1:48 AM | 25 | 25 | 25 |
| 28F,G | Skyline City | 5:47 AM | 7:18 PM | 25 | NS | NS |
| 28X | Leesburg Pike Limited | 5:11 AM | 7:28 PM | 15 - 20 | NS | NS |
| 29C,E,G,H,X | Annandale | 5:30 AM | 10:27 PM | 8 | NS | 50 |
| 29K,N | Alexandria-Fairfax | 5:30 AM | 11:35 PM | 30 | 30 | 36 |
| REX (R99) | Richmond Highway Express | 5:08 AM | 11:39 PM | 13 | 30 | 30 |
| TAGS (S80,91) | Springfield Circulator | 6:02 AM | 7:48 PM | 10 | 15 | NS |

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Data provided by WMATA effective as of December 29, 2013

Table 2-8: Metrobus Operating Characteristics (Saturday)

| Number | Name | Saturday Span of Service Start / End | | Saturday Headway |
|----------------------|-------------------------------------|---|----------|------------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna | 5:30 AM | 1:25 AM | 30 |
| 1C | Fair Oaks-Fairfax Blvd | 5:56 AM | 11:39 PM | 60 |
| 2A | Washington Blvd - Dunn Loring | 5:45 AM | 12:57 AM | 60 |
| 2B | Fair Oaks-Jermantown Road | 6:15 AM | 11:03 PM | 60 |
| 2T | Tysons Corner-Dunn Loring | 6:00 AM | 10:36 PM | 60 |
| 3A | Lee Highway - Falls Church | 5:45 AM | 12:51 AM | 31 |
| 3T | Pimmit Hills - Falls Church | 6:35 AM | 11:15 PM | 60 |
| 4A,B | Pershing Drive-Arlington Boulevard | 6:19 AM | 11:30 PM | 36 |
| 5A | DC-Dulles | 5:30 AM | 12:25 AM | 60 |
| 7A,F,Y | Lincolnia-North Fairlington | 6:17 AM | 3:55 AM | 35 |
| 9A,E | Huntington-Pentagon | 5:24 AM | 1:48 AM | 33 |
| 16A,B,D,E,J,P | Columbia Pike | 5:29 AM | 3:55 AM | 18 |
| 16G,H,K | Columbia Heights West-Pentagon City | 5:18 AM | 11:15 PM | 16 |
| 23A,C | McLean-Crystal City | 5:52 AM | 1:09 AM | 34 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 7:40 AM | 9:26 PM | 60 |
| 25B | Landmark-Ballston Line | 6:10 AM | 9:01 PM | 60 |
| 28A | Leesburg Pike | 5:50 AM | 1:52 AM | 21 |
| 29K,N | Alexandria-Fairfax | 6:10 AM | 10:23 PM | 60 |
| REX (R99) | Richmond Highway Express | 4:48 AM | 10:56 PM | 30 |

Data provided by WMATA effective as of December 29, 2013

Table 2-9: Metrobus Operating Characteristics (Sunday)

| Number | Name | Sunday Span of Service Start / End | | Sunday Headway |
|----------------------|-------------------------------------|---------------------------------------|----------|----------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna | 7:35 AM | 11:25 PM | 30- 60 |
| 1C | Fair Oaks-Fairfax Blvd | 6:56 AM | 10:27 PM | 60 |
| 2A | Washington Blvd - Dunn Loring | 5:45 AM | 12:57 AM | 60 |
| 2T | Tysons Corner-Dunn Loring | 8:00 AM | 8:36 PM | 60 |
| 3A | Lee Highway - Falls Church | 6:15 AM | 12:05 AM | 60 |
| 4A,B | Pershing Drive-Arlington Boulevard | 6:19 AM | 10:13 PM | 68 |
| 5A | DC-Dulles | 5:30 AM | 12:23 AM | 60 |
| 7A,F,Y | Lincolnia-North Fairlington | 7:30 AM | 12:35 AM | 44 |
| 9A,E | Huntington-Pentagon | 5:00 AM | 12:53 AM | 45 |
| 16A,B,D,E,J,P | Columbia Pike | 5:59 AM | 1:01 AM | 30 |
| 16G,H,K | Columbia Heights West-Pentagon City | 5:51 AM | 10:15 PM | 30 |
| 23A,C | McLean-Crystal City | 5:20 AM | 10:33 PM | 60 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 8:11 AM | 9:04 PM | 60 |
| 28A | Leesburg Pike | 5:50 AM | 12:36 AM | 30 |
| REX (R99) | Richmond Highway Express | 4:50 AM | 9:55 PM | 61 |

Data provided by WMATA effective as of December 29, 2013

Figure 2-9: Metrobus Lines by Operating Period

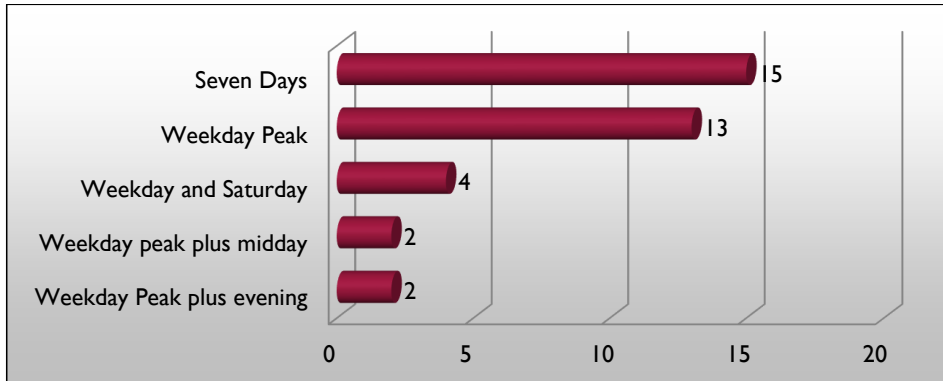
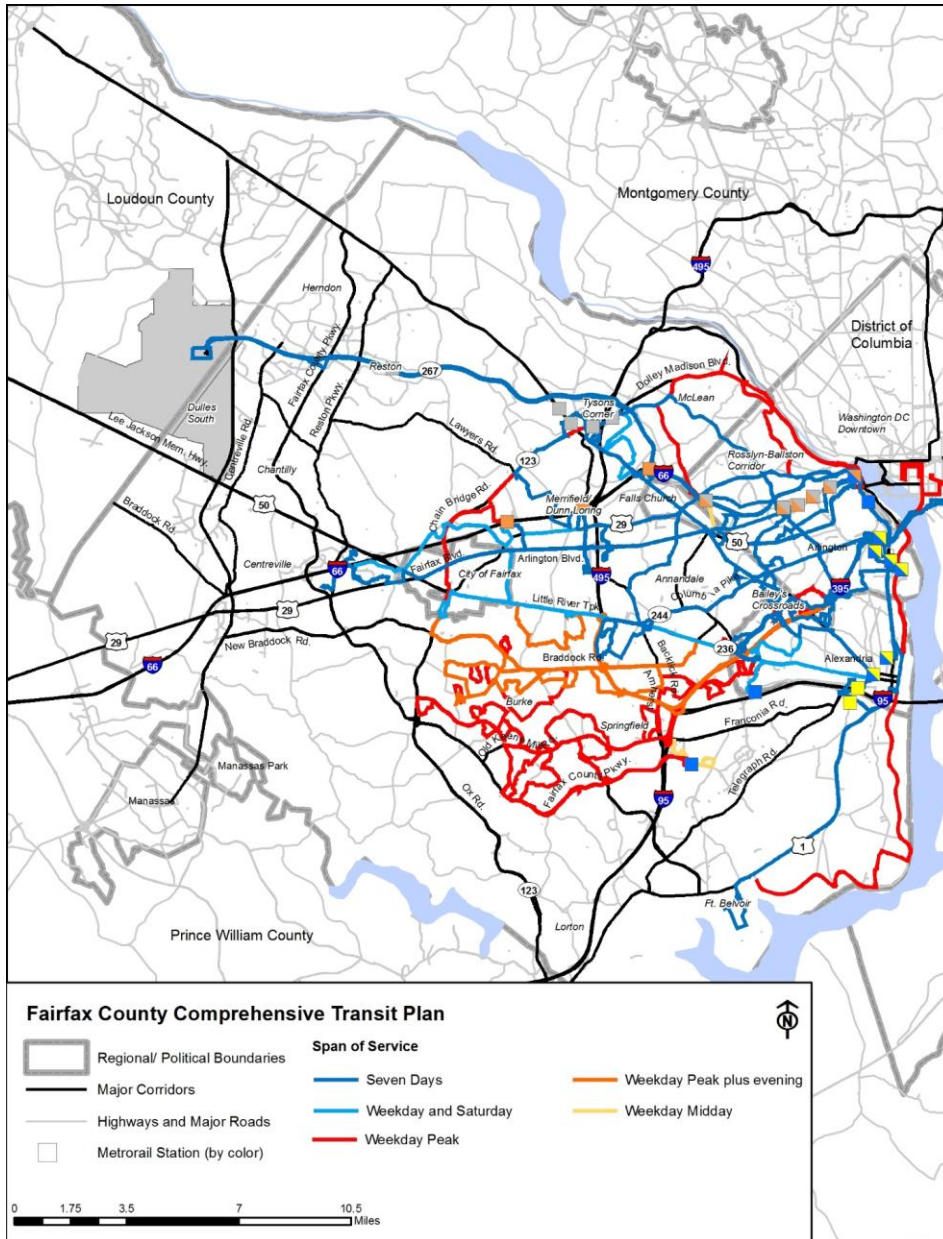


Figure 2-10: Metrobus Operating Periods



2.4 Service Performance

2.4.1. Service Consumption and Financial Statistics

Service consumption and financial statistics provide information on how much a service is used and the cost effectiveness of the service. The tables below provide detailed information on how many people ride each line and the cost and revenue for each.

Financial data was provided by WMATA from September 2013, and all line numbers and names represent the lines that were in operation at that time. Specifically, the following differences from current service are reflected in this section:

- The 1A,B,E,Z line is shown as the 1A,B,E,F,Z.
- Lines 2A and 2B, created in December 2013, are not included. Instead, financial data from the 2A,B,C,G, which preceded the 2A and 2B, is included in the analysis.
- The 3A – Lee Highway-Falls Church line is shown as the 3A,B,E – Lee Highway Line.
- The 4A,B Line is shown as the 4A,B,E,H.
- The 26A, created in December 2013, is not included in this section.

Table 2-10 through Table 2-13 present the financial performance of Fairfax County Metrobus routes using the following terms:

Ridership: The number of boardings on each line. WMATA provided ridership data for average weekdays, Saturdays, and Sundays by line based on September 2013 actual farebox data.

Farebox Revenue: The value of cash, tickets, and pass receipts provided by passengers as payment for public transit rides. WMATA collects and catalogs farebox data from each bus as it returns to the garage from revenue service, and tracks revenue continuously by line. WMATA provided farebox revenue data for average weekdays, Saturdays, and Sundays by line based on September 2013 actual farebox data.

Operating Costs: Operating costs include salary and benefits for drivers, fuel, maintenance expenses, and management by WMATA. For the purposes of the CTP, WMATA provided average estimated operating cost data for weekdays, Saturdays, and Sundays by line based on the current service plan for Fairfax County Metrobus Service.

Farebox Recovery Ratio: Farebox revenue divided by operating cost for each line.

Net cost per passenger: Operating cost minus revenue for each line divided by the ridership on that line.

Table 2-10: Metrobus Ridership and Financial Statistics (Annual)

| Number | Name | Ridership | Farebox Revenue | Operating Cost | Farebox Recovery Ratio | Net Cost per Passenger |
|------------------------|-------------------------------------|-------------------|---------------------|---------------------|------------------------|------------------------|
| 1A,B,E,F,Z | Wilson Boulevard | 1,196,264 | \$1,252,640 | \$4,677,395 | 0.27 | \$3.91 |
| 1C | Fair Oaks-Dunn Loring | 306,545 | \$352,977 | \$1,936,322 | 0.18 | \$6.32 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 806,201 | \$896,026 | \$4,340,133 | 0.21 | \$5.38 |
| 2T | Tysons Corner-Dunn Loring | 251,634 | \$276,177 | \$1,728,061 | 0.16 | \$6.87 |
| 3A,B,E | Lee Highway | 755,292 | \$846,573 | \$3,702,377 | 0.23 | \$4.90 |
| 3T | Pimmit Hills | 216,800 | \$254,266 | \$1,919,408 | 0.13 | \$8.85 |
| 4A,B,E,H | Pershing Drive-Arlington Boulevard | 583,964 | \$689,735 | \$3,066,339 | 0.22 | \$5.25 |
| 5A | DC-Dulles | 443,923 | \$2,376,322 | \$2,692,450 | 0.88 | \$6.07 |
| 7A,F,Y | Lincolnia-North Fairlington | 1,042,307 | \$1,195,963 | \$3,660,392 | 0.33 | \$3.51 |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon | 410,686 | \$483,398 | \$1,596,632 | 0.30 | \$3.89 |
| 9A,E | Huntington-Pentagon | 535,131 | \$530,995 | \$2,779,016 | 0.19 | \$5.19 |
| 11Y | Mt Vernon Express | 126,341 | \$436,788 | \$676,484 | 0.65 | \$5.35 |
| 15K,L | Chain Bridge Road | 116,376 | \$123,351 | \$661,575 | 0.19 | \$5.68 |
| 15M | George Mason-Tysons Corner | 53,237 | \$60,422 | \$647,598 | 0.09 | \$12.16 |
| 16A,B,D,E,J,P | Columbia Pike | 2,023,131 | \$2,170,265 | \$6,006,516 | 0.36 | \$2.97 |
| 16G,H,K | Columbia Heights West-Pentagon City | 1,211,786 | \$1,313,301 | \$3,841,374 | 0.34 | \$3.17 |
| 16L | Annandale-Skyline City-Pentagon | 46,096 | \$56,285 | \$204,063 | 0.28 | \$4.43 |
| 16X | Columbia Pike-Federal Triangle | 241,111 | \$251,537 | \$1,007,737 | 0.25 | \$4.18 |
| 17A,B,F,M | Kings Park | 107,629 | \$294,822 | \$1,540,258 | 0.19 | \$14.31 |
| 17G,H,K,L | Kings Park Express | 321,920 | \$998,188 | \$2,557,779 | 0.39 | \$7.95 |
| 18E,F | Springfield | 52,246 | \$127,796 | \$504,567 | 0.25 | \$9.66 |
| 18G,H,J | Orange Hunt | 193,094 | \$629,467 | \$1,216,925 | 0.52 | \$6.30 |
| 18P,R,S | Burke Centre | 204,025 | \$539,967 | \$1,992,179 | 0.27 | \$9.76 |
| 21A,D | Landmark-Pentagon | 161,506 | \$204,952 | \$604,269 | 0.34 | \$3.74 |
| 23A,C | McLean-Crystal City | 1,290,366 | \$1,330,703 | \$5,560,996 | 0.24 | \$4.31 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 272,647 | \$320,619 | \$2,209,349 | 0.15 | \$8.10 |
| 25B | Landmark-Ballston Line | 287,951 | \$317,670 | \$2,172,998 | 0.15 | \$7.55 |
| 28A | Leesburg Pike | 1,639,885 | \$1,748,626 | \$4,758,729 | 0.37 | \$2.90 |
| 28F,G | Skyline City | 149,320 | \$182,923 | \$574,918 | 0.32 | \$3.85 |
| 28X | Leesburg Pike Limited | 285,036 | \$244,937 | \$1,587,314 | 0.15 | \$5.57 |
| 29C,E,G,H,X | Annandale | 300,209 | \$812,829 | \$2,244,696 | 0.36 | \$7.48 |
| 29K,N | Alexandria-Fairfax | 707,937 | \$811,440 | \$2,306,877 | 0.35 | \$3.26 |
| REX (R99) | Richmond Highway Express | 1,119,271 | \$1,124,980 | \$4,567,054 | 0.25 | \$4.08 |
| TAGS (S80,91) | Springfield Circulator | 93,309 | \$15,140 | \$1,415,864 | 0.01 | \$15.17 |
| METROBUS TOTALS | | 17,553,175 | \$23,272,078 | \$80,958,643 | 0.29 | \$4.61 |

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Data provided by WMATA, September 2013 productivity report

Table 2-11: Metrobus Line Ridership and Financial Statistics (Weekday)

| Number | Name | Ridership | Farebox Revenue | Operating Cost | Farebox Recovery Ratio | Net Cst per Passenger |
|-----------------------|-------------------------------------|---------------|-----------------|------------------|------------------------|-----------------------|
| 1A,B,E,F,Z | Wilson Boulevard | 3,907 | \$4,087 | \$15,425 | 0.26 | \$3.95 |
| 1C | Fair Oaks-Fairfax Blvd | 916 | \$1,046 | \$6,060 | 0.17 | \$6.62 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 2,587 | \$2,878 | \$14,640 | 0.20 | \$5.66 |
| 2T | Tysons Corner-Dunn Loring | 818 | \$881 | \$5,635 | 0.16 | \$6.89 |
| 3A | Lee Highway - Falls Church | 2,642 | \$2,971 | \$12,280 | 0.24 | \$4.65 |
| 3T | Pimmit Hills | 797 | \$930 | \$6,981 | 0.13 | \$8.76 |
| 4A,B,E,H | Pershing Drive-Arlington Boulevard | 2,033 | \$2,406 | \$10,898 | 0.22 | \$5.36 |
| 5A | DC-Dulles | 1,355 | \$7,166 | \$8,635 | 0.83 | \$6.37 |
| 7A,F,Y | Lincolnia-North Fairlington | 3,553 | \$4,062 | \$12,373 | 0.33 | \$3.48 |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon | 1,636 | \$1,926 | \$6,361 | 0.30 | \$3.89 |
| 9A,E | Huntington-Pentagon | 1,704 | \$1,690 | \$8,631 | 0.20 | \$5.06 |
| 11Y | Mt Vernon Express | 503 | \$1,740 | \$2,695 | 0.65 | \$5.35 |
| 15K,L | Chain Bridge Road | 464 | \$491 | \$2,636 | 0.19 | \$5.68 |
| 15M | George Mason-Tysons Corner | 212 | \$241 | \$2,580 | 0.09 | \$12.16 |
| 16A,B,D,E,J,P | Columbia Pike | 6,288 | \$6,701 | \$18,601 | 0.36 | \$2.96 |
| 16G,H,K | Columbia Heights West-Pentagon City | 3,874 | \$4,203 | \$12,574 | 0.33 | \$3.25 |
| 16L | Annandale-Skyline City-Pentagon | 184 | \$224 | \$813 | 0.28 | \$4.43 |
| 16X | Columbia Pike-Federal Triangle | 961 | \$1,002 | \$4,015 | 0.25 | \$4.18 |
| 17A,B,F,M | Kings Park | 429 | \$1,175 | \$6,136 | 0.19 | \$14.31 |
| 17G,H,K,L | Kings Park Express | 1,283 | \$3,977 | \$10,190 | 0.39 | \$7.95 |
| 18E,F | Springfield | 208 | \$509 | \$2,010 | 0.25 | \$9.66 |
| 18G,H,J | Orange Hunt | 769 | \$2,508 | \$4,848 | 0.52 | \$6.30 |
| 18P,R,S | Burke Centre | 813 | \$2,151 | \$7,937 | 0.27 | \$9.76 |
| 21A,D | Landmark-Pentagon | 643 | \$817 | \$2,407 | 0.34 | \$3.74 |
| 23A,C | McLean-Crystal City | 4,187 | \$4,318 | \$17,695 | 0.24 | \$4.23 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 905 | \$1,066 | \$7,415 | 0.14 | \$8.19 |
| 25B | Landmark-Ballston Line | 999 | \$1,104 | \$7,850 | 0.14 | \$7.86 |
| 28A | Leesburg Pike | 4,711 | \$4,912 | \$13,804 | 0.36 | \$2.93 |
| 28F,G | Skyline City | 595 | \$729 | \$2,291 | 0.32 | \$3.85 |
| 28X | Leesburg Pike Limited | 1,136 | \$976 | \$6,324 | 0.15 | \$5.57 |
| 29C,E,G,H,X | Annandale | 1,196 | \$3,238 | \$8,943 | 0.36 | \$7.48 |
| 29K,N | Alexandria-Fairfax | 2,530 | \$2,901 | \$8,054 | 0.36 | \$3.18 |
| REX (R99) | Richmond Highway Express | 3,708 | \$3,675 | \$15,260 | 0.24 | \$4.12 |
| TAGS (\$80,91) | Springfield Circulator | 372 | \$60 | \$5,641 | 0.01 | \$15.17 |
| METROBUS TOTAL | | 58,916 | \$78,761 | \$278,638 | 0.28 | \$4.73 |

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Data provided by WMATA, September 2013 productivity report

Table 2-12: Metrobus Line Ridership and Financial Statistics (Saturday)

| Number | Name | Ridership | Farebox Revenue | Operating Cost | Farebox Recovery Ratio | Net Cost per Passenger |
|------------------------|-------------------------------------|---------------|-----------------|------------------|------------------------|------------------------|
| 1A,B,E,Z | Wilson Boulevard | 2,350 | \$2,454 | \$8,967 | 0.27 | \$3.82 |
| 1C | Fair Oaks-Fairfax Blvd | 681 | \$811 | \$3,991 | 0.20 | \$5.86 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 1,950 | \$2,159 | \$8,499 | 0.25 | \$4.36 |
| 2T | Tysons Corner-Dunn Loring | 523 | \$613 | \$3,696 | 0.17 | \$7.07 |
| 3A | Lee Highway - Falls Church | 1,098 | \$1,192 | \$7,065 | 0.12 | \$6.44 |
| 3T | Pimmit Hills | 293 | \$365 | \$2,933 | 0.17 | \$10.00 |
| 4A,B,E,H | Pershing Drive-Arlington Boulevard | 811 | \$937 | \$3,790 | 0.25 | \$4.68 |
| 5A | DC-Dulles | 866 | \$4,728 | \$4,466 | 1.06 | \$5.16 |
| 7A,F,Y | Lincolnia-North Fairlington | 1,514 | \$1,765 | \$6,016 | 0.29 | \$3.97 |
| 9A,E | Huntington-Pentagon | 1,154 | \$1,128 | \$6,782 | 0.17 | \$5.88 |
| 16A,B,D,E,J,P | Columbia Pike | 4,518 | \$4,877 | \$14,480 | 0.34 | \$3.20 |
| 16G,H,K | Columbia Heights West-Pentagon City | 2,589 | \$2,721 | \$7,846 | 0.35 | \$3.03 |
| 23A,C | McLean-Crystal City | 2,562 | \$2,587 | \$13,728 | 0.19 | \$5.36 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 363 | \$443 | \$3,126 | 0.14 | \$8.61 |
| 25B | Landmark-Ballston Line | 652 | \$713 | \$3,556 | 0.20 | \$5.45 |
| 28A | Leesburg Pike | 4,354 | \$4,813 | \$12,124 | 0.40 | \$2.78 |
| 29K,N | Alexandria-Fairfax | 1,278 | \$1,463 | \$5,006 | 0.29 | \$3.92 |
| REX (R99) | Richmond Highway Express | 2,294 | \$2,443 | \$8,806 | 0.28 | \$3.84 |
| METROBUS TOTALS | | 29,848 | \$36,213 | \$124,877 | 0.29 | \$4.18 |

Data provided by WMATA, September 2013 productivity report

Table 2-13: Metrobus Line Ridership and Financial Statistics (Sunday)

| Number | Name | Ridership | Farebox Revenue | Operating Cost | Farebox Recovery Ratio | Net Cost per Passenger |
|------------------------|-------------------------------------|---------------|-----------------|-----------------|------------------------|------------------------|
| 1A,B,E,F,Z | Wilson Boulevard | 1,434 | \$1,526 | \$5,169 | 0.30 | \$3.60 |
| 1C | Fair Oaks-Fairfax Blvd | 665 | \$775 | \$3,293 | 0.24 | \$4.95 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 802 | \$889 | \$3,178 | 0.28 | \$3.96 |
| 2T | Tysons Corner-Dunn Loring | 291 | \$351 | \$1,806 | 0.19 | \$6.21 |
| 3A | Lee Highway - Falls Church | 520 | \$576 | \$3,813 | 0.15 | \$7.33 |
| 4A,B,E,H | Pershing Drive-Arlington Boulevard | 484 | \$570 | \$2,018 | 0.28 | \$4.17 |
| 5A | DC-Dulles | 957 | \$5,407 | \$4,746 | 1.14 | \$4.96 |
| 7A,F,Y | Lincolnia-North Fairlington | 1,128 | \$1,332 | \$3,716 | 0.36 | \$3.29 |
| 9A,E | Huntington-Pentagon | 729 | \$747 | \$3,965 | 0.19 | \$5.44 |
| 16A,B,D,E,J,P | Columbia Pike | 3,287 | \$3,690 | \$8,989 | 0.41 | \$2.74 |
| 16G,H,K | Columbia Heights West-Pentagon City | 1,613 | \$1,811 | \$4,178 | 0.43 | \$2.59 |
| 23A,C | McLean-Crystal City | 1,639 | \$1,745 | \$5,914 | 0.30 | \$3.61 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 434 | \$486 | \$2,981 | 0.16 | \$6.87 |
| 28A | Leesburg Pike | 3,670 | \$4,234 | \$10,575 | 0.40 | \$2.88 |
| REX (R99) | Richmond Highway Express | 1,016 | \$1,108 | \$4,123 | 0.27 | \$4.06 |
| METROBUS TOTALS | | 18,667 | \$25,247 | \$68,463 | 0.37 | \$3.67 |

Data provided by WMATA, September 2013 productivity report

2.4.2. Service Effectiveness Measures

Service effectiveness measures indicate the productivity of the transit system. Performance measures include passenger trips per revenue mile, passenger trips per revenue hour, and passengers per vehicle trip. In all measures larger numbers indicate better performing lines. Passenger trips per revenue mile and revenue hour are primary indicators of line performance; they are direct indicators of service effectiveness and a strong indicator of cost effectiveness, as passengers are the primary determinant of fare revenue, and miles and hours are the primary determinant of costs. Both measures can be easily measured with a high degree of accuracy. Productivity per revenue mile tends to be the most appropriate measure for lines that operate in dense urban environments where bus speeds tend to be slow due to traffic congestion. Productivity per hour tends to be the most appropriate measure for lines in areas or at times where traffic congestion is not as prevalent.

Passengers per vehicle trip is also a measure of how productive a transit system is in terms of ridership per unit of service operated. However, this figure can sometimes be misleading, or at least require more careful interpretation. For example, some lines have peak-direction only service (deadheading back to the end of the line) while others operate in both directions (carrying few passengers in the reverse peak direction). The peak-only service will have higher productivity per trip since it operates only half as many revenue trips and most of those will be full, but it will be nearly as expensive to operate as bidirectional service. Thus, the results of ridership per trip should be viewed carefully, understanding how the line actually operates in comparison to other lines.

Ridership and revenue data was provided by WMATA for September 2013, and all line numbers and names in this section represent the lines that were in operation at that time. Specifically, the following differences from current service are reflected in this section:

- The 1A,B,E,Z line is shown as the 1A,B,E,F,Z.
- Lines 2A and 2B, created in December 2013, are not included. Instead, financial data from the 2A,B,C,G, which preceded the 2A and 2B, is included in the analysis.
- The 3A – Lee Highway-Falls Church line is shown as the 3A,B,E – Lee Highway Line.
- The 4A,B Line is shown as the 4A,B,E,H.
- The 26A, created in December 2013, is not included in this section.

Table 2-14 shows service effectiveness data for September 2013, while Table 2-15 through Table 2-17 show the data for an average weekday, Saturday and Sunday during that same period.

Figure 2-11 through Figure 2-13 show the productivity achieved by Metrobus' Fairfax lines in September, 2013 in terms of passengers per revenue mile for weekday, Saturday and Sunday service, respectively. Figure 2-14 through Figure 2-16 show the productivity achieved in terms of passengers per revenue hour. Where multiple lines overlap on the same roadway, the best-performing line is shown. By both measures, the highest performing corridor is the I-395 corridor. The lowest performing corridors seem to be Route 1 and Route 7. Figure 2-17 through Figure 2-19 show the productivity achieved in terms of passengers per revenue trip.

Table 2-14: Metrobus Line Productivity Statistics (Annual)

| Number | Name | Ridership | Passengers/ Revenue Mile | Passengers/ Revenue Hour | Passengers/ Trip |
|------------------------|-------------------------------------|-------------------|--------------------------------|--------------------------------|---------------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna | 1,196,264 | 3.14 | 43.8 | 33.1 |
| 1C | Fair Oaks-Fairfax Blvd | 306,545 | 1.93 | 28.3 | 18.8 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 806,201 | 1.89 | 28.4 | 24.9 |
| 2T | Tysons Corner-Dunn Loring | 251,634 | 1.56 | 22.9 | 16.4 |
| 3A | Lee Highway - Falls Church | 755,292 | 2.32 | 33.3 | 23.3 |
| 3T | Pimmit Hills - Falls Church | 216,800 | 1.22 | 28.1 | 12.2 |
| 4A,B | Pershing Drive-Arlington Boulevard | 583,964 | 2.48 | 32.8 | 17.0 |
| 5A | DC-Dulles | 443,923 | 0.81 | 25.7 | 23.2 |
| 7A,F,Y | Lincolnia-North Fairlington | 1,042,307 | 4.63 | 50.2 | 26.2 |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon | 410,686 | 2.76 | 49.8 | 18.4 |
| 9A,E | Huntington-Pentagon | 535,131 | 2.34 | 32.2 | 16.9 |
| 11Y | Mt Vernon Express | 126,341 | 2.21 | 36.4 | 38.7 |
| 15K,L | Chain Bridge Road | 116,376 | 1.56 | 32.2 | 19.3 |
| 15M | George Mason-Tysons Corner | 53,237 | 0.93 | 15.0 | 8.8 |
| 16A,B,D,E,J,P | Columbia Pike | 2,023,131 | 5.42 | 54.8 | 35.4 |
| 16G,H,K | Columbia Heights West-Pentagon City | 1,211,786 | 5.86 | 52.8 | 20.8 |
| 16L | Annandale-Skyline City-Pentagon | 46,096 | 2.79 | 50.3 | 30.6 |
| 16X | Columbia Pike-Federal Triangle | 241,111 | 3.56 | 46.2 | 22.9 |
| 17A,B,F,M | Kings Park | 107,629 | 0.52 | 13.4 | 9.3 |
| 17G,H,K,L | Kings Park Express | 321,920 | 1.06 | 26.6 | 22.5 |
| 18E,F | Springfield | 52,246 | 0.81 | 17.7 | 11.6 |
| 18G,H,J | Orange Hunt | 193,094 | 1.40 | 35.2 | 25.6 |
| 18P,R,S | Burke Centre | 204,025 | 1.08 | 24.4 | 13.5 |
| 21A,D | Landmark-Pentagon | 161,506 | 3.03 | 61.9 | 29.2 |
| 23A,C | McLean-Crystal City | 1,290,366 | 2.48 | 33.4 | 41.5 |
| 25ACDE | Ballston-Bradlee-Pentagon Line | 272,647 | 1.52 | 18.9 | 11.9 |
| 25B | Landmark-Ballston Line | 287,951 | 1.83 | 20.1 | 22.0 |
| 28A | Leesburg Pike | 1,639,885 | 3.81 | 50.3 | 60.7 |
| 28F,G | Skyline City | 149,320 | 2.49 | 55.5 | 17.5 |
| 28X | Leesburg Pike Limited | 285,036 | 2.79 | 34.9 | 26.4 |
| 29C,E,G,H,X | Annandale | 300,209 | 1.12 | 25.6 | 16.2 |
| 29K,N | Alexandria-Fairfax | 707,937 | 3.12 | 43.6 | 55.5 |
| REX (R99) | Richmond Highway Express | 1,119,271 | 2.45 | 39.2 | 33.2 |
| TAGS (\$80,91) | Springfield Circulator | 93,309 | 0.85 | 12.2 | 5.1 |
| METROBUS TOTALS | | 17,553,175 | 2.39 | 36.6 | 25.2 |

Data provided by WMATA, September 2013 productivity report

Table 2-15: Metrobus Line Productivity Statistics (Weekday)

| Number | Name | Ridership | Passengers/ Revenue Mile | Passengers/ Revenue Hour | Passengers/ Trip |
|------------------------|-------------------------------------|---------------|--------------------------------|--------------------------------|---------------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna | 3,907 | 3.18 | 43.6 | 33.7 |
| 1C | Fair Oaks-Fairfax Blvd | 916 | 1.86 | 26.2 | 18.0 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 2,587 | 1.84 | 27.0 | 24.6 |
| 2T | Tysons Corner-Dunn Loring | 818 | 1.59 | 22.7 | 16.7 |
| 3A | Lee Highway - Falls Church | 2,642 | 2.50 | 35.4 | 25.2 |
| 3T | Pimmit Hills - Falls Church | 797 | 1.25 | 28.8 | 12.5 |
| 4A,B | Pershing Drive-Arlington Boulevard | 2,033 | 2.48 | 32.3 | 17.2 |
| 5A | DC-Dulles | 1,355 | 0.79 | 24.9 | 22.6 |
| 7A,F,Y | Lincolnia-North Fairlington | 3,553 | 4.52 | 50.9 | 26.9 |
| 7B,C,H,P,W,X | Lincolnia-Park Center-Pentagon | 1,636 | 2.76 | 49.8 | 18.4 |
| 9A,E | Huntington-Pentagon | 1,704 | 2.44 | 33.0 | 17.6 |
| 11Y | Mt Vernon Express | 503 | 2.21 | 36.4 | 38.7 |
| 15K,L | Chain Bridge Road | 464 | 1.56 | 32.2 | 19.3 |
| 15M | George Mason-Tysons Corner | 212 | 0.93 | 15.0 | 8.8 |
| 16A,B,D,E,J,P | Columbia Pike | 6,288 | 5.72 | 55.4 | 35.3 |
| 16G,H,K | Columbia Heights West-Pentagon City | 3,874 | 5.73 | 51.7 | 20.6 |
| 16L | Annandale-Skyline City-Pentagon | 184 | 2.79 | 50.3 | 30.6 |
| 16X | Columbia Pike-Federal Triangle | 961 | 3.56 | 46.2 | 22.9 |
| 17A,B,F,M | Kings Park | 429 | 0.52 | 13.4 | 9.3 |
| 17G,H,K,L | Kings Park Express | 1,283 | 1.06 | 26.6 | 22.5 |
| 18E,F | Springfield | 208 | 0.81 | 17.7 | 11.6 |
| 18G,H,J | Orange Hunt | 769 | 1.40 | 35.2 | 25.6 |
| 18P,R,S | Burke Centre | 813 | 1.08 | 24.4 | 13.5 |
| 21A,D | Landmark-Pentagon | 643 | 3.03 | 61.9 | 29.2 |
| 23A,C | McLean-Crystal City | 4,187 | 2.52 | 33.5 | 41.0 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 905 | 1.50 | 18.8 | 11.5 |
| 25B | Landmark-Ballston Line | 999 | 1.81 | 19.5 | 21.7 |
| 28A | Leesburg Pike | 4,711 | 3.87 | 49.5 | 61.2 |
| 28F,G | Skyline City | 595 | 2.49 | 55.5 | 17.5 |
| 28X | Leesburg Pike Limited | 1,136 | 2.79 | 34.9 | 26.4 |
| 29C,E,G,H,X | Annandale | 1,196 | 1.12 | 25.6 | 16.2 |
| 29K,N | Alexandria-Fairfax | 2,530 | 3.22 | 44.4 | 57.5 |
| REX (R99) | Richmond Highway Express | 3,708 | 2.47 | 39.1 | 33.4 |
| TAGS (S80,91) | Springfield Circulator | 372 | 0.86 | 12.2 | 5.1 |
| METROBUS TOTALS | | 58,916 | 2.35 | 36.0 | 24.8 |

Data provided by WMATA, September 2013 productivity report

Table 2-16: Metrobus Line Productivity Statistics (Saturday)

| Number | Name | Ridership | Passengers/ Revenue Mile | Passengers/ Revenue Hour | Passengers/ Trip |
|------------------------|-------------------------------------|---------------|--------------------------------|--------------------------------|---------------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna | 2,350 | 2.81 | 43.0 | 33.1 |
| 1C | Fair Oaks-Fairfax Blvd | 681 | 2.01 | 33.3 | 20.6 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 1,950 | 2.05 | 35.1 | 27.1 |
| 2T | Tysons Corner-Dunn Loring | 523 | 1.51 | 23.6 | 15.8 |
| 3A | Lee Highway - Falls Church | 1,098 | 1.58 | 23.8 | 15.2 |
| 3T | Pimmit Hills - Falls Church | 293 | 0.95 | 22.1 | 9.5 |
| 4A,B | Pershing Drive-Arlington Boulevard | 811 | 2.29 | 35.4 | 14.5 |
| 5A | DC-Dulles | 866 | 0.84 | 27.9 | 24.0 |
| 7A,F,Y | Lincolnia-North Fairlington | 1,514 | 5.07 | 42.3 | 21.9 |
| 9A,E | Huntington-Pentagon | 1,154 | 2.02 | 28.9 | 15.0 |
| 16A,B,D,E,J,P | Columbia Pike | 4,518 | 4.04 | 48.1 | 31.4 |
| 16G,H,K | Columbia Heights West-Pentagon City | 2,589 | 5.96 | 55.6 | 20.2 |
| 23A,C | McLean-Crystal City | 2,562 | 2.11 | 29.8 | 40.0 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 363 | 1.51 | 17.6 | 14.0 |
| 25B | Landmark-Ballston Line | 652 | 2.02 | 25.9 | 24.1 |
| 28A | Leesburg Pike | 4,354 | 3.94 | 54.2 | 64.0 |
| 29K,N | Alexandria-Fairfax | 1,278 | 2.47 | 37.7 | 42.6 |
| REX (R99) | Richmond Highway Express | 2,294 | 2.42 | 39.4 | 32.8 |
| METROBUS TOTALS | | 29,848 | 2.57 | 38.0 | 27.0 |

Data provided by WMATA, September 2013 productivity report

Table 2-17: Metrobus Line Productivity Statistics (Sunday)

| Number | Name | Ridership | Passengers/ Revenue Mile | Passengers/ Revenue Hour | Passengers/ Trip |
|------------------------|-------------------------------------|---------------|--------------------------------|--------------------------------|---------------------|
| 1A,B,E,Z | Wilson Boulevard-Vienna | 1,434 | 3.25 | 47.6 | 27.1 |
| 1C | Fair Oaks-Fairfax Blvd | 665 | 2.37 | 42.6 | 23.7 |
| 2A,B,C,G | Fair Oaks-Jermantown Road | 802 | 2.54 | 39.3 | 23.6 |
| 2T | Tysons Corner-Dunn Loring | 291 | 1.38 | 23.7 | 14.5 |
| 3A | Lee Highway - Falls Church | 520 | 1.41 | 23.4 | 14.9 |
| 4A,B | Pershing Drive-Arlington Boulevard | 484 | 2.70 | 37.2 | 17.3 |
| 5A | DC-Dulles | 957 | 0.93 | 29.8 | 26.6 |
| 7A,F,Y | Lincolnia-North Fairlington | 1,128 | 5.90 | 53.9 | 23.5 |
| 9A,E | Huntington-Pentagon | 729 | 1.93 | 29.2 | 14.3 |
| 16A,B,D,E,J,P | Columbia Pike | 3,287 | 5.56 | 61.3 | 43.2 |
| 16G,H,K | Columbia Heights West-Pentagon City | 1,613 | 7.29 | 61.9 | 24.8 |
| 23A,C | McLean-Crystal City | 1,639 | 2.70 | 39.7 | 51.2 |
| 25A,C,D,E | Ballston-Bradlee-Pentagon Line | 434 | 1.77 | 21.9 | 16.1 |
| 28A | Leesburg Pike | 3,670 | 3.37 | 50.4 | 54.8 |
| REX (R99) | Richmond Highway Express | 1,016 | 2.28 | 40.5 | 30.8 |
| METROBUS TOTALS | | 18,667 | 2.83 | 43.4 | 29.5 |

Data provided by WMATA, September 2013 productivity report

Figure 2-11: Weekday Passengers per Revenue Mile

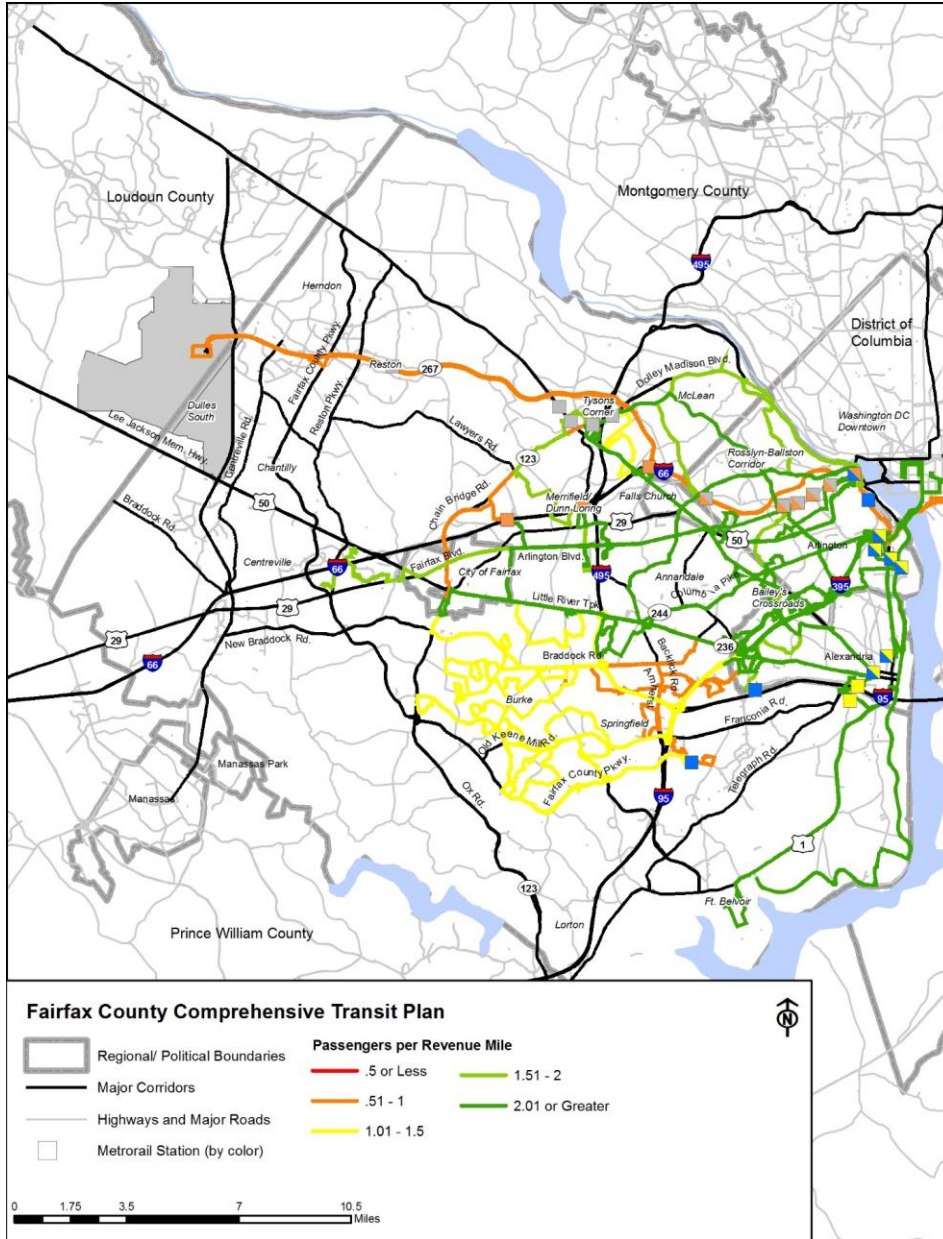


Figure 2-12: Saturday Passengers per Revenue Mile

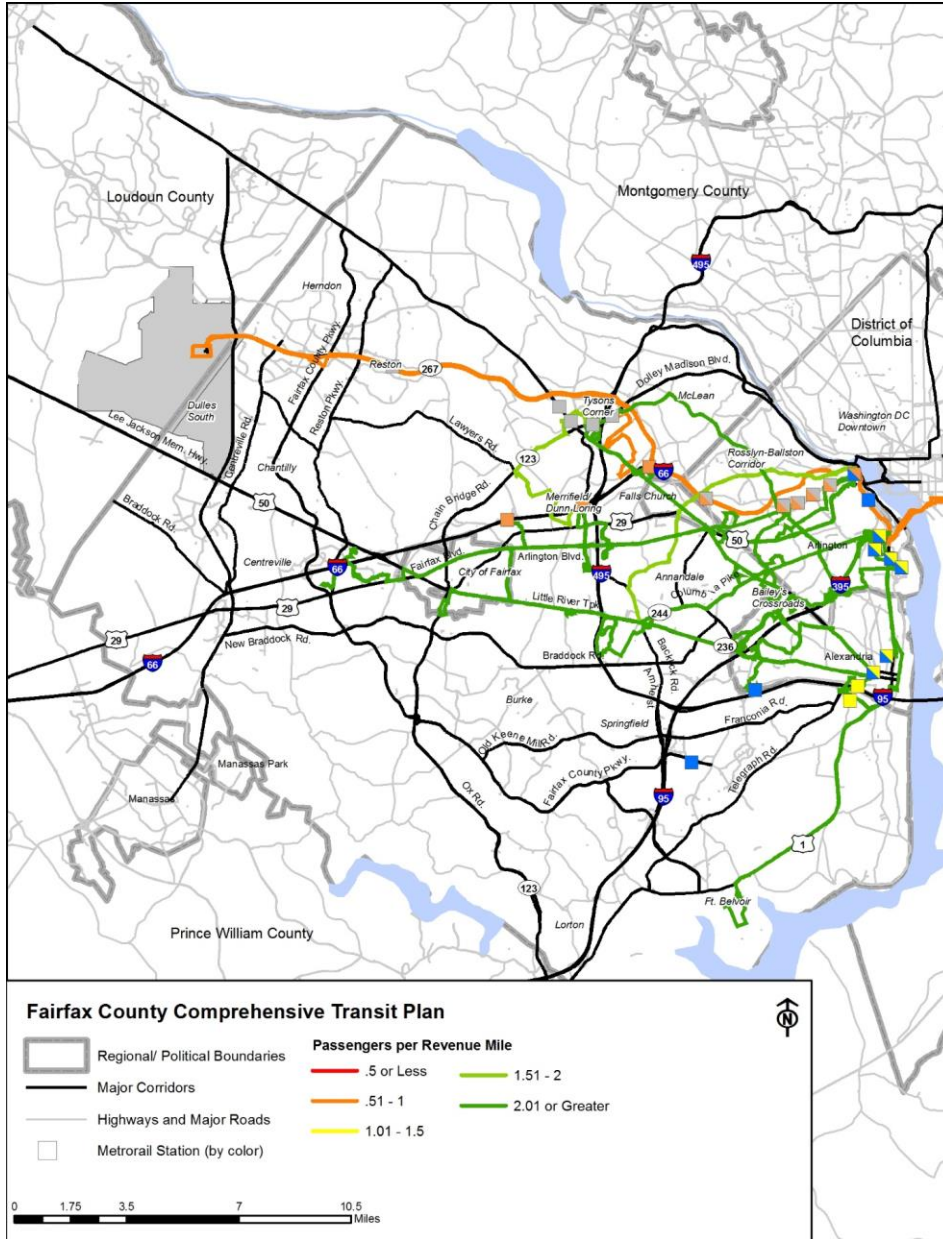


Figure 2-13: Sunday Passengers per Revenue Mile

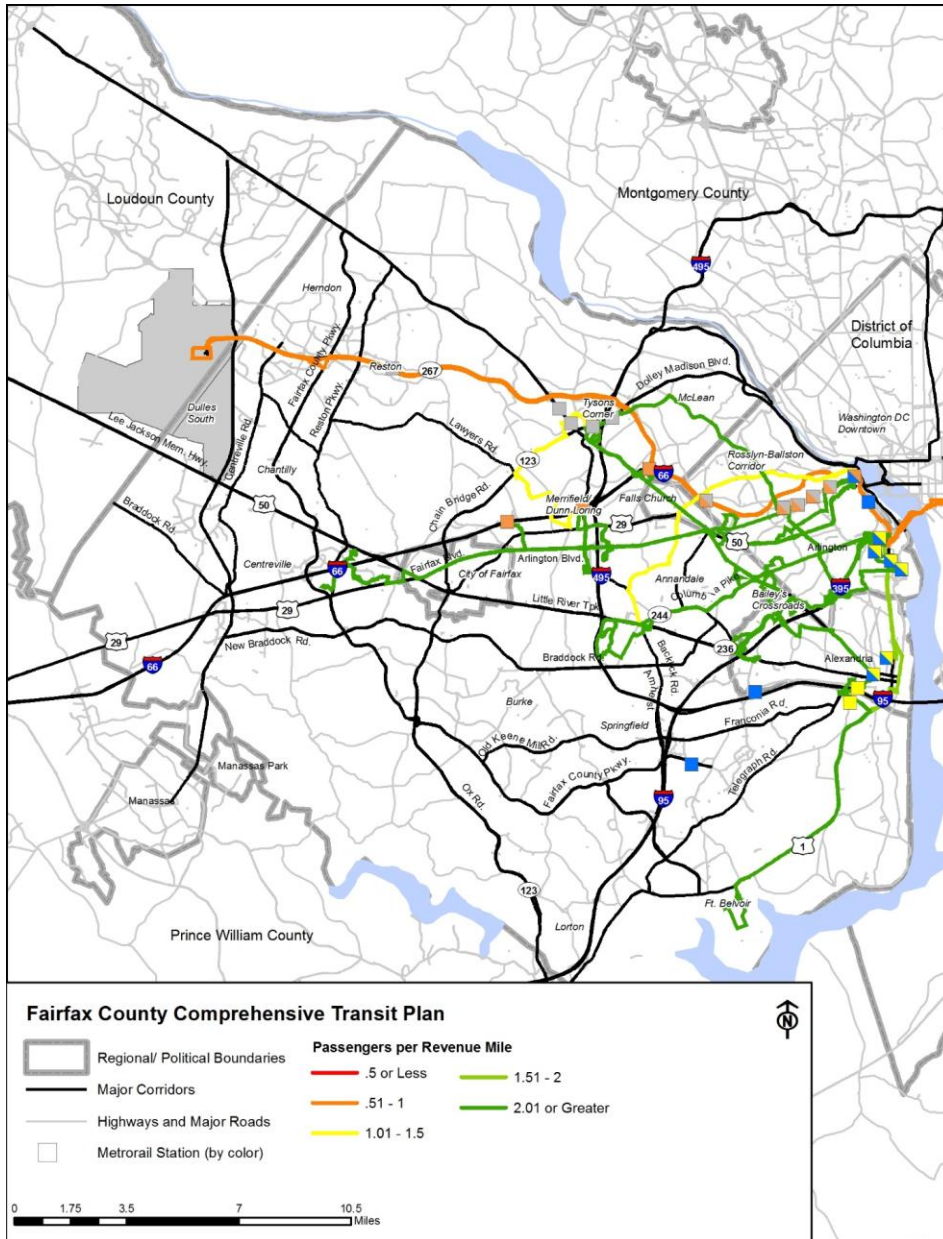


Figure 2-14: Weekday Passengers per Revenue Hour

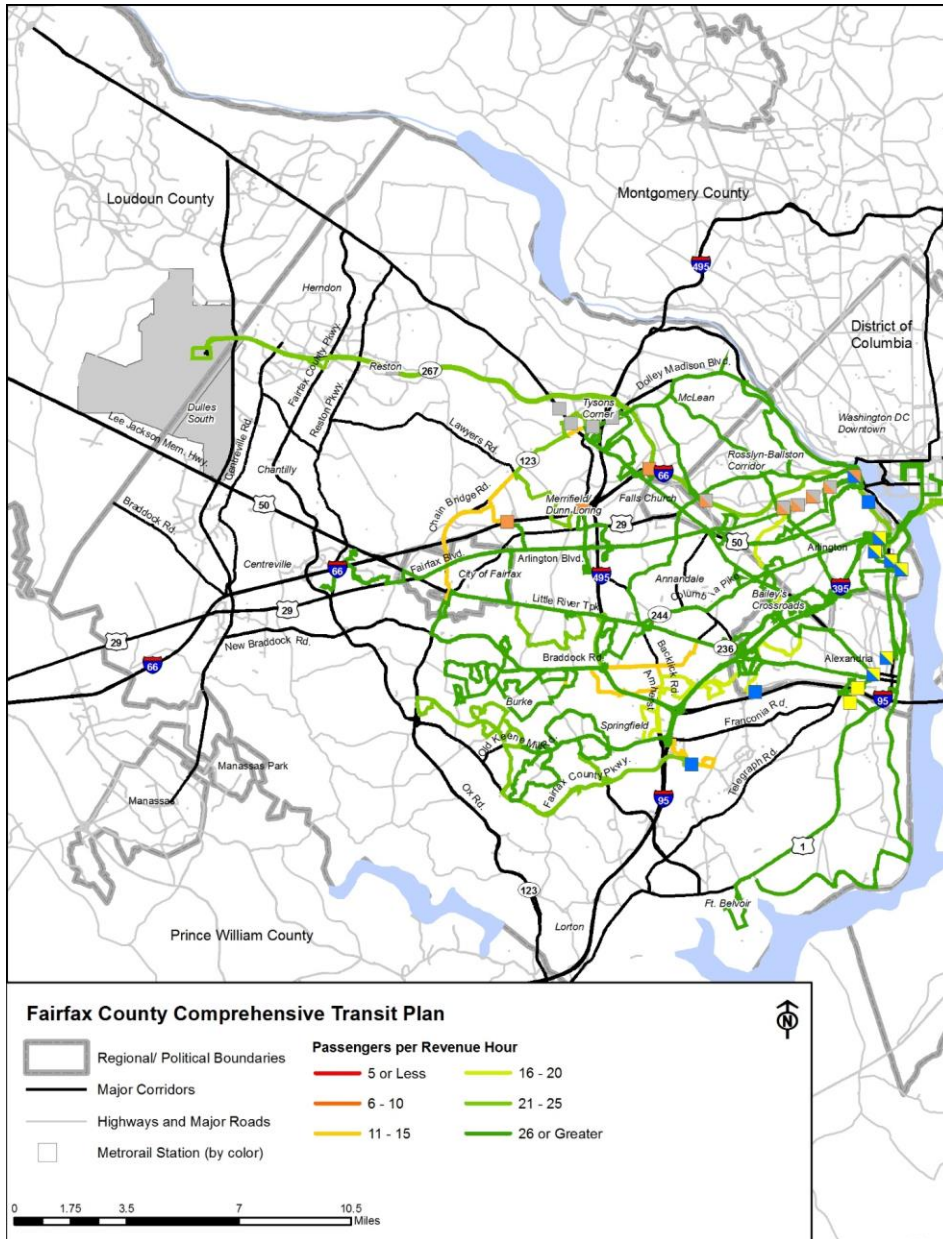


Figure 2-15: Saturday Passengers per Revenue Hour

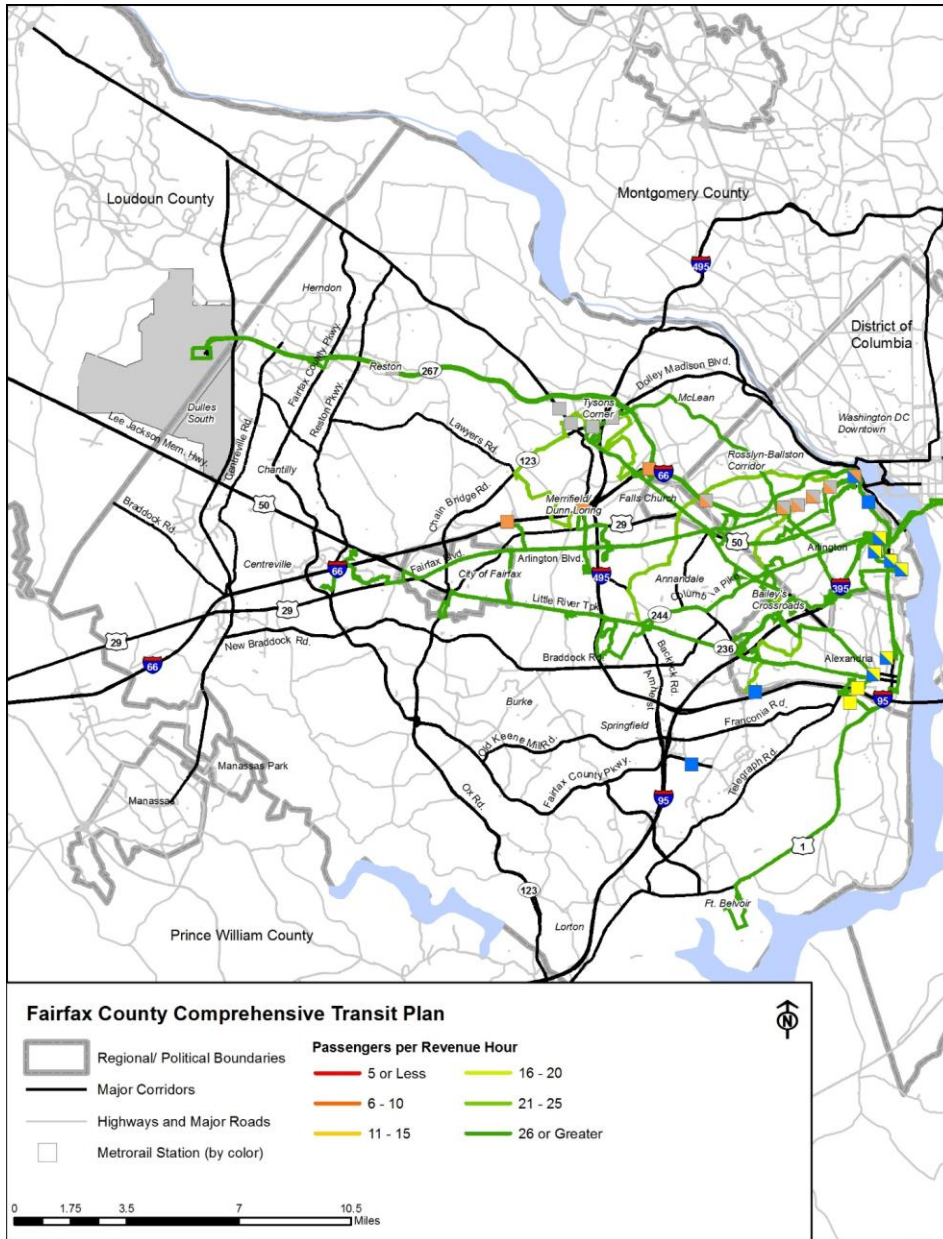


Figure 2-16: Sunday Passengers per Revenue Hour

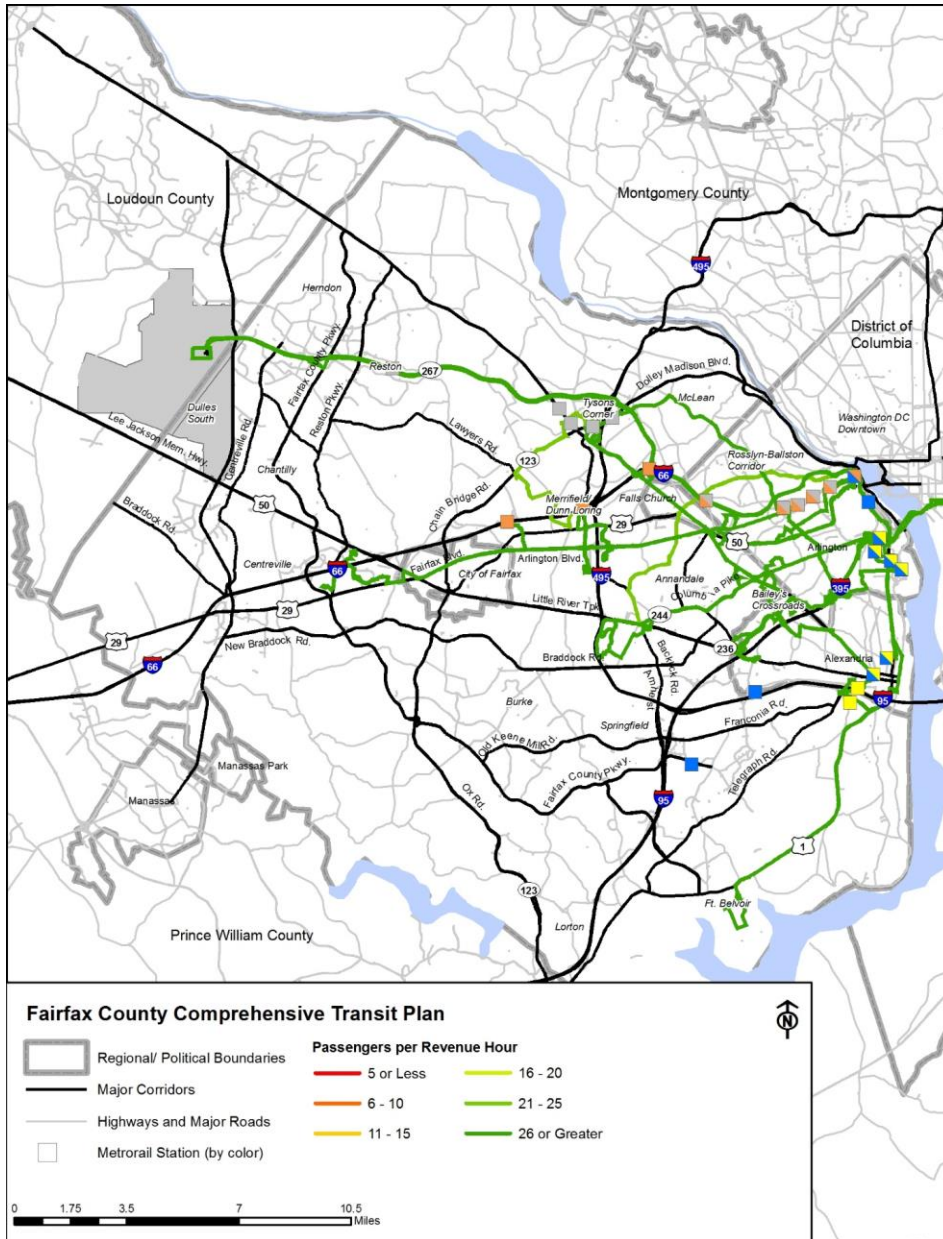


Figure 2-17: Weekday Passengers per Trip

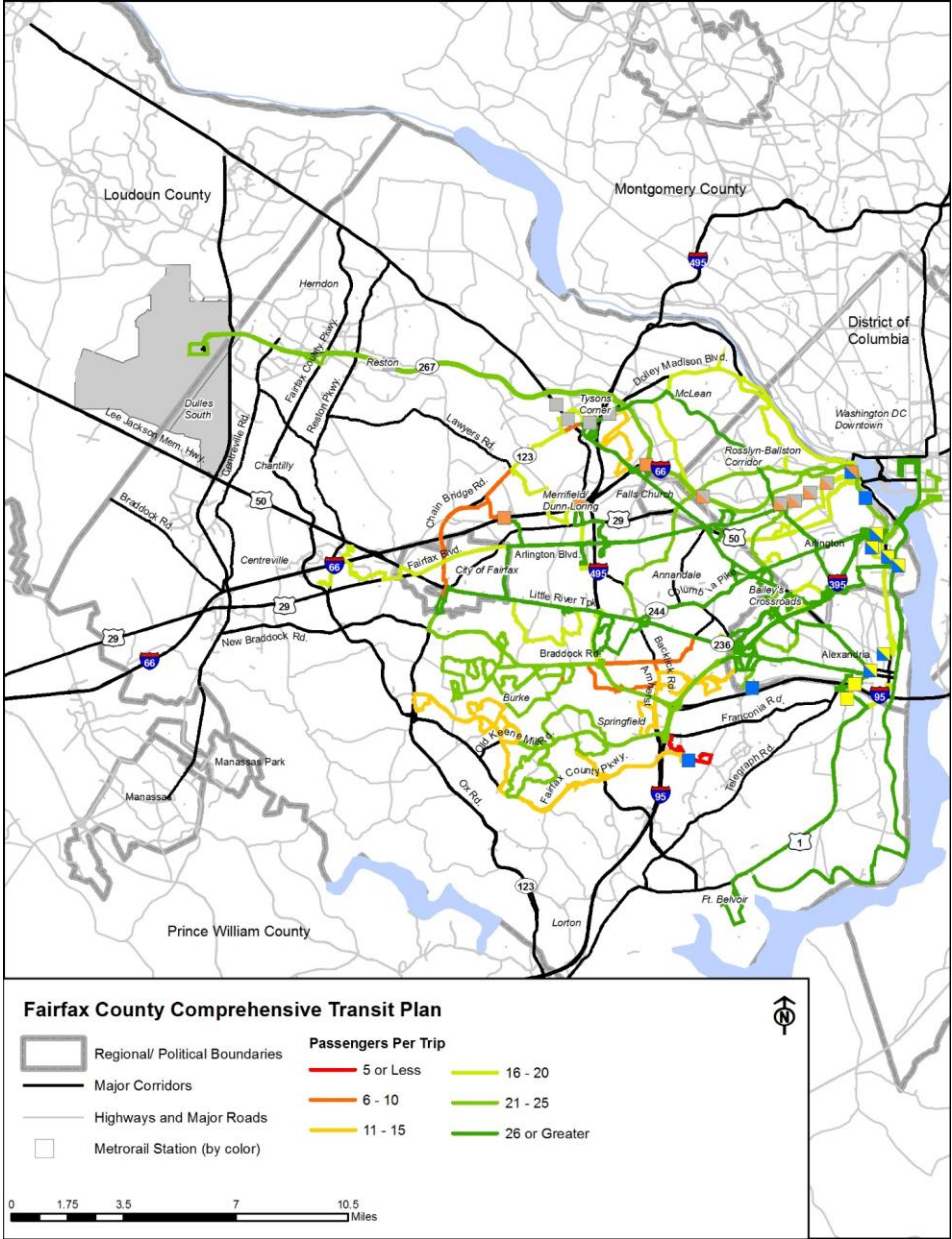


Figure 2-18: Saturday Passengers per Trip

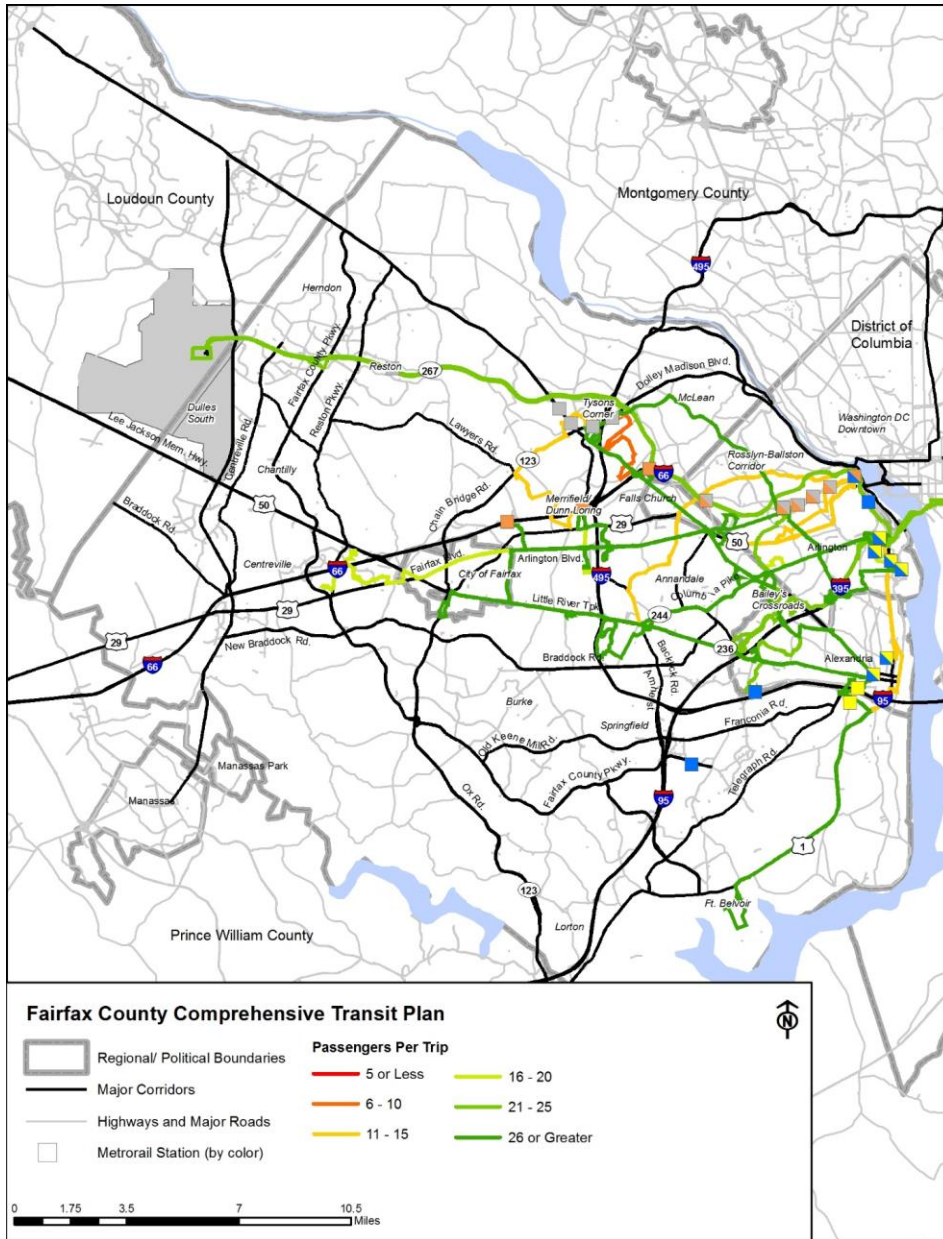


Figure 2-19: Sunday Passengers per Trip

