



Bus Priority Plan

DECEMBER 2021

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INTRODUCTION

Bus Priority for Better Buses

Mayor Muriel Bowser established the Bus Priority Program to improve bus speeds and reliability for riders across the District, whether on Metrobus, DC Circulator, or commuter buses. By improving bus service, DDOT is improving mobility and access to opportunities for District residents, workers, and visitors.

Bus priority includes the following strategies:

- Improvements to the roads where buses operate, including bus lanes, transit signal priority, and floating bus islands;
- Changes to the way bus service is operated, including more direct routes, faster fare payment and boarding, and bus stop rebalancing;
- Enforcement of bus lanes and bus stops;
- Improvements for multimodal safety and pedestrian access to bus stops.

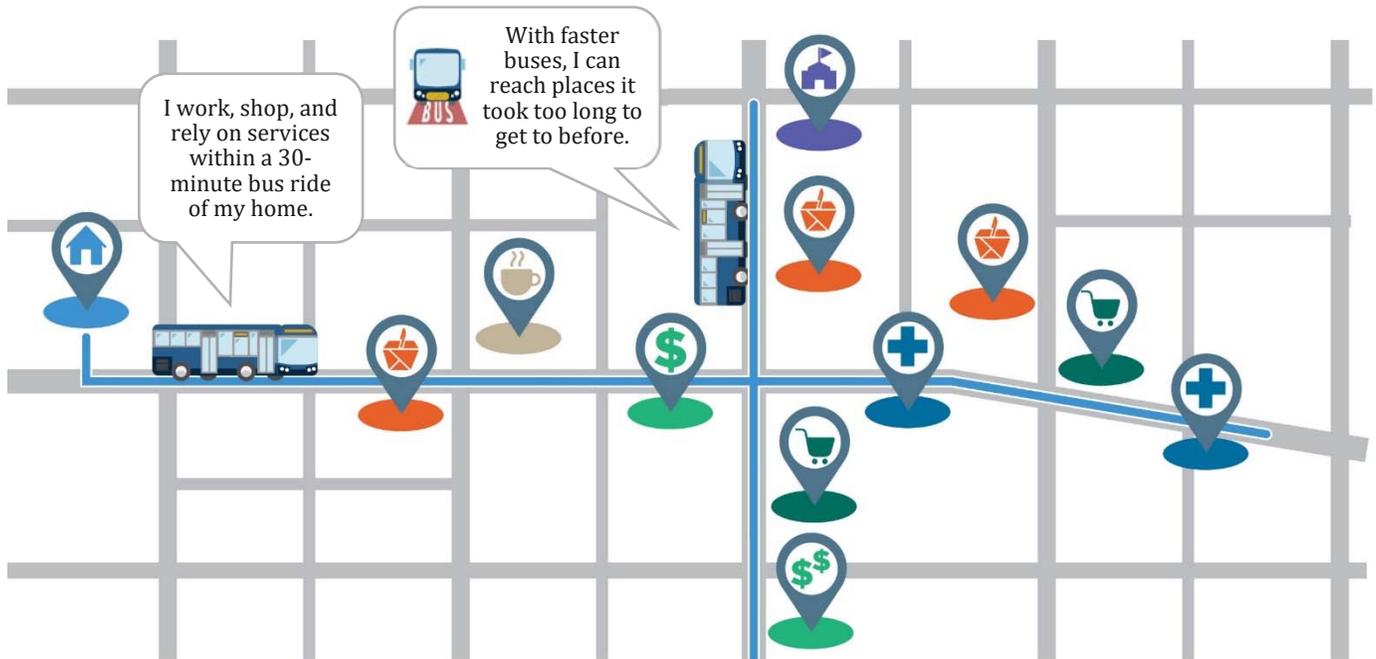
DDOT developed a Toolbox of over twenty bus priority treatments that can be applied to future projects to improve the speed and reliability of bus service.¹ The Toolbox allows for flexible and context-sensitive planning: DDOT will engage the community to identify tailored improvements based on the characteristics and needs of a given neighborhood and bus route.



¹ To view the Bus Priority Program Toolbox, please visit <https://ddot.dc.gov/node/1527011>

What does bus priority mean for riders?

Faster and more reliable transit means that District riders can depend on the bus to meet their day-to-day needs. They can get to work on time, spend less time waiting for the bus, and spend more time with family. It also means they may be able to access jobs and schools that were previously too far by transit.



As part of the establishment of the Bus Priority Program, DDOT is instituting a data-driven process to identify and prioritize bus priority projects based on areas with the greatest need, as well as opportunities for collaboration with other DDOT projects and programs. This document outlines the process to identify the bus priority corridor network and develop the project pipeline, which is DDOT's plan for delivery of up to 51 bus priority projects, steered by the public input received through the moveDC update process. The proposed project pipeline will help to improve the mobility of more than 110,000 people² per day — approximately a third of the current Metrobus ridership (boardings) in the region.³

² Based on boardings of routes that operate on bus priority corridors

³ Pre COVID-19 pandemic ridership

The Need for an Equitable Recovery

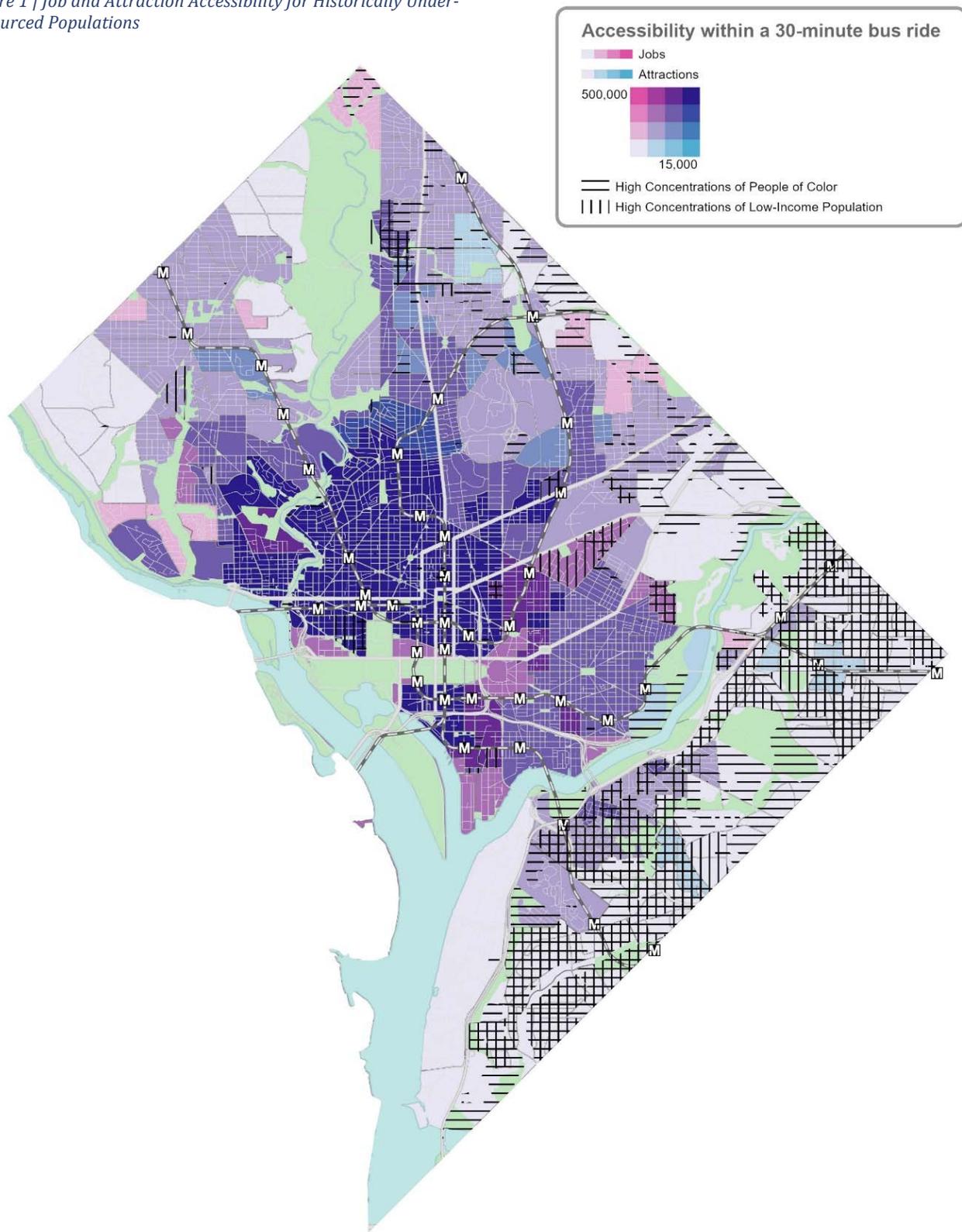
As the District reopens, the transportation network plays a vital role in supporting an equitable recovery by providing better access to jobs and opportunities for historically under-resourced communities and reliable transit for all workers. The District Department of Transportation's equity statement is the Department's commitment to transportation equity defined as the just distribution of transportation resources.⁴ As part of this commitment, DDOT is focused on developing policies, programs and services that remove existing transportation barriers for people of color, low-income households, persons with disabilities and other historically under-resourced communities. As shown in Figure 1, areas with higher concentrations of people of color and low-income households have less access to jobs and destinations within 30 minutes by bus compared to other areas in the District. The Bus Priority Program strives to correct this and other inequities that prevent access to opportunity.

In 2020, DDOT installed bus lanes on three corridors: Martin Luther King, Jr. Avenue SE, M Street SE, and 14th Street NW. Riders on these corridors experienced faster and more reliable service compared to other places in the District without bus lanes.
- Spring 2021 Metrobus performance data



⁴ To view DDOT's equity statement, please visit <https://ddot.dc.gov/page/equity-statement>

Figure 1 | Job and Attraction Accessibility for Historically Under-Resourced Populations



Over the last decade bus service in the region has become slower and less reliable as congestion levels have increased. Average Metrobus bus speeds in the region experienced a nine percent decrease between 2008 and 2017⁵, costing WMATA \$30 million annually to maintain the same level of service regionally. However, during the COVID-19 pandemic, fewer cars on the road resulted in faster buses.⁶ As the District reopens and people return to offices and schools, there is a risk that traffic congestion could match or exceed pre-COVID levels. The return of congestion means the return of slow and unreliable buses.

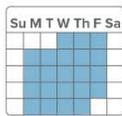
Slower buses mean that riders can access fewer jobs, schools, and destinations within a given amount of time.

What do slow and unreliable buses mean for riders?

1. I plan for extra time traveling



I take an earlier bus to make sure I arrive on time



15 minutes of extra travel time
x 5 days a week
= 75 minutes a week



Time that could be better spent on something else

2. It can cost me money



Late for work or lose my job



I get a late pickup fee at childcare



I'm charged a no-show fee at the doctor

3. It adds stress to my day



The bus arrives so crowded that I have to wait for the next one



I miss my transfer

⁵ National Transit Database (2008-2017).

⁶ Bus running times (the time a bus takes to complete a trip) fell by about 15 percent overall during the low traffic period early in the COVID-19 pandemic in spring 2020 (WMATA April 13 through May 8, 2020 bus running times, compared to February 2020).

Who Rides the Bus?

The District's bus system is the backbone of the transportation network, providing critical connections for District residents, workers, students, and visitors. During the COVID-19 pandemic, Metrobus served up to two to three times as many riders as Metrorail each day and was an important transportation mode for grocery store workers, nurses, and other essential workers who continued to commute to work.⁷

In many neighborhoods in the District, the bus is the primary public transportation option. Only 30 percent of residents live in a neighborhood easily accessible by Metrorail.⁸ For many residents, the bus network provides vital connections to jobs, schools, healthcare, and other destinations. Prior to the pandemic, the bus carried almost as many District residents as Metrorail each day.⁹



People who ride the bus are also disproportionately low-income and people of color, compared to the rest of District residents. Almost half of District Metrobus riders make under \$30,000 per year and two thirds live in zero-car households. 79 percent identify as people of color.¹⁰ Investing in bus priority means better access to jobs and opportunities for residents in all eight wards.

Other Benefits of Bus Priority

Creating a better bus system for the District is critical to meeting District goals for equity, growth, and sustainability. The bus priority corridor network is part of moveDC, the District's long-range transportation plan.¹¹ As part of moveDC, DDOT analyzed the transportation network for walking, biking, transit, and vehicles to identify where there is need for improvement. By working to improve bus speeds and reliability across the District, the Bus Priority Program will address transportation needs identified by moveDC.^{12,13}

Create a transit priority network by implementing a total of 25 lane-miles of dedicated bus lanes by fiscal year 2025.
- moveDC strategy

⁷ WMATA Ridership Data Portal

⁸ SustainableDC 2.0 Plan (2019)

⁹ WMATA Metrobus rider survey (2018) and Metrorail rider survey (2016)

¹⁰ WMATA Metrobus rider survey (2018)

¹¹ For more information on moveDC, please visit <https://wemovedc.org>

¹² For more information on transportation needs, please visit <https://movedc-dcgis.hub.arcgis.com/pages/mapping-transportation-needs>.

¹³ DDOT measures the length of bus lanes in lane-miles. A lane-mile is the total length of the bus lane in each direction along a street. For example, a one-mile corridor with bus lanes in each direction would have two bus lane-miles. DDOT currently has 6.2 lane-miles of bus lanes.

SustainableDC 2.0, the District’s sustainability plan, calls for an increase in the use of public transit to 50 percent of all commuter trips in all wards by 2032. Prior to COVID-19, the share of commuter trips by transit was 40.5 percent.¹⁴ To reach the goal of 50 percent, SustainableDC 2.0 calls for two actions directly tied to bus priority:

- Expansion of high-capacity transit on high ridership corridors; and
- Improved transit connections to employment and activity centers from underserved areas.



Bus priority also supports Mayor Bowser’s Vision Zero safety objective of zero fatalities and serious injuries to travelers of the District’s transportation system by 2024.¹⁵ DDOT incorporates multimodal safety improvements as part of bus priority projects, such as traffic calming and safer pedestrian crossings. In addition, DDOT is prioritizing bus priority improvements in locations that overlap with Vision Zero high-crash corridors, as outlined on page 12.

Bus priority will also be important as the District works to achieve Mayor Bowser’s housing goal of 36,000 new housing units by 2025 with at least 12,000 affordable for low-income residents.¹⁶ Bus priority improves access across all eight wards and helps to ensure all residents can live in the District without being burdened by housing and transportation costs.

¹⁴ For more information about SustainableDC, please visit <https://sustainable.dc.gov/>

¹⁵ For more information about Vision Zero, please visit <https://www.dcvisionzero.com/>

¹⁶ For more information about housing goals, please visit <https://housing.dc.gov/>

CORRIDOR NETWORK

The bus priority network is made up of corridors spanning approximately 70 miles across all eight wards of the District. Bus priority corridors identify where improvements are needed to help make transit faster and more reliable along the District's busiest bus routes. These projects may include dedicated bus lanes, transit signal priority, queue jumps, bus stop rebalancing, camera enforcement of bus lanes, all-door boarding, and improvements to bus stop access and safety, as outlined in the Toolbox. The corridors were identified based on feedback gathered by the moveDC team on what residents and other stakeholders valued, WMATA's Priority Corridor Network, as well as WMATA and DC



Circulator ridership and bus volumes. DDOT also identified future growth corridors where demand for transit is expected to grow over the next 20 years based on forecasted population, housing, and employment growth. Many of these growth corridors are in areas identified as Future Planning Analysis areas on the District's Comprehensive Plan Generalized Policy Map. DDOT will assess the need for future updates to the bus priority network in collaboration with residents and other stakeholders, including as part of the moveDC update process.

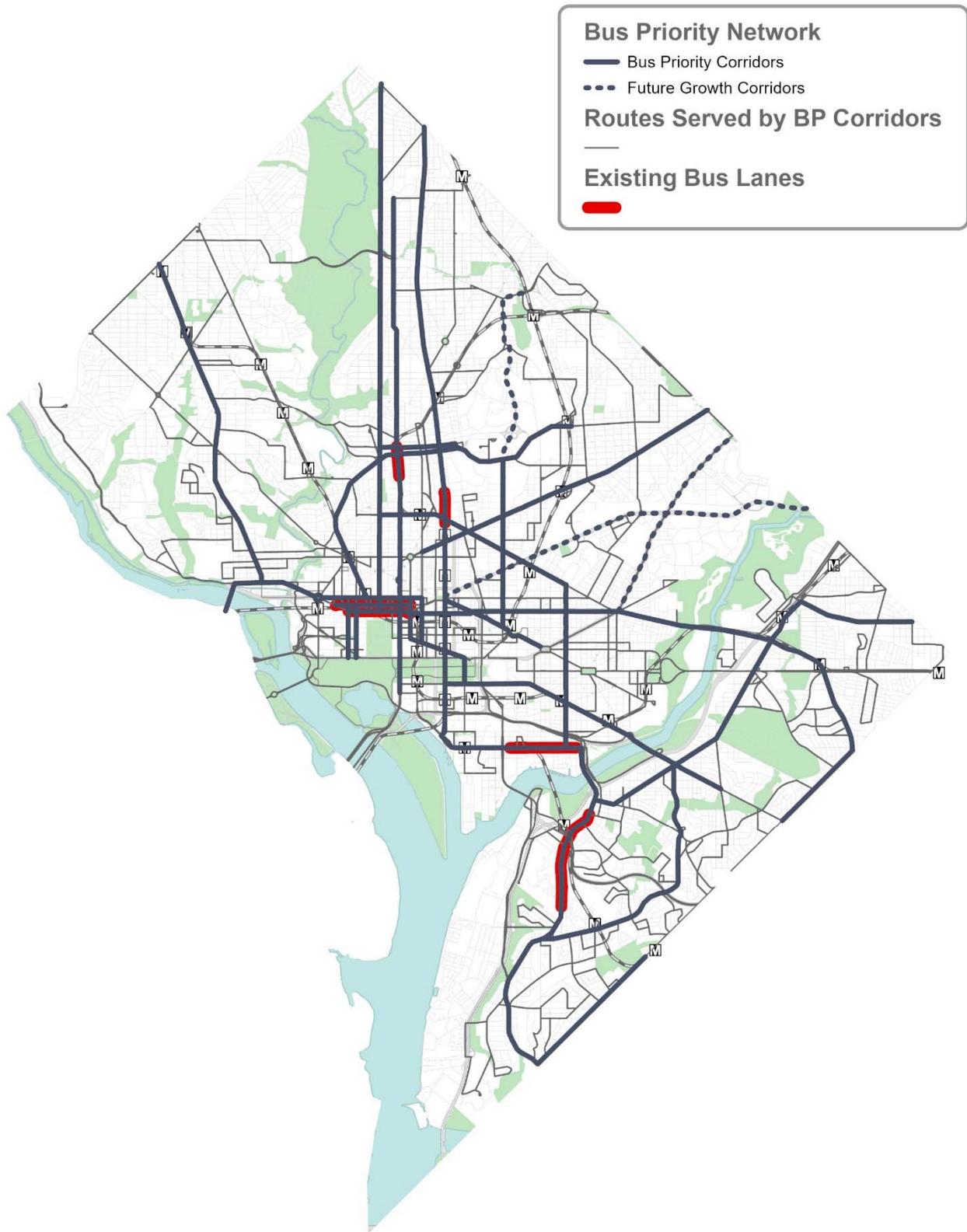
Over 60 percent of District residents live within a quarter mile of a bus priority corridor, many in neighborhoods not easily accessed by Metrorail. The bus priority network serves 125 Metrobus and DC Circulator routes for a portion of their route (out of 256 routes in all, or 49 percent).¹⁷ The list of transit routes on bus priority corridors is listed in the Appendix. A bus may only operate for part of its route on a bus priority corridor, but the travel time savings from the bus priority portion make the entire trip faster and more reliable. Figure 2 shows the entire bus priority corridor network in blue, with blue dashed lines for potential future corridors. Red highlights illustrate existing bus lanes in the District.

Located within a quarter mile of a bus priority corridor:

- 60% of residents
 - 79% of jobs
 - 67% of low-income households
 - 65% of persons with disabilities
 - 64% of people of color
-

¹⁷ Based on fall 2019 Metrobus and DC Circulator service levels

Figure 2 | Bus Priority Plan Corridors (routes served based on fall 2019 service levels)



PROJECT PIPELINE

The project pipeline includes the upcoming near-term, mid-term, and long-term bus priority projects. It is informed by a data-driven analysis of the bus priority corridor network, as outlined on page 12. DDOT also considered current and upcoming DDOT projects to identify opportunities for integrating bus priority into other multimodal efforts or to identify areas where significant infrastructure investment is already underway. The flow chart to the right summarizes the process to develop the project pipeline.

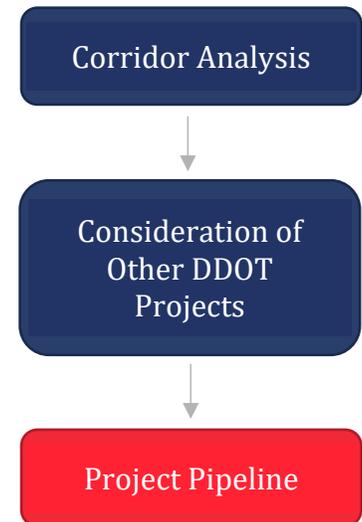
The project pipeline is contingent on funding availability and accounts for current staffing levels and contracting capacity. DDOT anticipates periodically adjusting the project pipeline based on updates to the corridor analysis with current data, public feedback, coordination with new multimodal projects initiated by the agency, staff capacity, and funding levels.

The project pipeline is made up of projects that are approximately one to two miles in length. Projects of this length will allow DDOT to make improvements more quickly across more corridors. For each bus priority project, DDOT will engage with residents and other stakeholders to identify needs along the corridor and context-sensitive improvements.

DDOT is working towards delivery of 51 bus priority projects. These projects will help to meet the moveDC strategy of implementing dedicated bus lanes, plus additional targeted improvements at bus stops and intersections to speed up buses. This large investment in bus priority by the Bowser Administration represents over 80 percent of the full buildout of the bus priority network, excluding future growth corridors.

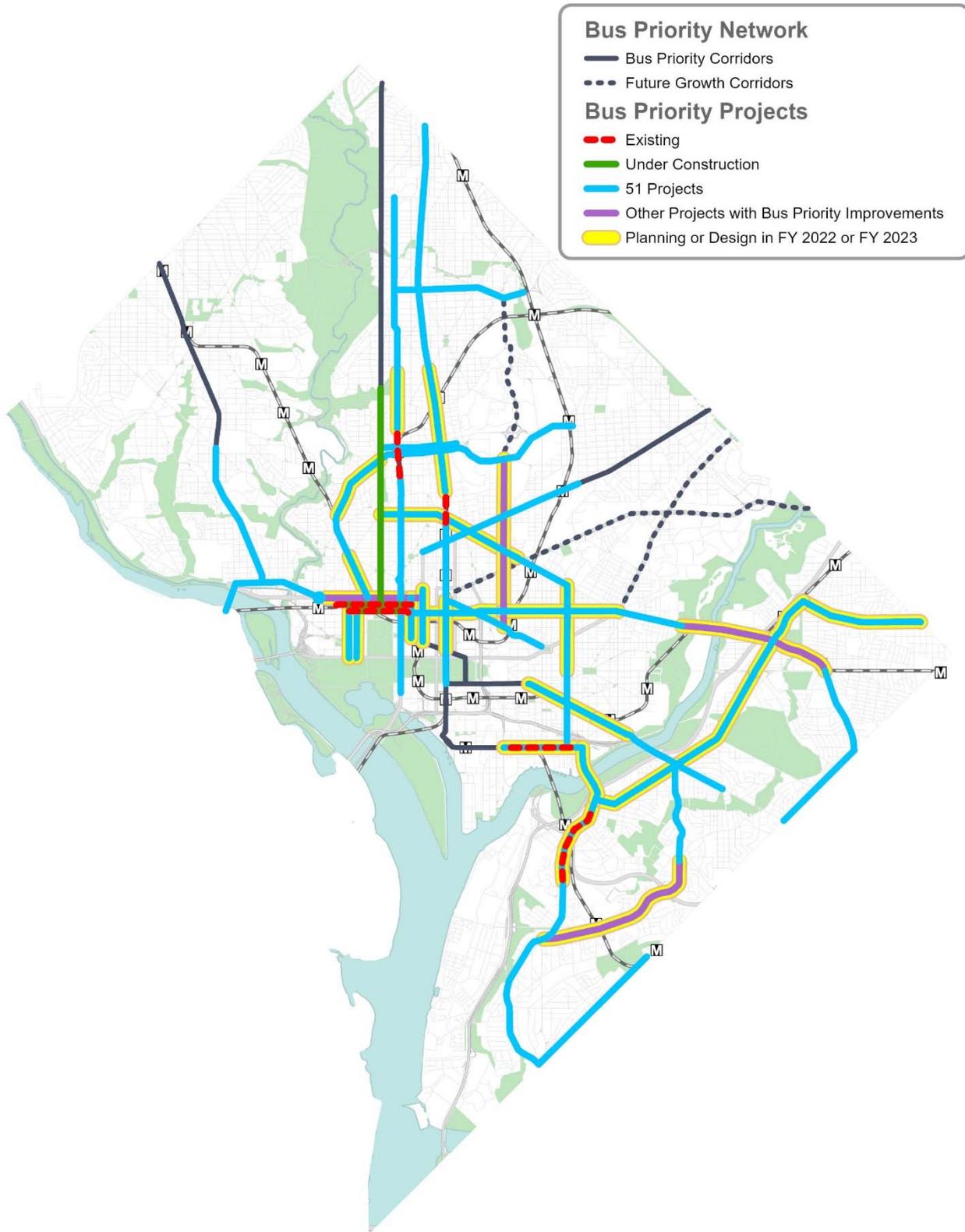
The project pipeline is shown in the map below and upcoming projects are listed in the Appendix. Upcoming projects include those that will be in planning or design in FY 2022 or FY 2023. In addition to the 51 projects, the map includes projects funded by other sources that incorporate bus priority improvements, all together totaling over 60 miles of bus priority corridor projects. Over 25 miles of these corridor projects are already underway or will be in planning or design in FY 2022 or FY 2023.

DDOT will provide regular updates on the bus priority website regarding upcoming projects, as well as the status of active projects.¹⁸



¹⁸ Please visit the bus priority website at <https://ddot.dc.gov/page/bus-priority>

Figure 3 | Bus Priority Project Pipeline



CORRIDOR ANALYSIS

DDOT performed an analysis of the bus priority corridors to inform the development of the project pipeline and identify areas with the greatest need for improvement. To perform the analysis, the bus priority network was broken into 23 corridors based on bus routing and roadway characteristics, as shown in Figure 4. An interactive version can be found on DDOT's bus priority website.¹⁹ Each corridor was then broken into smaller segments to obtain additional information about important locations for bus priority improvements. H and I Streets NW and the K Street Transitway corridors were not analyzed as bus priority projects were already underway at those locations. Additional bus priority corridors in downtown were identified following the corridor analysis to further leverage the improvements on H, I, and K Streets NW and improve bus operations in downtown, including 19th, 18th, 13th, and 11th Streets NW.²⁰

The corridor analysis used the following metrics to provide a holistic understanding of need across the District:

- Transit performance: passenger delay (which reflects where the most riders are experiencing the slowest speeds) and bus delay (which reflects where slow speeds impact efficient bus operations the most)²¹;
- Equity: persons with disabilities, people of color, low-income households, and low-wage jobs within a quarter mile of the corridor;
- Safety: focused on overlap with the Vision Zero high-injury network, to identify opportunities for shared improvements; and
- Land use: near-term population and employment growth within a quarter mile of the corridor, to highlight where demand for transit may increase in the next five years.

The transit performance and equity metrics were weighted more heavily to reflect the importance of addressing slow and unreliable bus service in historically under-resourced communities. The weighting for all four metrics is shown in the Appendix, as well as maps of the corridor network overlaid with each of the metrics.

Based on the corridor analysis, the top ranked corridors and segments are prioritized for improvement in the project pipeline, with consideration for alignment with other DDOT projects. The highest scoring corridors and segments are shown in Figure 5, as well as listed in the Appendix.

¹⁹ For more information on bus priority corridors, please visit <https://ddot.dc.gov/page/corridor-map>

²⁰ Additional bus routes will shift to 11th and 13th Streets NW with the opening of the K Street Transitway, as buses will be able to access the Transitway from those streets.

²¹ Fall 2019 (pre-COVID) transit data was used for the analysis.

Figure 4 | Bus Priority Corridor Map

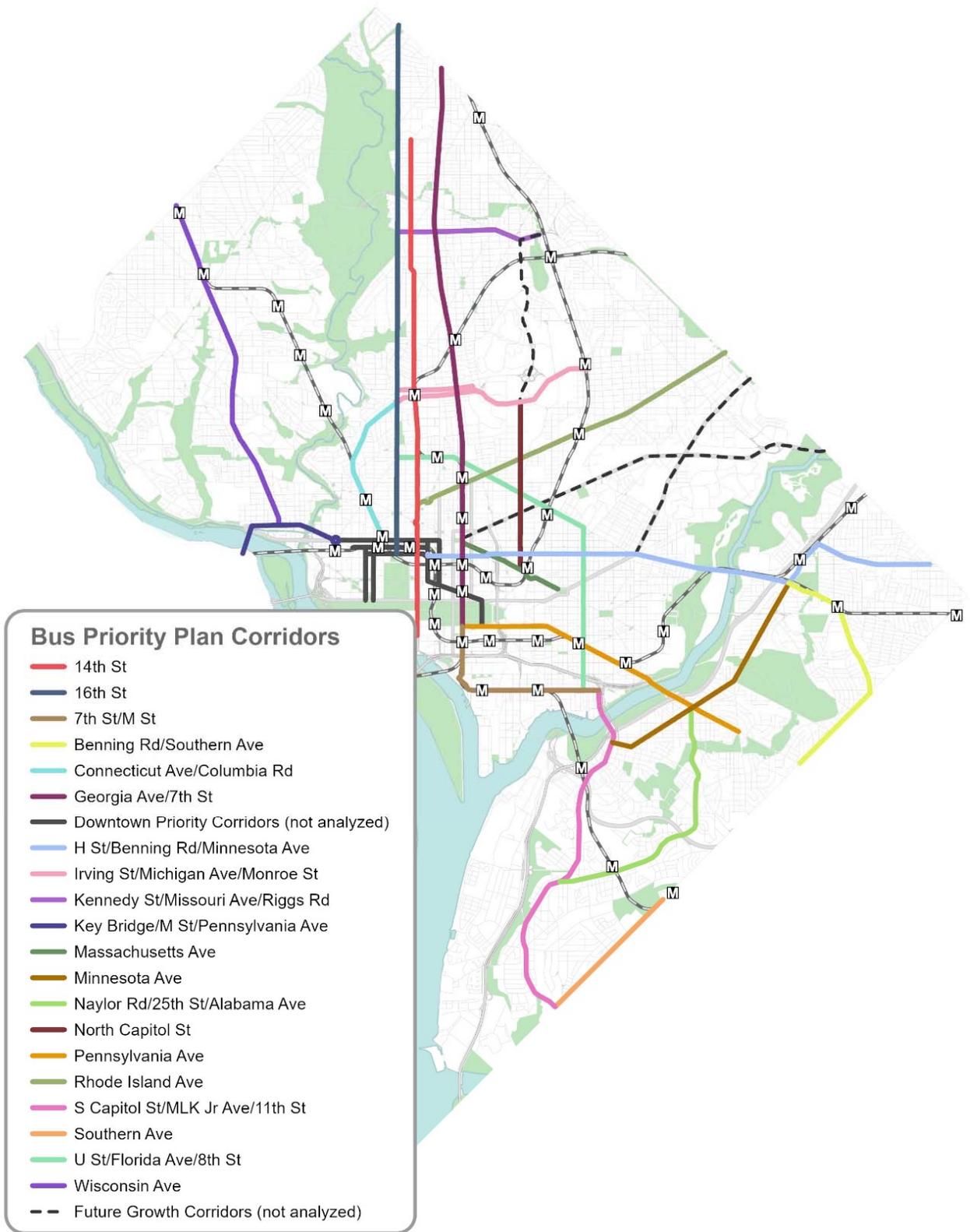
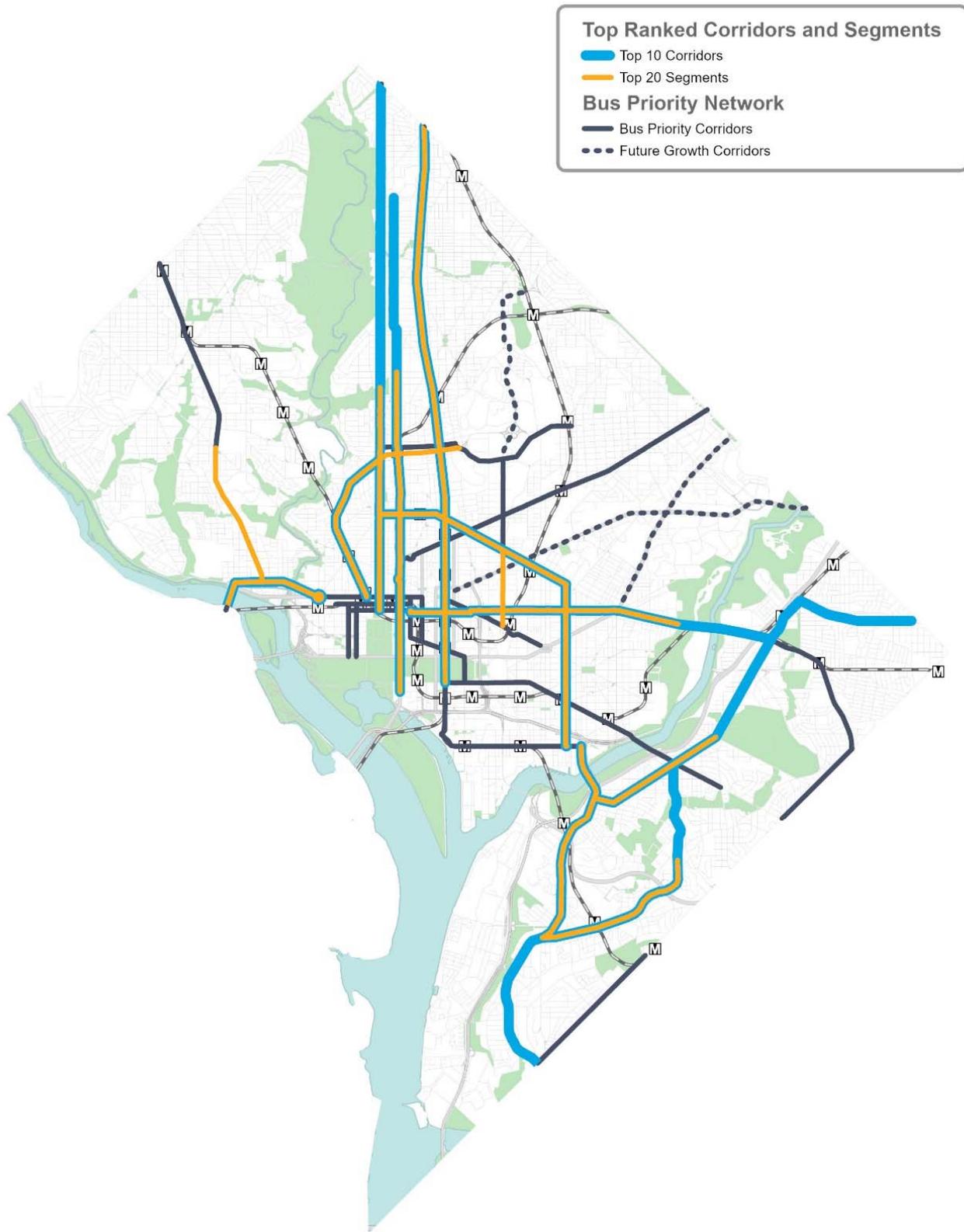


Figure 5 | Top 10 Corridors and Top 20 Segments



APPENDIX

Transit Service on Bus Priority Corridors

Table 1 | WMATA, DC Circulator, or DC Streetcar Routes that Serve Bus Priority Corridors (November 2021)²²

Corridor	WMATA Routes	DC Circulator or DC Streetcar Routes
14th St	52, 54, 59, D4, 16E	Woodley Park-Adams Morgan
16th St	S2, S9	
7th St/M St	52, 74, P6, V4	Eastern Market-L'Enfant Plaza
Benning Rd/Southern Ave	F14, V7, V8, W4	
Connecticut Ave/Columbia Rd	42, 43, L2, N2, N4, N6	Woodley Park-Adams Morgan
Georgia Ave/7th St	32, 36, 70, 74, 79	
H St/Benning Rd/Minnesota Ave	80, D8, P6, V2, V4, X2, X9	DC Streetcar
Irving St/Michigan Ave/Monroe St	80, D8, H2, H4, H8	Woodley Park-Adams Morgan
Kennedy St/Missouri Ave/Riggs Rd	60, 64, E4, K2, K6	
Key Bridge/M St/Pennsylvania Ave	31, 33, 38B	Georgetown-Union Station, Rosslyn-Dupont
Massachusetts Ave	96, D6, X8	Congress Heights-Union Station
Minnesota Ave	B2, U5, U6, U7, V2, V4	
Naylor Rd/25th St/Alabama Ave	32, 92, V7, W1, W2, W3, W4, W6, W8	Congress Heights-Union Station
North Capitol St	80	
Pennsylvania Ave	32, 36, B2, M6, V4	

²² Does not include downtown corridors: H Street NW, I Street NW, K Street NW, 11th Street NW, 13th Street NW, 18th Street NW, and 19th Street NW. Please visit <https://www.wmata.com/>, <https://www.dccirculator.com/>, and <https://dcstreetcar.com/> to learn more about transit routes.

Corridor	WMATA Routes	DC Circulator or DC Streetcar Routes
Rhode Island Ave	83, 86, D8, G6, P6, T14, T18	
S Capitol St/MLK Jr Ave/11th St	90, 92, A2, A4, A6, A7, A8, B2, V2, W1, W2, W3, W4	Congress Heights-Union Station
Southern Ave	A2, A6, A7, D12, D14, NH1, P12, P18, W14	
U St/Florida Ave/8th St	90, 92, 96	Congress Heights-Union Station
Wisconsin Ave	31, 33, 96, N2	Georgetown-Union Station

Project Pipeline: Upcoming Projects

Table 2 | Projects in Planning or Design in FY 2022 or FY 2023

Corridor	Extents	Category	Projected Initiation
H Street NW	14th St to North Capitol St	Part of 51 Projects	Project already underway
Minnesota Ave SE	Pennsylvania Ave to East Capitol St	Part of 51 Projects	Project already underway
Pennsylvania Ave SE	2 nd St to Barney Circle	Part of 51 Projects	Project already underway
MLK Jr. Ave SE	Good Hope Rd to Redwood St	Part of 51 Projects	Project already underway to build upon existing pilot bus lanes
M St SE	South Capitol St to 11 th St	Part of 51 Projects	Project already underway to build upon existing pilot bus lanes
7th St NW	Massachusetts Ave to Pennsylvania Ave	Part of 51 Projects	Project already underway
K St NW Transitway	22 nd St to 11 th St	Other Project with Bus Priority Included	Project already underway
Benning Rd NE	Oklahoma Ave to East Capitol St	Other Project with Bus Priority Included	Project already underway
8th St NE	Florida Ave to East Capitol St	Part of 51 Projects	FY 2022

Corridor	Extents	Category	Projected Initiation
Columbia Rd NW	16 th St to California St	Part of 51 Projects	FY 2022
11th St NW	Massachusetts Ave to Pennsylvania Ave	Part of 51 Projects	FY 2022
13th St NW	K St to Pennsylvania Ave	Part of 51 Projects	FY 2022
Georgia Ave NW	Kansas Ave to Barry Pl	Part of 51 Projects	FY 2022
Minnesota Ave SE	Good Hope Rd to Pennsylvania Ave	Part of 51 Projects	FY 2022
H Street NE	North Capitol St to Benning Rd	Part of 51 Projects	FY 2022
Nannie Helen Boroughs Ave NE	Minnesota Ave to Eastern Ave	Part of 51 Projects	FY 2022
Alabama Ave SE	MLK Jr. Ave to 25 th St	Other Project with Bus Priority Included	FY 2022
North Capitol St	Michigan Ave to Massachusetts Ave	Other Project with Bus Priority Included	FY 2022
U St NW	16 th St to 9 th St	Part of 51 Projects	FY 2023
Minnesota Ave NE	East Capitol St to NHB Ave	Part of 51 Projects	FY 2023
14th St NW	Newton St to Upshur St	Part of 51 Projects	FY 2023
18th & 19th St NW	I St to Constitution Ave	Part of 51 Projects	FY 2023
MLK Jr. Ave SE	M St to Good Hope Rd	Part of 51 Projects	FY 2023
Florida Ave NW/NE	9th St NW to 1st St NE	Part of 51 Projects	FY 2023
Connecticut Ave NW	Dupont Circle to K St	Part of 51 Projects	FY 2023

Top Corridors and Segments

Table 3 | Top 10 Corridors and Top 20 segments from the Corridor Analysis

Corridor Rank	Corridor	Segment Rank	Segment
1	U St/Florida Ave/8th St	7	Rhode Island Ave NW - 8th St NE
		15	16th St NW - Rhode Island Ave NW
		16	Florida Ave NE - M St
2	Georgia Ave/7th St	5	Kansas Ave NW - Rhode Island Ave NW
		12	Rhode Island Ave NW - Independence Ave SW
		18	Eastern Ave NW - Kansas Ave NW
3	Connecticut Ave/Columbia Rd	11	16th St NW - K St NW
4	S Capitol St/MLK Jr Ave/11th St	3	M St - Alabama Ave SE
5	14th St	1	Euclid St NW - Newton St NW
		8	Newton St NW - Upshur St NW
		14	C St NW - Euclid St NW
6	Naylor Rd/25th St/Alabama Ave	9	MLK Jr Ave SE - Alabama Ave SE
7	H St/Benning Rd/Minnesota Ave	6	New York Ave NW - Union Station
		10	Union Station - Oklahoma Ave NE
8	Key Bridge/M St/Pennsylvania Ave	20	Key Bridge - Washington Circle
9	Minnesota Ave	17	Good Hope Rd SE - Randle Circle
10	16th St	4	Arkansas Ave NW - H St NW
-	North Capitol	2	Florida Ave NW - Massachusetts Ave NW
-	Irving St/Michigan Ave/Monroe St	13	Columbia Rd NW

Corridor Rank	Corridor	Segment Rank	Segment
-	Wisconsin Ave	19	Massachusetts Ave NW - M St NW

Corridor Analysis Metric Weights

DDOT performed a sensitivity analysis for different weighting scenarios for the four metrics: transit performance, equity, safety, and land use. Ultimately the following weights were recommended in order to prioritize improvement in areas with high transit needs and historically under-resourced communities. DDOT will evaluate the need for adjustments to the metric weights for future updates to the corridor analysis based on public feedback and consideration of updated data.

Table 4 | Corridor Analysis Metric Weights

Score	Weight
Transit Performance	60%
Equity	30%
Safety	5%
Land Use	5%

Corridor Analysis Maps

The data sources for the following corridor analysis maps are listed below.

Table 5 | Data Sources for Corridor Analysis Maps

Map	Assumption	Data Source
Routes Served by Bus Priority (BP) Corridors	N/A	Fall 2019 Metrobus and DC Circulator service
Peak ²³ Passenger Delay	N/A	WMATA Trace Model and General Transit Feed Specification (GTFS) Feed, October 2019
Peak Bus Delay		
Off-Peak ²⁴ Passenger Delay		
Off-Peak Bus Delay		
Low-income Population Density	80 percent AMI or less	2019 American Community Survey (ACS_ 5-Year Estimates)
People of Color Population Density	N/A	2019 ACS 5-Year Estimates
Persons with Disabilities Population Density	N/A	2019 ACS 5-Year Estimates
Low-wage Job Density		2018 Longitudinal Employer-Household Dynamics (LEHD)
Corridor Overlap with Vision Zero High-Crash Corridors	N/A	DDOT Vision Zero Program
Population Density	N/A	2019 ACS 5-Year Estimates
Job Density	Jobs paying under \$3,333 a month (\$39,996 a year)	2015 LEHD

²³ Peak hours are 6 AM to 9 AM and 3 PM to 7 PM

²⁴ Off-peak hours are all other periods

Figure 6 | Peak Passenger Delay

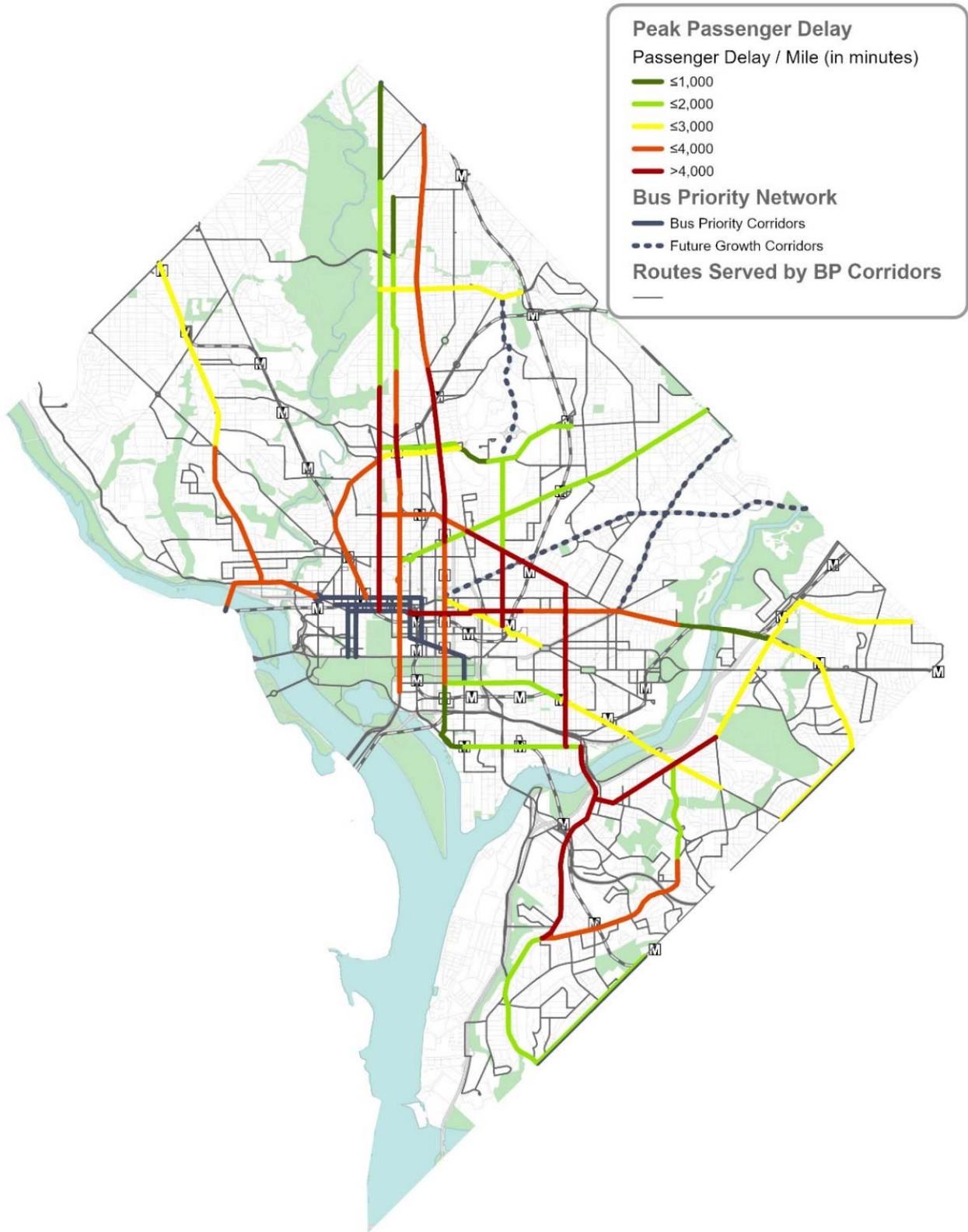


Figure 7 | Peak Bus Delay



Figure 8 | Off-Peak Passenger Delay



Figure 9 | Off-Peak Bus Delay



Figure 10 | Low-Income Population Density

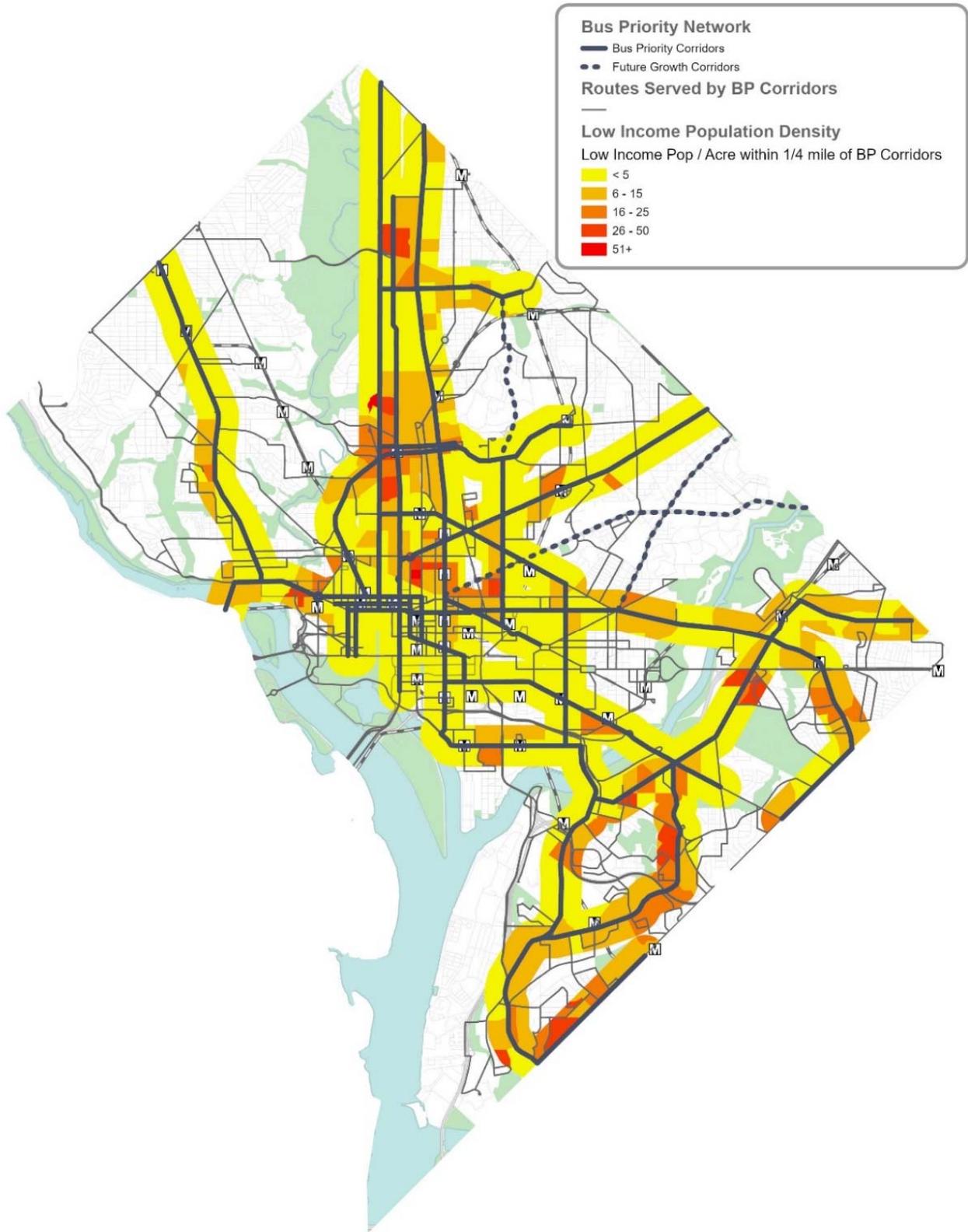


Figure 11 | People of Color Population Density

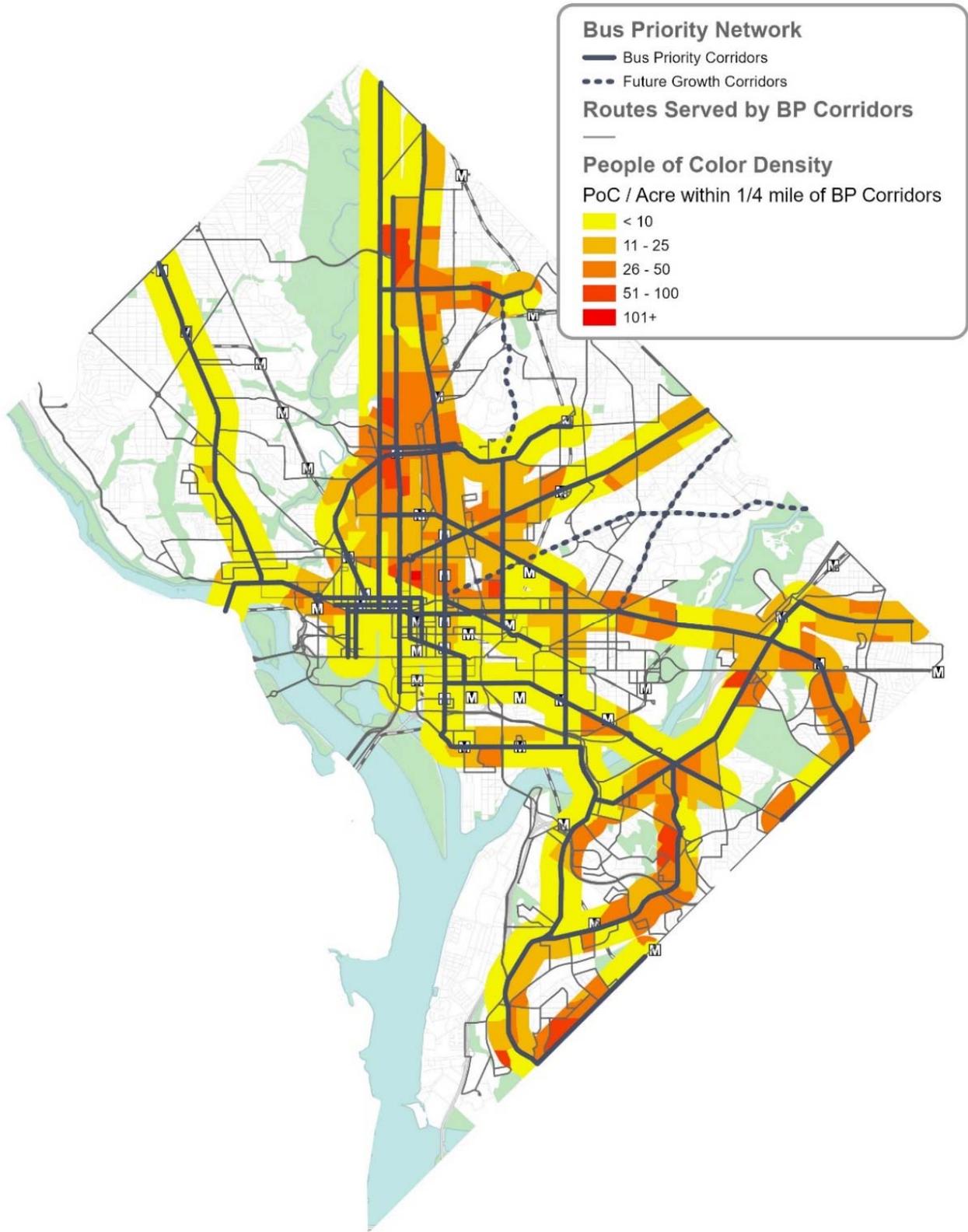


Figure 12 | Persons with Disabilities Population Density

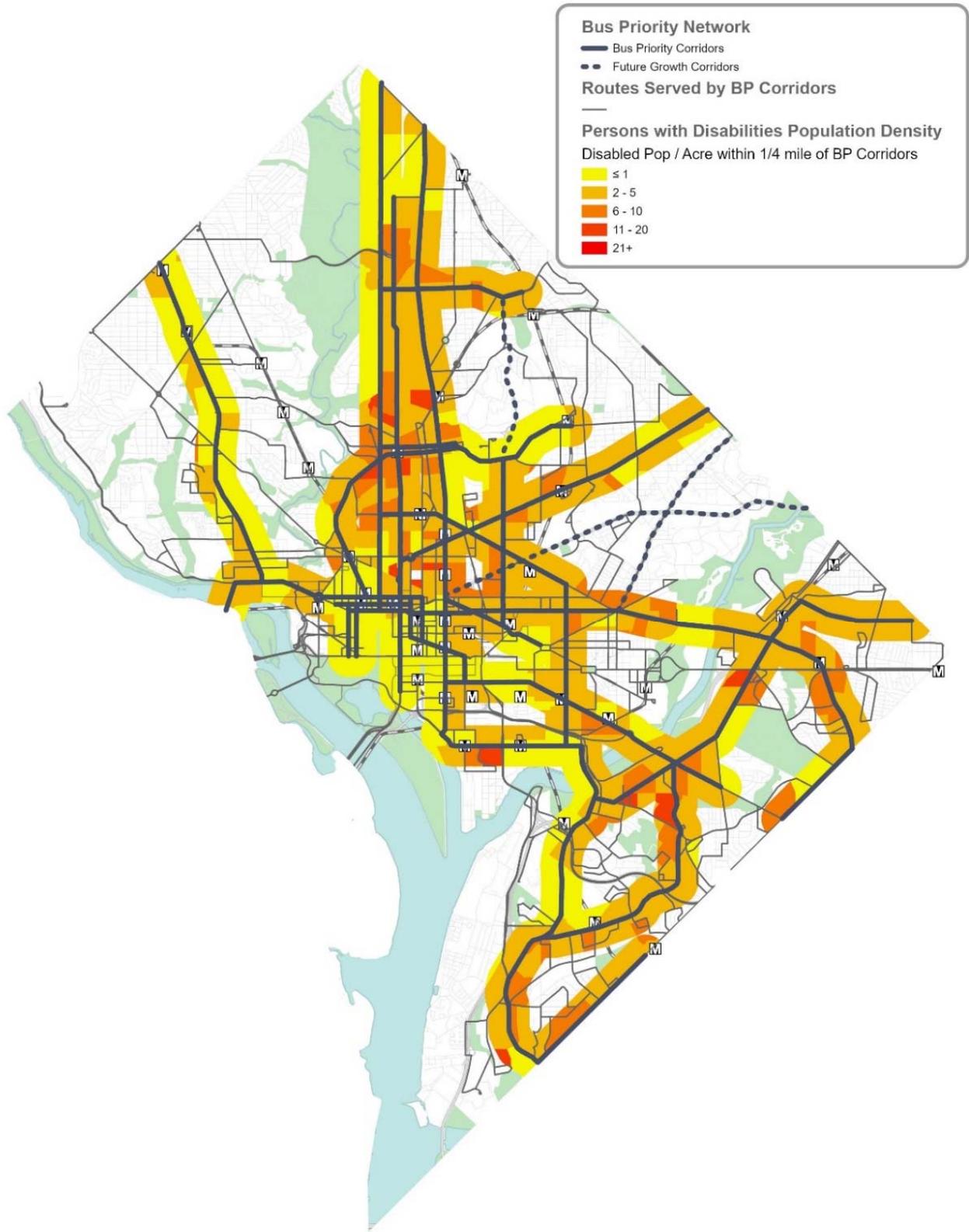


Figure 13 | Low-Wage Job Density

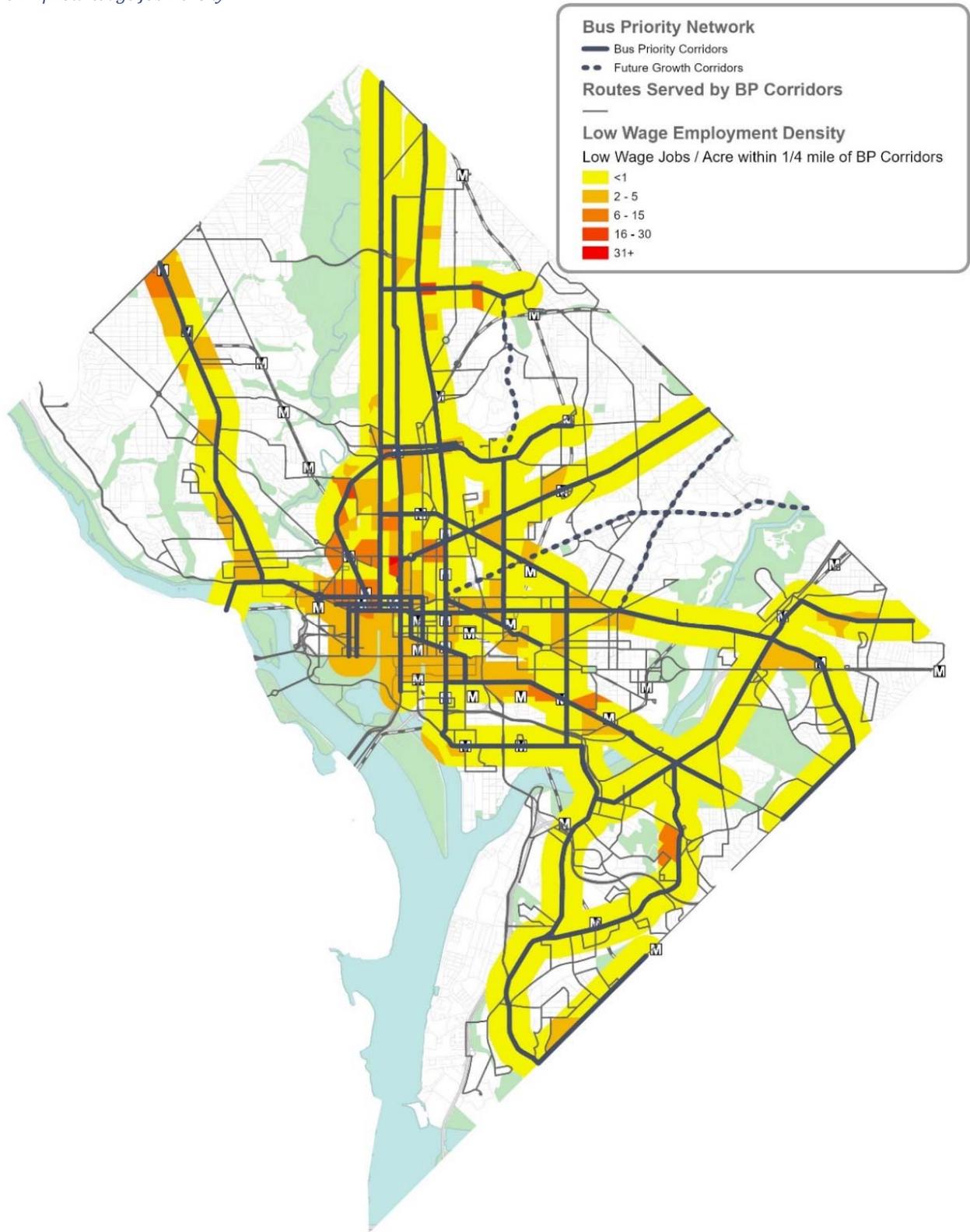


Figure 14 | Corridor overlap with Vision Zero High-Crash Corridors



Figure 15 | Population Density

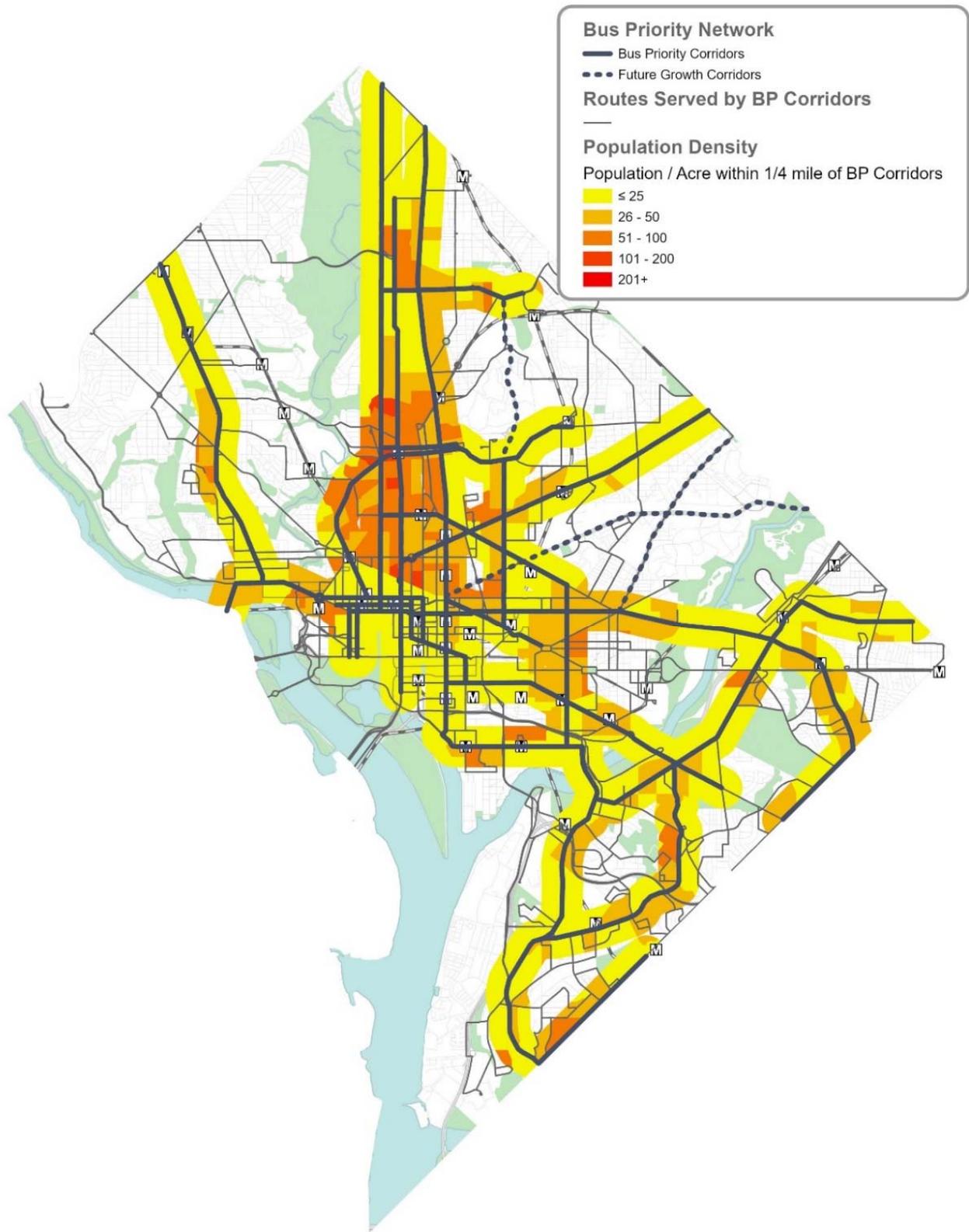


Figure 16 | Job Density

