Existing Conditions

Technical Memorandum - Appendix

April 2023

CONTENTS

Overview

This document provides an overview of the detailed methodologies that went into creating the Existing Conditions analysis for the Bus Network Redesign. It includes data sources, and summarization of key results that were used to guide the service planning process.

Line Benefit Score

The line benefit score illustrates the benefit of a line to transit riders on a scale of 1 to 100 (highest benefit). Criteria include population served, network value, and ridership. The line benefit score is measured as the average of the scaled criteria. The three criteria are defined as follows:

Population Served

The definition of population served varies by service classification:

- **BRT, Framework, and Gap Lines:** Total population within a half mile of bus stops along the line.
- **Coverage Lines**: Low-income[1] plus zero-vehicle households[2] within a quarter mile of bus stops along the line.
- **Commuter Lines:** Labor force within a ¼ mile of origin bus stops during the AM Peak and within one mile of a Park & Ride served by the line. Origin bus stops are those with greater boardings than alightings in PM peak.

To calculate the population served score, the population served of each line is divided by the maximum population served among all lines.

Network Value

The value of a line to the transit network, in terms of number of transfers to/from a line as well as percentage of ridership that is exclusive to the line.

- **Transfers:** Number of transfers to/from a line relative to the maximum number of transfers among lines.
- **Jobs:** Jobs within a quarter mile of stops served by each line, according to the most recent MWCOG Cooperative Forecasts.
- **Unique Segment Ridership:** Percent of daily boardings on a line at stops that are only served by that line.

To calculate the network value score, transfers, jobs, and unique segment ridership of each line are divided by their corresponding maximum among all lines and averaged to create the network value score.

Ridership

This metric focuses on routes that are highly used by assessing total average weekday ridership, which measures the demand for the line.

The ridership score is calculated by dividing the ridership of each line by the maximum ridership among all lines.

Data Sources

- American Community Survey (ACS) 2020 5-year estimates
- May 2022 Metrobus GTFS

[1] A person residing in a household that earns less than 200 percent of the annual federal poverty level.
[2] Households with no cars.

- FY 2022 Ridecheck Plus
- May 2022 Trace Model

Table 1 through **Table 3** summarize the Line Benefit Scores and its components.

Results

Table 1: Line Benefit Score and Sub Scores by line: Framework and BRT Class

Line Name	Routes	Network Value Score	Population Served Score	Ridership Score	Line Benefit Score
14th Street	52, 54	53	76	100	76
U Street-Garfield	90, 92	32	92	97	74
Georgia Avenue-7th Street	70	47	77	87	70
Greenbelt-Twinbrook	C2, C4	36	75	70	60
Pennsylvania Avenue	32, 36	58	55	64	59
16th Street	S2	43	82	47	58
Benning Road-H Street	X2	49	45	78	57
East Capitol Street-Cardozo	96	27	100	34	54
Leesburg Pike	28A	49	62	45	52
Wisconsin Avenue	31, 33	48	45	61	51
Georgia Avenue Limited	79	27	70	49	49
16th Street Limited	S9	31	72	41	48
Sibley Hospital - Stadium Armory	D6	49	64	23	45
New Carrollton-Silver Spring	F4	38	48	50	45
New Hampshire Ave. - Maryland	K6	38	44	50	44
Bladensburg Road-Anacostia	B2	28	44	58	43
Columbia Pike	16A, 16C, 16E	36	62	28	42
Crosstown	H2, H4	29	55	40	41
Georgia Avenue-Maryland	Y2, Y7, Y8	22	49	50	41
North Capitol Street	80	40	46	36	41
Deanwood-Alabama Avenue	W4	17	48	59	41
Capitol Heights - Minnesota Ave.	V2, V4	11	48	65	41
Fort Totten-Petworth	60, 64	30	64	24	39
Mount Pleasant	42, 43	39	48	30	39
Rhode Island Avenue	G8	42	51	24	39

Line Name	Routes	Network Value Score	Population Served Score	Ridership Score	Line Benefit Score
Eastover-Addison Road	P12	23	36	56	38
Veirs Mill Road	Q1, Q2, Q4, Q5, Q6	23	51	39	38
Mclean-Crystal City	23A, 23B, 23T	26	64	21	37
Ballston-Farragut Square	38B	36	50	21	36
Bethesda-Silver Spring	J1, J2	38	36	34	36
Connecticut Avenue	L2	37	45	27	36
Takoma-Petworth	62, 63	16	68	17	34
Massachusetts Avenue	N2, N4, N6	41	44	18	34
Park Road-Brookland	H8, H9	26	51	26	34
Wilson Blvd. -Vienna	1A, 1B	28	49	25	34
Oxon Hill-Suitland	D12, D14	20	49	33	34
Riggs Road	R1, R2	27	49	28	34
Military Road-Crosstown	E4	39	37	24	33
14th Street Limited	59	14	69	10	31
Barcroft-South Fairlington	22A, 22F	24	65	4	31
Annapolis Road	T18	19	31	39	30
Lincolnia-North Fairlington	7A	30	48	13	30
Hunting Point-Ballston	10B	19	57	14	30
Alexandria-Fairfax	29K, 29N	11	58	17	29
College Park-White Flint	C8	25	50	12	29
Richmond Highway Express	REX	33	33	19	29
Benning Road-H St Limited	X9	11	51	21	28
College Park	83, 86	20	44	21	28
Washington Blvd. -Dunn Loring	2A	35	36	9	27
Columbia Pike- Pentagon City	16G, 16H	22	37	22	27
Martin Luther King Jr. Highway	A12	29	27	19	25
Alexandria-Pentagon	10A	16	45	12	24
Calverton-Westfarm	Z6	12	40	15	23
New Carrollton-Fort Totten	F6	12	45	10	22
Fairland	Z8	14	38	15	22
Landmark-Ballston	25B	18	37	9	21
Fair Oaks-Fairfax Blvd.	1C	28	29	5	21
Rhode Island Avenue - New Carrollton	T14	15	37	12	21
Chillum Road	F1, F2	14	37	9	20

Line Name	Routes	Network Value Score	Population Served Score	Ridership Score	Line Benefit Score
Metroway Potomac Yard	MW1	23	24	11	19
Convention Center-Southwest Waterfront	74	29	21	5	18
District Heights-Suitland	V12	23	19	11	18
Kenilworth Avenue	R12	19	23	7	16
New Hampshire Ave. - Maryland Limited	K9	5	34	5	14
National Harbor-Alexandria	NH2	12	8	6	9

Table 2: Line Benefit Score and Sub Scores by Line: Coverage Class

Line Name	Routes	Network Value Score	Population Served Score	Ridership Score	Line Benefit Score
Anacostia-Congress Heights	A2, A6, A7, A8	20	81	90	64
Anacostia-Eckington	P6	35	84	30	50
Benning Heights-Alabama Avenue	V7, V8	16	88	24	43
United Medical Center-Anacostia	W2, W3	6	100	20	42
P Street-Ledroit Park	G2	35	64	8	36
Garfield-Anacostia Loop	W6, W8	8	79	18	35
Marshall Heights	U5, U6	5	73	21	33
Shipley Terrace-Fort Drum	W1	7	76	10	31
Pershing Drive-Arlington Blvd	4B	31	50	8	30
Langley Park -Cheverly	F8	16	60	7	28
Sheriff Road-Capitol Heights	F14	26	46	11	28
Hospital Center	D8	14	45	21	27
Ivy City-Franklin Square	D4	14	59	9	27
Deanwood- Minnesota Ave.	U7	27	42	11	27
Greenbelt-New Carrollton	G12, G14	20	39	21	27
Connecticut Avenue-Maryland	L8	31	32	11	25
Anacostia-Fort Drum	A4, W5	12	40	23	25
District Heights-Seat Pleasant	V14	24	36	8	23
Sheriff Road-River Terrace	U4	31	30	7	23
Forestville	K12	25	22	15	21
Maryland Avenue	X8	26	28	5	20
Glover Park-Dupont Circle	D2	25	26	7	19

Line Name	Routes	Network Value Score	Population Served Score	Ridership Score	Line Benefit Score
Oxon Hill-Fort Washington	P18	26	25	5	19
Central Avenue	C21, C22, C26, C29	21	23	13	19
Laurel	89M	30	20	6	19
Annandale-East Falls Church	26A	10	45	4	19
Brookland-Fort Lincoln	H6	29	15	11	18
Fair Oaks-Jermantown Road	2B	30	20	3	18
National Harbor-Southern Avenue	NH1	12	28	11	17
Queens Chapel Road	R4	19	24	9	17
Marlow Heights-Temple Hills	H12	25	18	6	16
River Road	T2	28	13	6	16
Ardwick Industrial Park Shuttle	F12	26	17	3	15
Fairfax Village	M6	14	21	11	15
Ivy City - Fort Totten	E2	14	21	7	14
Cheverly-Washington Business Park	F13	14	21	4	13
Takoma-Fort Totten	K2	25	12	3	13
Bowie-Belair	B24	17	14	6	12
Marlboro Pike	J12	12	18	6	12
Hillcrest Heights	C12, C14	9	16	4	10
Nebraska Avenue	M4	9	12	7	10
Bowie-New Carrollton	B27	11	13	2	9

Table 3: Line Benefit Score and Sub Scores by Line: Commuter Class

Line Name	Routes	Network Value Score	Population Served Score	Ridership Score	Line Benefit Score
Columbia Pike-Farragut Square	16Y	21	100	3	41
Orange Hunt	18G, 18J	18	73	1	31
Kings Park-North Springfield	17B, 17M	8	82	1	30
Landmark - Holmes Run Parkway	21C	22	65	2	29
Kings Park Express	17G, 17K	12	68	3	28
Burke Centre	18P	6	76	3	28
DC-Dulles	5A	38	31	3	24

Line Name	Routes	Network Value Score	Population Served Score	Ridership Score	Line Benefit Score
Laurel-Burtonsville Express	Z7	15	35	2	18
Colesville-Ashton	Z2	9	40	2	17
Foxchase-Seminary Valley	8W	16	33	1	17
Bock Road	W14	26	21	4	17
Mount Vernon Line	11C	11	27	1	13
Annandale	29G	2	31	3	12
Bowie State University	B21, B22	5	17	3	9
Clinton	C11, C13	1	3	1	2
Skyline City	28F	27	-	0	-
Lee Highway-Farragut Square	3Y, 3F		77	1	-
Benning Road	X3	2	-	0	-

Ridership Recovery

Ridership Recovery of a line is defined as the ratio in percentages of annual ridership in FY 2022 (post-pandemic) to FY 2019 (pre-pandemic) for lines that were operational in both years.

Data Source

- FY 2019 and FY 2022 Ridecheck Plus

Equity-Focus Communities

Metro designates certain block groups in the region as equity-focus communities (EFCs) according to population of people of color, low-income residents, and people with a disability. Each block group is given three separate scores based on their percentile rank in the three aforementioned demographic variables, and an index score that sums all three scores. The highest scoring block groups are then selected and designated as EFCs. The number of EFCs selected is set so that 30 percent of the region's population reside in one of these selected block groups.

A Metrobus line's service area is defined as a quarter-mile buffer of its stops. To calculate a Metrobus line's percentage equity-focus community service (the proportion of the line that serves EFCs), the overlapping area between each line's service area and the EFCs is divided by the line's entire service area. This metric is used as an equity lens when evaluating how different demographic groups experience service quality.

Data Source

- ACS 2020 5-year estimates

Frequency of Service by Population Group

Frequency of service in an area is measured and compared for different population groups.

The WMATA compact area is partitioned into an H3 grid of resolution eight. H3 is a hexagonal hierarchical geospatial indexing system that can be subdivided into finer and finer grids. Resolution eight hexagons have varying sizes based on their position on the globe but have an average edge length of 0.25-0.3 miles. The stops, from all service providers, within each hexagon are examined. The effective frequency for the hexagon is defined as the frequency of the most frequent route that serves any of the stops within it. The effective frequency is later assigned to the population groups living in each hexagon. Finally, the distribution of frequencies for each population group is obtained by pooling information from all hexagons.

Data Source

- ACS 2020 5-year estimates
- 2022 GTFS:
  - Metrobus
  - Arlington Transit (ART)
  - Alexandria Transit (DASH)
  - DC Circulator (DDOT)
  - City of Fairfax (CUE)
  - Fairfax Connector (FFX)
  - Prince George's County (TheBus)
  - Montgomery County (RideOn)
- H3 hexagonal grids

Circuity

Refers to how much diversion there is on a route and is calculated by comparing the distance the bus travels on its route to the most direct path on the road network from the route's start and endpoints.

Circuity of a route is measured as the ratio of the length of the route over the direct distance between its start and end points using the road network. For each direction on a route, the length of the route/direction divided by the direct driving distance between the route/direction's first and last stops is measured. These values by direction are then averaged to get a route value. The standard circuity value for a route is 1.75. A route with a circuity ratio smaller than or equal to the standard gets an A grade, and an E otherwise.

Data Source

- May 2022 Metrobus GTFS

Results

Figure 1 illustrates the circuity values for each Metrobus line.

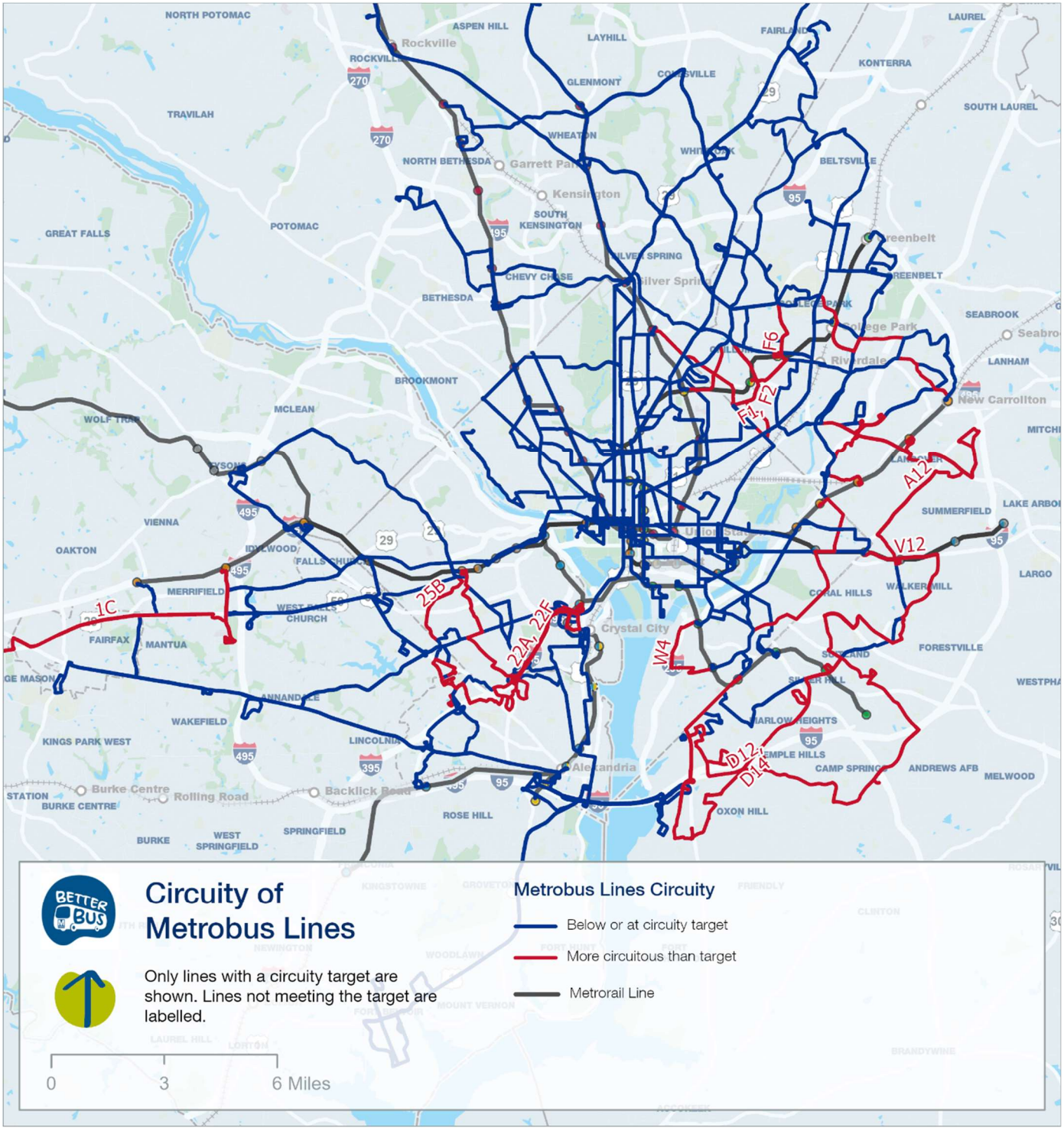

Figure 1: Metrobus Lines by Circuity Target

Table 4 summarizes all routes and their circuity ratio (in descending order of circuity).

Table 4: Circuity by Metrobus Route

Route	Circuity Ratio	Route	Circuity Ratio	Route	Circuity Ratio	Route	Circuity Ratio
D14	7.29	F6	1.9	11C	1.51	R4	1.32
S35	7	F14	1.85	1B	1.51	V4	1.32
W2	6.28	2B	1.82	H12	1.51	36	1.31
W3	5.81	B22	1.82	10A	1.5	52	1.31
U6	3.8	C21	1.82	T14	1.5	D51	1.31
A12	3.76	J12	1.79	C8	1.48	K6	1.31
D12	3.66	F2	1.78	Z6	1.48	S2	1.31
U5	3.64	H8	1.75	16G	1.47	V7	1.31
K12	2.97	NH1	1.75	38B	1.46	28F	1.3
W4	2.92	F1	1.74	42	1.46	74	1.3
22A	2.87	P18	1.74	B21	1.46	Q4	1.3
F13	2.83	A6	1.73	43	1.45	V2	1.3
D8	2.65	C14	1.72	80	1.44	18P	1.29
U7	2.56	M4	1.72	23T	1.43	31	1.29
W1	2.55	16E	1.7	R1	1.43	D32	1.29
89M	2.21	8W	1.69	Z8	1.43	E4	1.29
A2	2.16	P6	1.68	10B	1.42	2A	1.28
C12	2.16	T2	1.67	M6	1.42	C4	1.28
G14	2.14	P12	1.66	16H	1.41	D4	1.28
C29	2.12	A8	1.64	Z7	1.4	H4	1.28
F8	2.09	23A	1.63	17G	1.39	Q5	1.28
26A	2.08	D2	1.62	32	1.39	R2	1.28
A33	2.08	D33	1.62	A31	1.39	29N	1.27
C26	2.08	W45	1.62	C2	1.39	MW1	1.27
A4	2.07	C22	1.61	D6	1.39	Q1	1.27
22F	2.05	G8	1.57	29G	1.38	T18	1.27
G12	2.01	17K	1.56	B2	1.38	16C	1.26
V12	2.01	1A	1.56	17B	1.37	4B	1.26
W5	2	28A	1.56	7A	1.37	F4	1.26
V14	1.99	W14	1.56	Q6	1.36	H2	1.24
23B	1.98	86	1.55	83	1.35	S41	1.24
17M	1.95	R12	1.55	J2	1.35	J1	1.23
H6	1.94	N6	1.53	16Y	1.34	16A	1.22
F12	1.91	Z2	1.53	21C	1.33	H9	1.22
1C	1.9	B24	1.52	A7	1.32	G2	1.2
25B	1.9	REX	1.52	Q2	1.32	L8	1.2

Route	Circuity Ratio
N2	1.19
N4	1.19
33	1.18
NH2	1.18
18G	1.17
3Y	1.17
60	1.17
92	1.17
29K	1.16
96	1.16
18J	1.15
W47	1.15

Route	Circuity Ratio
54	1.13
70	1.13
90	1.13
A32	1.13
E2	1.13
S9	1.13
X9	1.13
Y7	1.12
Y8	1.12
5A	1.11
V8	1.1
X8	1.1

Route	Circuity Ratio
59	1.09
B27	1.09
C13	1.09
K2	1.09
L2	1.09
3F	1.07
64	1.07
D34	1.07
K9	1.07
U4	1.07
Y2	1.06
62	1.05

Route	Circuity Ratio
63	1.05
79	1.05
D31	1.05
C11	1.03
X2	1.01
7M	1
X3	1
W6	--- (Loop Route)
W8	--- (Loop Route)

Service Span

The span of service establishes the hours of operation of each line by service day which is the time of day when transit service will begin and end each weekday, Saturday, and Sunday.

For each line, the time of day when service starts and ends is obtained from GTFS. Any gaps in service are also accounted for (e.g., if a line operates from 5:00am to 9:00am and then again from 3:00pm to 7:00pm, its span of service is eight hours).

The span of service of each line is compared against WMATA standards based on the line's classification and tier (Table 5).

Table 5: Service Availability Standards

		Span of Service			Headway						
					Weekday		Saturday		Sunday		St
Class	Tier	Weekday	Saturday	Sunday	Peak	Off-Peak	Core	Off-peak	Core	Off-Peak	M
	1	5:30 a.m.– 12:00 p.m.	6:00 a.m.– 12:00 p.m.	6:00 a.m.– 10:00 p.m.	10	15	20	20	20	20	2-
	2	5:30 a.m.– 10:00 p.m.	6:00 a.m.– 9:00 p.m.	6:30 a.m.– 9:00 p.m.	15	30	30	30	30	30	1-
	3	5:30 a.m.– 10:00 p.m.	6:00 a.m.– 9:00 p.m.	6:30 a.m.– 9:00 p.m.	30	30	30	30	30	30	1-
nework	1	6:00 a.m.–12:00 a.m.	7:00 a.m.–12:00 a.m.	7:00 a.m.–12:00 a.m.	20	30	30	30	30	30	4-
	2	6:00 a.m.–10:00 p.m.	8:00 a.m.–9:00 p.m.	8:00 a.m.–9:00 p.m.	30	30	30	60	60	60	4-
	3	6:00 a.m.–10:00 p.m.	8:00 a.m.–9:00 p.m.	8:00 a.m.–9:00 p.m.	60	60	60	60	60	60	4-
erage	1	6:00 a.m.–9:00 p.m.	7:00 a.m.–9:00 p.m.	7:00 a.m.–9:00 p.m.	30	60	60	60	60	60	4-
	2	6:00 a.m.–8:00 p.m.	8:00 a.m.–8:00 p.m.	8:00 a.m.–8:00 p.m.	30	60	60	60	60	60	4-
	3	6:00 a.m.–8:00 p.m.	8:00 a.m.–8:00 p.m.	8:00 a.m.–8:00 p.m.	60	60	60	60	60	60	4-
mmuter	1		---	---	---	---	---	---	---	---	--

Class	Tier	Span of Service			Headway						St
		Weekday	Saturday	Sunday	Weekday Peak	Weekday Off-Peak	Saturday Core	Saturday Off-peak	Sunday Core	Sunday Off-Peak	
	2	Minimum of one trip that arrives by 7:00 a.m., and one trip that leaves on or after 6:30 p.m.	---	---	---	---	---	---	---	---	--
	3		---	---	---	---	---	---	---	---	--

The grade is determined based on the difference (in hours) between the span and that standard using the thresholds in **Table 6**Table 6.

Table 6: Brackets for Span of Service Grades

Difference between service span and standard span in hours (standard - span)	Grade
< 0	A
0 - 0.5	B
0.5 - 5	C
5 - 7	D
> 7	E

Data Source

- May 2022 Metrobus GTFS

Results

Figure 2 through **Figure 8** illustrate span grades for each service day and line classification. Additionally, **Table 7**Table 7 summarizes the distribution of service span grades for lines serving each geomarket in the region.

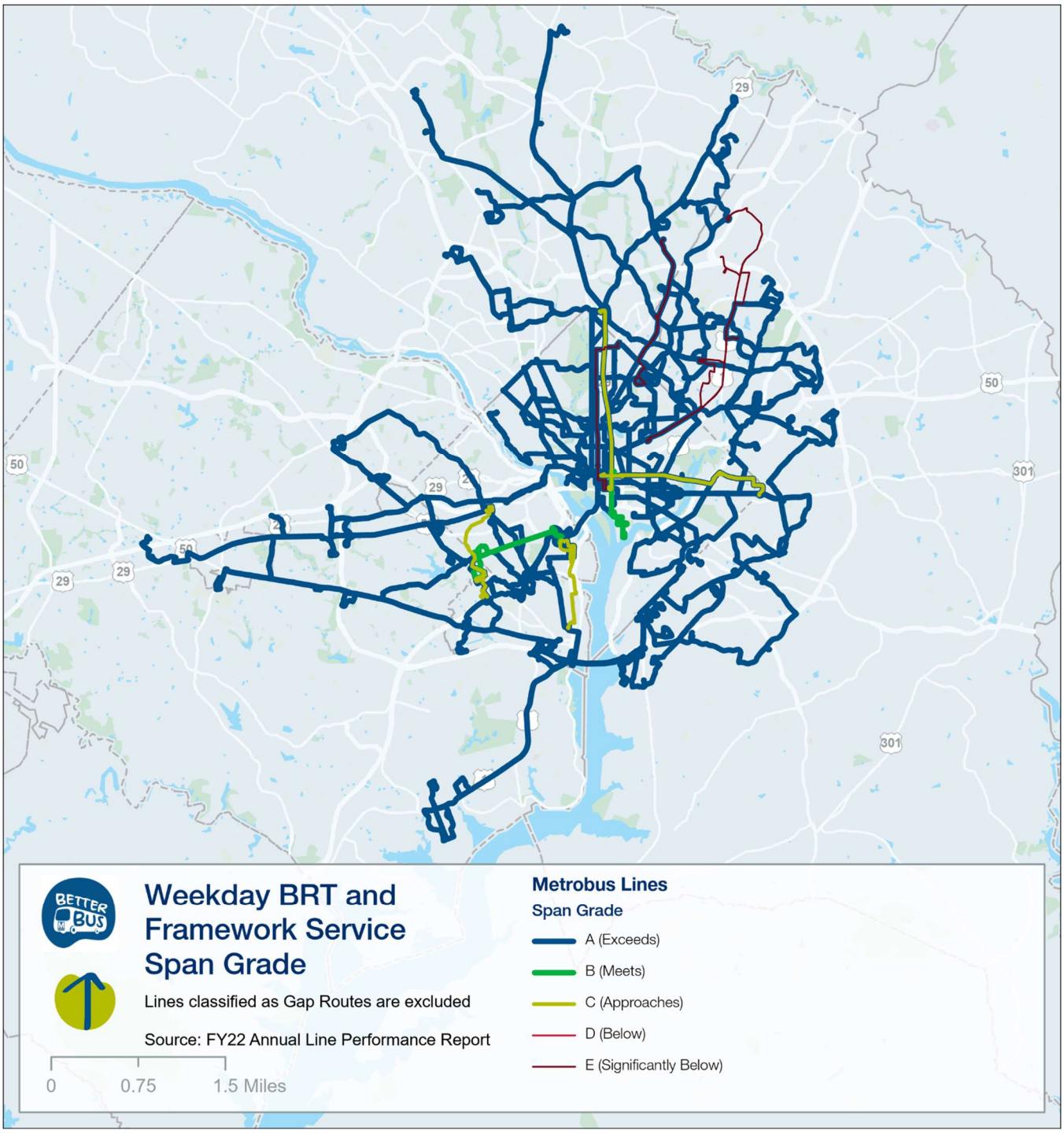

Figure 2: Weekday Span of Service Grade for BRT and Framework Lines

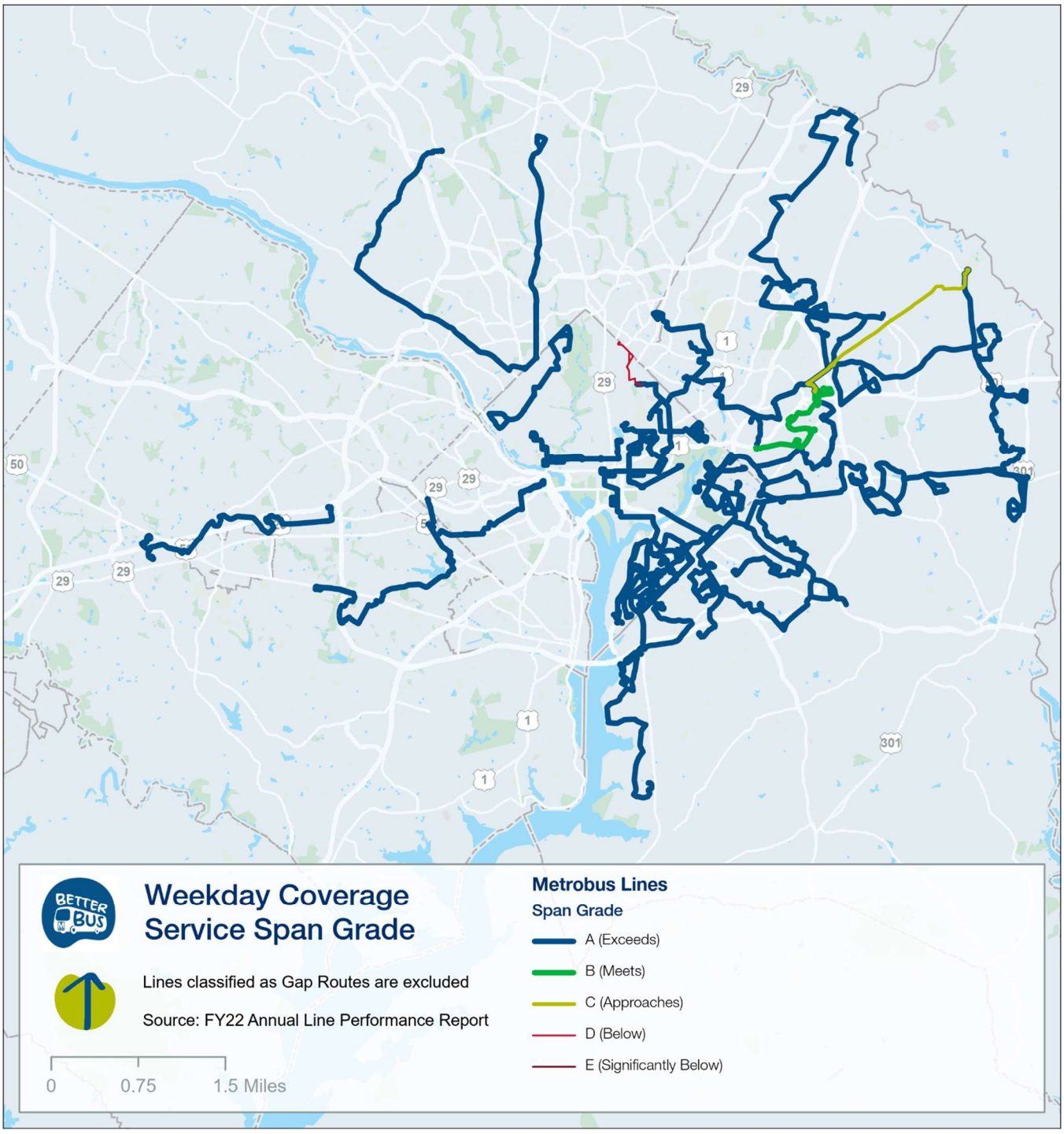

Figure 3: Weekday Span of Service Grade for Coverage Lines

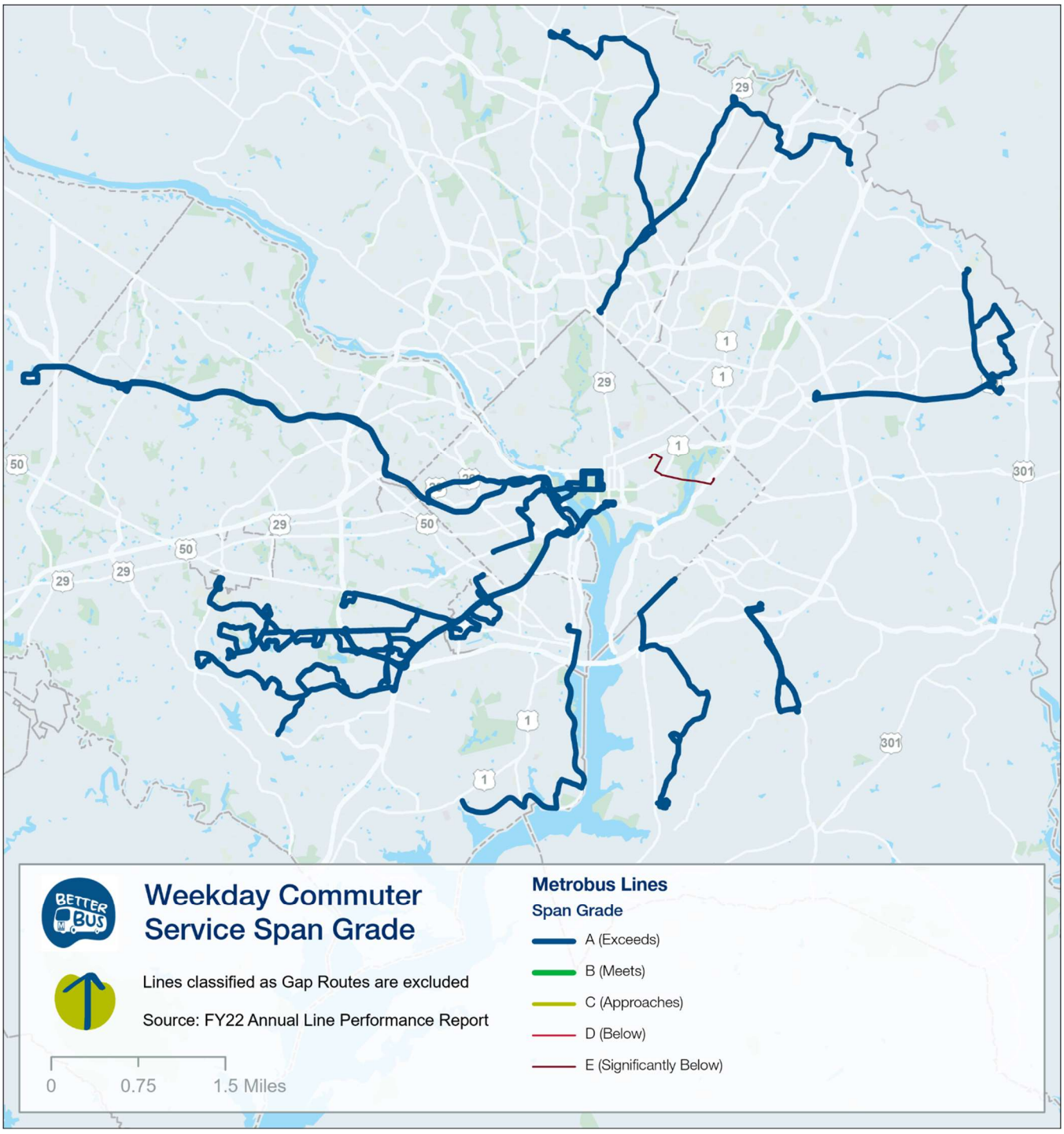

Figure 4: Weekday Span of Service Grade for Commuter Lines

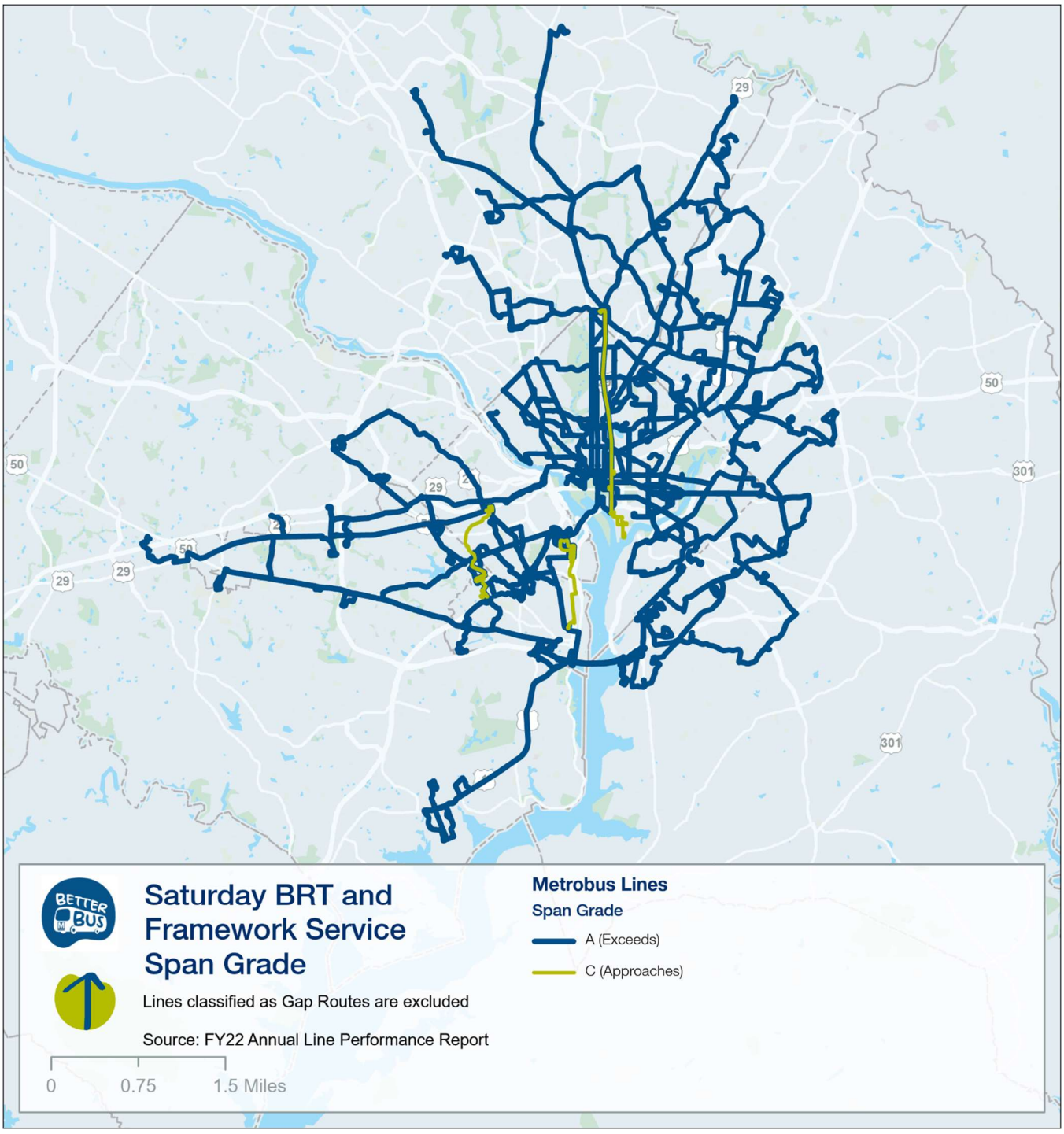

Figure 5: Saturday Span of Service Grades for BRT and Framework Lines

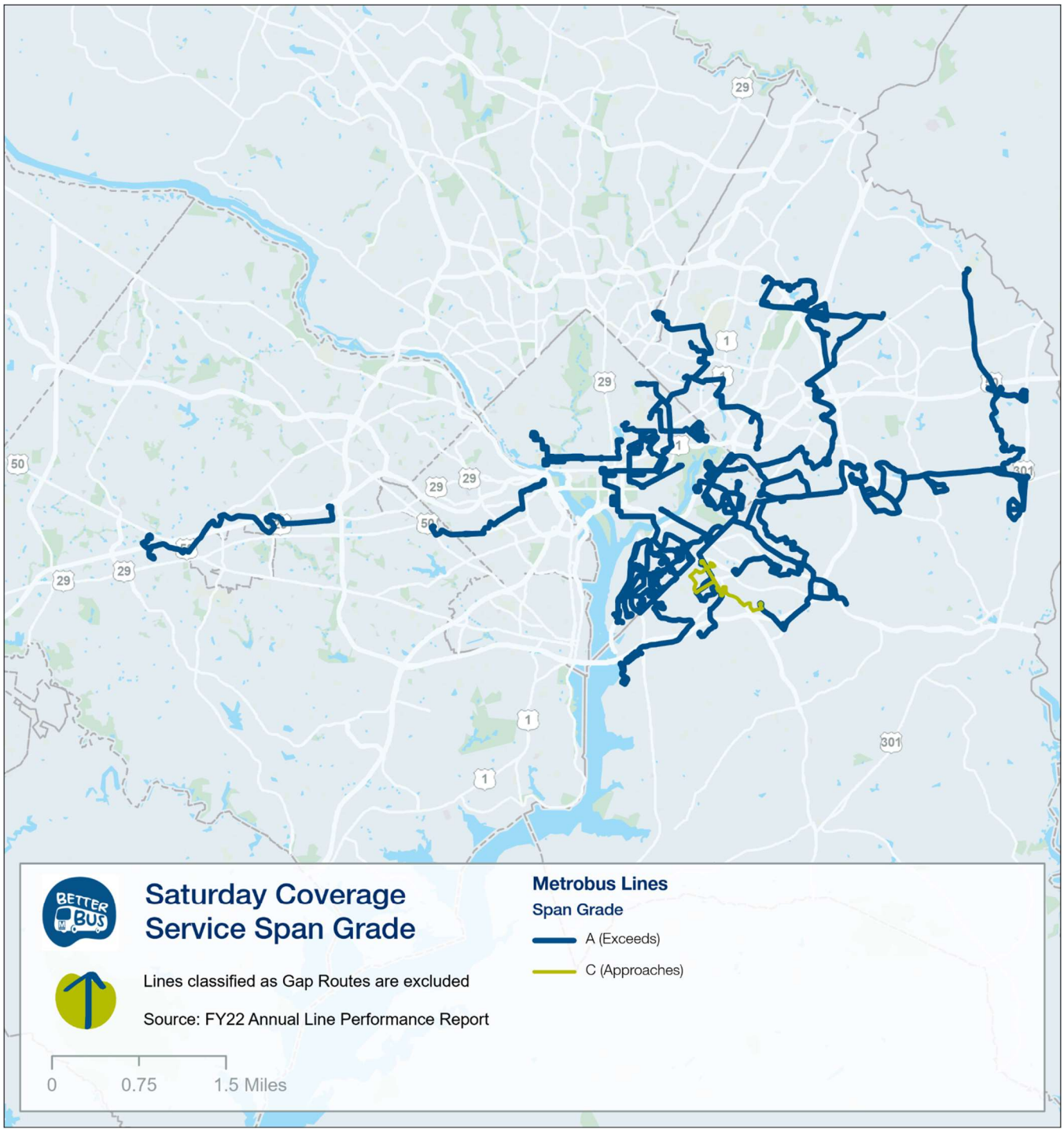

Figure 6: Saturday Span of Service Grade for Coverage Lines

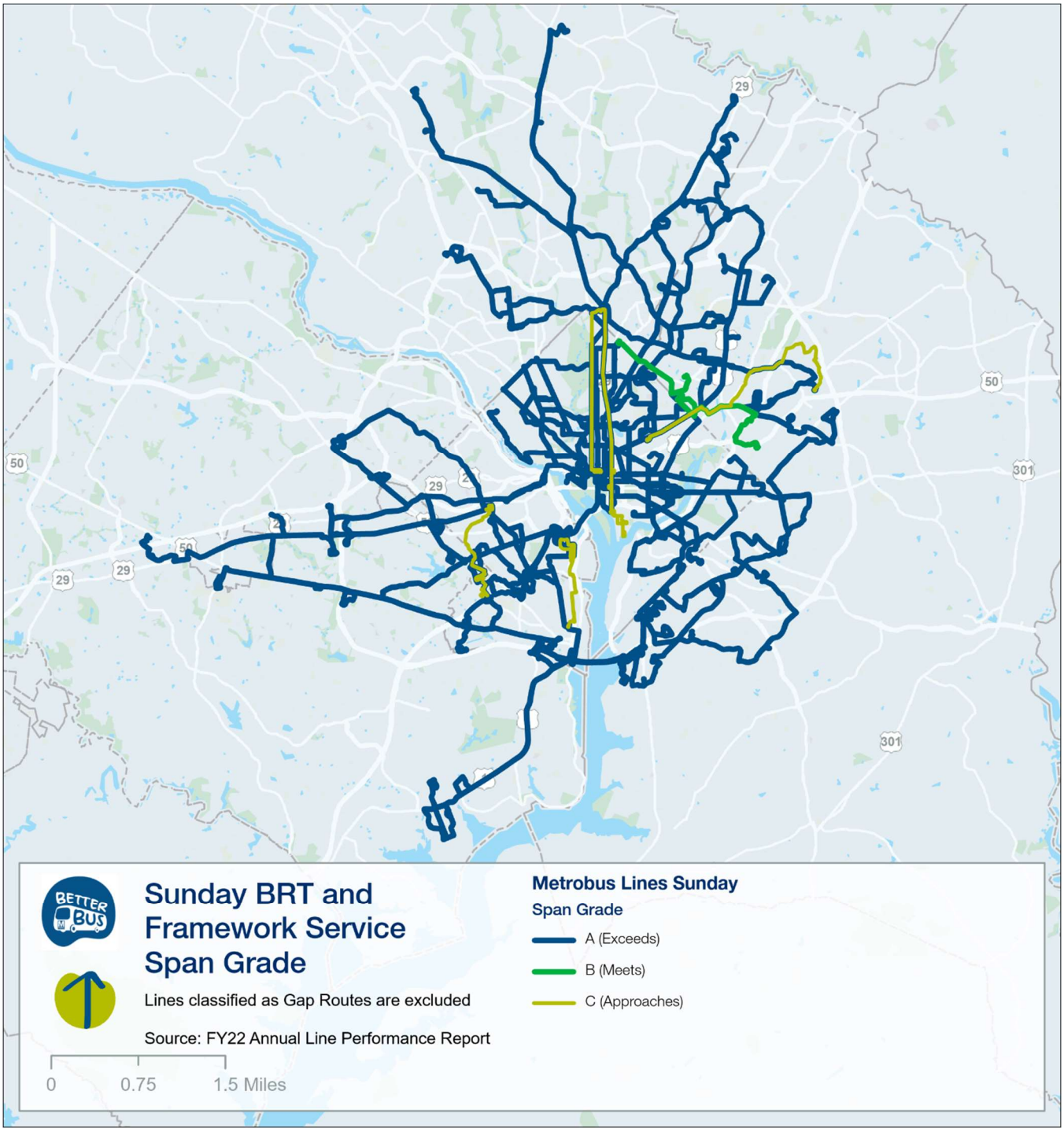

Figure 7: Sunday Span of Service Grade for BRT and Framework Lines

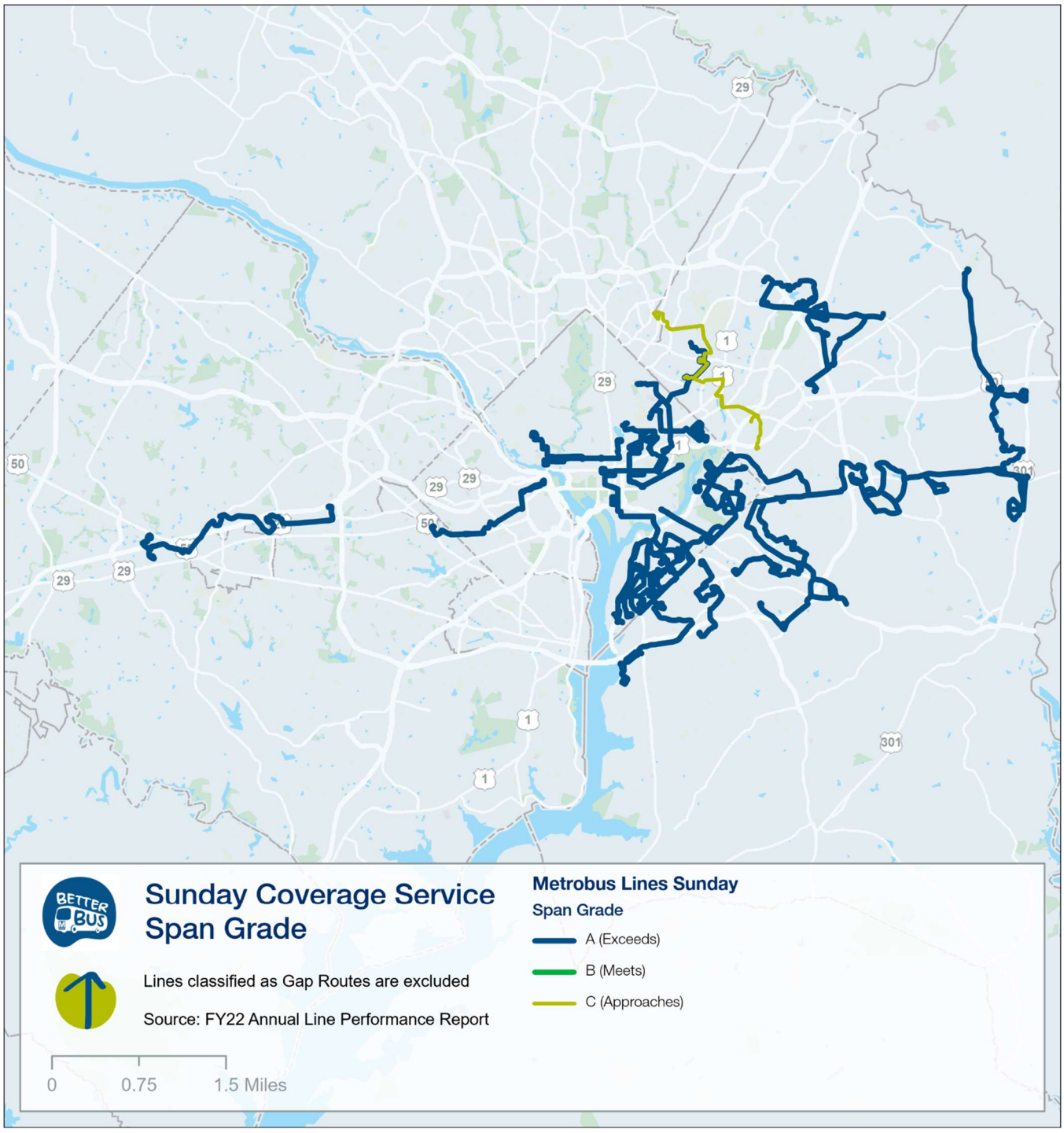

Figure 8: Sunday Span of Service Grade for Coverage Lines

Table 7: Distribution of Weekday Span Grade by Geomarket

Jurisdiction	Geomarket	A	B	C	D	E	Total Lines
Arlington	Ballston - Courthouse - Rosslyn	21	1	1	0	0	23
Arlington	Bluemont - Barcroft - Douglas Park	11	1	1	0	0	13
Arlington	Crystal/Pentagon Cities - Shirlington	16	1	1	0	0	18
Arlington	East Falls Church - Garden City	7	0	0	0	0	7
Alexandria	Brookville - Landmark/Van Dorn	12	0	1	0	0	13
Alexandria	Old Town - Rosemont	18	0	1	0	0	19
DC	Anacostia - Good Hope	11	0	0	0	0	11
DC	Benning Heights - Deanwood	12	0	1	0	1	14
DC	Brookland - Fort Totten	19	0	0	1	2	22
DC	Chinatown - Dupont Circle	26	1	2	0	1	30
DC	Cleveland Park - Woodley Park	14	0	0	0	0	14
DC	Columbia Heights - Mt. Pleasant	9	0	1	0	1	11
DC	Congress Heights - Anacostia Naval Station	18	0	0	0	0	18
DC	Foggy Bottom - GWU	7	0	0	0	0	7
DC	Friendship Heights - Palisades	10	0	0	0	0	10
DC	Howard University - Cardozo/Shaw	9	0	1	0	1	11
DC	Ivy City - Fort Lincoln	12	0	1	0	2	15
DC	L'Enfant Plaza - Waterfront	8	1	0	0	0	9
DC	National Mall	20	1	1	0	1	23
DC	Navy Yard - Potomac Avenue	6	1	0	0	0	7
DC	Petworth - Walter Reed	10	0	1	1	1	13
DC	Shaw/Howard University - Mt Vernon Sq.	13	1	1	0	1	16
DC	Union Station - NOMA	13	0	1	0	1	15
DC	Van Ness - Barnaby Wood	8	0	0	0	0	8
Fairfax	Annandale - Falls Church	12	0	0	0	0	12
Fairfax	Baileys Crossroads - Lincolnia	13	1	1	0	0	15
Fairfax	Burke	4	0	0	0	0	4
Fairfax	Fairfax City - Vienna	8	0	0	0	0	8
Fairfax	Lorton - Fort Belvoir	2	0	0	0	0	2
Fairfax	Mclean - Tysons Corner	3	0	0	0	0	3
Fairfax	Mount Vernon - Springfield/Franconia	7	0	0	0	0	7
Fairfax	Reston - Herndon	2	0	0	0	0	2
Loudoun	Dulles International Airport	1	0	0	0	0	1
Montgomery	Aspen Hill - Olney	6	0	0	0	0	6
Montgomery	Bethesda - Potomac - White Flint	9	0	0	0	0	9
Montgomery	Glenmont -Wheaton - White Oak	18	0	1	1	1	21
Montgomery	Rockville - Twinbrook	4	0	0	0	0	4
Montgomery	Shady Grove	1	0	0	0	0	1
Prince George's	Beltsville - Laurel	4	0	0	0	1	5
Prince George's	Bladensburg - New Carrollton	13	0	1	0	0	14
Prince George's	Bowie - Mitchellville	3	0	1	0	0	4
Prince George's	Branch Avenue - Fort Washington	16	0	0	0	0	16
Prince George's	Brandywine - Clinton	2	0	0	0	0	2
Prince George's	College Park - Hyattsville	16	0	0	0	2	18
Prince George's	Greenbelt	4	0	1	0	0	5
Prince George's	Joint Base Andrews - Upper Marlboro	4	0	0	0	0	4
Prince George's	Largo - Glenarden	16	1	1	0	0	18
Prince George's	Suitland - Capitol Heights	14	0	1	0	0	15

Table 8 summarizes lines with longest and shortest span compared to their standards for each state.

Table 8: Lines with Longest / Shortest Spans Compared to Standards

State	Lines with Longest Span of Service Compared to Standard	Lines with Shortest Span of Service compared to standard
District of Columbia	Benning Road-H Street (X2)	United Medical Center-Anacostia (W2, W3)
	East Capitol Street-Cardozo (96)	Bladensburg Road-Anacostia (B2)
	Crosstown (H2, H4)	Shipley Terrace-Fort Drum (W1)
	14th Street (52,54)	Benning Road-H St Limited (X9)
	Wisconsin Avenue (31,33)	Georgia Avenue-7th Street (70)
Virginia	Leesburg Pike (28A)	Foxchase-Seminary Valley (8W)
	Alexandria-Pentagon (10A)	Landmark-Ballston (25B)
	Lincolnia-North Fairlington (7A)	Columbia Pike (16A, 16C, 16E)
	Ballston-Farragut Square (38B)	-
	Mclean-Crystal City (23A, 23B, 23T)	-
Maryland	Greenbelt-Twinbrook (C2, C4)	College Park (83,86)
	Bethesda-Silver Spring (J1, J2)	Rhode Island Avenue - New Carrollton (T14)
	Eastover-Addison Road (P12)	Fairland (Z8)
	Georgia Avenue-Maryland (Y2, Y7, Y8)	Bowie-New Carrollton (B27)
	New Hampshire Ave. - Maryland (K6)	Ardwick Industrial Park Shuttle (F12)

Frequency

The frequency of service is the average amount of scheduled time between trips on each line. Frequency is measured by hour and service day.

The average amount of scheduled time between trips for each hour is measured by dividing 60 minutes by the number of trips scheduled in that hour.

The frequency of service of each line during peak period is compared against WMATA standards based on the line's classification and tier (Table 5). The grade is determined based on the difference between the peak frequencies and the standard peak frequencies for each day using the thresholds in **Table 9**Table 9.

Table 9: Brackets for Frequency of Service Grades

Difference between service peak frequency and standard peak frequency in minutes (service - standard)	Grade
<-5	A
- 5 to 0	B
0 to 5	C
5 to 10	D
>= 10	E

Data Source

- May 2022 Metrobus GTFS

Results

Figure 9 Figure 9 through **Figure 14** illustrate frequency grades for each service day and line classification. Additionally, **Table 7** summarizes the distribution of service span grades for lines serving each geomarket in the region.

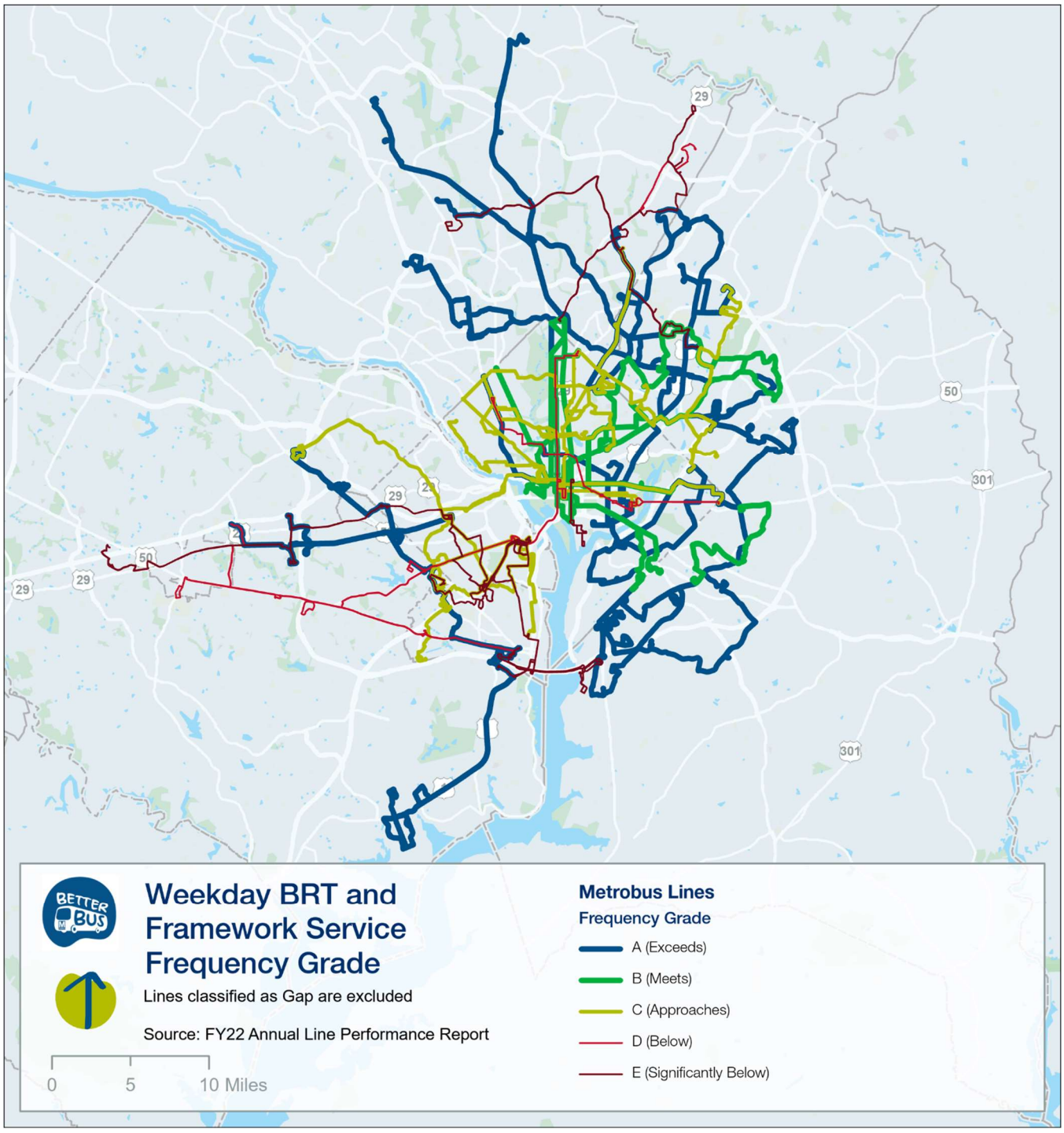

Figure 9: Weekday Frequency of Service Grade for BRT and Framework Lines

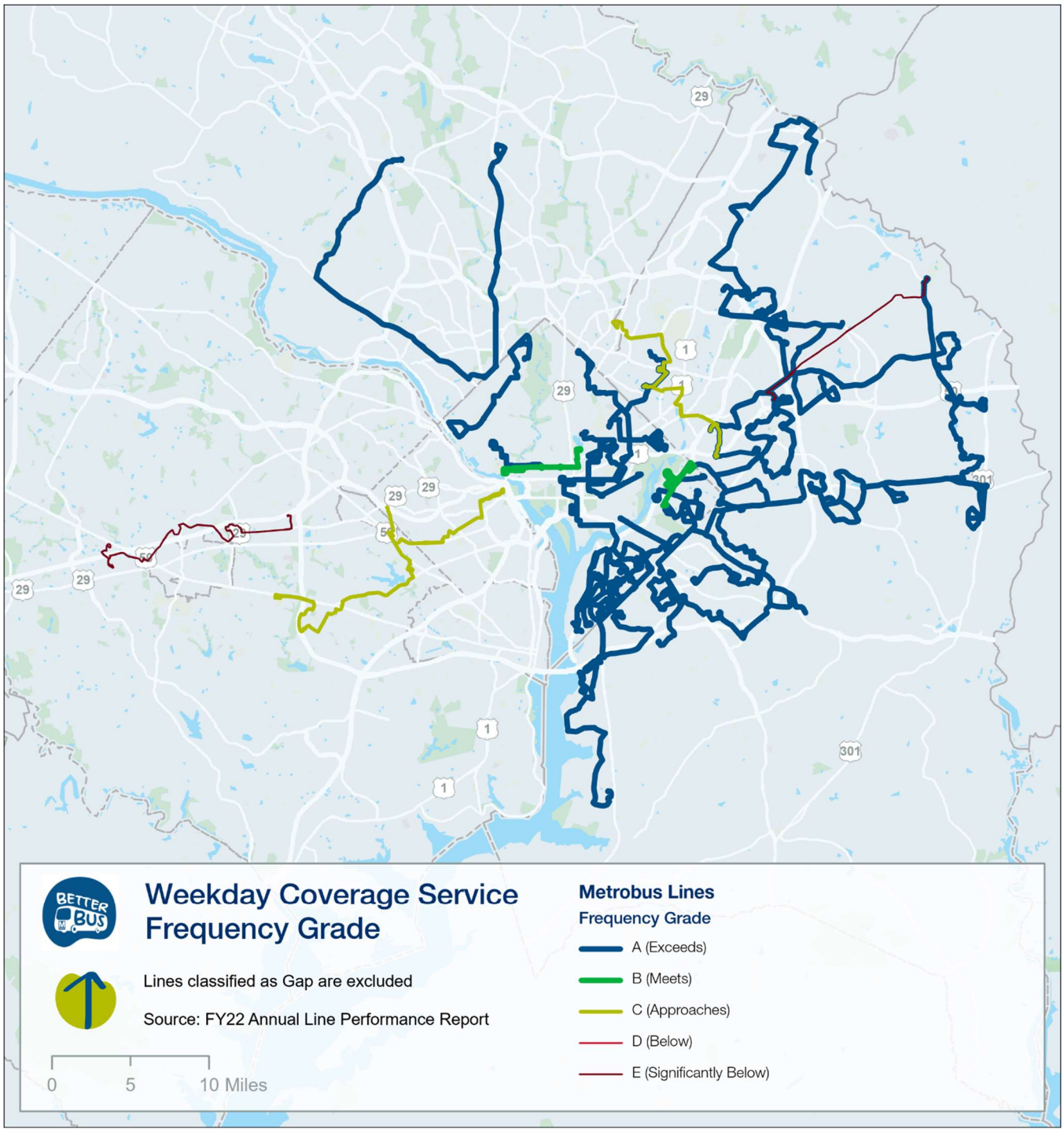

Figure 10: Weekday Frequency of Service Grade for Coverage Lines

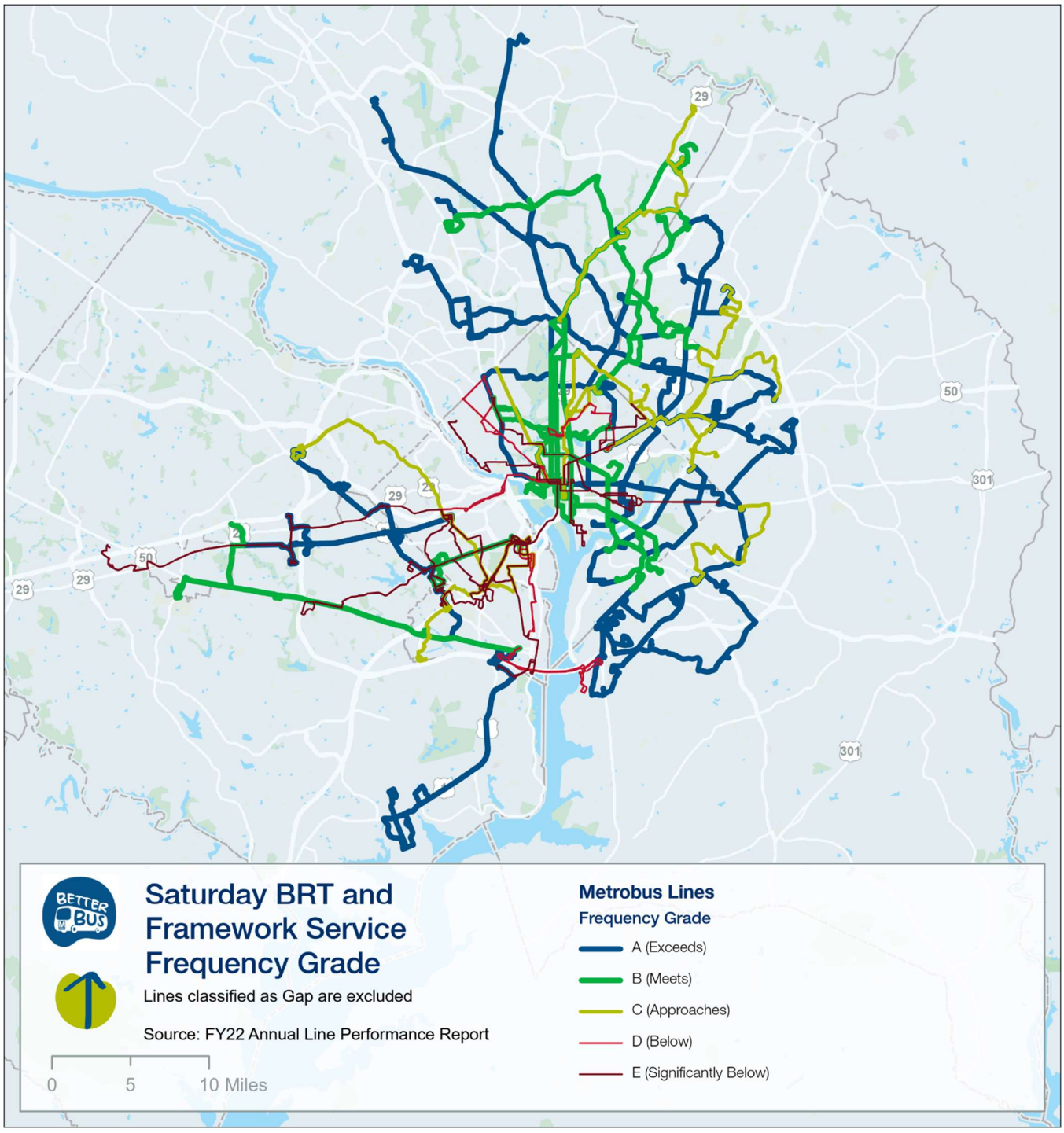

Figure 11: Saturday Frequency of Service Grade for BRT and Framework Lines

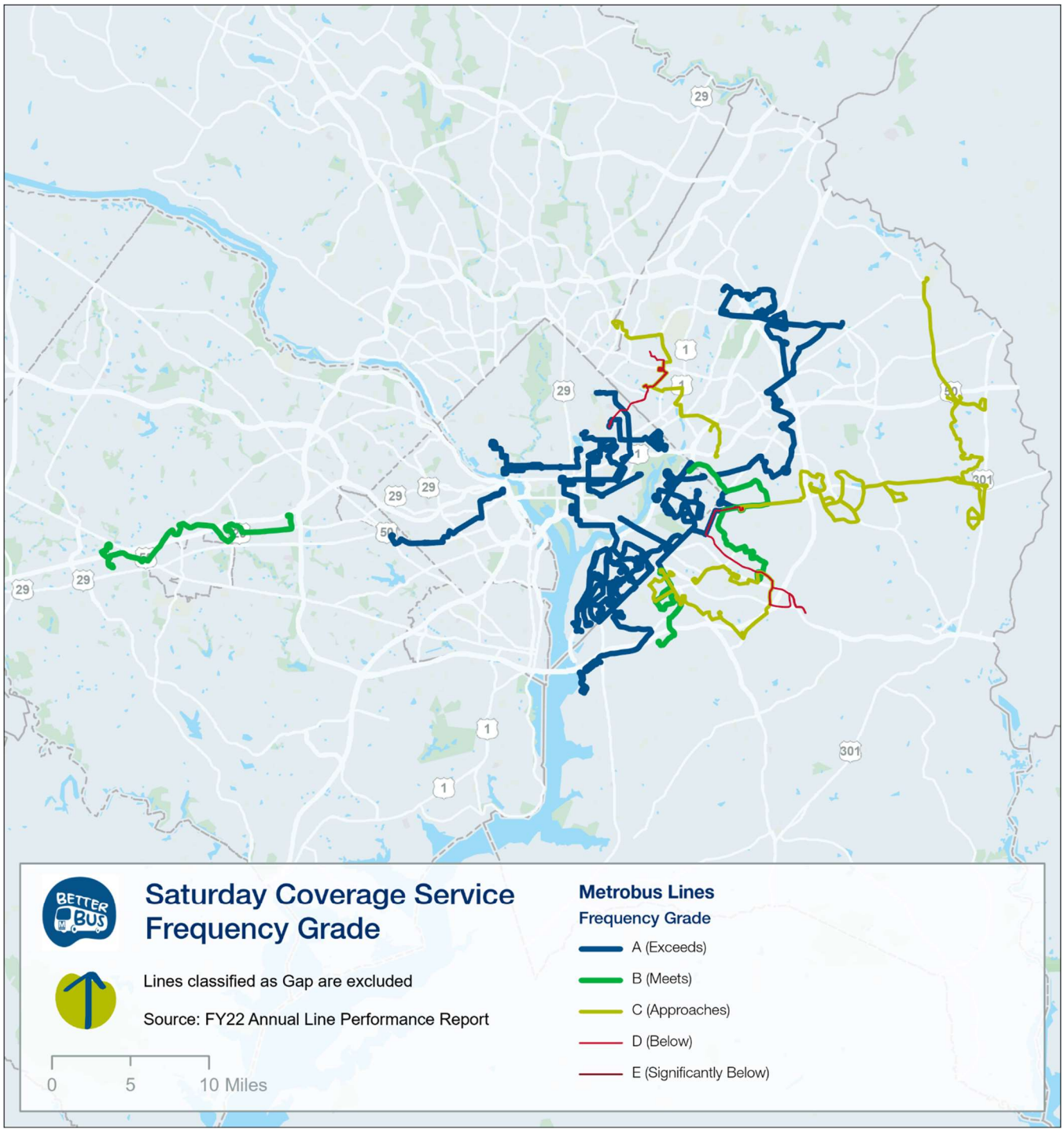

Figure 12: Saturday Frequency of Service Grade for Coverage Lines

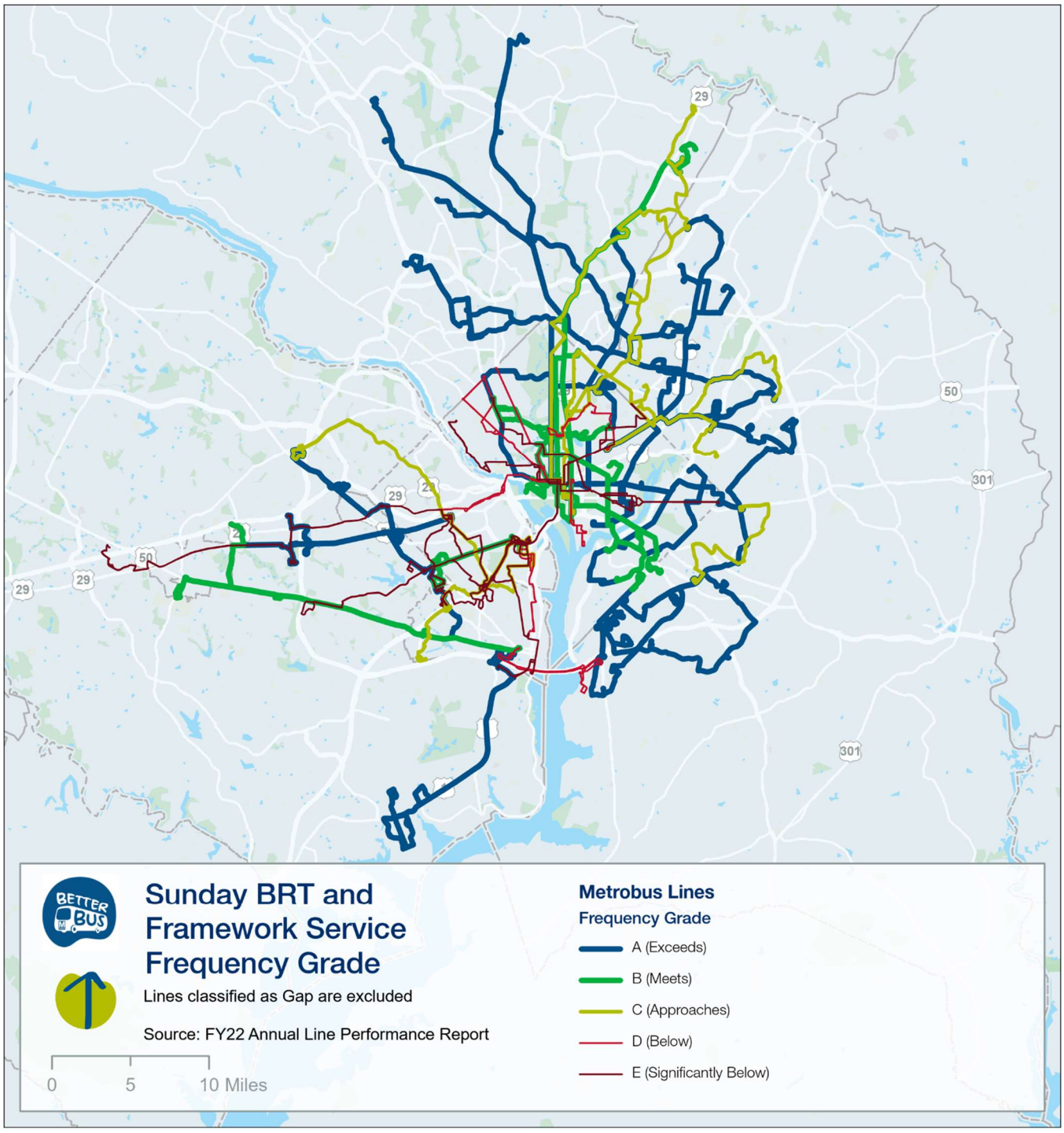

Figure 13: Sunday Frequency of Service Grade for BRT and Framework Lines

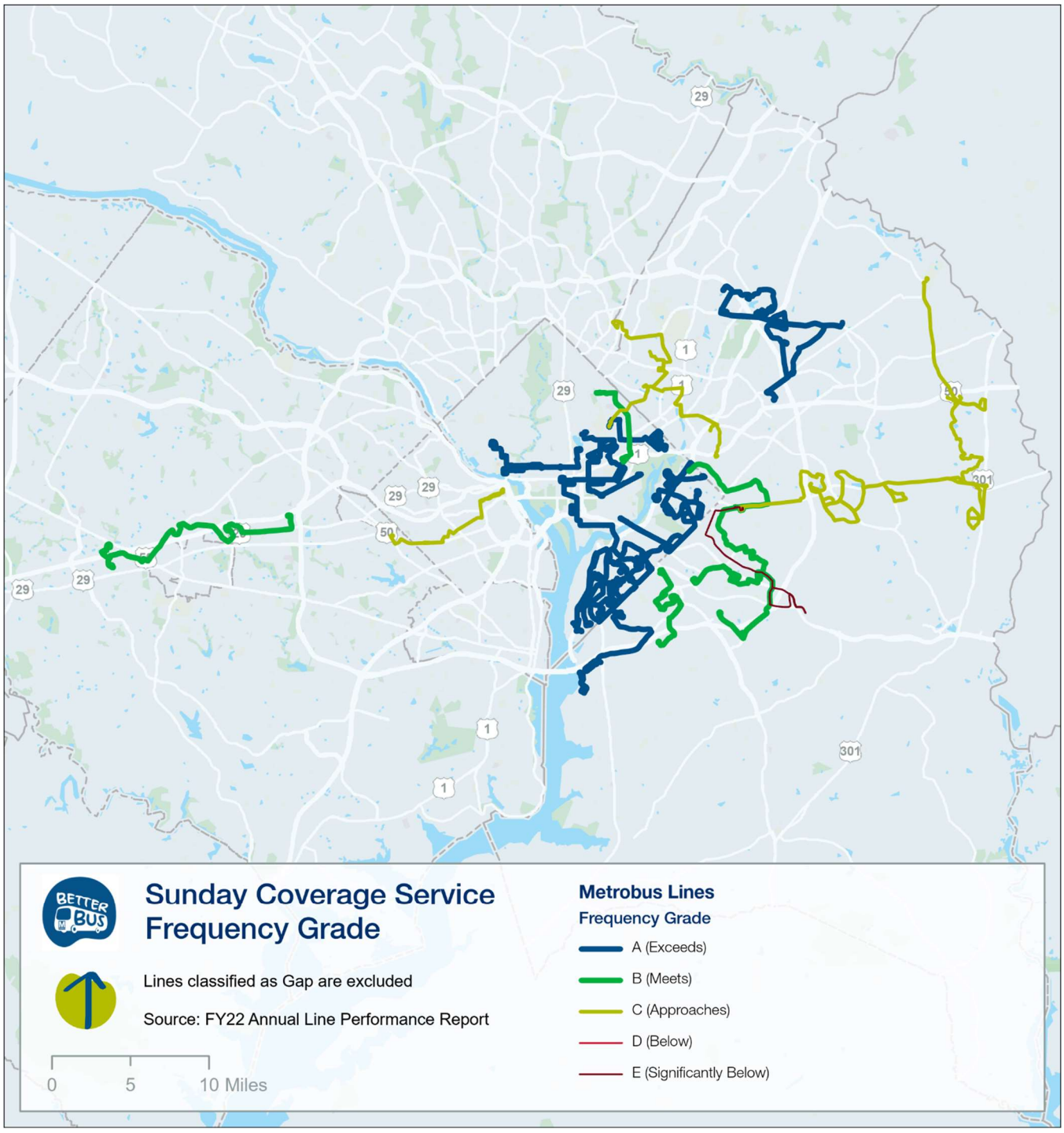

Figure 14: Sunday Frequency of Service Grade for Coverage Lines

Table 10: Distribution of Weekday Frequency Grade by Geomarket

Jurisdiction	Geomarket	A	B	C	D	E	Total Lines
Arlington	Ballston - Courthouse - Rosslyn	1	0	6	1	4	12
Arlington	Bluemont - Barcroft - Douglas Park	1	0	5	1	3	10
Arlington	Crystal/Pentagon Cities - Shirlington	0	0	4	1	3	8
Arlington	East Falls Church - Garden City	2	0	2	0	1	5
Alexandria	Brookville - Landmark/Van Dorn	1	0	2	1	1	5
Alexandria	Old Town - Rosemont	2	0	3	1	4	10
DC	Anacostia - Good Hope	10	1	0	0	0	11
DC	Benning Heights - Deanwood	8	2	2	1	0	13
DC	Brookland - Fort Totten	11	5	6	0	0	22
DC	Chinatown - Dupont Circle	8	10	6	3	1	28
DC	Cleveland Park - Woodley Park	5	4	4	1	0	14
DC	Columbia Heights - Mt. Pleasant	2	4	4	1	0	11
DC	Congress Heights - Anacostia Naval Station	15	1	0	0	1	17
DC	Foggy Bottom - GWU	1	2	2	0	0	5
DC	Friendship Heights - Palisades	4	1	4	1	0	10
DC	Howard University - Cardozo/Shaw	2	4	3	2	0	11
DC	Ivy City - Fort Lincoln	9	3	2	0	0	14
DC	L'Enfant Plaza - Waterfront	2	4	0	1	1	8
DC	National Mall	5	7	4	3	1	20
DC	Navy Yard - Potomac Avenue	5	1	0	0	1	7
DC	Petworth - Walter Reed	3	3	6	1	0	13
DC	Shaw/Howard University - Mt Vernon Sq.	5	6	2	2	1	16
DC	Union Station - NOMA	8	3	2	1	0	14
DC	Van Ness - Barnaby Wood	3	1	3	1	0	8
Fairfax	Annandale - Falls Church	2	0	1	2	3	8
Fairfax	Baileys Crossroads - Lincolnia	2	0	4	2	1	9
Fairfax	Fairfax City - Vienna	2	0	0	1	2	5
Fairfax	Lorton - Fort Belvoir	1	0	0	0	0	1
Fairfax	Mclean - Tysons Corner	1	0	1	0	0	2
Fairfax	Mount Vernon - Springfield/Franconia	1	0	0	0	2	3
Fairfax	Reston - Herndon	0	0	0	0	1	1
Fairfax	Aspen Hill - Olney	3	0	0	0	1	4
Loudoun	Bethesda - Potomac - White Flint	6	0	2	0	1	9
Montgomery	Glenmont -Wheaton - White Oak	11	2	3	1	2	19
Montgomery	Rockville - Twinbrook	3	0	0	0	1	4
Montgomery	Shady Grove	1	0	0	0	0	1
Montgomery	Beltsville - Laurel	3	0	0	0	1	4
Montgomery	Bladensburg - New Carrollton	6	3	3	0	1	13
Prince George's	Bowie - Mitchellville	2	0	0	0	1	3
Prince George's	Branch Avenue - Fort Washington	12	1	0	0	1	14
Prince George's	College Park - Hyattsville	9	3	5	0	1	18
Prince George's	Greenbelt	3	0	1	0	1	5
Prince George's	Joint Base Andrews - Upper Marlboro	3	0	0	0	0	3
Prince George's	Largo - Glenarden	10	2	4	1	0	17
Prince George's	Suitland - Capitol Heights	12	1	1	1	0	15

Productivity

Productivity measures the ridership of a line normalized by the amount of service the line provides. The amount of service is either revenue miles of service or revenue hours of service. In this report revenue hours is used, and therefore, productivity is defined as passengers per revenue hour.

Passengers per revenue hour is the ratio of average daily ridership over average daily revenue hours operated on each line. The averages are the weighted average of daily values across all schedule periods for each service day.

The productivity of each line is compared against WMATA standards based on the line's classification and tier. The grade is determined based on the percentage difference between the line's productivity value and the standard as summarized in Error! Reference source not found..

Table 11: Brackets for Productivity Grades

Percent difference between lines' productivity and the standard $\left(\frac{line\ productivity - standard\ productivity}{standard\ productivity}\right)$	Grade
> 10%	A
0% to 10%	B
-10% to 0%	C
-20% to -10%	D
< -20%	E

Data Source

- FY 2022 Ridecheck Plus

Results

Figure 15 illustrates weekday productivity for each Metrobus line. Additionally, **Table 12** summarizes the distribution of service span grades for lines serving each geomarket in the region.

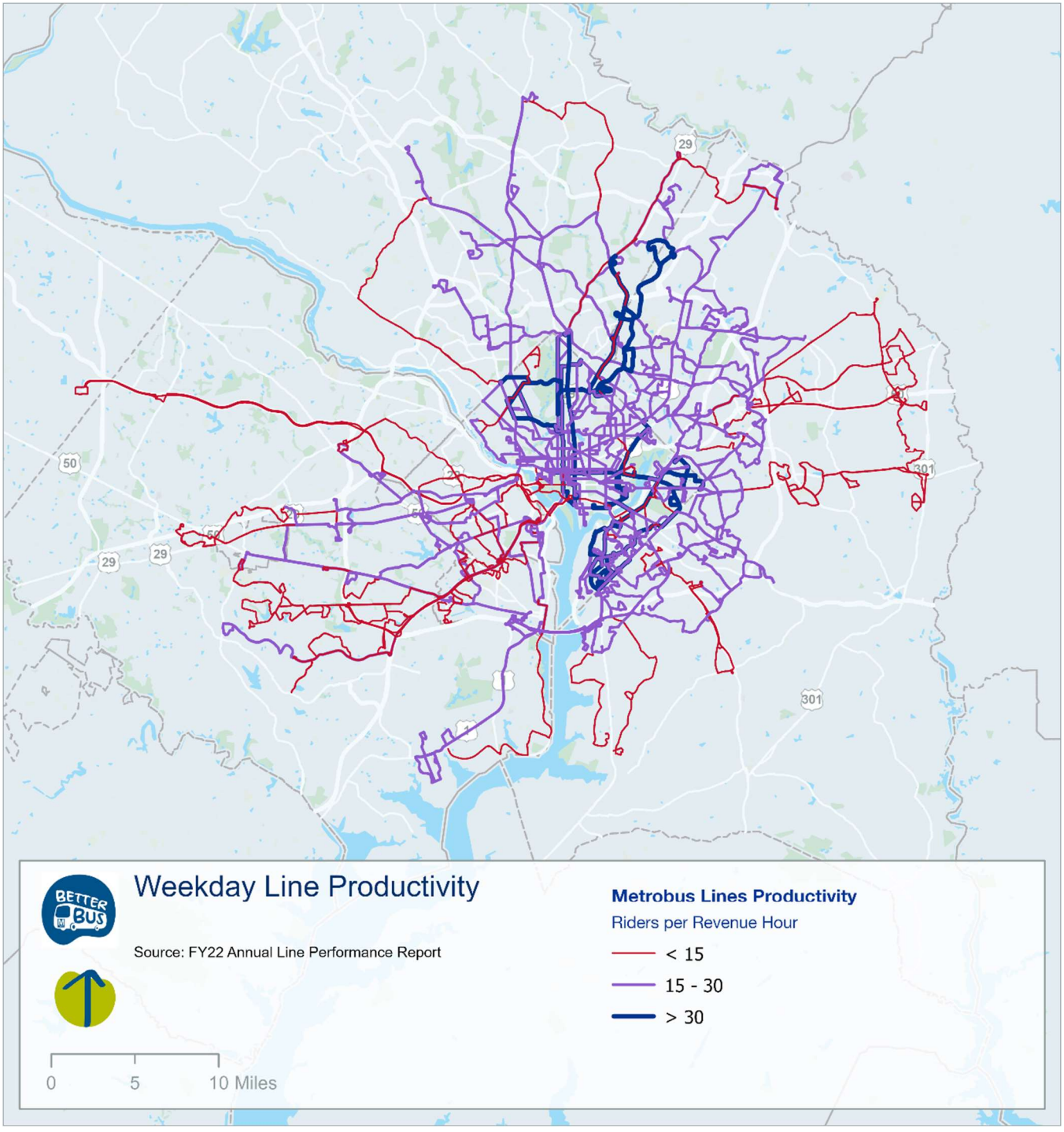

Figure 15: Weekday Productivity of Lines (Riders per Revenue Hour)

Table 12: Distribution of Weekday Passengers per Revenue Hour Grade by Geomarket

Jurisdiction	Geomarket	A	B	C	D	E	Total Lines
Arlington	Ballston - Courthouse - Rosslyn	1	3	0	4	15	23
Arlington	Bluemont - Barcroft - Douglas Park	0	2	0	2	9	13
Arlington	Crystal/Pentagon Cities - Shirlington	1	1	0	3	13	18
Arlington	East Falls Church - Garden City	0	1	0	2	4	7
Alexandria	Brookville - Landmark/Van Dorn	1	1	0	3	8	13
Alexandria	Old Town - Rosemont	1	2	0	3	13	19
DC	Anacostia - Good Hope	8	2	0	1	0	11
DC	Benning Heights - Deanwood	11	2	0	1	0	14
DC	Brookland - Fort Totten	11	4	1	2	4	22
DC	Chinatown - Dupont Circle	4	4	2	10	10	30
DC	Cleveland Park - Woodley Park	1	1	2	7	3	14
DC	Columbia Heights - Mt. Pleasant	2	1	2	4	2	11
DC	Congress Heights - Anacostia Naval Station	14	2	0	1	1	18
DC	Foggy Bottom - GWU	0	0	1	1	5	7
DC	Friendship Heights - Palisades	4	0	1	4	1	10
DC	Howard University - Cardozo/Shaw	2	2	0	5	2	11
DC	Ivy City - Fort Lincoln	9	4	0	1	1	15
DC	L'Enfant Plaza - Waterfront	2	1	1	2	3	9
DC	National Mall	4	2	1	6	10	23
DC	Navy Yard - Potomac Avenue	3	2	0	1	1	7
DC	Petworth - Walter Reed	4	2	2	4	1	13
DC	Shaw/Howard University - Mt Vernon Sq.	2	3	1	6	4	16
DC	Union Station - NOMA	7	3	0	3	2	15
DC	Van Ness - Barnaby Wood	3	0	1	4	0	8
Fairfax	Annandale - Falls Church	0	2	0	4	6	12
Fairfax	Baileys Crossroads - Lincolnia	1	2	0	5	7	15
Fairfax	Burke	1	0	0	2	1	4
Fairfax	Fairfax City - Vienna	0	0	0	3	5	8
Fairfax	Lorton - Fort Belvoir	0	1	0	0	1	2
Fairfax	Mclean - Tysons Corner	0	0	0	1	2	3
Fairfax	Mount Vernon - Springfield/Franconia	1	1	0	2	3	7
Fairfax	Reston - Herndon	0	0	0	0	2	2
Loudoun	Dulles International Airport	0	0	0	0	1	1
Montgomery	Aspen Hill - Olney	4	2	0	0	0	6
Montgomery	Bethesda - Potomac - White Flint	5	0	2	1	1	9
Montgomery	Glenmont -Wheaton - White Oak	10	5	2	2	2	21
Montgomery	Rockville - Twinbrook	3	0	0	0	1	4
Montgomery	Shady Grove	1	0	0	0	0	1
Prince George's	Beltsville - Laurel	2	3	0	0	0	5
Prince George's	Bladensburg - New Carrollton	8	6	0	0	0	14
Prince George's	Bowie - Mitchellville	3	1	0	0	0	4
Prince George's	Branch Avenue - Fort Washington	14	0	0	1	1	16
Prince George's	Brandywine - Clinton	2	0	0	0	0	2
Prince George's	College Park - Hyattsville	11	4	0	0	3	18
Prince George's	Greenbelt	4	1	0	0	0	5
Prince George's	Joint Base Andrews - Upper Marlboro	4	0	0	0	0	4
Prince George's	Largo - Glenarden	10	7	0	1	0	18
Prince George's	Suitland - Capitol Heights	12	2	0	1	0	15

Reliability

Reliability measures the degree to which riders can rely on a line to provide them with service as it is scheduled. Reliability has several components such as crowding in the bus, seat availability and load, and on-time performance. In this report on-time performance is used.

On-time performance refers to the percentage of trips that depart a certain timepoint relative to their scheduled departure time on time (i.e., within a window of 2 minutes ahead and 7 minutes late).

The on-time performance of each line is compared against a constant 79 percent standard, across all classifications and tiers. The difference between a lines' on-time performance and the standard determines its grade as tabulated in Error! Reference source not found..

Table 13: Brackets for Reliability Grades

Percent difference between lines on-time performance and standard	Grade
> 5%	A
0% to 5%	B
-5% to 0%	C
-10% to -5%	D
< -10%	E

Data Source

- Oracle, on-time performance table

Results

Table 14 summarizes the high performing and low performing lines. **Figure 16** through **Figure 18** illustrate on-time performance grades in each line classification for each state. Additionally, **Table 15** summarizes on-time performance grades by geomarket.

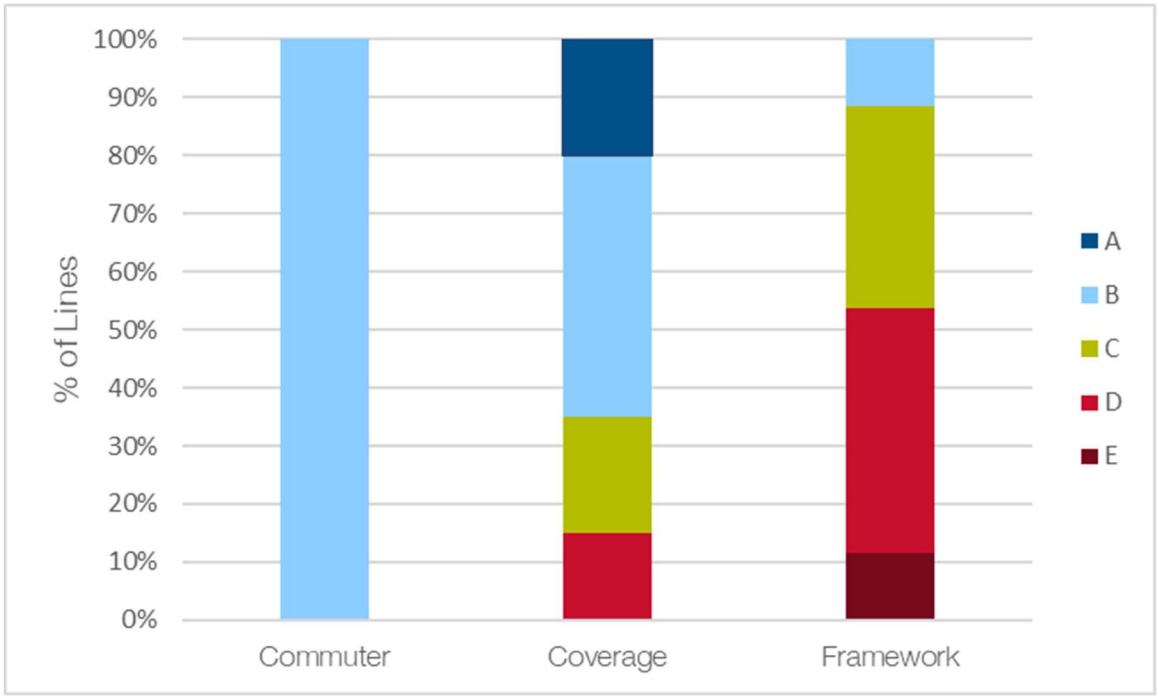

Figure 16: On-Time Performance by Service Classification for Lines in District of Columbia

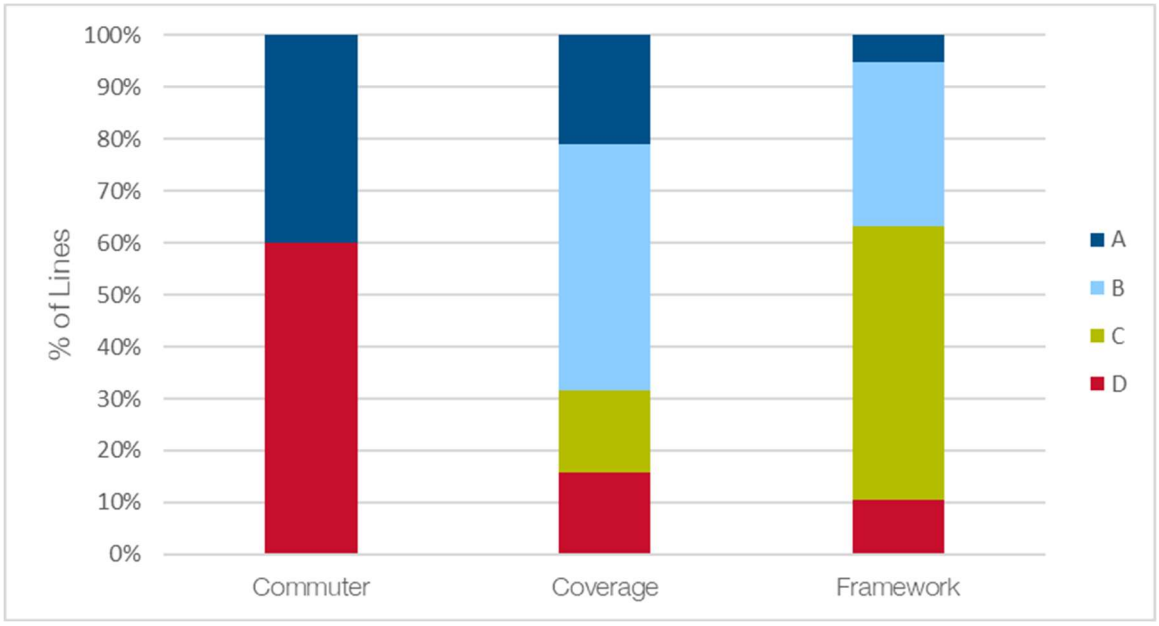

Figure 17: On-Time Performance by Service Classification for Lines in Maryland

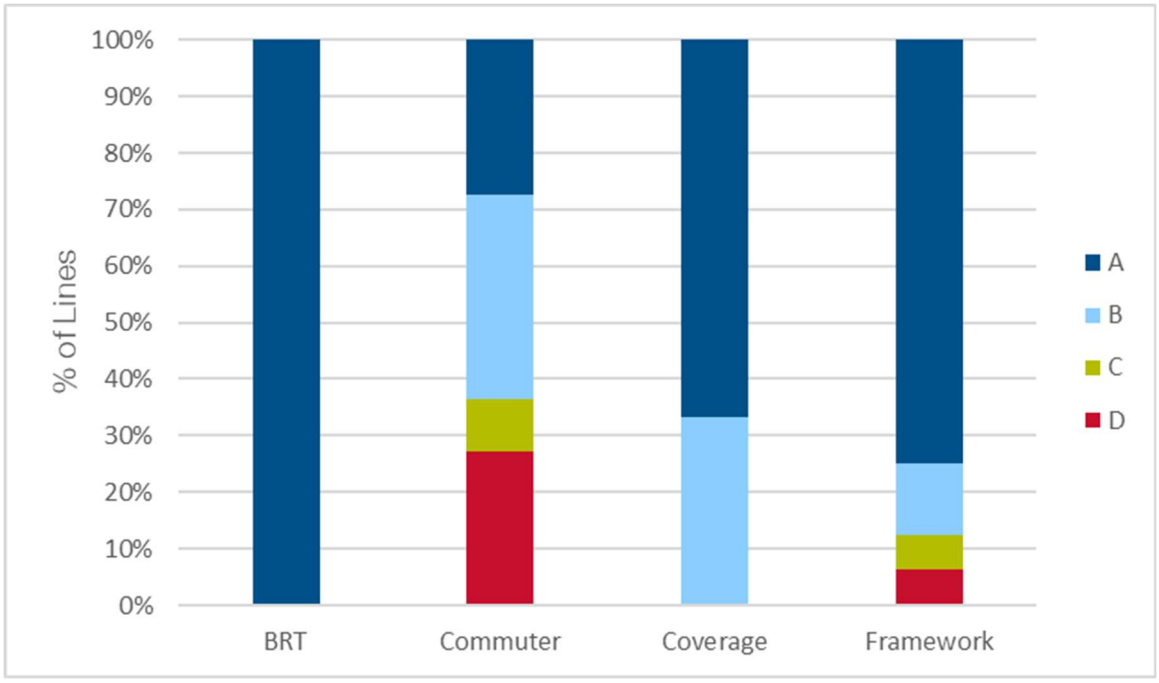

Figure 18: On-Time Performance by Service Classification for Lines in Virginia

Table 14: Most and Least Reliable Lines by State

	Least Reliable Lines	Most Reliable Lines
Maryland	College Park-White Flint (C8) Colesville-Ashton (Z2) Greenbelt-Twinbrook (C2, C4)	Ardwick Industrial Park Shuttle (F12) Bowie-New Carrollton (B27) Marlow Heights-Temple Hills (H12)
Virginia	Lee Highway-Farragut Square (3Y, 3F) Kings Park Express (17G, 17K) Mount Vernon Line (11C)	Metroway Potomac Yard (MW1) Landmark - Holmes Run Parkway (21C) Mark Center-Pentagon (7M)
DC	Congress Heights-Georgetown (D51) Mt. Pleasant - Tenleytown Line (W45, W47) 16th Street-Tenleytown (D31, D32, D33, D34)	Nebraska Avenue (M4) Deanwood- Minnesota Ave. (U7) Sheriff Road-River Terrace (U4)

Table 15: Distribution of Weekday On-Time Performance Grade by Geomarket

Jurisdiction	Geomarket	A	B	C	D	E	Total Lines
Arlington	Ballston - Courthouse - Rosslyn	13	5	1	3	1	23
Arlington	Bluemont - Barcroft - Douglas Park	9	1	0	2	1	13
Arlington	Crystal/Pentagon Cities - Shirlington	10	5	1	2	0	18
Arlington	East Falls Church - Garden City	5	1	0	0	1	7
Alexandria	Brookville - Landmark/Van Dorn	7	3	2	1	0	13
Alexandria	Old Town - Rosemont	10	5	2	2	0	19
DC	Anacostia - Good Hope	0	3	4	4	0	11
DC	Benning Heights - Deanwood	2	7	3	1	1	14
DC	Brookland - Fort Totten	1	6	8	6	0	21
DC	Chinatown - Dupont Circle	1	3	7	14	5	30
DC	Cleveland Park - Woodley Park	1	2	3	6	2	14
DC	Columbia Heights - Mt. Pleasant	0	1	2	6	2	11
DC	Congress Heights - Anacostia Naval Station	1	5	6	6	0	18
DC	Foggy Bottom - GWU	0	1	0	4	2	7
DC	Friendship Heights - Palisades	1	2	3	2	2	10
DC	Howard University - Cardozo/Shaw	0	0	2	6	3	11
DC	Ivy City - Fort Lincoln	1	5	4	5	0	15
DC	L'Enfant Plaza - Waterfront	1	2	0	5	1	9
DC	National Mall	1	4	3	10	5	23
DC	Navy Yard - Potomac Avenue	0	2	2	3	0	7
DC	Petworth - Walter Reed	0	1	4	6	2	13
DC	Shaw/Howard University - Mt Vernon Sq.	0	1	4	8	3	16
DC	Union Station - NOMA	0	3	5	5	2	15
DC	Van Ness - Barnaby Wood	1	1	3	2	1	8
Fairfax	Annandale - Falls Church	6	3	2	1	0	12
Fairfax	Baileys Crossroads - Lincolnia	9	3	2	1	0	15
Fairfax	Burke	0	3	0	1	0	4
Fairfax	Fairfax City - Vienna	3	3	1	1	0	8
Fairfax	Lorton - Fort Belvoir	0	1	0	1	0	2
Fairfax	Mclean - Tysons Corner	2	1	0	0	0	3
Fairfax	Mount Vernon - Springfield/Franconia	1	4	0	2	0	7
Fairfax	Reston - Herndon	1	1	0	0	0	2
Loudoun	Dulles International Airport	0	1	0	0	0	1
Montgomery	Aspen Hill - Olney	0	1	3	2	0	6
Montgomery	Bethesda - Potomac - White Flint	1	2	3	2	1	9
Montgomery	Glenmont -Wheaton - White Oak	0	2	10	6	2	20
Montgomery	Rockville - Twinbrook	0	2	0	1	1	4
Montgomery	Shady Grove	0	1	0	0	0	1
Prince George's	Beltsville - Laurel	0	0	2	3	0	5
Prince George's	Bladensburg - New Carrollton	4	7	3	0	0	14
Prince George's	Bowie - Mitchellville	2	2	0	0	0	4
Prince George's	Branch Avenue - Fort Washington	3	5	3	5	0	16
Prince George's	Brandywine - Clinton	1	0	0	1	0	2
Prince George's	College Park - Hyattsville	0	8	5	3	1	17
Prince George's	Greenbelt	1	2	0	2	0	5
Prince George's	Joint Base Andrews - Upper Marlboro	1	0	2	1	0	4
Prince George's	Largo - Glenarden	6	4	6	1	1	18
Prince George's	Suitland - Capitol Heights	1	5	7	1	1	15

In addition to on-time performance, stop spacing for each line is compared to its standard and illustrated in Error! Reference source not found..

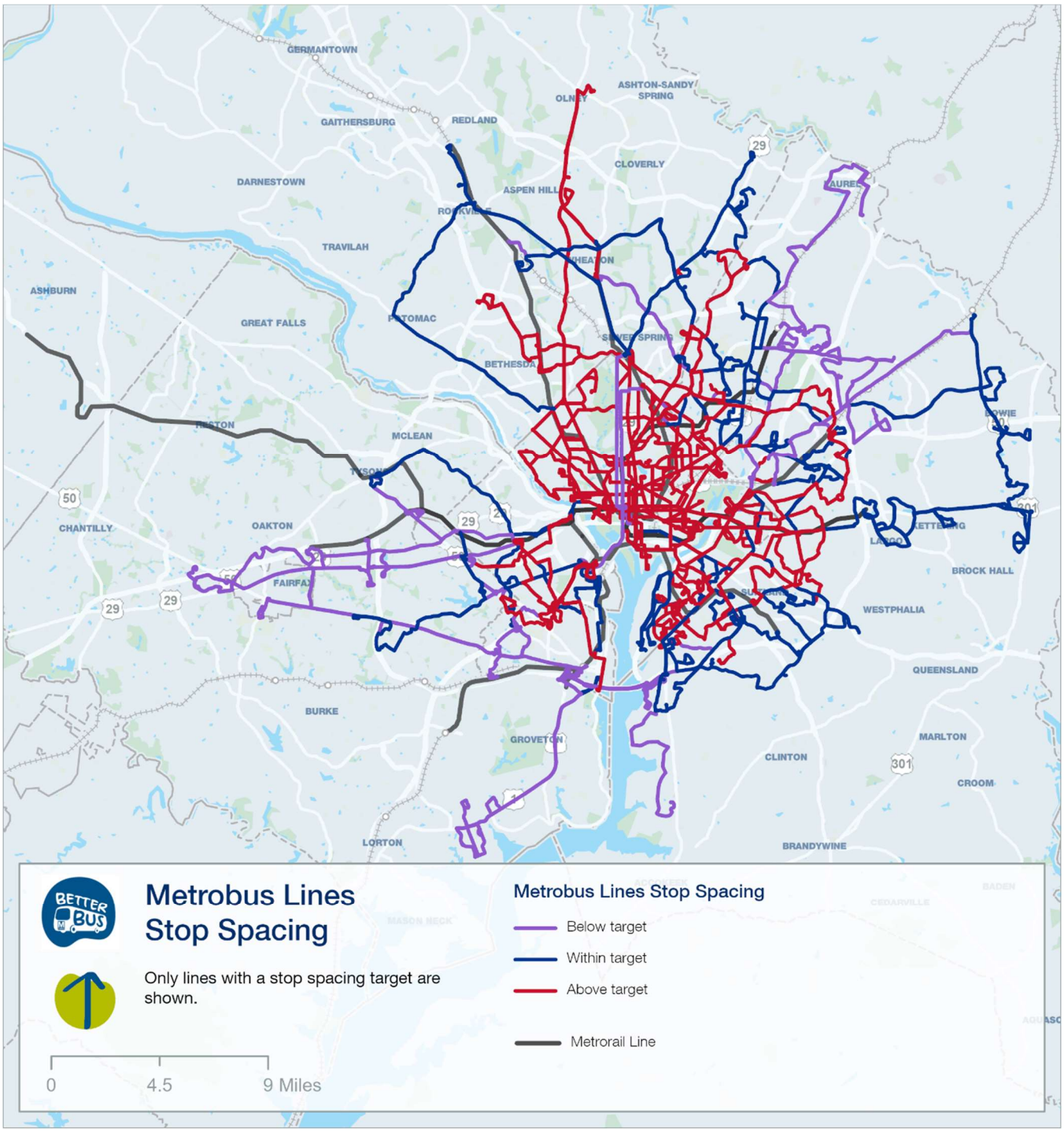

Figure 19: Metrobus Lines by Stop Spacing

Overall Performance

Individual grades from all metrics are averaged at the line level, for each service day to produce an overall grade.

The overall grade for each line is an arithmetic average of the grades for all metrics. Each metric is assigned a score of 0 through 4 corresponding with letter grades as follows: A=4; B=3; C=2; D=1; and E=0. Ultimately, these individual metric scores are averaged to produce the overall grade.

The overall average is graded according to Table 16.

Table 16: Brackets for Overall Grades

Arithmetic average of all grades	Grade
>3.668	A
2.668 – 3.667	B
1.668 – 2.667	C
0.668 – 1.667	D
< 0.667	E

Data Source

- FY 2022 Annual Line Performance Report

Results

Error! Not a valid bookmark self-reference. summarizes the distribution of service span grades for lines serving each geomarket in the region.

Table 17: Distribution of Overall Grade by Geomarket

Jurisdiction	Geomarket	A	B	C	D	Total Lines
Arlington	Ballston - Courthouse - Rosslyn	0	2	15	6	23
Arlington	Bluemont - Barcroft - Douglas Park	0	0	8	5	13
Arlington	Crystal/Pentagon Cities - Shirlington	0	2	10	6	18
Arlington	East Falls Church - Garden City	0	0	6	1	7
Alexandria	Brookville - Landmark/Van Dorn	0	2	9	2	13
Alexandria	Old Town - Rosemont	0	3	11	5	19
DC	Anacostia - Good Hope	5	2	4	0	11
DC	Benning Heights - Deanwood	5	7	2	0	14
DC	Brookland - Fort Totten	2	11	7	2	22
DC	Chinatown - Dupont Circle	0	7	19	4	30
DC	Cleveland Park - Woodley Park	0	3	10	1	14
DC	Columbia Heights - Mt. Pleasant	0	3	8	0	11
DC	Congress Heights - Anacostia Naval Station	8	3	6	1	18
DC	Foggy Bottom - GWU	0	1	5	1	7
DC	Friendship Heights - Palisades	1	3	5	1	10
DC	Howard University - Cardozo/Shaw	0	4	6	1	11
DC	Ivy City - Fort Lincoln	2	9	3	1	15
DC	L'Enfant Plaza - Waterfront	0	3	3	3	9
DC	National Mall	0	4	15	4	23
DC	Navy Yard - Potomac Avenue	3	1	2	1	7
DC	Petworth - Walter Reed	0	6	7	0	13
DC	Shaw/Howard University - Mt Vernon Sq.	0	4	10	2	16
DC	Union Station - NOMA	3	4	7	1	15
DC	Van Ness - Barnaby Wood	1	3	4	0	8
Fairfax	Annandale - Falls Church	0	1	9	2	12
Fairfax	Baileys Crossroads - Lincolnia	0	2	10	3	15
Fairfax	Burke	0	1	3	0	4
Fairfax	Fairfax City - Vienna	0	0	6	2	8
Fairfax	Lorton - Fort Belvoir	0	1	1	0	2
Fairfax	Mclean - Tysons Corner	0	0	2	1	3
Fairfax	Mount Vernon - Springfield/Franconia	0	2	3	2	7
Fairfax	Reston - Herndon	0	0	0	2	2
Loudoun	Dulles International Airport	0	0	0	1	1
Montgomery	Aspen Hill - Olney	1	2	3	0	6
Montgomery	Bethesda - Potomac - White Flint	1	4	3	1	9
Montgomery	Glenmont -Wheaton - White Oak	2	9	8	2	21
Montgomery	Rockville - Twinbrook	0	2	1	1	4
Montgomery	Shady Grove	0	1	0	0	1
Prince George's	Beltsville - Laurel	0	3	2	0	5
Prince George's	Bladensburg - New Carrollton	1	7	6	0	14
Prince George's	Bowie - Mitchellville	0	1	3	0	4
Prince George's	Branch Avenue - Fort Washington	3	7	5	1	16
Prince George's	Brandywine - Clinton	0	0	2	0	2
Prince George's	College Park - Hyattsville	3	10	2	3	18
Prince George's	Greenbelt	0	3	2	0	5
Prince George's	Joint Base Andrews - Upper Marlboro	0	3	1	0	4
Prince George's	Largo - Glenarden	3	8	7	0	18
Prince George's	Suitland - Capitol Heights	5	7	3	0	15

Metrorail Interaction

Using 2022 GTFS feeds for each system (Metrobus and Metrorail), Metrorail service area was defined as a ½ mi buffer surrounding Metrorail stations, while a Metrobus line's service area was defined as a ¼ mi buffer surrounding each line's bus stops. The percentage overlap between each Metrobus line's service area and Metrorail's service area was obtained through dividing the overlapping area by the bus service area for each line.

The percentiles of average Metrorail weekday transfers along with the percentage Metrorail service area overlap were used to examine the relationship between each Metrobus line and the Metrorail system. Lines were classified as complementary, substitutive, and independent as follows: lines with transfer volumes above the 50th percentile were deemed complementary services, lines below the 50th percentile of transfer volumes and below 50 percent Metrorail overlap were deemed independent services, while lines below the 50th percentile of transfer volumes and above 50 percent Metrorail overlap were deemed substitutive services.

Data Source

- May 2022 Trace model

Results

Figure 20 illustrates transfers to Metrorail on weekdays for each service classification. **Table 18** summarizes transfers to Metrorail and percentage of service area overlap with Metrorail for each Metrobus line.

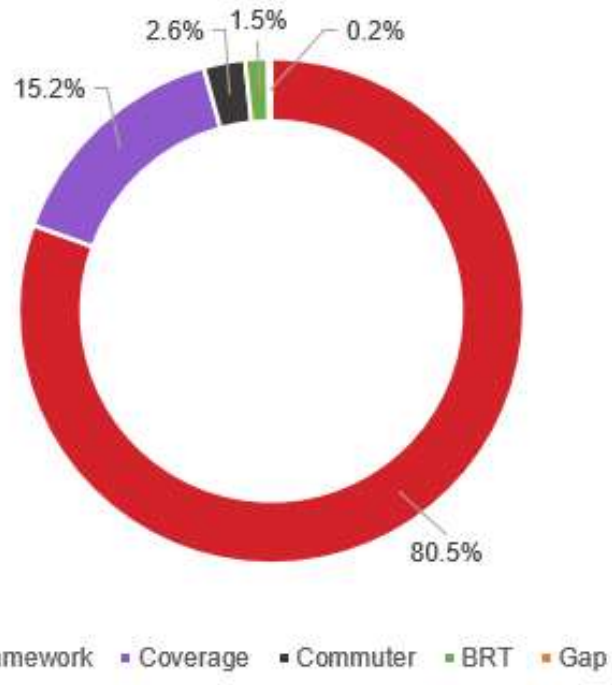

Figure 20: Weekday Metrorail Transfers by Metrobus Classification

Table 18: Metrobus Lines by Weekday Metrorail Transfers and Percentage Overlap with Metrorail

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
14th Street	52, 54	395	3.8%	67%	Metro Center, McPherson Square, Columbia Heights, Takoma, Smithsonian, L'Enfant Plaza
Wisconsin Avenue	31, 33	329	5.3%	62%	Federal Triangle, McPherson Square, Farragut North, Farragut West, Tenleytown-AU, Friendship Heights, Foggy Bottom-GWU, Archives, L'Enfant Plaza
New Hampshire Ave. - Maryland	K6	266	5.2%	9%	Fort Totten
Leesburg Pike	28A	248	5.3%	23%	Tysons Corner, West Falls Church, East Falls Church, King St-Old Town
Columbia Pike	16A, 16C, 16E	239	8.2%	21%	Pentagon, Pentagon City, McPherson Square
Pennsylvania Avenue	32, 36	228	3.5%	65%	Naylor Rd, Potomac Ave, Eastern Market, Archives, Federal Triangle, McPherson Square, Farragut North, Farragut West, Foggy Bottom-GWU, Southern Ave
Connecticut Avenue	L2	220	7.9%	69%	Vann Ness-UDC, Cleveland Park, Woodley Park, Farragut North, Farragut West
Mount Pleasant	42, 43	205	6.7%	75%	Dupont Circle, Farragut North, Farragut West, Foggy Bottom-GWU
U Street-Garfield	90, 92	200	2.0%	57%	Anacostia, Eastern Market, NoMa-Gallaudet U, U St, Congress Heights
Georgia Avenue-Maryland	Y2, Y7, Y8	199	3.9%	28%	Silver Spring, Forest Glen, Wheaton, Glenmont
Columbia Pike-Pentagon City	16G, 16H	198	8.7%	14%	Pentagon City
Bethesda-Silver Spring	J1, J2	192	5.6%	26%	Silver Spring, Bethesda, Medical Center
Crosstown	H2, H4	191	4.7%	65%	Brookland-CUA, Columbia Heights, Cleveland Park, Tenleytown-AU, Vann Ness-UDC

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
Riggs Road	R1, R2	189	6.6%	6%	Fort Totten
Georgia Avenue-7th Street	70	183	2.0%	63%	Silver Spring, Georgia Ave-Petworth, Shaw-Howard U, Mt. Vernon Square, Gallery Place-Chinatown, Archives, L'Enfant Plaza
Massachusetts Avenue	N2, N4, N6	183	10.1%	42%	Farragut West, Farragut North, Dupont Circle, Tenleytown-AU, Friendship Heights
Sibley Hospital - Stadium Armory	D6	181	7.7%	43%	Union Station, Judiciary Square, Metro Center, McPherson Square, Farragut North, Farragut West, Dupont Circle
Greenbelt-Twinbrook	C2, C4	176	2.4%	19%	Twinbrook, Wheaton, Prince George's Plaza, Greenbelt
North Capitol Street	80	171	4.6%	67%	McPherson Square, Metro Center, Gallery Place-Chinatown, Union Station, Brookland-CUA, Fort Totten
Benning Road-H Street	X2	171	2.1%	56%	Minnesota Ave, Gallery Place-Chinatown, Metro Center, McPherson Square
Fort Totten-Petworth	60, 64	165	6.6%	78%	Fort Totten, Georgia Ave-Petworth, U St, Metro Center, Federal Triangle
Ballston-Farragut Square	38B	163	7.5%	86%	Ballston-MU, Clarendon, Court House, Rosslyn, Farragut West, Farragut North
New Carrollton-Silver Spring	F4	161	3.1%	27%	New Carrollton, Prince George's Plaza, Silver Spring
East Capitol Street-Cardozo	96	159	4.6%	74%	Capitol Heights, Benning Rd, Stadium-Armory, Union Station, U St, Tenleytown-AU
Metroway Potomac Yard	MW1	158	13.5%	73%	Braddock Rd, Potomac Yard, Crystal City, Pentagon City
Eastover-Addison Road	P12	158	2.8%	20%	Southern Ave, Suitland, Addison Rd
Military Road-Crosstown	E4	158	6.4%	25%	Fort Totten
16th Street	S2	157	3.2%	55%	Silver Spring, McPherson Square, Metro Center, L'Enfant Plaza, Federal Triangle, Archives

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
Georgia Avenue Limited	79	153	3.0%	58%	Silver Spring, Georgia Ave-Petworth, Shaw-Howard U, Mt. Vernon Square, Gallery Place-Chinatown, Archives
Takoma-Petworth	62, 63	150	8.8%	71%	Georgia Ave-Petworth, Takoma, U St, Metro Center, Federal Triangle
Rhode Island Avenue	G8	147	6.1%	62%	Farragut West, Shaw-Howard U, Rhode Island Ave, Brookland-CUA, Mt. Vernon Square, Metro Center, McPherson Square, Farragut North
Lincolnia-North Fairlington	7A	146	10.8%	32%	Pentagon, Van Dorn St, Pentagon City
Veirs Mill Road	Q1, Q2, Q4, Q5, Q6	138	3.5%	34%	Rockville, Wheaton, Forest Glen, Silver Spring, Shady Grove
Mclean-Crystal City	23A, 23B, 23T	137	6.3%	25%	Ballston-MU, McLean, Crystal City
16th Street Limited	S9	131	3.1%	47%	McPherson Square, Silver Spring
College Park	83, 86	131	6.2%	14%	Rhode Island Ave, College Park-U of MD, Prince George's Plaza
Capitol Heights - Minnesota Ave.	V2, V4	120	1.8%	51%	Navy Yard-Ballpark, Potomac Ave, Minnesota Ave, Capitol Heights, Anacostia
Oxon Hill-Suitland	D12, D14	118	3.5%	7%	Suitland, Southern Ave
Alexandria-Pentagon	10A	117	9.1%	48%	Pentagon, Pentagon City, Braddock Rd, Huntington
Anacostia-Congress Heights	A2, A6, A7, A8	116	1.2%	27%	Anacostia, Southern Ave
Greenbelt-New Carrollton	G12, G14	114	5.2%	10%	New Carrollton, Greenbelt
Park Road-Brookland	H8, H9	113	4.3%	70%	Rhode Island Ave, Brookland-CUA, Georgia Ave-Petworth, Columbia Heights
New Carrollton-Fort Totten	F6	109	10.6%	31%	Prince George's Plaza, West Hyattsville, Fort Totten, New Carrollton, College Park-U of MD
Bladensburg Road-Anacostia	B2	108	1.8%	30%	Stadium-Armory, Anacostia, Potomac Ave

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
Queens Chapel Road	R4	105	11.6%	55%	Brookland-CUA, West Hyattsville, Prince George's Plaza
Central Avenue	C21, C22, C26, C29	103	7.9%	10%	Addison Rd, Largo Town Center
Chillum Road	F1, F2	100	11.2%	23%	Takoma, West Hyattsville, Cheverly
Richmond Highway Express	REX	91	4.6%	19%	Eisenhower Ave, King St-Old Town, Huntington
Anacostia-Eckington	P6	90	2.9%	85%	Anacostia, Navy Yard-Ballpark, Archives, Metro Center, Gallery Place-Chinatown, Rhode Island Ave, L'Enfant Plaza, Federal Center SW
Martin Luther King Jr. Highway	A12	90	4.6%	22%	Capitol Heights, Addison Rd, Landover
Hunting Point-Ballston	10B	89	6.2%	19%	Braddock Rd
Washington Blvd. -Dunn Loring	2A	85	9.2%	34%	Ballston-MU, East Falls Church
Deanwood-Alabama Avenue	W4	82	1.4%	33%	Anacostia, Congress Heights, Deanwood
Benning Road-H St Limited	X9	81	3.7%	58%	Gallery Place-Chinatown, Minnesota Ave, Capitol Heights, Metro Center
National Harbor-Alexandria	NH2	79	12.4%	47%	Eisenhower Ave, King St-Old Town
Annapolis Road	T18	77	1.9%	16%	New Carrollton, Rhode Island Ave
Kenilworth Avenue	R12	77	10.2%	22%	Deanwood, College Park-U of MD, Greenbelt
Wilson Blvd. - Vienna	1A, 1B	77	3.0%	16%	Vienna, Ballston-MU
Fairfax Village	M6	77	6.9%	15%	Potomac Ave
District Heights-Seat Pleasant	V14	71	8.3%	26%	Deanwood, Addison Rd

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
14th Street Limited	59	70	6.5%	60%	Takoma, Columbia Heights, McPherson Square, Metro Center, Federal Triangle
Sheriff Road-Capitol Heights	F14	68	6.0%	26%	Naylor Rd, Addison Rd, Capitol Heights, New Carrollton
College Park-White Flint	C8	66	5.1%	16%	College Park-U of MD, Glenmont, White Flint
Pershing Drive-Arlington Blvd	4B	65	7.7%	34%	Court House, Rosslyn
Anacostia-Fort Drum	A4, W5	64	2.8%	19%	Anacostia
Langley Park - Cheverly	F8	62	8.2%	23%	Prince George's Plaza, West Hyattsville, Cheverly
District Heights-Suitland	V12	61	5.6%	20%	Suitland, Addison Rd
Barcroft-South Fairlington	22A, 22F	59	15.8%	20%	Pentagon, Ballston-MU, Pentagon City
Alexandria-Fairfax	29K, 29N	59	3.3%	6%	King St-Old Town, Vienna
Hospital Center	D8	58	2.7%	48%	Rhode Island Ave, Union Station
Marshall Heights	U5, U6	57	2.6%	36%	Minnesota Ave
Forestville	K12	56	3.7%	18%	Branch Ave, Suitland
Benning Heights-Alabama Avenue	V7, V8	56	2.2%	34%	Minnesota Ave, Benning Rd, Congress Heights
Landmark - Holmes Run Parkway	21C	56	34.4%	12%	Pentagon
Landmark-Ballston	25B	51	5.6%	16%	Ballston-MU
Laurel	89M	49	8.1%	5%	Greenbelt
Ivy City - Fort Totten	E2	49	7.1%	16%	Fort Totten
Glover Park-Dupont Circle	D2	47	6.6%	23%	Dupont Circle
Burke Centre	18P	45	13.3%	4%	Pentagon

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
Kings Park Express	17G, 17K	45	15.4%	3%	Pentagon
Annandale	29G	45	12.8%	7%	Pentagon
Convention Center-Southwest Waterfront	74	43	7.8%	84%	Gallery Place-Chinatown, Archives, L'Enfant Plaza, Waterfront
River Road	T2	40	11.7%	9%	Rockville
Rhode Island Avenue - New Carrollton	T14	38	6.2%	12%	New Carrollton, Rhode Island Ave
Ivy City-Franklin Square	D4	37	3.1%	51%	
Fairland	Z8	36	4.1%	6%	Silver Spring
Kings Park-North Springfield	17B, 17M	35	2.4%	3%	Pentagon
United Medical Center-Anacostia	W2, W3	35	37.4%	45%	Anacostia, Congress Heights, Southern Ave
Nebraska Avenue	M4	34	1.7%	13%	Tenleytown-AU
Brookland-Fort Lincoln	H6	33	4.4%	22%	Brookland-CUA
Orange Hunt	18G, 18J	31	3.0%	3%	Pentagon
Fair Oaks-Jermantown Road	2B	31	23.4%	15%	Vienna
Annandale-East Falls Church	26A	31	9.2%	6%	East Falls Church
Cheverly-Washington Business Park	F13	30	7.7%	17%	New Carrollton, Cheverly
Hillcrest Heights	C12, C14	30	8.4%	30%	Naylor Rd, Branch Ave
Maryland Avenue	X8	29	7.6%	30%	Union Station
Takoma-Fort Totten	K2	28	5.5%	52%	Fort Totten, Takoma
Mark Center-Pentagon	7M	28	10.3%	45%	Pentagon

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
P Street-Ledroit Park	G2	27	4.3%	58%	Dupont Circle
Marlboro Pike	J12	27	3.2%	16%	Addison Rd
Ardwick Industrial Park Shuttle	F12	27	4.2%	40%	Cheverly, Landover, New Carrollton
New Hampshire Ave. - Maryland Limited	K9	26	9.3%	13%	Fort Totten
Calverton-Westfarm	Z6	26	4.9%	5%	Silver Spring
Foxchase-Seminary Valley	8W	25	1.7%	10%	Pentagon
National Harbor-Southern Avenue	NH1	25	28.2%	9%	Southern Ave
Shipley Terrace-Fort Drum	W1	25	2.3%	32%	Southern Ave, Congress Heights
Lee Highway-Farragut Square	3Y, 3F	24	2.5%	51%	East Falls Church, Farragut West, Farragut North, McPherson Square, Metro Center, Federal Triangle
Bowie-Belair	B24	24	25.8%	6%	New Carrollton
Connecticut Avenue-Maryland	L8	21	4.2%	6%	Friendship Heights
Columbia Pike-Farragut Square	16Y	21	2.0%	38%	Farragut West, Farragut North, McPherson Square, Metro Center
Bowie State University	B21, B22	21	6.6%	4%	New Carrollton
Marlow Heights-Temple Hills	H12	20	6.7%	12%	Naylor Rd
Deanwood-Minnesota Ave.	U7	20	3.3%	68%	Deanwood, Minnesota Ave
Clinton	C11, C13	20	1.7%	24%	Branch Ave

Line Name	Routes	Average Weekday Transfers	% Riders Transfer to Metrorail	% Overlap with Metrorail	Metrorail Stations Served
Garfield-Anacostia Loop	W6, W8	19	25.4%	33%	Anacostia
Mount Vernon Line	11C	18	1.0%	7%	Braddock Rd
Fair Oaks-Fairfax Blvd.	1C	17	28.4%	6%	Donn Loring
Oxon Hill-Fort Washington	P18	17	3.5%	4%	Southern Ave
Bock Road	W14	16	3.5%	3%	Southern Ave
Sheriff Road-River Terrace	U4	16	4.4%	51%	Minnesota Ave
Colesville-Ashton	Z2	12	2.3%	4%	Silver Spring
Bowie-New Carrollton	B27	10	5.5%	9%	New Carrollton
Laurel-Burtonsville Express	Z7	10	6.5%	5%	Silver Spring
16th Street-Tenleytown	D31, D32, D33, D34	10	4.6%	37%	Columbia Heights, Cleveland Park, Vann Ness-UDC, Tenleytown-AU
Mt. Pleasant - Tenleytown Line	W45, W47	5	2.6%	37%	Tenleytown-AU, Cleveland Park, Columbia Heights
Skyline City	28F	2	11%	29%	Pentagon
Minnesota Avenue - Anacostia	A31, A32, A33	-	-	31%	Anacostia, Minnesota Ave, Southern Ave
Benning Road	X3	-	-	26%	Minnesota Ave
Rhode Island Avenue-Carver Terrace	S41	-	-	20%	Rhode Island Ave
Congress Heights-Georgetown	D51	-	-	17%	Congress Heights
Fort Dupont Shuttle	S35	-	-	0%	