

**FAIRFAX COUNTY COMPREHENSIVE TRANSIT PLAN
AND TRANSIT DEVELOPMENT PLAN UPDATE**

Technical Memorandum

2. Fairfax County Metrobus Operations Analysis

August 2014

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.

This Technical Memorandum, in 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's 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.

For the purpose of this technical memorandum on operations analysis, Metrobus data was provided by WMATA. Revenue miles and hours data, as well as headway and span data, reflect the service 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)

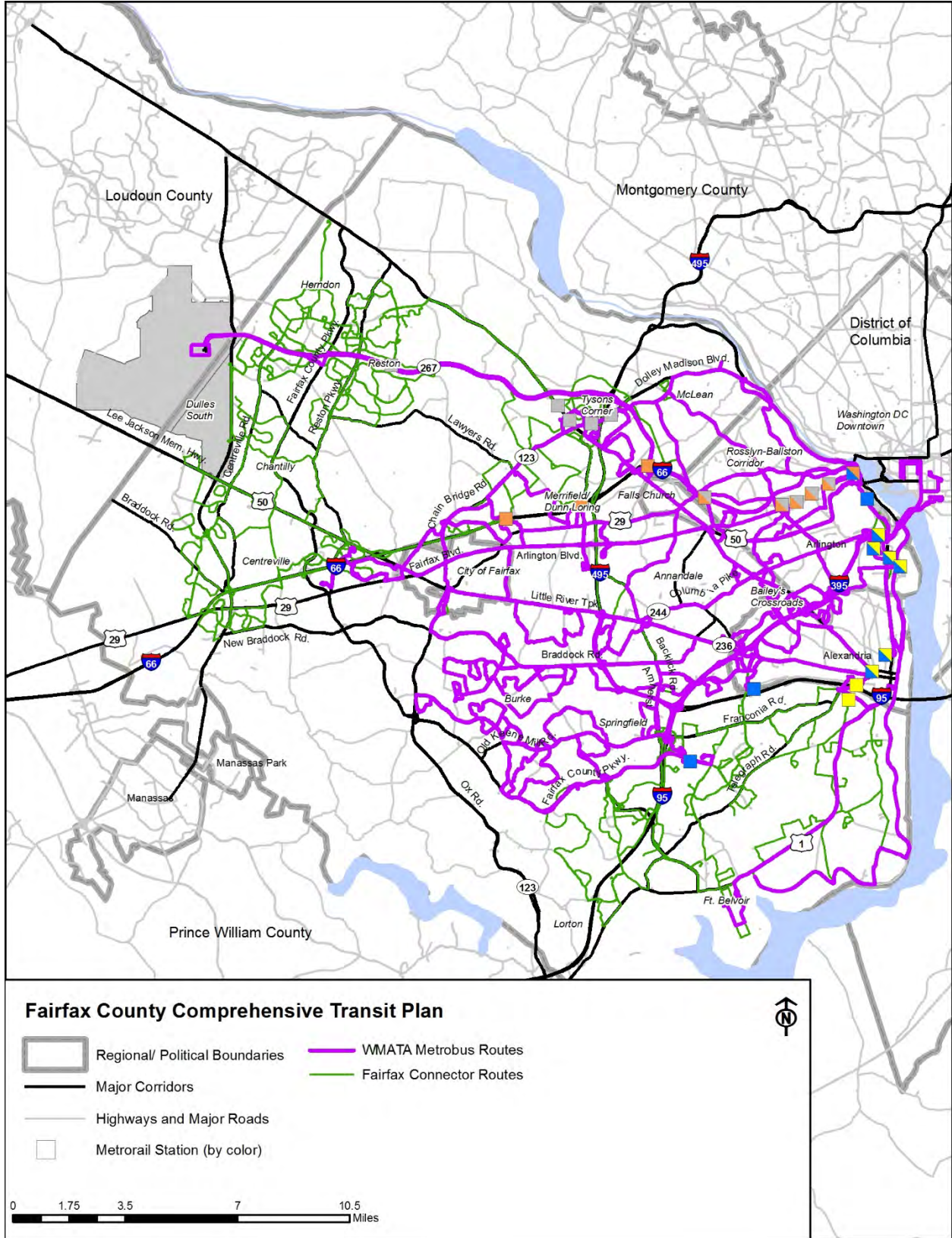


Table 2-1: Metrobus Lines Operating in Fairfax County

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

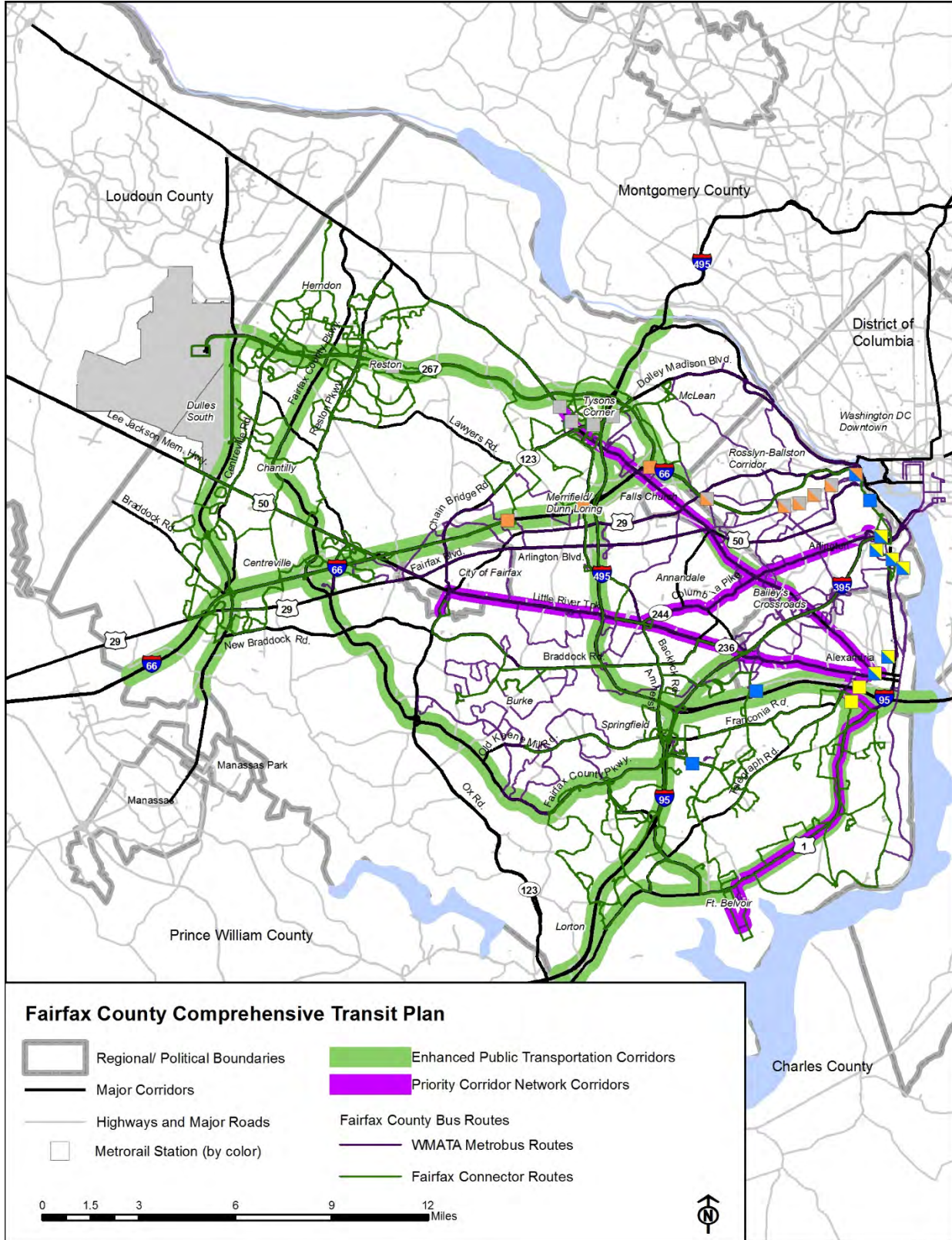
Number	Name	Service Type	Magisterial District	EPTC	WMATA PCN
18G,H,J	Orange Hunt	Commuter	Mason, Lee, Springfield	I-395	No
18P,R,S	Burke Centre	Commuter	Mason, Lee, Braddock, Springfield	I-395	Fairfax County Parkway
21A,D	Landmark-Pentagon	Commuter	Mason	I-395	No
23A,C	McLean-Crystal City	Major	Providence, 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
1A,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
1A,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 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 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
TOTALS	36	20	21	19	15

Figure 2-3: Metrobus Lines by Peak Period Headway

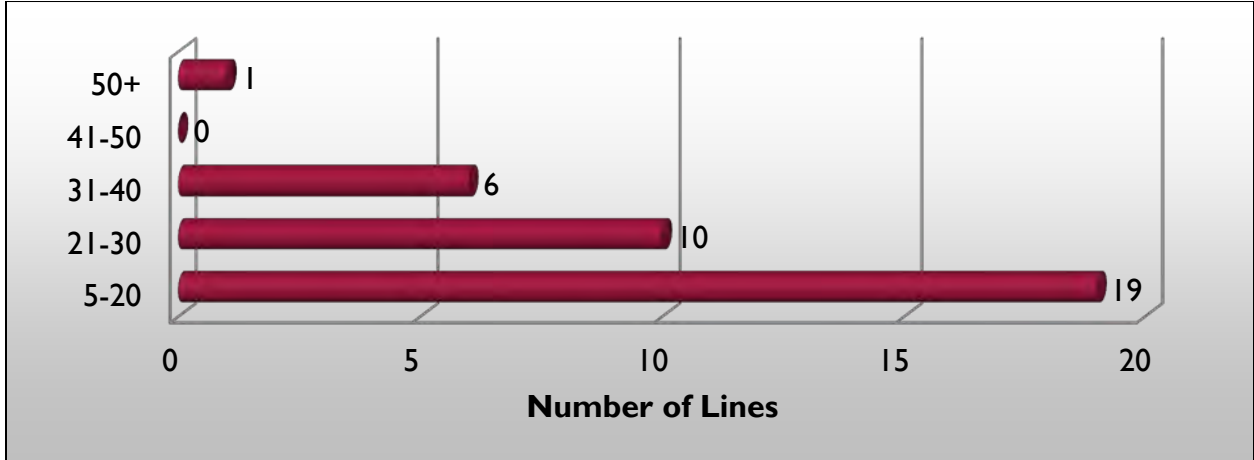


Figure 2-4: Metrobus Lines by Midday Period Headway

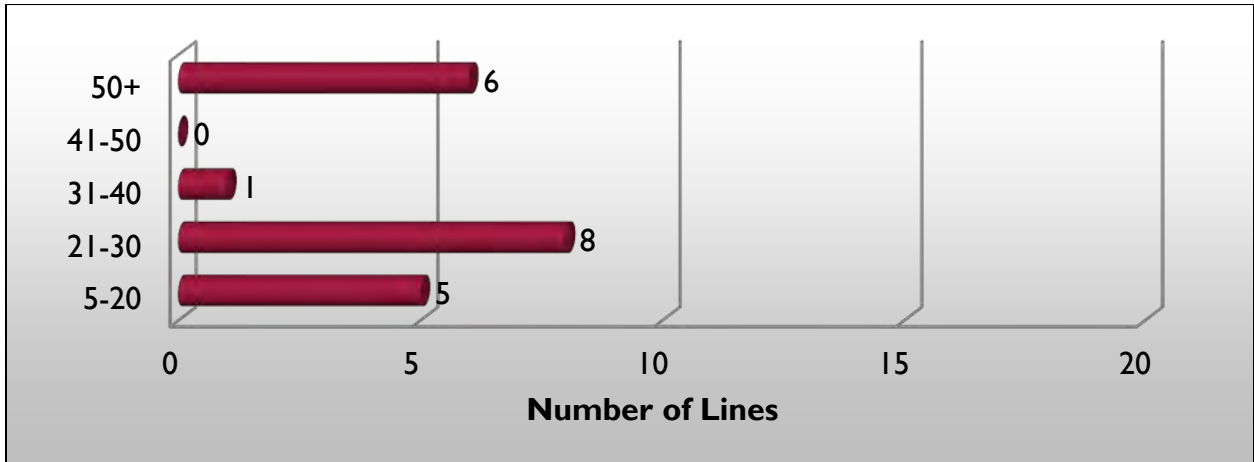


Figure 2-5 Metrobus Lines by Evening Period Headway

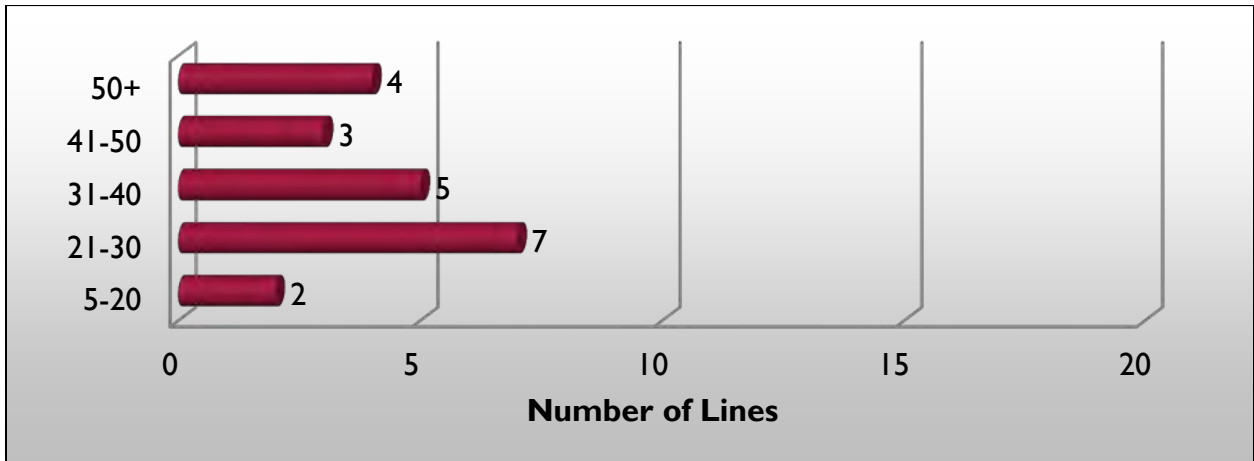


Figure 2-6: Metrobus Peak Headway

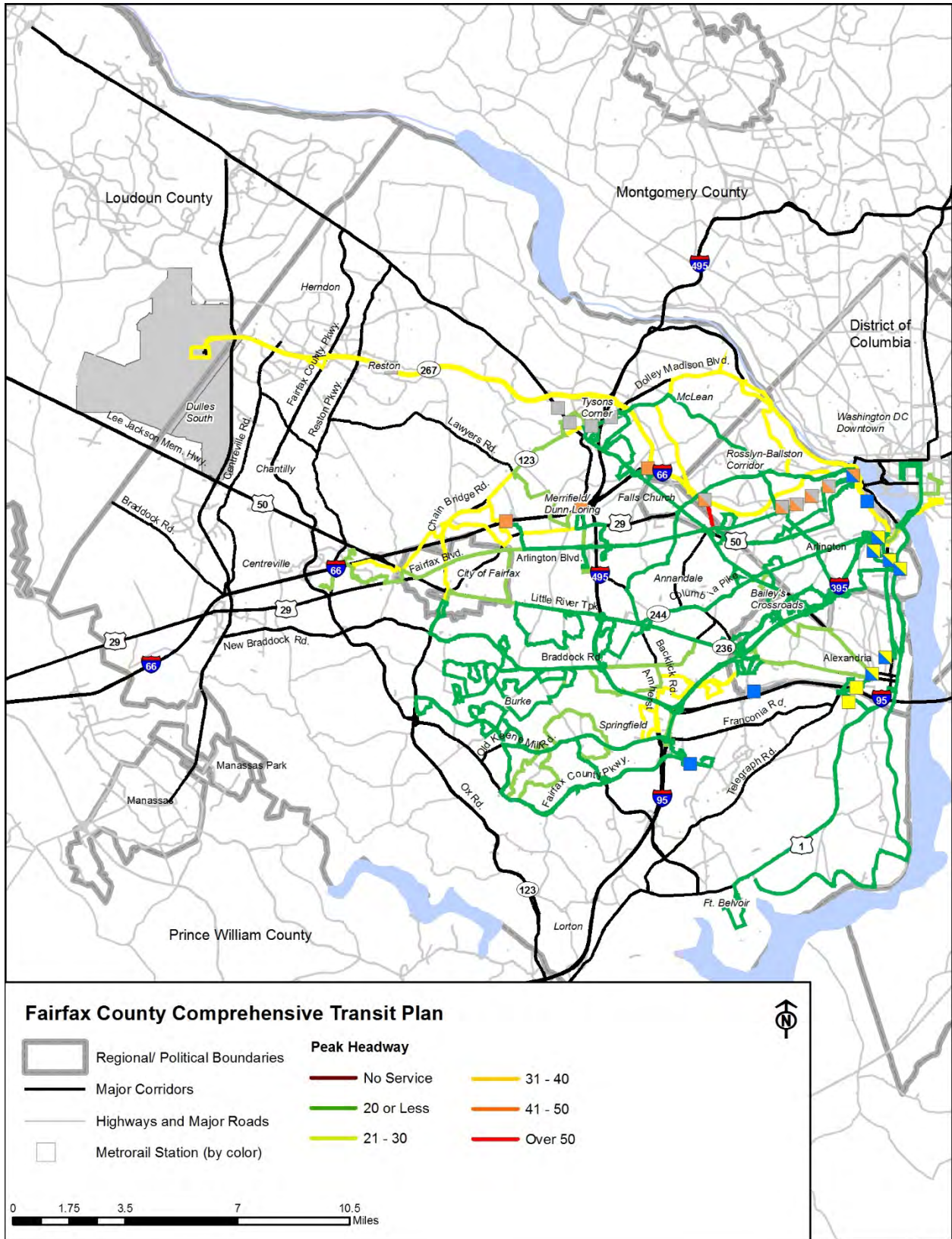


Figure 2-7: Metrobus Midday Headway

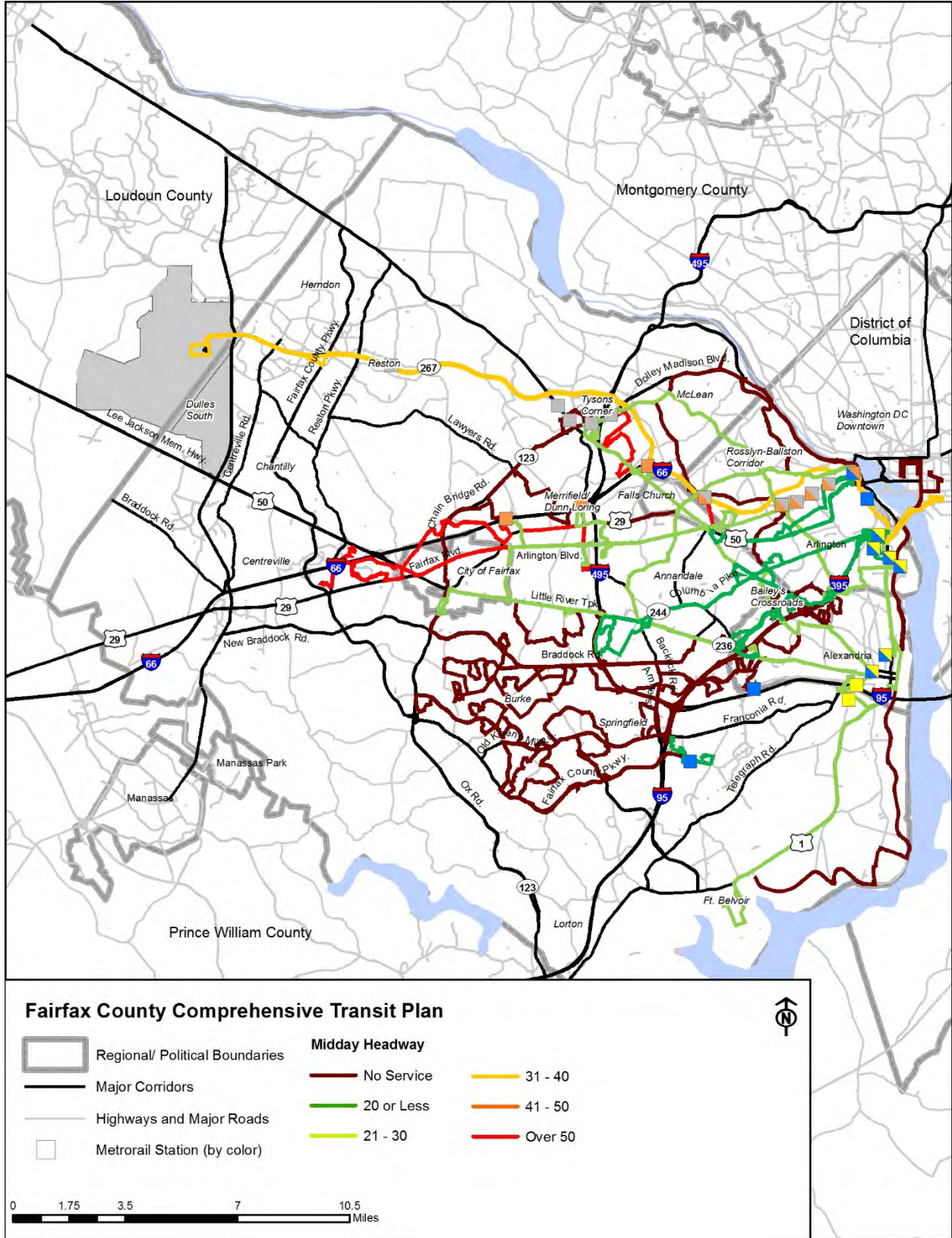


Figure 2-8: Metrobus Evening Headway

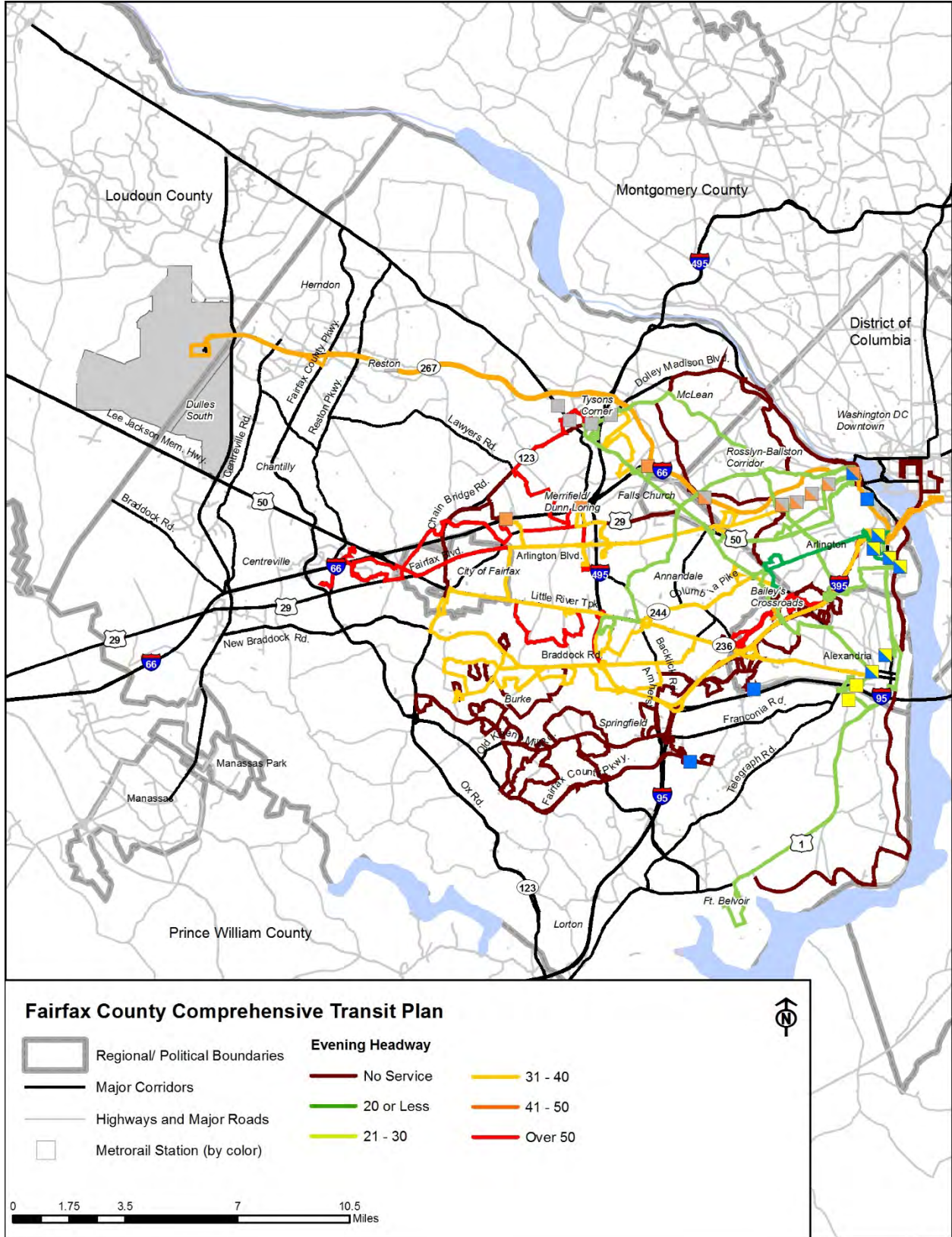


Table 2-7: Metrobus Operating Characteristics (Weekday)

Number	Name	Span of Service		Peak Headway Peak Direction	Midday Headway	Evening Headway
		Start	End			
I A,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	6:40 AM	9:03 AM	17	NS	NS
	Mt Vernon Express SB	4:10 PM	7:25 PM	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	6:45 AM	8:21 AM	31	NS	NS
	Annandale-Skyline City-Pentagon WB	4:55 PM	6:39 PM	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	5:20 AM	8:58 AM	7	NS	NS
	Kings Park Express SB	3:55 PM	7:31 PM	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

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

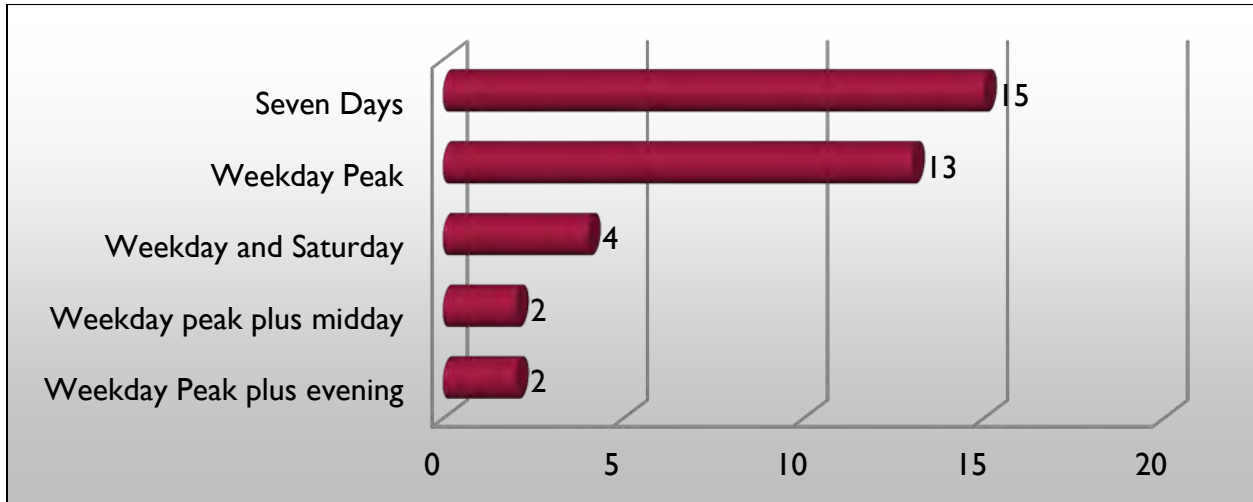
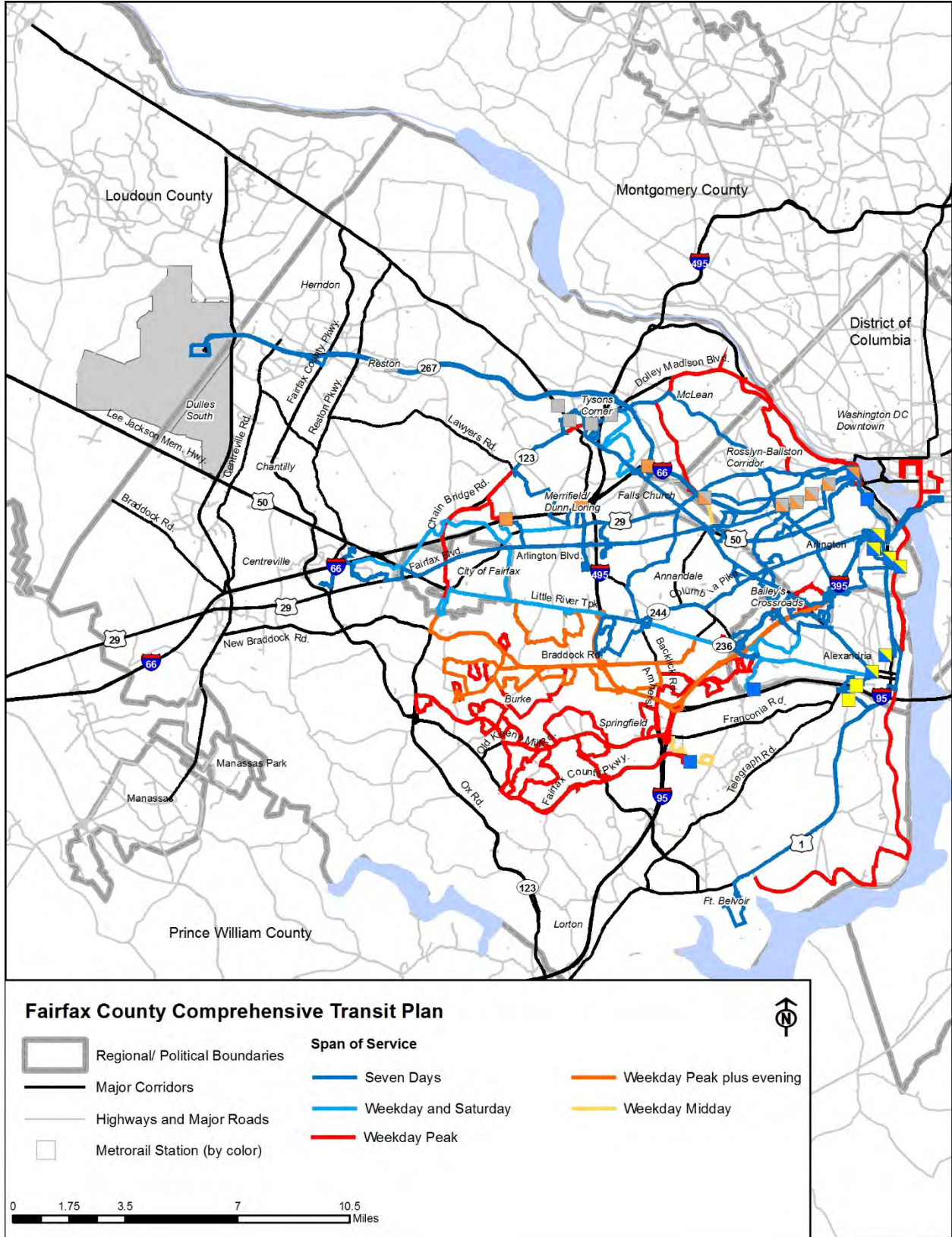


Figure 2-10: Metrobus Operating Periods



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 (\$80,91)	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

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 Cost 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 (S80,91)	Springfield Circulator	372	\$60	\$5,641	0.01	\$15.17
METROBUS TOTAL		58,916	\$78,761	\$278,638	0.28	\$4.73

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 (S80,91)	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

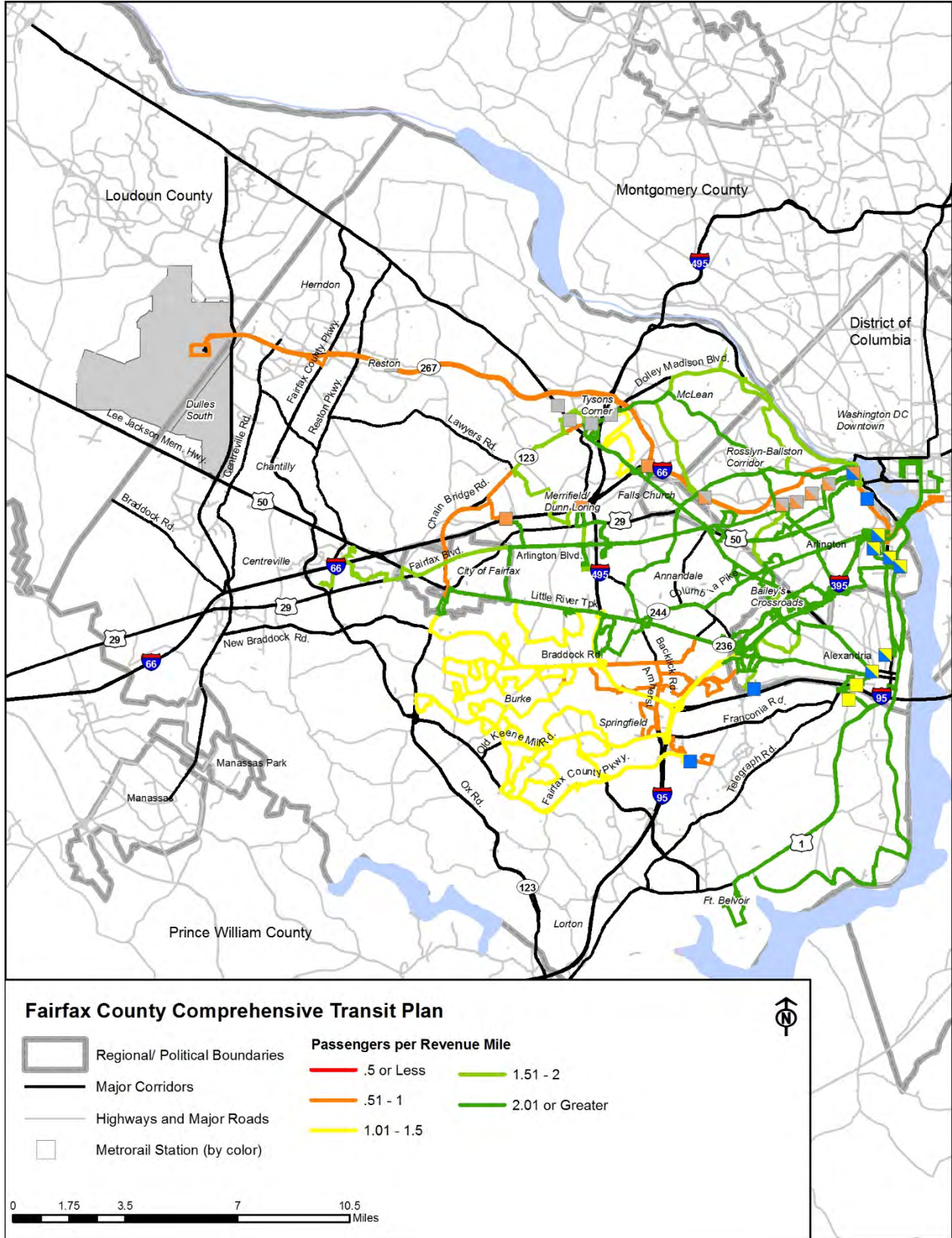


Figure 2-12: Saturday Passengers per Revenue Mile

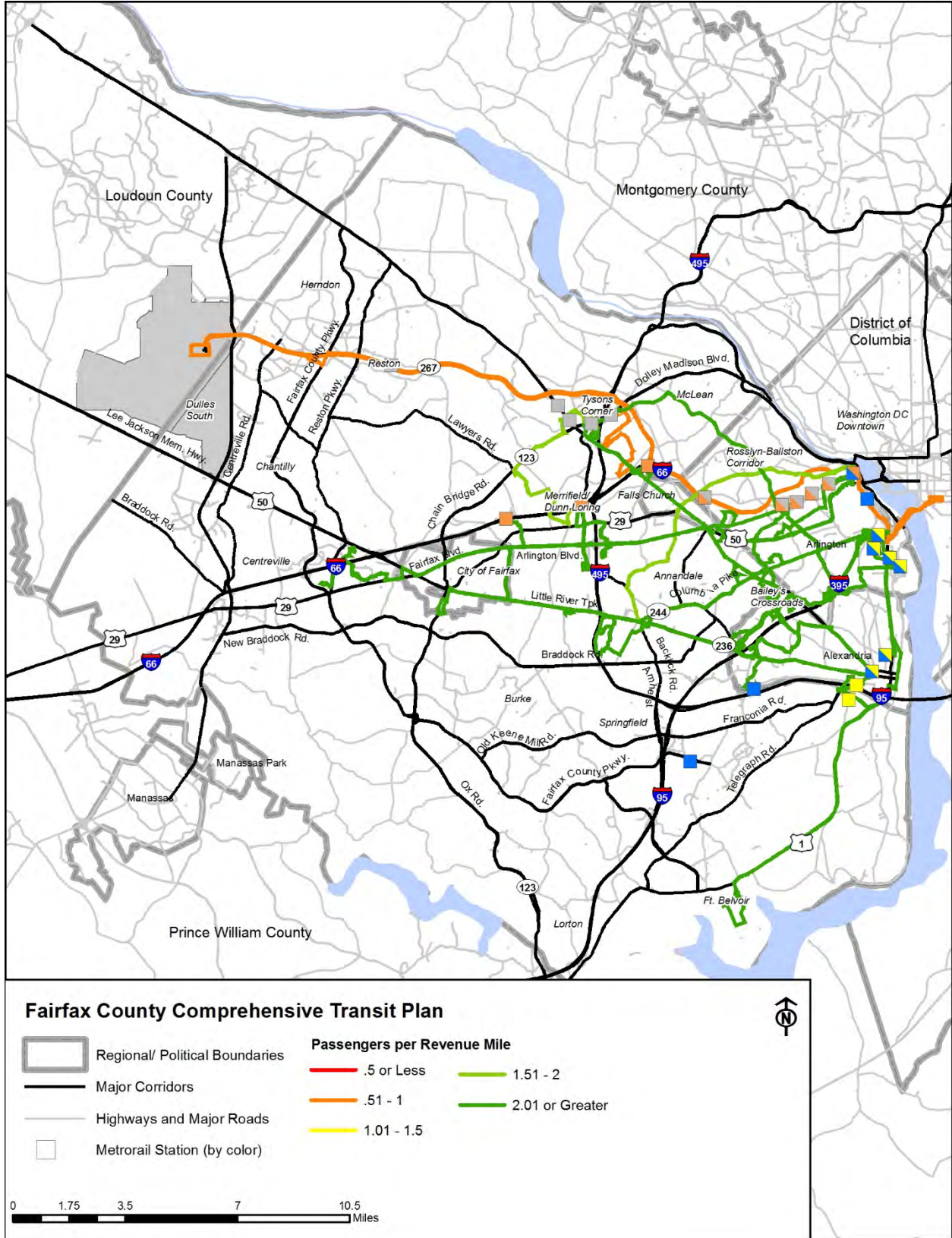


Figure 2-13: Sunday Passengers per Revenue Mile

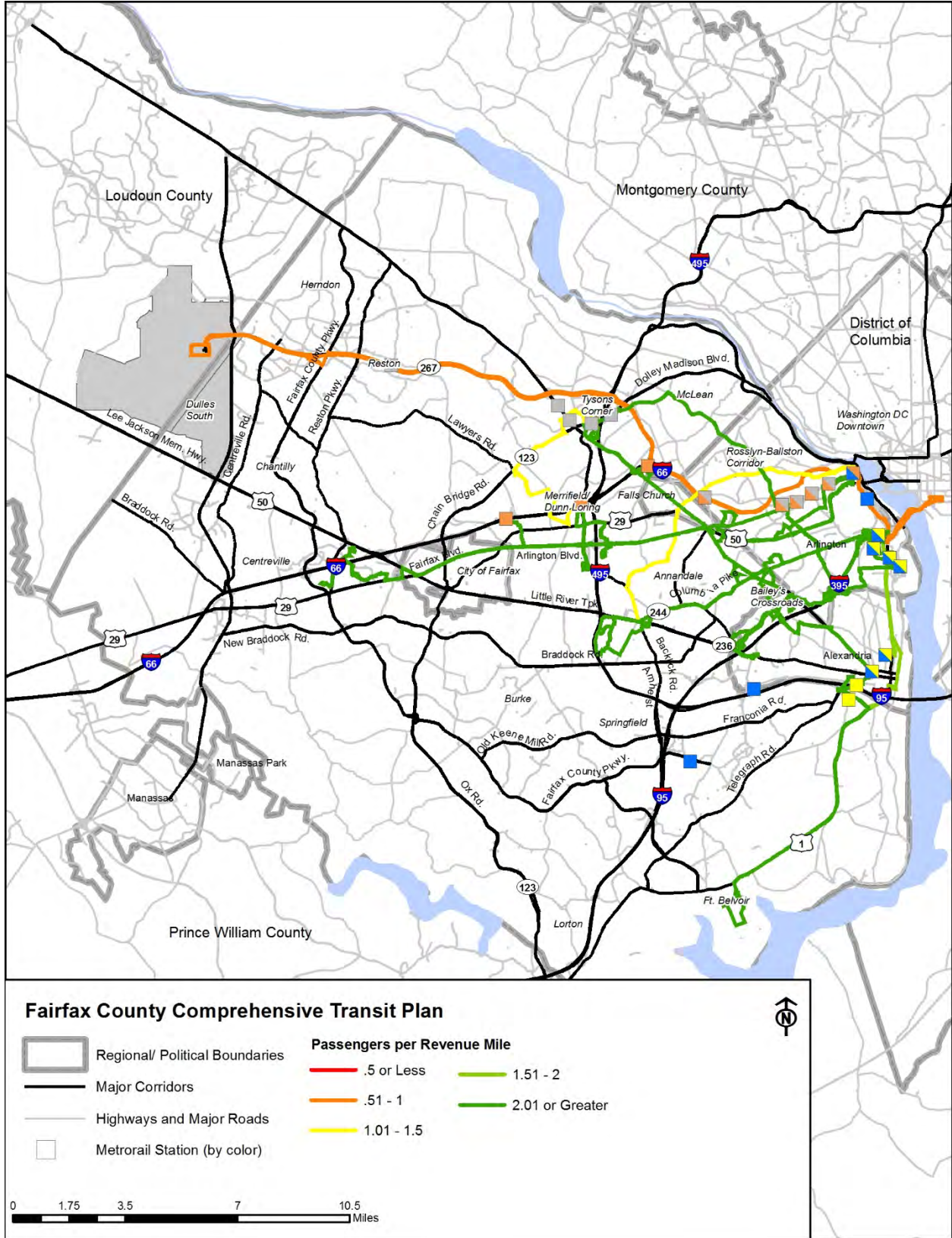


Figure 2-14: Weekday Passengers per Revenue Hour

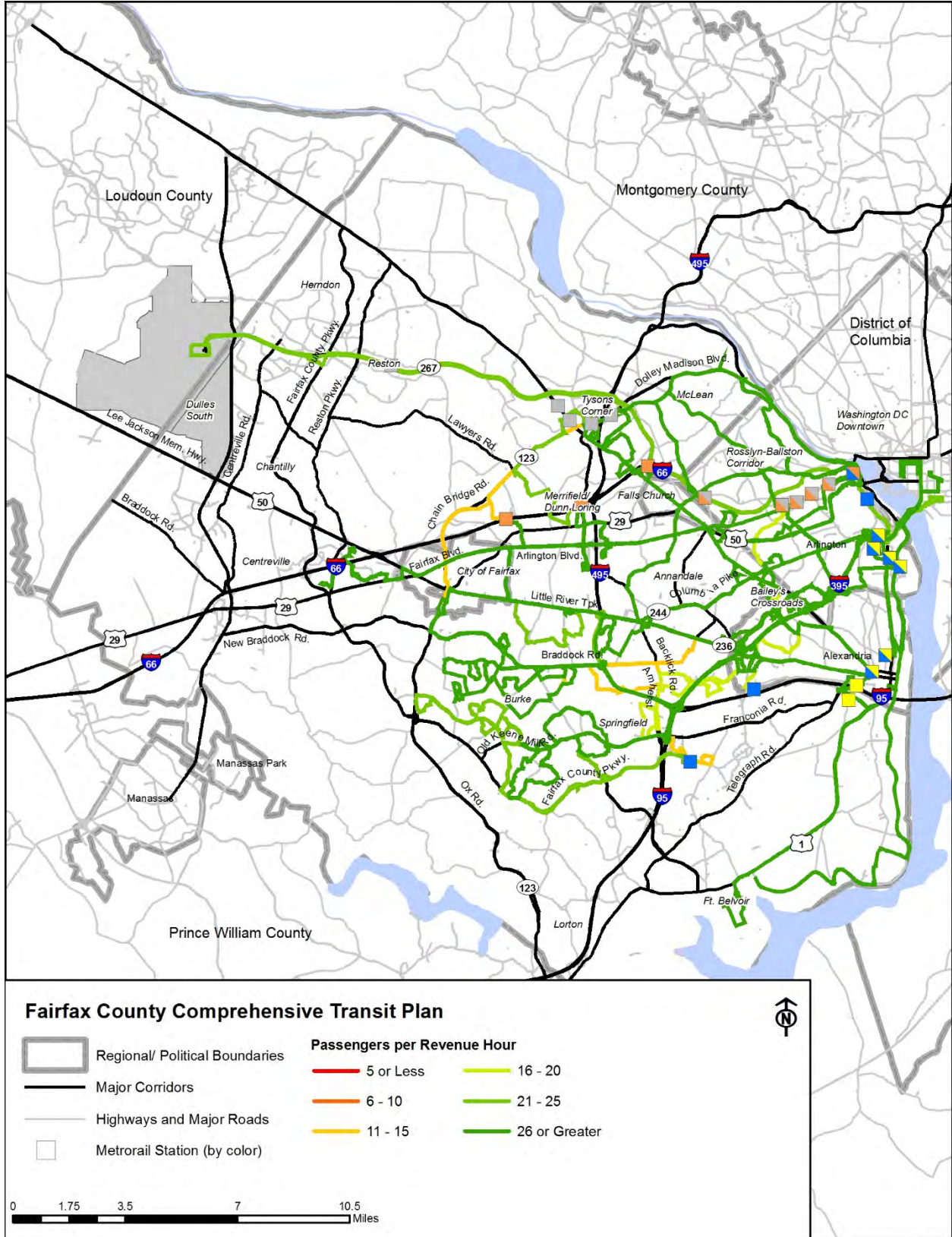


Figure 2-15: Saturday Passengers per Revenue Hour

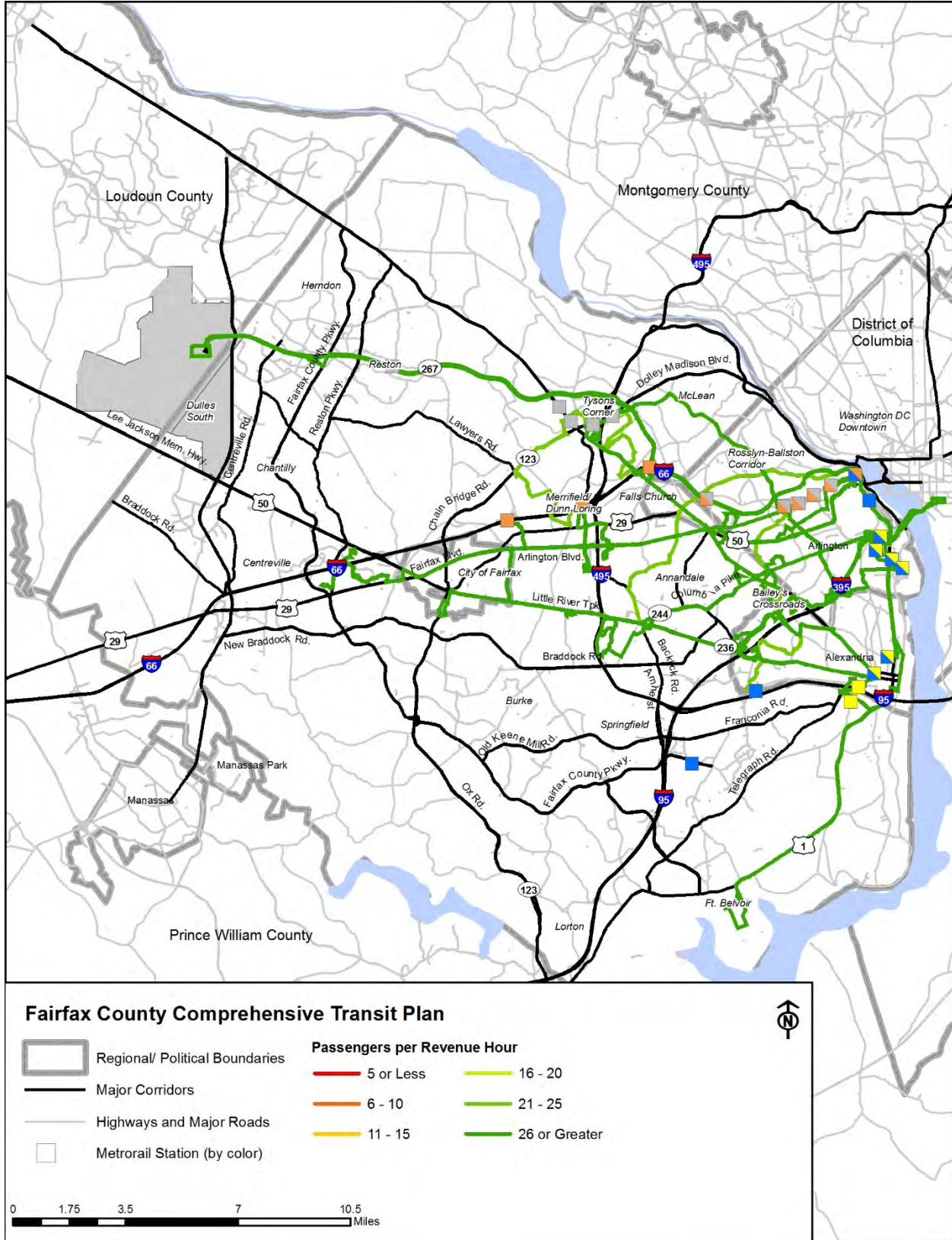


Figure 2-16: Sunday Passengers per Revenue Hour

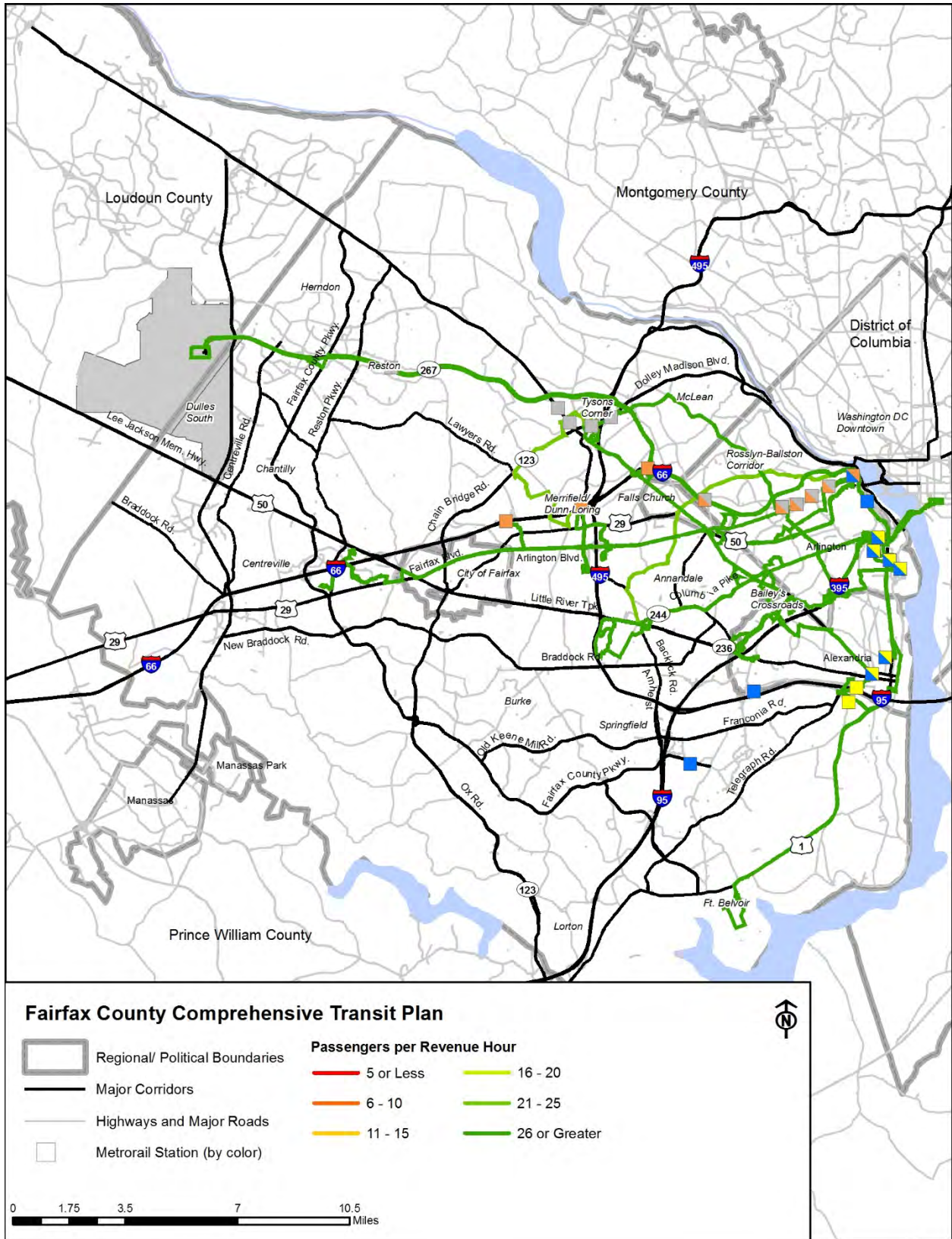


Figure 2-17: Weekday Passengers per Trip

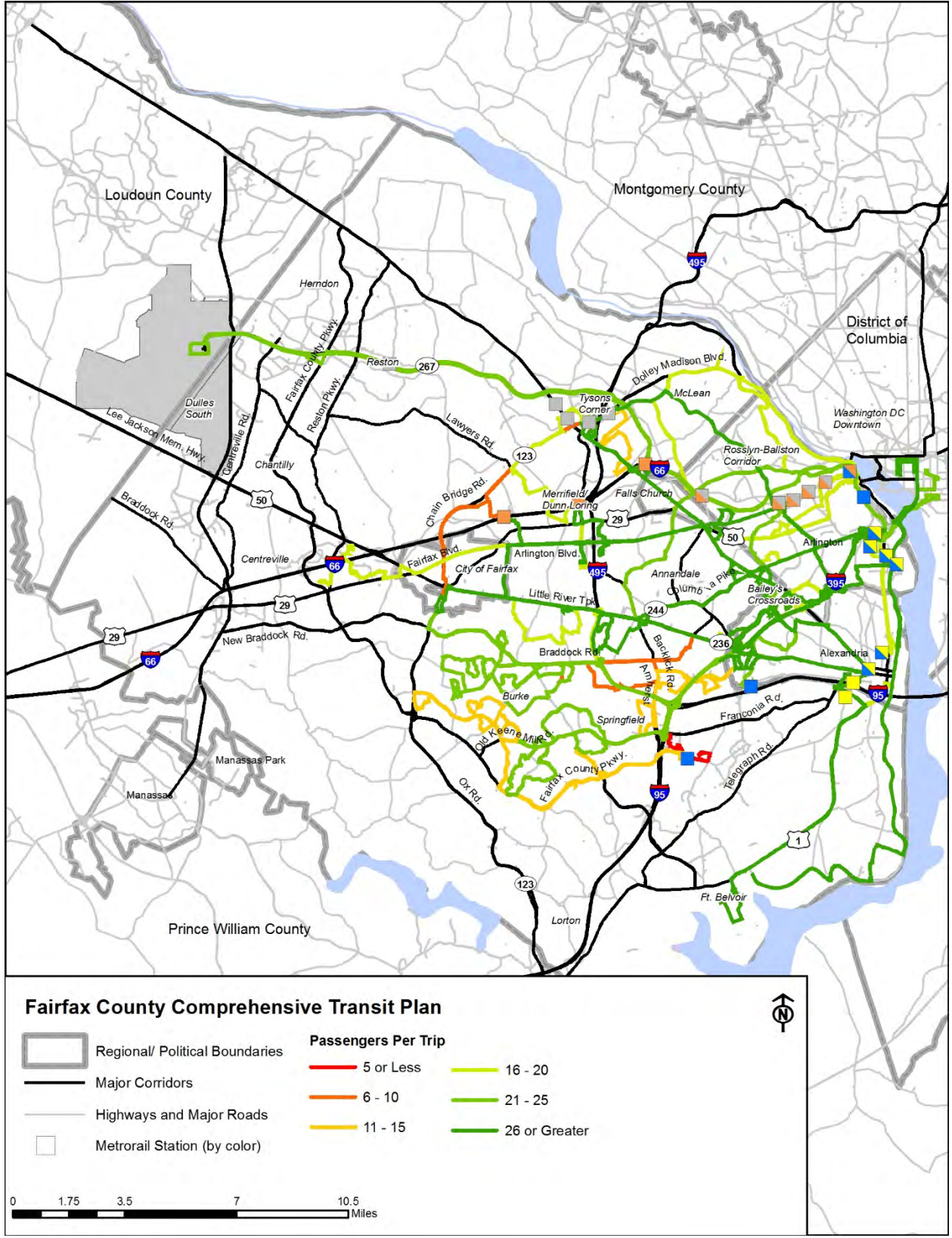


Figure 2-18: Saturday Passengers per Trip

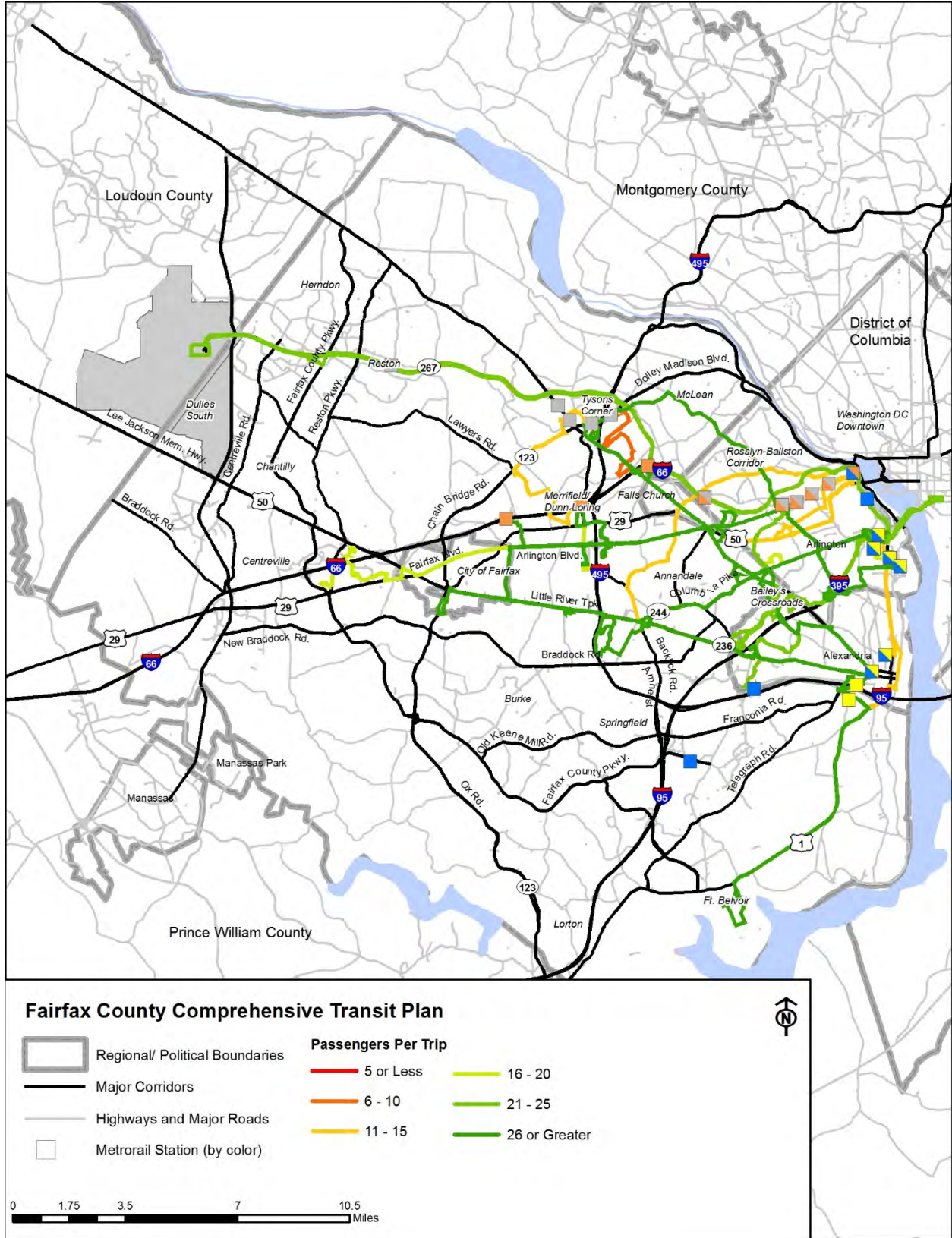


Figure 2-19: Sunday Passengers per Trip

