Microtransit in DC Study

Final Report: Recommendations for the DC Neighborhood Service

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Completed by:

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INTEGRATED TRANSPORTATION PLANNING

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1. INTRODUCTION

In 2019, the District of Columbia's Department For-Hire Vehicles (DFHV) launched the DC Neighborhood Connect (DCNC, formerly DC Microtransit) program. The purpose of the service is to make affordable, curb-to-curb transit service available to residents in less dense and/or accessible parts of the District to connect them to key destinations and high-frequency bus and rail services. Anyone traveling within one of the DCNC service areas is eligible to use the service, but the target populations for the service are low-income and unbanked residents, as well as residents with disabilities.

In 2021, DFHV, through the Metropolitan Washington Council of Governments (MWCOG) Transportation-Land Use Connections (TLC) Program, initiated the Microtransit in DC study to assess the performance, strengths, and weaknesses of the DC Neighborhood Connect microtransit service and identify opportunities for service improvements and expansion. This report summarizes the findings of the work completed through the study, which included public engagement (a focus group with Ward 8 residents and a rider survey) and technical analysis, both of which informed the study's recommendations. All of the recommendations are intended to support DC Neighborhood Connect service in meeting one or more of the following goals:

- Maintain or enhance the quality of the service in terms of wait times and reliability
- Increase ridership among the target population groups
- Support connections to and ridership on fixed-route public transportation services (buses, Metrorail)
- Use financial resources efficiently

More detailed information on some topics in this report can also be found in technical memoranda developed for the study on the following topics: Existing Conditions, Preliminary Service Change Recommendations for the Northeast Zone, Fare Recommendations, and Vehicle Requirements and Proposed Shifts.

2. EXISTING CONDITIONS

About DC Neighborhood Connect Service

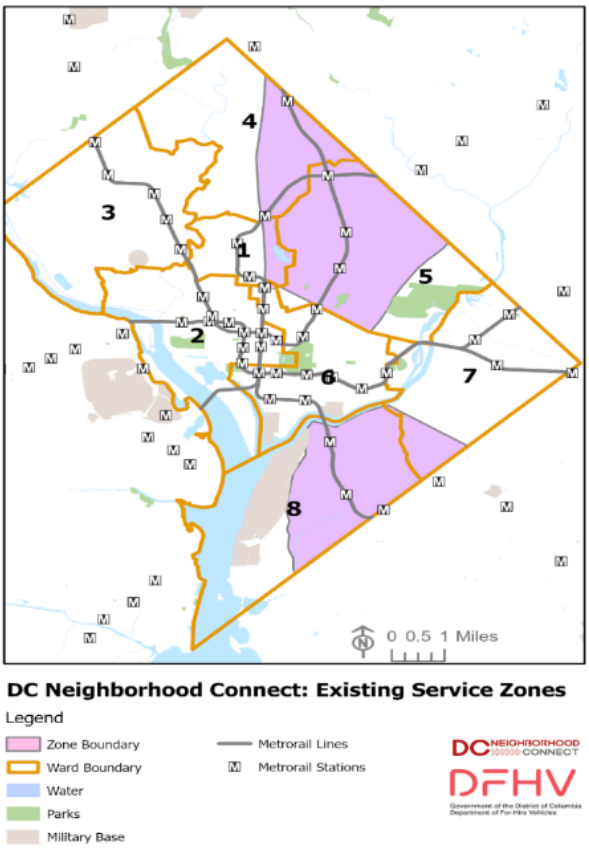
DC Neighborhood Connect service is available to the public within two[1] zones in the District of Columbia (**Figure 1**). The service allows residents to use a smartphone app to plan, request, pay (as applicable), and track a shared on-demand shuttle to their curb or the nearest corner and travel anywhere within the zone. (Trips can also be booked by calling customer service.) A zone including parts of Wards 1, 4, and 5 in Northeast DC (hereafter the "Northeast Zone") was the first area to receive this service. After service modifications due to the COVID-19 pandemic, in 2021, the service was re-launched and a zone covering most of Ward 8 began receiving service as well. Service is available seven days per week with the following hours of operation:

- Monday – Thursday: 6:30 a.m. to 10:00 p.m.
- Friday: 6:30 a.m. to 12:00 a.m.
- Saturday: 8:00 a.m. to 12:00 a.m.
- Sunday: 8:00 a.m. to 10:00 p.m.

DFHV typically has a maximum of seven vehicles operating throughout both zones. Since 2020, trips on DCNC have been zero-fare.[2] As Metrobus and Metrorail have not been zero-fare since January 2021, this may have incentivized use of DCNC over other transit modes, detracting from fixed-route ridership. The average length of a DCNC trip is about 3 miles.

By way of background, residents living anywhere in the DCNC Zones (and the District generally) who are unable to use fixed-route services (bus or Metrorail) due to their disability are also eligible for MetroAccess and TransportDC services.[3] MetroAccess provides door-to-door trips booked at least one day in advance. MetroAccess fares are twice the fare of the same trip made on a fixed-route bus or Metrorail up to a maximum of $6.50. TransportDC provides same-day, door-to-door trips at a cost of $7.00 per trip.

Figure 1: DC Connect Existing Service Areas



[1] As of March 28, 2022 (following the drafting of most content in this report), service is actually provided in three zones. The creation of a third zone by dividing the former Northeast Zone is discussed in detail in this report.

[2] The decision to keep the service zero-fare was influenced by disruptions to Metrorail service that began due to a safety incident in October 2021.

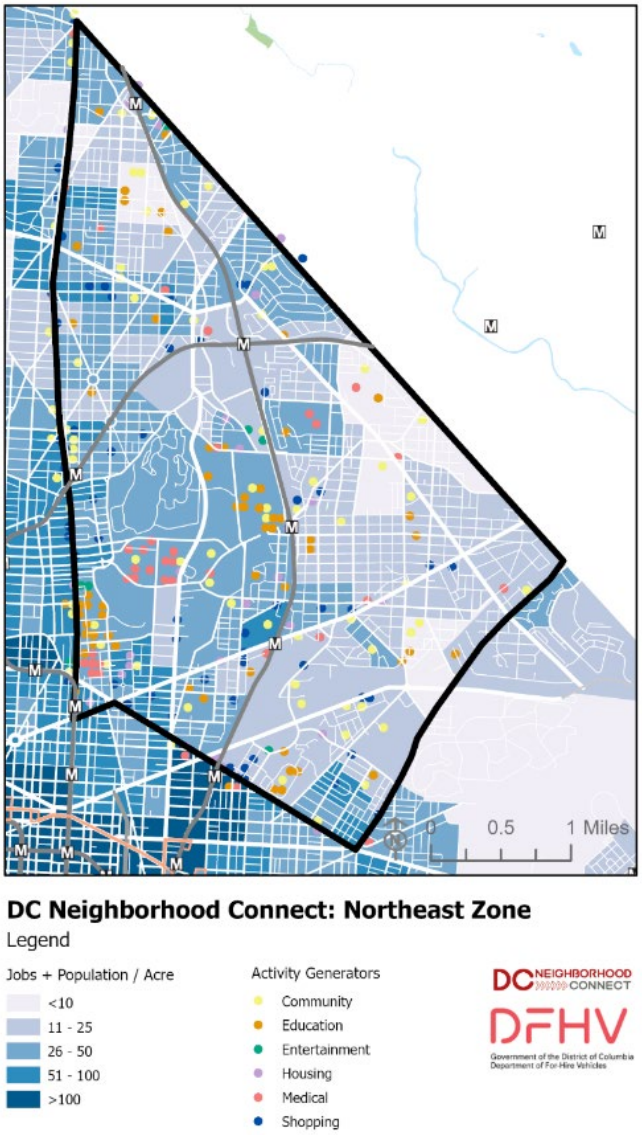
[3] For more information about these services, respectively, see: https://www.wmata.com/service/accessibility/metro-access/ and https://dfhv.dc.gov/service/transport-dc.

About the Northeast Zone

This DCNC zone (**Figure 2**) is bordered by Georgia Avenue to the West, Eastern Avenue to the East, and Florida Avenue and Bladensburg Road to the South. The zone is 11.3 square miles in size and covers three wards in the District–most of Ward 5, almost half of Ward 4 and under a third of Ward 1. This zone has around 128,200 residents, or 19 percent of the District's population. There are six Metrorail stations in the zone, allowing residents access to the Red, Yellow, and Green Metrorail lines. Approximately 76 percent of those living within this zone are residents of color and 18 percent are low-income.[4]

There are approximately 310 activity generators in or directly adjacent to this zone. These activity generators are diverse and distributed across the area (**Figure 2**). There are two major clusters of education points of interest, which center around Howard University and The Catholic University of America. The cluster of medical points in this zone is centered around MedStar Washington Hospital Center and the VA Medical Center. Ivy City and Union Market in the south are dense commercial areas in this zone.

Figure 2: Northeast Zone Density and Activity Centers



[4] Defined here as earning 150 percent or less of the federal poverty level.

Figure 3 shows the passenger travel flows for the DCNC Northeast Zone in 2021 as well as the density of destination points.[5] Some of the most popular destinations in this zone are near Rhode Island Metro, Brooklyn Manor Apartments, Ivy City, Fort Totten Metro, the Brightwood Walmart, and Fort Totten Square. There are instances where this service is used between areas with little or poor transit connections, as well as between areas with existing rich fixed-route transit connections. There were many trips made between Brookland and Brentwood–two neighborhoods served by the Metrorail Red Line. However, concentrations of origins and destinations in these neighborhoods indicate that many trips come to or from areas of Brookland that are more than 10-15 minutes in walking distance to the Metrobus Route T18 or the Metrorail station to get to Brentwood. There are also many flows between Brentwood and Ivy City. The Metrobus Route D8 operates daily between these two neighborhoods every 20 minutes.

Figure 3: Northeast Zone 2021 Trip Patterns

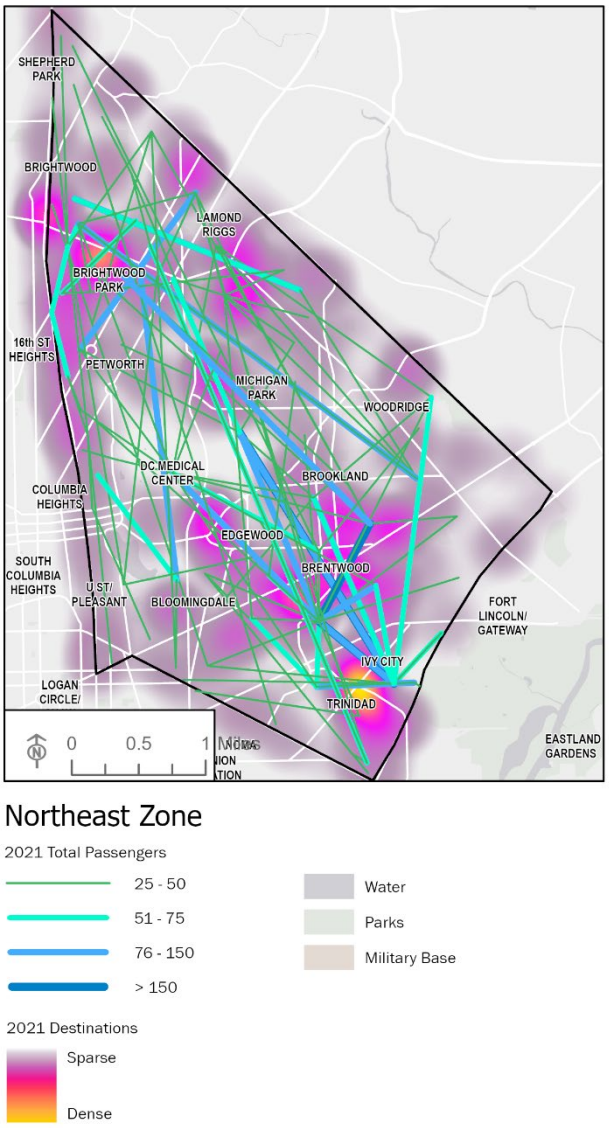


Table 1: Average Trip Characteristics for Northeast Zone

Year	Average Trip Duration (Minutes)		
	Weekday	Weekend (Fri. & Sat.)	Sunday
2019	12.4	11.2	11.2
2020	18.5	18.1	17.6
2021	11.7	11.9	10.5
Total	**14.6**	**14.0**	**13.5**
Average Wait Time (Minutes)			
2019	13.8	14.0	15.9
2020	12.3	12.8	11.9
2021	15.7	18.9	19.5
Total	**13.7**	**14.9**	**15.5**
Average Daily Passengers Served			
2019	133	109	77
2020	83	63	51
2021	122	95	58
Total	**111**	**88**	**62**

From June to November 2021, DCNC provided 16,622 passenger trips in the Northeast Zone, or an average of 2,060 passenger trips per month. During this period, ridership increased significantly, however, from 1,953 passenger trips in July to nearly 3,977 trips in November 2021. **Table 1** shows the annual average trip characteristics for DCNC trips within the Northeast zone for 2019 and 2021. The average wait time has increased since pre-pandemic service in 2019.

[5] Because trips are aggregated to Census block groups, lines are placed at the center of each block group, rather than the precise locations where trips are originating or terminating.

About the Ward 8 Zone

This zone is bordered by Pennsylvania Avenue and the Potomac River in the North, Southern Avenue in the East, and Anacostia Freeway in the West. This seven-square mile zone covers most of Ward 8 and a portion of Ward 7 in the North near Fairfax Village and Hillcrest. This zone is home to an estimated 83,600 people, or 12 percent of the District's population (**Table 5**). There are 10,200 jobs in the zone, accounting for only 1 percent of the jobs in the District. The density of jobs and population is shown in **Figure 7**. This zone is significantly less dense in both jobs and people than the Northeast zone. There are three Metrorail stations in (or directly bordering) this zone, allowing residents access to the Green Line at different points in the area. This zone serves a higher density of vulnerable populations than the Northeast zone. People of color account for nearly 97 percent of the population here. Furthermore, 47 percent of the population is considered low-income. More than two thirds of the households in this zone are low-car (zero or one car per household).

There are an estimated 87 activity generators in or directly adjacent to this zone. The distribution of these generators is shown in **Figure 7**. There are significantly fewer activity generators per square mile in this zone compared to the Northeast Zone and the rest of the District. There are no universities/colleges, major medical centers, or major commercial centers in this zone like there are in the Northeast zone.

DC Neighborhood Connect service was launched for the public in Ward 8 in July of 2021. However, passengers were making trips in this zone 2020, when service offered trips exclusively to essential healthcare workers across the district. During this time, service was limited to just three healthcare facilities, one of which was in this zone–United Medical Center along the southern boundary of the District. In 2020, 22 percent of all healthcare worker trips originated within this Ward 8 zone.

Figure 4: Ward 8 Zone Activity Generator Density Map

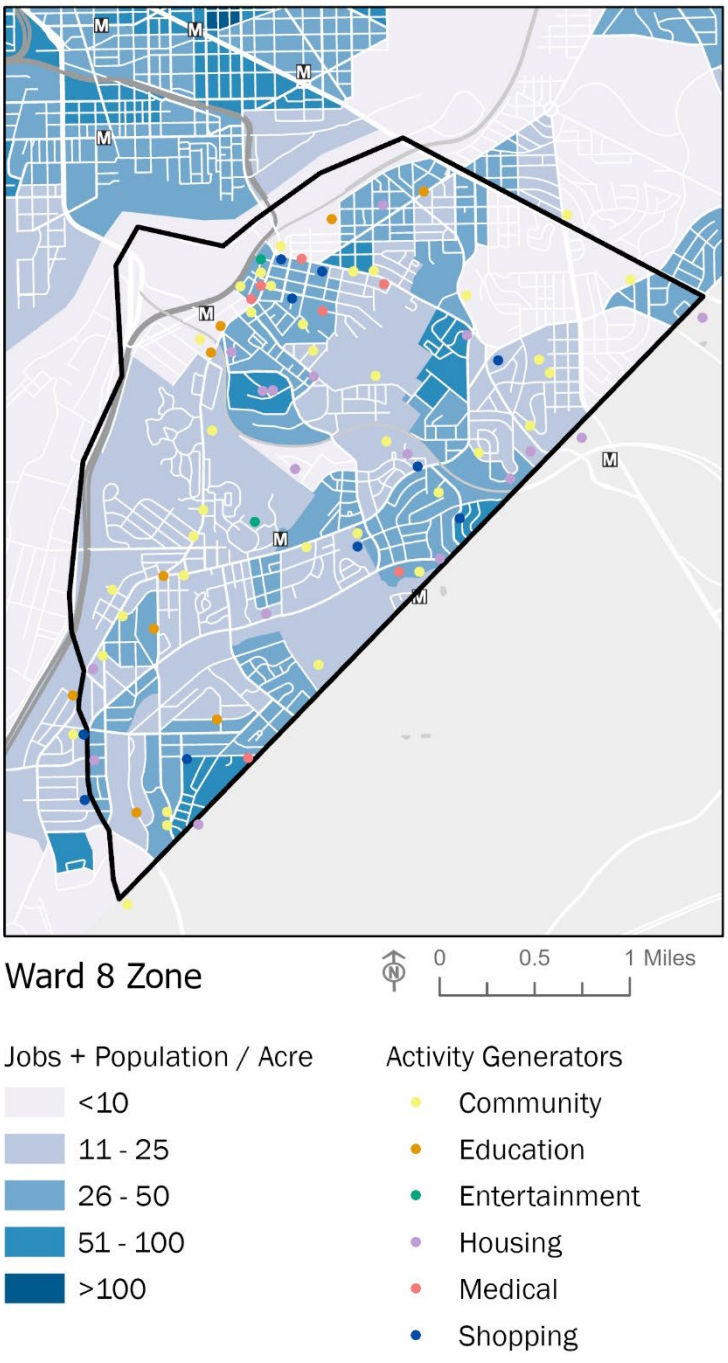


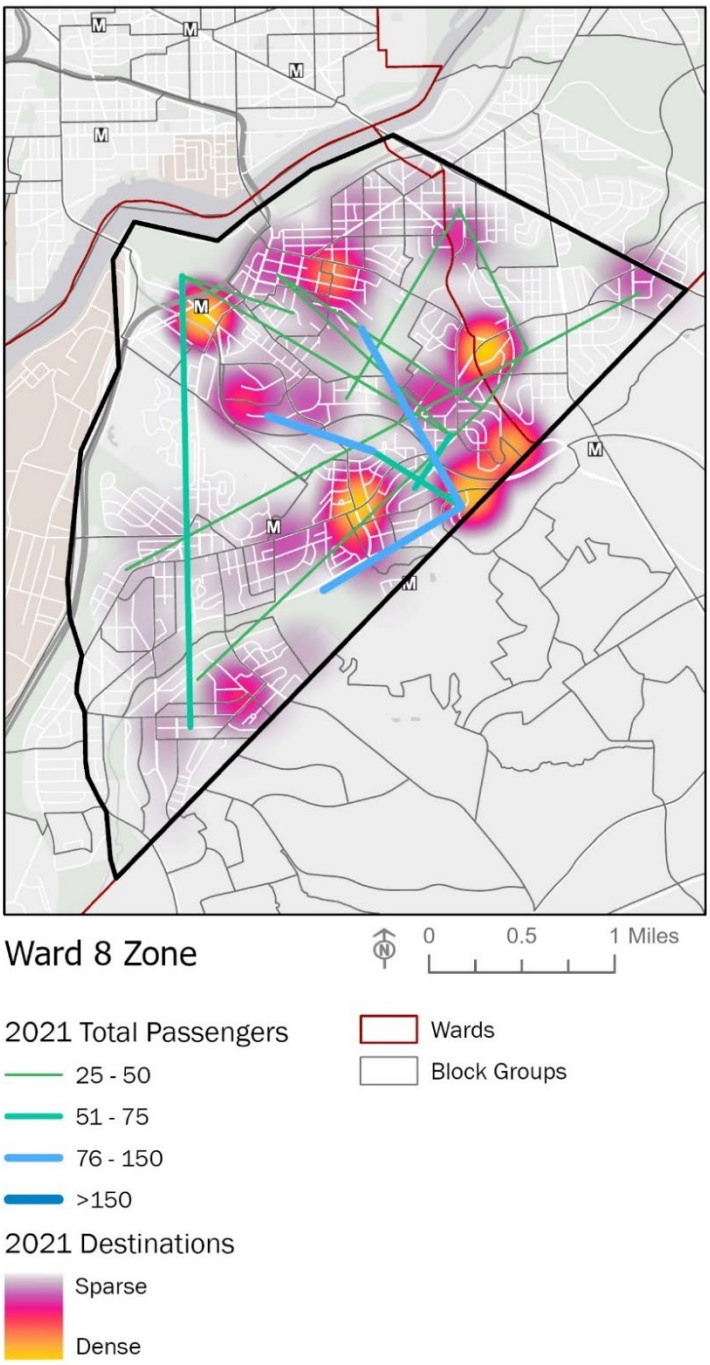
Figure 5 shows the 2021 travel flows within the zone as well as the concentration of destinations. Noticeably, the United Health Care facility is a faint purple area on the map with a relatively low number of trips ending there. Instead, the highest concentration of trip destinations was seen near Anacostia Metrorail, the neighborhoods of Anacostia, Buena Vista, Hillcrest, and Douglas. One of the highest travel flow patterns across the zone is between the Shipley Park area and commercial areas in Congress Heights. Similarly, another high travel flow pattern is between the Shipley Park area and Historic Anacostia. Finally, there are a high volume of trips that occurred between the Douglas neighborhood and Barry Farm neighborhood.

Table 2 shows the average trip characteristics for DCNC trips within the Ward 8 zone. Sunday has the lowest trip duration and the lowest daily passenger volumes. (Note: Trips in 2020 in this zone had many restrictions and are not a great proxy for comparing travel trends over time in this area.)

Table 2: Average Trip Characteristics for Ward 8 Zone

Year	Average Trip Duration (Minutes)		
	Weekday	Weekend (Fri. & Sat.)	Sunday
2020	14.2	17.7	14.5
2021	8.9	9.2	7.7
Total	**12.0**	**13.5**	**11.1**
Average Wait Time (Minutes)			
2020	9.3	9.2	9.1
2021	11.8	11.9	11.2
Total	**10.3**	**10.5**	**10.2**
Average Daily Passengers Served			
2020	3.9	3.2	3.7
2021	25.8	21.7	11.4
Total	**13.0**	**12.4**	**7.5**

Figure 5: Ward 8 Zone 2021 Trip Patterns



Service Performance

Wait Times

DCNC service performance has changed over time, in part due to growing public awareness and promotion of the zone. In spite of service suspensions due to COVID-19, utilization of DCNC has been increasing over time. This is especially true in the Ward 8 zone. As a result, wait times have been steadily increasing since mid-2021 (a reality not fully captured in the annual averages shown above) and additional vehicles and operators have been required to control wait times. The Northeast Zone's usage has been steadier, with some month-to-month variation, while Ward 8 demand continues to increase. As of late 2021 and early 2022, wait times in both zones were averaging around 25-30 minutes, with some passengers waiting significantly longer for a ride during busy periods. This increase in wait times has the potential to make the service a less reliable travel option for riders who may not have flexibility in their schedules to accommodate late arrivals (e.g., to work, doctor's appointments, etc.).

Operating Costs and Financial Productivity

Cost per passenger trip for DCNC varies significantly by month. In the last six months of 2021, costs per trip decreased over time, generally due to an increase in trip volume relative to the number of vehicles deployed (**Table 3**).

Table 3: Operational Costs by Month, 2021

Month	Operational Cost	Trips	Cost per Trip
July	$51,382	1,603	$32.05
August	$68,427	2,581	$26.51
September	$120,094	3,203	$37.49
October	$66,160	3,716	$17.80
November	$71,327	4,271	$16.70
December	$96,868	4,305	$22.50

At its lowest point in 2021, DCNC was averaging a cost per passenger trip of $16.70. By comparison, local buses and Metrorail operating in the area have costs per passenger trip ranging between $2.50 and $5.00 on weekdays.

Trip Characteristics

Shared origins and destinations make on-demand services more efficient. Therefore, zones that encompass many popular employment, residential, medical, and commercial points of interest have a higher likelihood of success and efficiency. There are high concentrations of pick-ups and drop-offs near these points in both service zones; Metrorail stations, shopping centers, universities and schools, medical centers, and large apartment complexes often emerge as high-volume pick-up and drop-off points. There is also a trend in both zones in which some of the highest volume trip patterns are to and from select residential areas. This points out a limitation in the dataset, which is that there were not large volumes of trips made in 2021 compared to 2019. This relatively low volume of trips allows very dedicated passengers who make daily or weekly trips to dominate the travel patterns shown in the analysis.

Capacity and Productivity

Capacity

In late 2021, DCNC typically had a maximum of six vehicles in service in the Northeast Zone. While this level of service was adequate in most of 2021 to maintain reasonable average wait times, the recent increases in wait times indicate that, *absent other changes to the service parameters*, additional vehicles could be required to meet current and/or increased future demand at the current or an improved level of service, which would increase the total cost of providing the service. The magnitude of the increase (if any) in ridership will be the strongest factor in determining whether wait times increase. **While deploying additional vehicles could reduce wait times, it could also simply reduce the rate at which wait times increase *if* demand increases significantly**.

It is also important to note that wait times and demand are related to each other through a feedback loop. Lower wait times result in higher demand, as the service becomes more attractive to riders. At the same time, higher demand leads to wait time increases, resulting in lower ridership, as people choose alternative modes for their trips or decline to make the trip. DCNC operates in fairly dense urban areas where people are frequently making decisions about which mode to take for a trip from a variety of options including bus, rail, foot, personal bike, shared bike, scooter, and ride-hailing. For both reasons (feedback loop and high volumes of travel by a variety of modes), it is not feasible in the long-term to bring DCNC wait times below a certain level *within a reasonable level of resource expenditure*. This is especially the case when the service compares favorably to alternative travel options in price.

Productivity

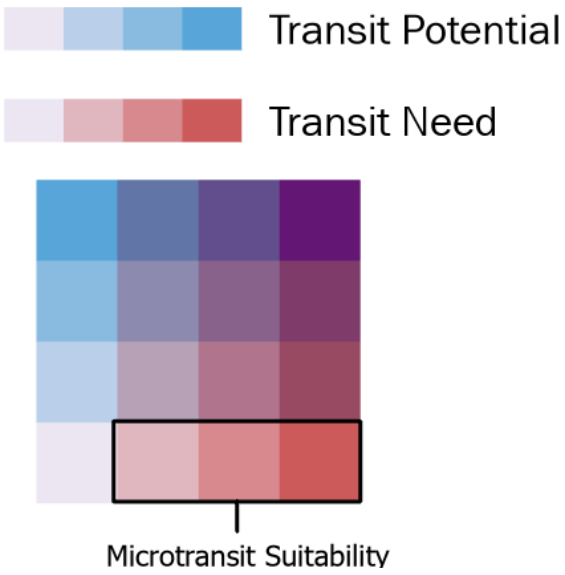
From June 2021 through November 2021, the percentage of trips that were shared was consistently between 24 percent and 27 percent. In October and November 2021, DCNC service (across both zones) achieved an average of 2.4 passenger trips per revenue hour. This is a relatively low figure for a dense urban area and could likely be increased with smaller zone sizes.

3. MARKET ANALYSIS

Microtransit Suitability

Microtransit services are most suitable in locations where the population has a high level of need for public transportation service but low to moderate density, where fixed-route transit is not as available or suitable, and a few smaller vehicles can accommodate the demand for transit service. Microtransit suitability analysis combines two indices—the Transit Need Index and Transit Potential Index—to identify areas with characteristics consistent with successful microtransit service. Transit Need is a measure of demographic and socioeconomic characteristics that are indicative of a higher tendency to use and rely on transit (such as on-demand services).[6] Transit Potential is a measure of population and employment density in an area. Areas identified as high in both Transit Potential and Transit Need, or at least high in Transit Potential, are suitable for fixed-route transit services. Areas more suitable for microtransit service are higher in Transit Need and Lower in Transit Potential (as indicated in red in **Figure 4**).

Figure 6: Microtransit Suitability Index

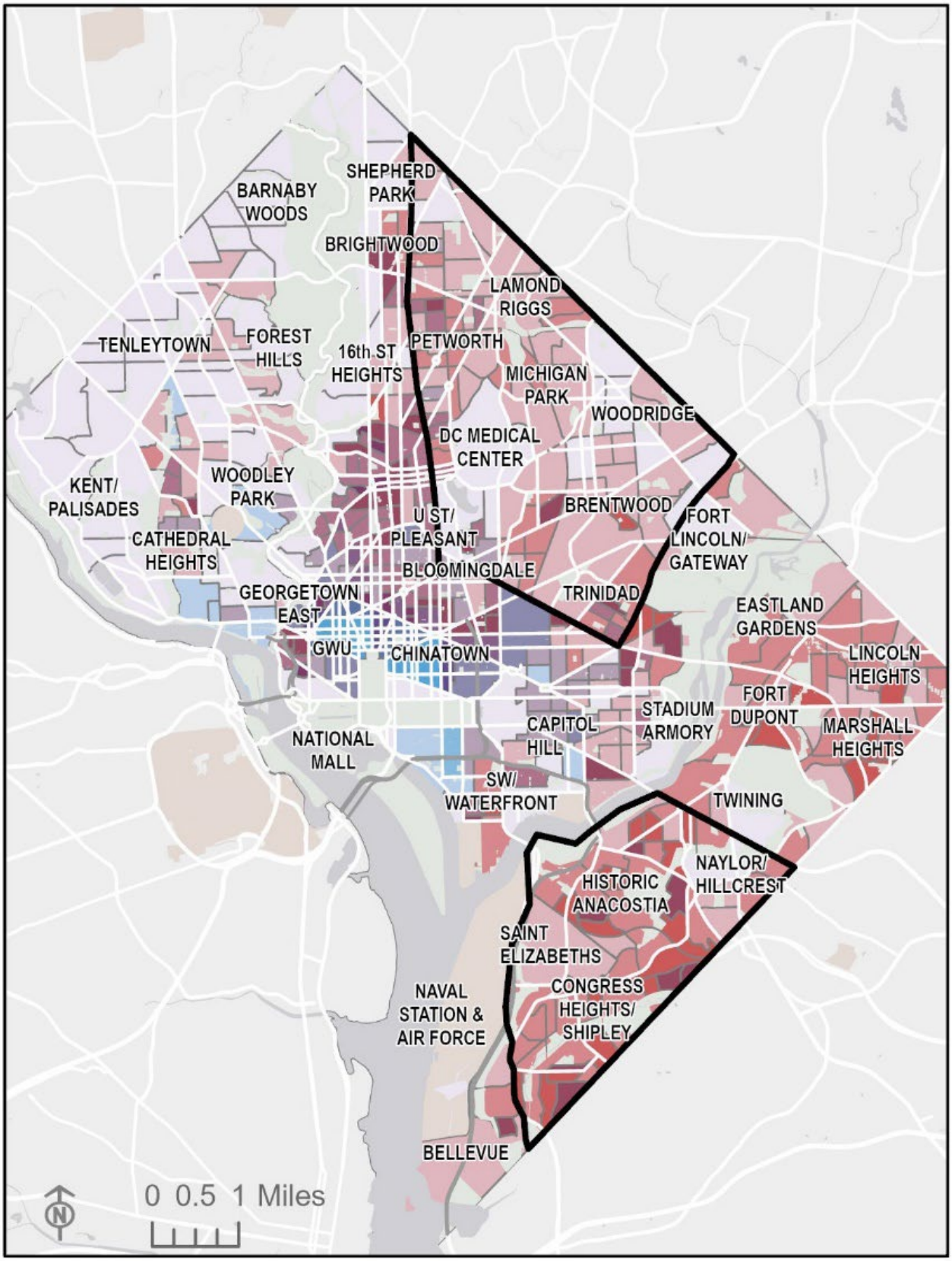


Microtransit suitability for the District is shown in **Figure 5**.[7] Overall, the District's Core has high Transit Potential and appears bluer and/or more purple, indicating that it is most suited for higher-capacity transit. As red (rather than purple, blue, or gray) areas are considered more suitable for microtransit, the suitability analysis indicates that the Northeast Zone encompasses several areas that are relatively more suitable for fixed-route transit based on population characteristics and density. It also indicates that the Ward 8 zone appropriately serves the largest cluster of areas in the District with higher microtransit suitability. A third take-away from the analysis is that **there are many areas in Ward 7 east of the river (e.g., Eastland Gardens, Fort Dupont, Lincoln Heights, and Marshall Heights) that are highly suitable for microtransit service**.

[6] Transit-oriented populations include low-income and low-car (zero or one-car) households, persons with disabilities, youths, and senior citizens. These socioeconomic characteristics are indicators for persons more likely to use and/or depend on transit to meet their transportation needs.

[7] Microtransit Suitability is a relative measure, so areas shown in the map are being compared to other areas within the District and not to an industry standard or threshold (as they are in Microtransit *Feasibility*, described in more detail below).

Figure 7: District of Columbia Microtransit Suitability



4. BEST PRACTICES AND GUIDELINES FOR MICROTRANSIT SERVICE

A literature review and interviews with providers of microtransit service from around the U.S. identified general guidelines for consideration in designing microtransit services. A few key findings include:

- **It is critical to define the purpose of the service and use that as a guideline to develop the service parameters and/or inform its policies**. In a few examples:
  - If a service is intended to support ridership on a fixed-route network rather than detract from it, it should provide connections to local fixed-route services through which residents can access a variety of activity destinations, rather than trying to include a maximum number of activity destinations within a zone.
  - A service may be intended to maintain coverage and access for riders while reducing operating costs. In the case of a service that is highly productive during the day but has low productivity at night, for example, microtransit service might replace one or more fixed routes during only a specific period of the day (in this example, at night) as a cost-saving measure while preserving coverage.
  - For a service that is intended to serve a specific population, an agency might consider employing policies and/or marketing practices to encourage or ensure its use primarily or exclusively by that population.
- Recent agency experience indicates that **zones in urban areas are not recommended to be more than three to five square miles in size**; in more suburban or rural locations; zones can be up to six to ten square miles in size. When zones are too large, there are multiple potential challenges associated with providing service:
  - Longer trips reduce the number of passengers that can be served, resulting in lower productivity and a lower number of trips that can be served at a given level of service. Longer trips can also significantly increase wait times for other passengers.
  - In urban areas, zones that overlap with fixed-route services are more likely to replace rather than complement fixed-route ridership. As the cost of providing a microtransit trip is significantly higher than a passenger trip provided by moderately productive bus route, this results in a less efficient use of public resources.

After operating its Pickup on-demand service for several years, Capital Metro in Austin, TX recently updated its service guidelines to indicate that urban microtransit zones should be around three square miles in size and suburban zones should be around six square miles.[8] Pickup currently serves eleven zones of varying characteristics, including some urban zones with similarities to the District. In another case example, CDTA in Albany, NY serves a zone that is 17 square miles. Upon implementing service in that zone, CDTA found that it quickly became difficult to serve the area with the planned number of vehicles. CDTA had to double the number of vehicles in serve to meet demand and continues to struggle with high wait times.

[8] For more information, see: Capital Metro Board Meeting. Approval of Capital Metro Pickup Service Guidelines - V1.0 April 2021, March 2021.

5. PUBLIC AND RIDER ENGAGEMENT

Rider Survey Findings

Prior to the onset of the COVID-19 pandemic, in late 2019, DFHV administered a survey to better understand and evaluate DCNC customer demographics and opinions about the service. At the time, the service was only operational in the original Northwest/Northeast zone. During this study, in Spring 2022, DFHV administered a second survey to riders in all three zones. Nearly identical questions were used for both surveys. **Table 4** shows how the characteristics of the samples varied between the two surveys.

Table 4: Comparison of DCNC Survey Sample from 2019 and 2022

	2019 Survey (NE/NW Zone)	2022 Survey (All Zones)	Change
Survey sample (n)	62	93	+31
Breakdown of rider home locations (based on zip codes)	N/A	61% Zones 1 and 2 (NE/NW) | 39% Zone 3 (Ward 8)	N/A
Percentage with a disability	19%	26%	+7%
Percentage from households earning under $25,000	43%	59%	+16%
Percent from households earning less than $40,000	50%	72%	+22%
Percent from households earning less than $70,000	73%	84%	+11%
Percent from households earning over $85,000	21%	7%	-14%
Percentage people of color	64%	80%	+16%
Percentage female/male/other	65% | 33%| 2%	72%| 22%| 5%	+7%| - 11%| +1 %
Percentage indicating that Metrobus was one of their primary modes of travel prior to using DCNC service	65%	66%	+1%
Percentage indicating that Metrorail was one of their primary modes of travel prior to using DCNC service	45%	38%	-7%

Survey takers in 2022, on average and compared to those who took the 2019 survey, were more likely to have a disability, be from a lower income household, and be a person of color. This is not surprising given that the 2022 survey was targeted to three zones, including the zone in Ward 8 that did not exist in 2019. Ward 8 residents are more likely than other residents in the District to have a disability, be low-income, and be a person of color. The fact that more survey takers were female may be explained by demographics in Zone 3 and/or also more generally by the populations (across both zones) that are more likely to use the service. The fact that the proportion of riders who are from low-income households increased in the 2022 survey could also reflect the fact that wait times in 2022 were higher and riders with higher incomes may have decided to use higher cost travel options to save time.

Table 5 compares the findings related to opinions of service quality for both the 2019 and 2022 surveys.

Table 5: Comparison of DCNC Survey Findings from 2019 and 2022

	2019 Survey (NE/NW Zone)	2022 Survey (All Zones)	Change
Average rating of likeliness to recommend the service to others (out of 10)	8.1	7	-1.1
Percent who said their most recent trip was “very good” or “good”	83%	58%	-25%
Percent who said the drivers are “very good” or “good”	78%	57%	-21%
Percent who said booking a trip is “very easy” or “easy”	67%	62%	-5%
Percent who said booking a trip is “difficult” or “very difficult”	14%	25%	+11%
Average amount willing to pay	$3.59	$3.46	-$0.13
Average time willing to wait	16 mins	16 mins	No change

There were two questions on which there was a particularly noticeable change in rider attitudes about the service. The percentage of survey respondents who indicated that their most recent trip was “very good” or “good” declined by 25 percentage points. In addition, the percentage of riders who indicated that the drivers are “very good” or “good” declined by 21 percent. A higher percentage of riders also said they found booking trips difficult, and the likelihood of riders recommending the survey to others decreased modestly (however, people were generally still likely to recommend it to others). These declines in performance may be related to the increased wait times that were observed in the service across the two time periods. In addition, the results suggest drivers may not be as high performing as they were in 2019. Notably, respondents were consistent across both surveys in indicating an average amount of time they were willing to wait of 16 minutes and an average price they were willing to pay of around $3.50.

Ward 8 Focus Group

Background

To engage with Ward 8 residents regarding DC Neighborhood Connect service, the study team held a virtual focus group meeting (**Figure 8**) to better understand riders’ experience using the service and how to improve it. DFHV and DDOT invited residents to the meeting by emailing riders, Ward 8 stakeholder organizations and commissioners, and advertising at the Congress Heights Senior Wellness Center.

Figure 8: Ward 8 Focus Group Meeting

The one-hour focus group was held on Tuesday, April 19, 2022, at 6:00 p.m. via Zoom. Residents were able to participate via computer, tablet, smartphone, or call-in by telephone. To ensure accessibility for persons with a hearing impairment, closed captioning with live transcription was made available. A total of seven residents and one local elected official that attended the focus group including four active riders, three non-riders, and one participant who had taken the service a

single time.[9] Two employees from Foursquare ITP co-moderated the meeting, and four additional team members (from DFHV, DDOT, and Foursquare ITP) attended the meeting and assisted with logistics and question-answering.

The meeting was divided into two portions. The first part of the meeting educated participants on the DC Neighborhood Connect service including an overview of how the service works and where the service operates. The second phase of the meeting, which took up the majority of the hour, was interactive and discussion-based, with a mixture of polling and discussion questions that allowed active riders the opportunity to provide feedback on the service and elements that need improvement, in addition to allowing non-users the opportunity to provide information that would entice them to use the service.

Polling Takeaways

A list of eight questions were presented using the Zoom built-in Polling function. Participants were able to use their electronic devices to response to the questions and their responses were presented in real-time. Participants without electronic devices or uncomfortable using them were encouraged to speak their responses or enter responses into the chat. **Table 6** shows the eight polling questions and the top response(s) for each question.

[9] One participant arrived late and their usage was not recorded.

Table 6. Focus Group Polling Questions and Top Response(s)

Polling Question	Findings (Top Responses)
How did you hear about the focus group?	Most received an email directly from DFHV.
Before today or until recently, had you heard about DC Neighborhood Connect (microtransit)?	Most were familiar with the service.
For participants who had heard of DC Neighborhood Connect, how did you hear about the service?	The majority heard about the service through word of mouth, including through: • Transport DC (driver informed them of the new service). • An adult child informed them of the service. • A few saw the bus circulating around the neighborhood.
Approximately how many times have you used the DC Neighborhood Connect service?	The majority indicated they used the service a few times.
How do you typically learn about new public transportation services/bus routes?	Participants said they learn about new services through: • The WMATA (Metro) website • Flyers in the community
For DC Neighborhood Connect users, how easy or difficult is it to book a trip?	Participants were evenly between: • Not too difficult, figured out rather quickly, • Very easy, and • Didn't apply because they have never booked a trip. However, one participant mentioned she had been (erroneously) told that booking by phone was not an option.
How long would your, or would you be (if not a current rider), willing to wait for a DC Neighborhood Connect trip?	The majority said 21-30 minutes is an acceptable timeframe; some clarified verbally that the acceptable wait time depends on their trip type.
What other modes of transportation do you most commonly use?	Residents provided responses that included: • Metrobus or DC Circulator • Drive own car • Uber/Lyft • Family/friend

Discussion Takeaways

In addition to the polling questions, participants were asked to provide feedback on a series of discussion questions. **Table 7** identifies key themes identified from the discussion, supporting feedback, and potential methods for addressing the feedback for DFHV to consider. Some themes from the feedback are addressed in the **Recommendations** section below.

Interestingly, some participants' comments indicated to the study team the possibility that some people may be using the service more informally (e.g., booking trips for groups larger than they indicate in the app, hailing a ride, riders getting on the vehicle without having a reservation, etc.). For example, a participant mentioned vehicles regularly being full while trip data indicates that a relatively low number of trips are shared, which would indicate a low likelihood of vehicles being full. DFHV could consider holding discussions with its drivers and/or employing undercover riders to observe whether this is indeed occurring.

Table 7. Discussion Findings and Potential Strategies

Theme	Findings	Potential Strategies
Awareness, Marketing, and Education	■ Many non-riders are unaware of how and where the service operates. Residents expressed interest in using the service if they could travel to key destinations within Ward 8, for example, the Congress Heights Senior Wellness Center and Safeway on Alabama Avenue. (Note: These destinations are currently served.) ■ In addition, residents were unaware if they qualified to use the service and that the service is open to the general public. ■ Also, misinformation about the service is circulating in the community to include how the service works, when it operates, and where it operates. ■ Some (older) residents seem uncomfortable with using a smartphone app to request transportation.	Conduct additional marketing to residents in DC Neighborhood Connect zones to ensure they are familiar with the service and comfortable using it.
Coverage and Access to Key Destinations	Residents (riders and non-riders) indicated the service is currently not available for the entirety of Ward 8. Therefore, residents are unable to access some destinations within their community including: ■ Department of Human Services on S. Capitol Street SE, ■ Good Foods Market on S. Capitol Street SE, ■ William O. Lockridge/Bellevue Library on Atlantic Street SW, and ■ Community of Hope on Atlantic Street SW Some participants expressed a preference for the service to provide access to all key destinations in Ward 8.	Expand to select requested locations (see Recommendations below)
Technological Impediments (GPS)	Current riders indicated there are instances where the vehicle does not pick them up or drop them off at the location requested in the DC Neighborhood Connect app.	■ Work with technology vendor to identify and address ■ Ensure drivers known how to report these issues so DFHV can address them.
Zone Expansions	■ Current residents expressed interest in using the service to travel beyond Ward 8 to access other key destinations in D.C. particularly medical facilities. ■ Current riders indicated that if traveling to places of interest outside Ward 8 they are required to transfer to another transportation service.	Consider zone expansions if/as possible (see Recommendations below)
Wait Times and Reliability	■ Current riders indicated that during morning and afternoon peak periods, wait times are high and they end up using other transportation modes. One resident said they experienced a wait time of more than 50 minutes. Other residents echoed that they often receive messages indicating no vehicles are currently available. ■ Current riders indicated that, while the service is convenient, it is unreliable in part due to the high wait times.	■ Within available resources, deploy additional vehicles to accommodate demand ■ Implement fares to manage demand and ensure cost-competitiveness of more efficient services ■ Customize shifts to add capacity specifically during peak periods
Advance Booking Preference	Current riders expressed interest in the ability to schedule a ride in advance/for a later time. In particular, for riders who use the service for medical appointments, the service would be more attractive if they could pre-arrange a pickup time.	Work with technology vendor to identify feasibility of implementing advance booking options.
COVID-19 Social Distancing and Masking	Current riders expressed discomfort with passenger overcrowding on vehicles, in addition to some passengers being non-compliant with the [now former] D.C. mask mandate.	Keep COVID-19 guidance up-to-date based on D.C. government requirements; encourage use of masks when appropriate.

6. SUMMARY OF FINDINGS, STRENGTHS, AND WEAKNESSES

Based on the above analysis and findings, strengths and weaknesses identified related to DCNC service are described below.

- The DCNC service is provided in many areas of the District that are less well served by fixed-route transit and that are relatively more suitable for microtransit, including particularly the eastern portions of the Northeast Zone. This is especially true in the case of the Ward 8 Zone, which contains the highest concentration of microtransit-suitable areas in the entire District.
- DCNC provides a completely affordable (currently zero-fare) curb-to-curb service to residents within its zones, including wheelchair users, thereby achieving the goal of enhancing access to high-quality transit service for low-income residents and residents with disabilities. DCNC Northeast Zone riders were highly satisfied with the quality of the service when surveyed in late 2019. Although riders' satisfaction declined in the 2022 survey, overall, most riders still indicated they would be likely to recommend the service to others.
- DCNC significantly enhances access to both destinations and other transit services, which is especially important in areas of the District that are not within walking distance of a Metrorail station or frequent bus route.
- Ridership and wait times for DCNC service increased significantly in the final months of 2021. Ridership increased from 1,953 passenger trips in July 2021 to nearly 3,977 passenger trips in November 2021 and average wait times increased from 12 minutes in July and August 2021 to 23 minutes in November 2021. If ridership continues to increase, absent other changes such as the deployment of additional vehicles or implementation of service changes, wait times will further increase.
- The size of the Northeast Zone is too large relative to the context, including the level of Transit Potential in the area. At over 11 square miles, the zone is more than three times the size recommended by Capital Metro's guidelines. When microtransit vehicles make longer trips (which is the case in a larger zone), wait times increase, productivity decreases, and riders are even more likely to use DCNC instead of fixed-route service. The 2019 and 2022 survey responses both support this conclusion, as many riders indicated using DCNC *in lieu of* Metrobus and Metrorail. For these reasons, it is appropriate to consider adjustments to the zone boundaries.
- The microtransit suitability analysis indicates that there are additional areas in the District, primarily in Ward 7, that could be suitable for and benefit from DCNC service, should resources to provide it be available. Allocating resources toward multiple microtransit zones, of course, will involve making trade-offs between coverage and service quality (as measured by indicators such as average wait times).
- The fact that DCNC service is currently free (while other available transit services charge fares) indicates there is currently a strong cost-related incentive for riders to use DCNC service rather than other, more cost-effective transit modes (i.e., those with a lower cost per passenger trip) that, in some cases, are available to them. This is not a desirable outcome from a cost effectiveness perspective, as the cost of providing a microtransit trip is higher than buses or rail.

7. EXPSERVICE MODIFICATION AND EXPANSION RECOMMENDATIONS

This chapter includes recommended changes to DCNC service to address the issues described in the previous section, respond to the feedback received from riders, and, as resources are available to do so, serve additional riders in locations that are most suitable for microtransit.

Northeast DC Zone

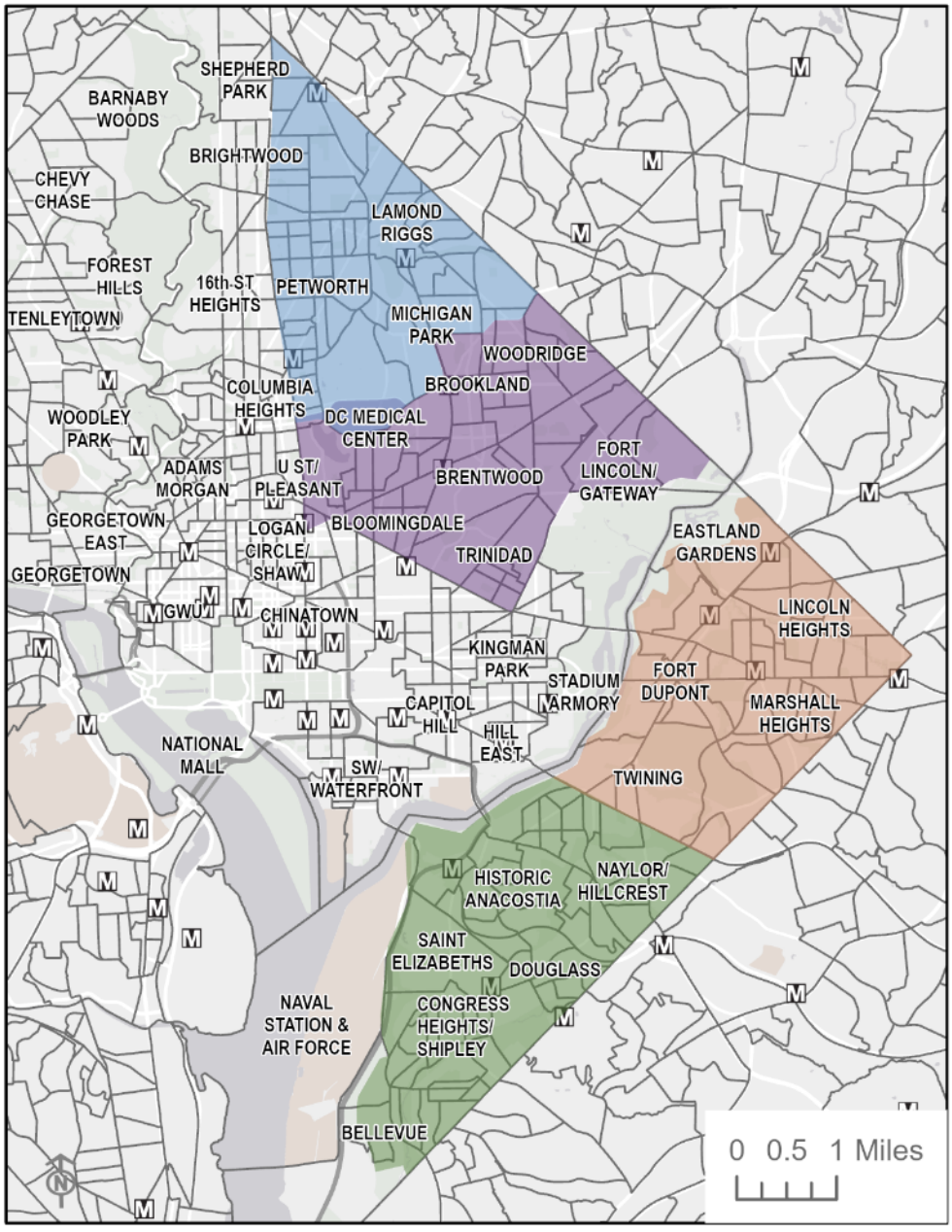
Split Northeast DC Zone and Expand to Fort Lincoln

The study team recommends changes to the Northeast Zone to address current and potential future challenges. These changes (shown in **Figure 9**) include:

- Dividing the Northeast Zone into two separate zones: a Northern Zone and a Southern Zone (subject to potential renaming). The boundary between the two zones would be (from west to east) primarily along Michigan Avenue, the Metrorail Red line, Taylor Street, and then Michigan Avenue again in the east (until Eastern Avenue).
  - Notably, there would be an area where the two zones overlap (around MedStar Washington Hospital Center, Children's Hospital, and the VA Medical Center – primarily between Michigan Avenue and Irving Street) so people from both zones can access these important medical destinations. While discouraging the use of DCNC for longer (less efficient) trips, this would still enable DCNC riders to transfer between zones if necessary.
- Expanding the Southern Zone to include the Fort Lincoln area, giving people in the Southern Zone access to the many retail destinations in that area. This will help counteract the drawback of the above-described change of reducing the number of retail destinations people in the Southern Zone can access.

The sections below discuss the analyses conducted to identify the need for this zone modification.

Figure 9: Proposed Changes to DCNC Zones



Recommendations

Zone Name

- New Northern Zone
- New Southern Zone
- Ward 8
- Ward 7

- Water
- Parks
- Military Base

Impacts to Current Riders of Splitting the Northeast Zone

Notably, over three-quarters (76 percent) of DCNC trips provided between June and November 2021 in the Northeast Zone had their origins and destinations fully within one of these two proposed zones. These trips would not have been affected at all by this proposed change (**Table 6**).

Table 8: 2021 Passenger Statistics Across Proposed Split Zone

Trip Type	Total	%
Total Passenger Trips from June to November 2021 (NE Zone only)	13,267	
Intrazonal (entirely within either the Northern Zone or Southern Zone)	10,073	76%
Interzonal (between New Proposed Northern Zone and Southern Zone)	3,194	24%

Figure 10: 2021 DCNC Interzonal Trips Based Upon Proposed Zone Boundaries

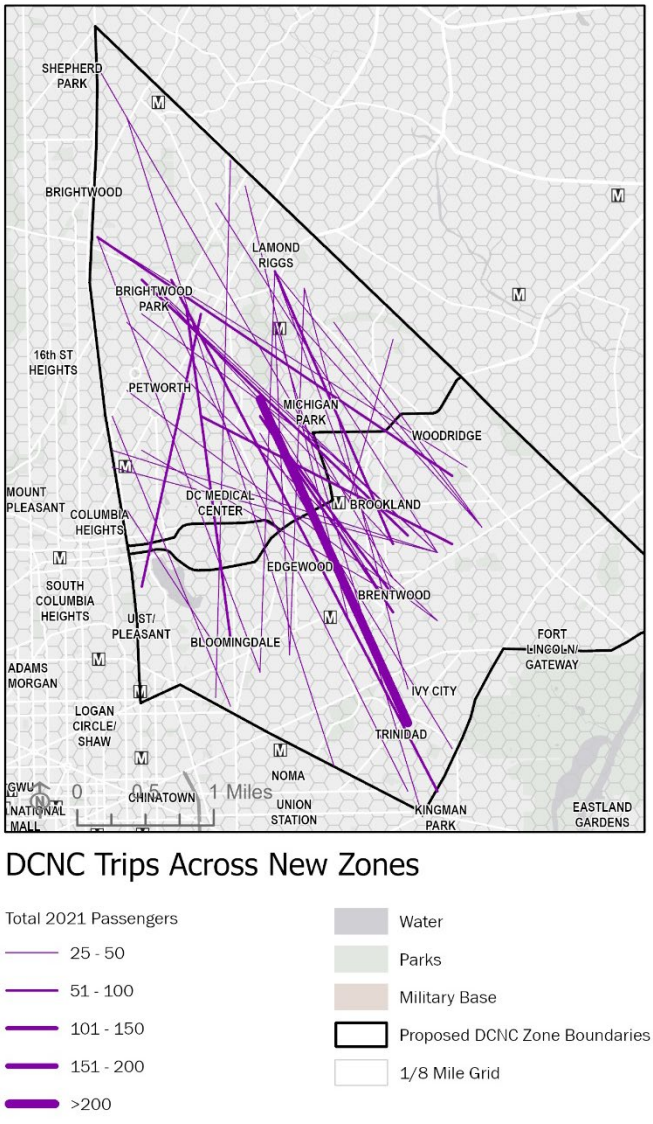


Figure 10 shows only the trips from 2021 that occurred across zones; these are the trips that could no longer be made, absent a transfer, with the proposed changes.[10] The lines indicate the higher volume patterns across zones. (Not all trip patterns appear on the map, given the 25-trip threshold used to identify the most common trip patterns.) Of these high-volume travel patterns, an estimated six percent are being made to and from the two Walmart locations in the Northern zone. By adding the Fort Lincoln area as a destination in the Southern Zone, this will preserve access to major retail destinations for people traveling in the Southern Zone. The high-volume interzonal trips are also often seen going to and from middle schools and high schools, and to and from Metrorail stations. Of the high-volume flows capture by the lines in **Figure 10**, more than 20 can be attributed to a handful of high use residences.[11] Those few residences account for more than 15 percent of the interzonal trips. For example, the highest volume of interzonal trips shown on the map between the Trinidad neighborhood and Michigan Park neighborhood is coming to and from a single residence. So, while 24 percent of trips would be more difficult to make, a relatively small number of individuals would be affected by the change. The following sections describe each of the new proposed zones in more detail.

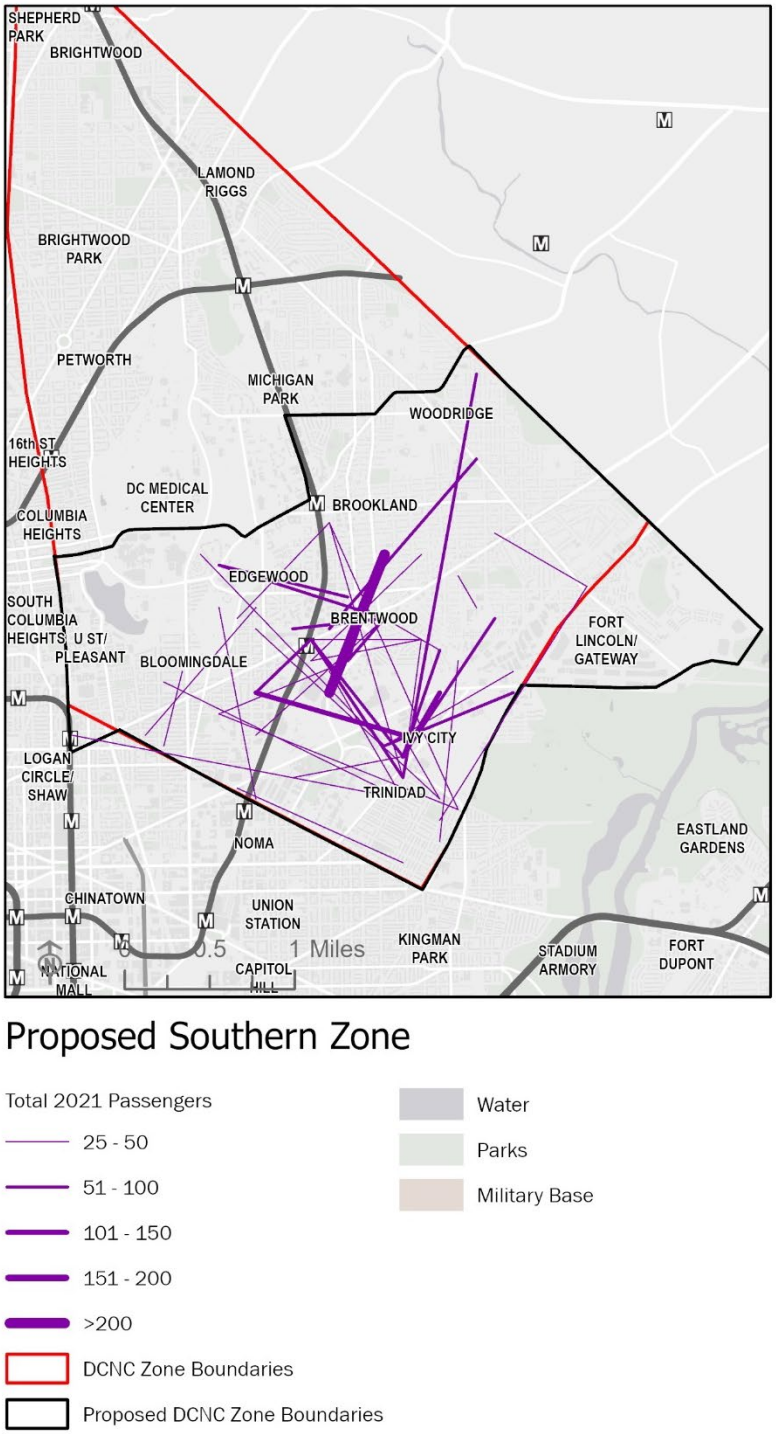
[10] Trips were aggregated to an eighth-mile grid across the District.
[11] This analysis is observational based on existing land use and high-volume pick-up and drop-off locations.

Southern Zone

The proposed new Southern Zone (**Figure 11**) would maintain the current eastern and western boundaries of the Northeast Zone, as well as most of its southern boundary. The changes would involve the expansion to include Fort Lincoln, moving the southeastern boundary to run along New York Avenue and Eastern Avenue, as well as the addition of a northern boundary at Columbia Road, Irving Street, Michigan Avenue, the Metrorail Red Line, Taylor Street, and then Michigan Avenue (to Eastern Avenue). The new zone would be 6.6 square miles in size. Key destinations individuals traveling in the Southern Zone could reach would include:

- Major Retail: Costco in Fort Lincoln, Target in Ivy City, Goodwill, several additional full-service grocery stores
- Metrorail stations: NoMa-Galludet, Shaw-Howard, Rhode Island Ave-Brentwood, Brookland-CUA
- Medical: Children's National Hospital, MedStar Washington Hospital Center, VA Medical Center, HSC Pediatric Center, Howard University Hospital, GWU Urgent Care Center, at least one dozen pharmacies
- Education: Howard University, Trinity Washington University, Galludet University, Catholic University of America, Dunbar High School, McKinley Tech High School, and several other junior and high schools
- Social Assistance: Bread for the City, SOME Food Distribution Center, Crowder Owens Food Bank
- Other: Convention Center, Eight DPR Recreation or Community Centers

Figure 11: Proposed DCNC Southern Zone



The lines in **Figure 11** show the most common trip patterns on the DCNC service in 2021 for trips within the Southern Zone.

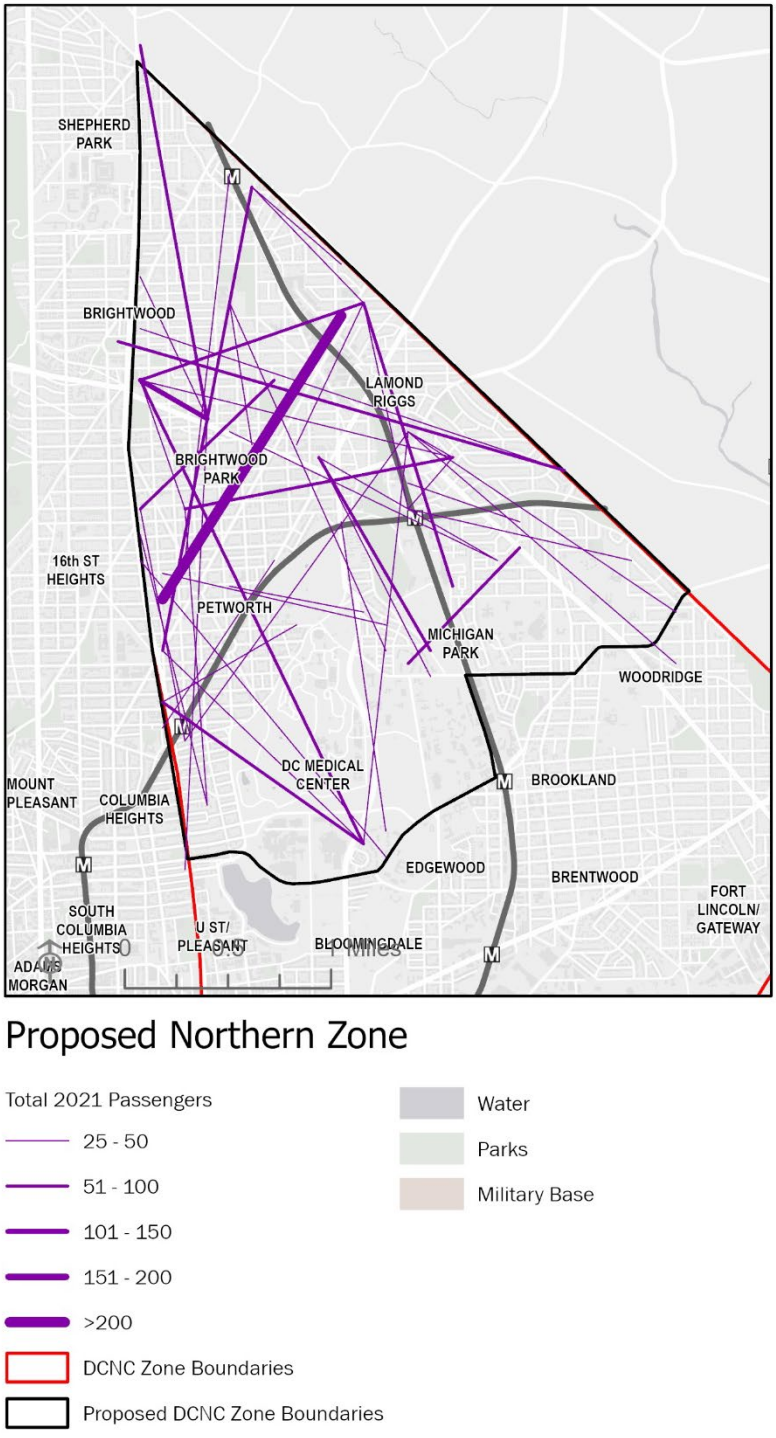
Northern Zone

The proposed new Northern Zone (**Figure 12**) would maintain the current eastern and western boundaries of the Northeast Zone. The changes to the Northeast Zone to create this Northern Zone would involve the addition of a southern boundary at (from west to east) Harvard Street, Hobart Place, Michigan Avenue, the Metrorail Red Line, Taylor Street, and then Michigan Avenue (to Eastern Avenue). The new zone would be 6.7 square miles in size. Key destinations individuals traveling in the Northern Zone could reach would include:

- Major Retail: Two Walmart Supercenters, Target, several other full-service grocery stores
- Metrorail stations: Takoma, Brookland-CUA, Fort Totten, Georgia Ave-Petworth
- Medical: Children's National Hospital, MedStar Washington Hospital Center, VA Medical Center, three urgent care centers, at least one dozen pharmacies
- Education: Catholic University of America, Coolidge High School, and several other junior and high schools
- Social Assistance: Capital Area Food Bank
- Other: Seven DPR Recreation or Community Centers

The lines in **Figure 12** show the most common trip patterns on the DCNC service for trips within the Northern Zone.

Figure 12: Proposed DCNC Northern Zone

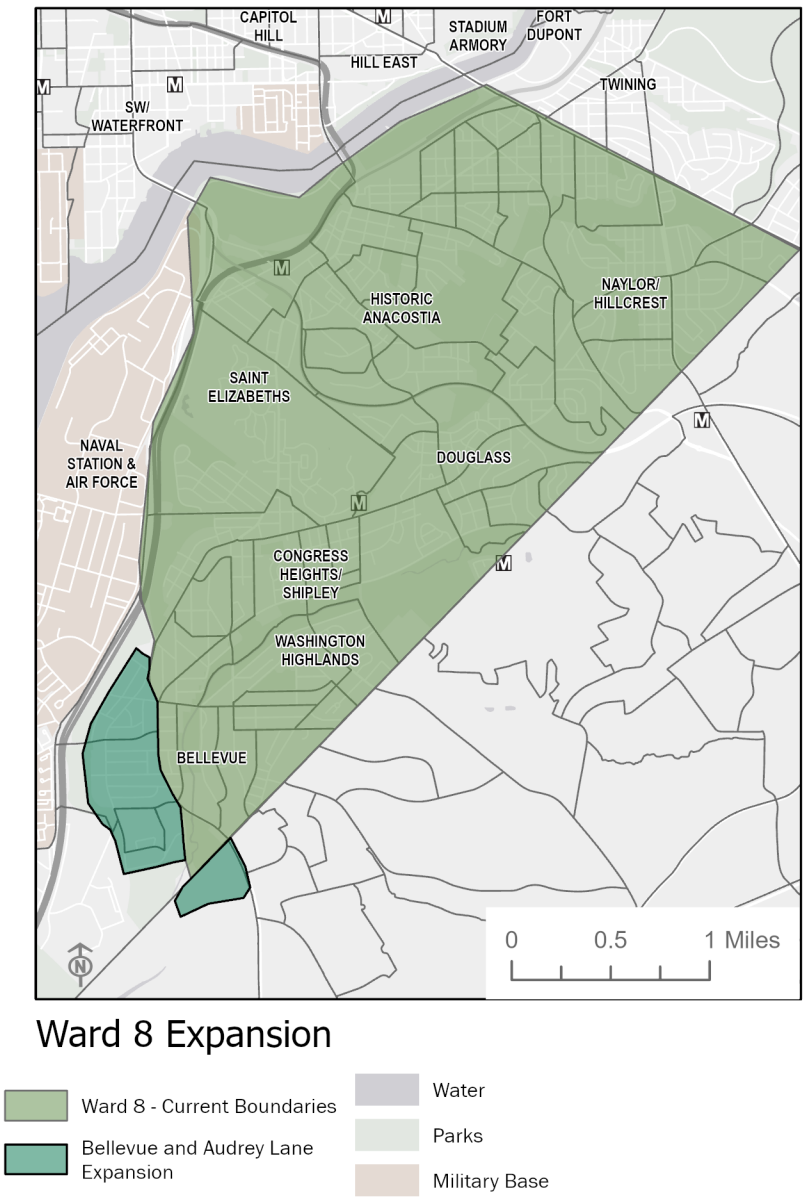


Ward 8 Zone Expansion

The study team recommends minor modifications to the boundaries of the Ward 8 Zone. This zone is already larger than the ideal zone size and has issues with wait times due to growing demand. However, based on an analysis of the focus group results and existing zone, as well as the plans for deployment of additional vehicles, it is evident that Bellevue is a highly desirable and suitable area for expansion of the zone. Expanding the Ward 8 Zone to Bellevue (as shown in **Figure 13**) provides connections to importance services.

The Ward 8 Zone could be expanded to include all residential areas up to I-295. This would accommodate travel patterns seen in Transport DC data from 2021. (There are also a significant number of trips made on Transport DC services between Ward 7 and Ward 8. However, expanding this zone to span two wards is not feasible.) It would also give riders access to additional destinations such as the William O. Lockridge/ Bellevue Neighborhood Library, D.C. Department of Human Services, BridgePoint Hospital National Harborside, other government offices and employment sites, and several apartment complexes. In addition, DCNC would give riders access to Eastover Shopping Center at Audrey Lane as an out-of-zone destination providing passengers with additional access to grocery stores, government services, and transit. Additionally, ensuring that the zone boundaries are set so that the Southern Ave Metro Station is accessible will enhance mobility and connect the region to the rest of the District, opening a number of mobility options and connections.

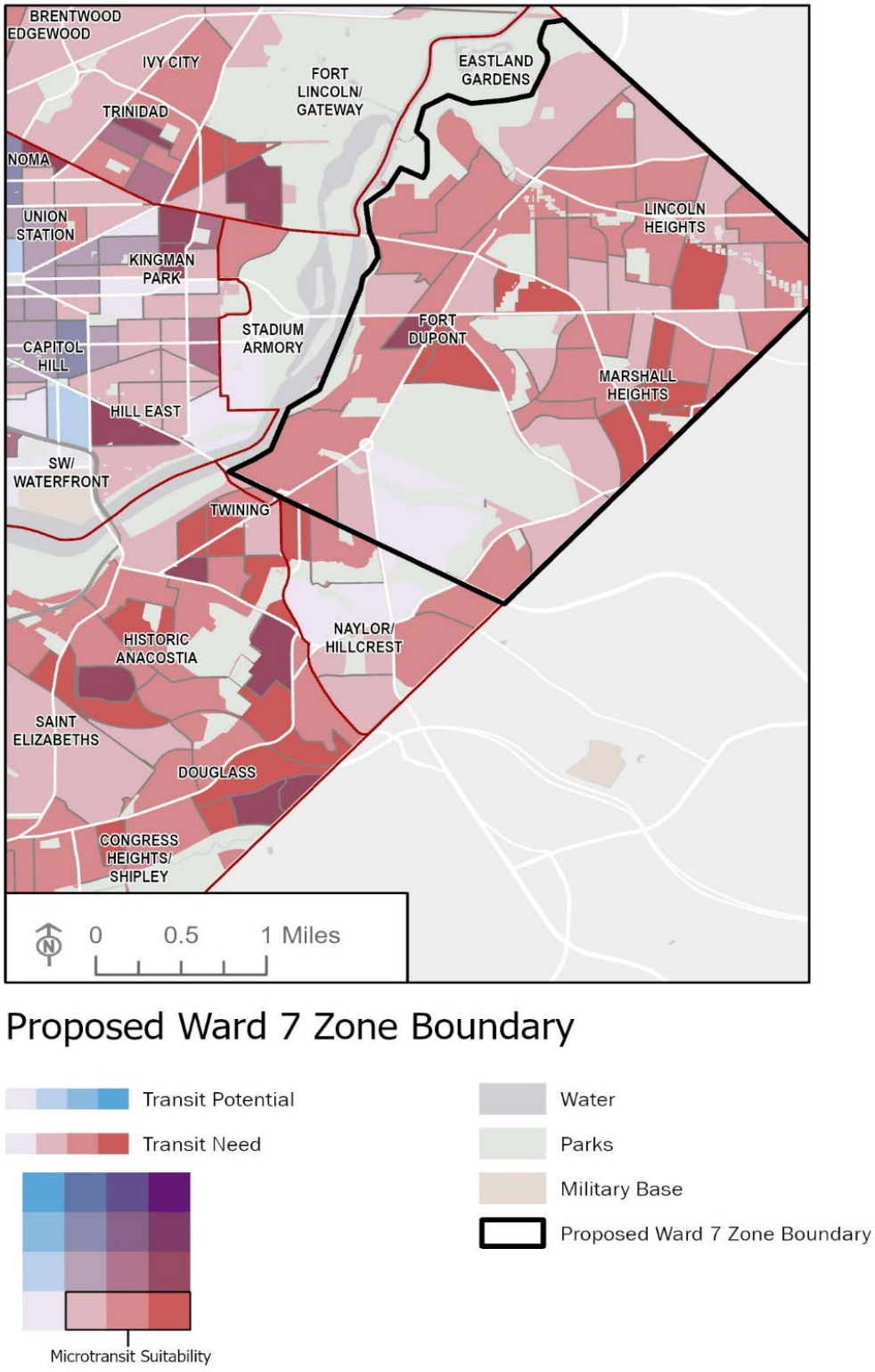
Figure 13: Proposed DCNC Ward 8 Zone



New Ward 7 Zone

The study team has also identified the remaining area of the District east of the Anacostia River (mostly Ward 7) as a potential expansion zone. The proposed zone boundaries are depicted in **Figure 14.**

Figure 14: Proposed Ward 7 Zone and Microtransit Suitability



The analysis indicated that Ward 7 bears similarities to Ward 8 that make it a suitable candidate for deployment of a microtransit zone. Ward 7 has high microtransit suitability scores in a compact area, is a similar size to the Ward 8 Zone, and has a more dispersed population compared to other parts of the District. There are 66 activity generators identified within the zone, such as multi-family housing, medical services, and shopping centers. This zone, like the Ward 8 Zone, would serve a higher density of vulnerable populations than the Northeast Zone. People of color account for nearly 98 percent of the population here. Furthermore, 36 percent of the population is considered low-income and more than two thirds of the households in this zone own zero or one car.

This proposed zone encompasses the majority of Ward 7 east of the river, and the southwestern boundary is adjacent to the boundary of the Ward 8 Zone ensuring that DCNC service is available in Naylor/Hillcrest and Twining. This zone also overlaps the existing Ward 8 Zone slightly, allowing passengers to access the Ward 8 zone in an overlap at the Francis A. Gregory Neighborhood Library.

However, the study team does not recommend implementing service in this zone immediately. Due to staffing and vehicle requirements, it is important to ensure that capacity in terms of available drivers, vehicles, and funding for operations, is sufficient for existing zones before establishing a new Ward 7 Zone. It is recommended that service in this zone be implemented after wait times have become relatively stable in existing zones, and once it is confirmed that resources for a new service are available.

Request for Service in Upper Northwest to Address E6 Bus Route Elimination

DDOT received a request to consider a microtransit zone encompassing the neighborhoods of Barnaby Woods, Hawthorne, and Upper Chevy Chase in Northwest D.C. This was prompted in part by the elimination of the E6 bus route in 2020, which connected Friendship Heights and destinations along Connecticut Ave and the Knollwood Life Plan (senior) Community. E6 was eliminated due to low ridership, and route M4 was established to replace it. In recent months, the M4 did not serve Knollwood, so residents there who do not quality for MetroAccess or TransportDC service no longer had a way to access destinations at Friendship Heights by transit without a transfer. However, Metrobus expanded route M4 (as shown in **Figure 16**) in June 2022, which reopened walking-distance access to the bus system for those residents.

This area has a low overall microtransit suitability. While it does have a high concentration of seniors, overall transit need is relatively low due to high incomes and other factors such as automobile availability. **Figure 15** shows that the area has a low proportion of residents with disabilities (a target population for DCNC) compared to the entire District. The overall low level of transit need, coupled with low microtransit suitability score across the area results in an insufficiently large zone to establish as a DCNC service area.

Targeted microtransit service, however, could bridge the gap between eliminated transit service and communities that relied on this service. For example, a once or twice per week service with targeted hours could serve as an important connector service to the Friendship Heights shopping center, metro station, and the region at large. Ensuring that this targeted service fits passengers' needs requires additional community engagement. However, for D.C. government to provide this service in an equitable manner would require a broader study of the transportation needs of seniors throughout the District to determine where the unmet need is greatest.

Figure 16: People with Disabilities per Acre by Ward

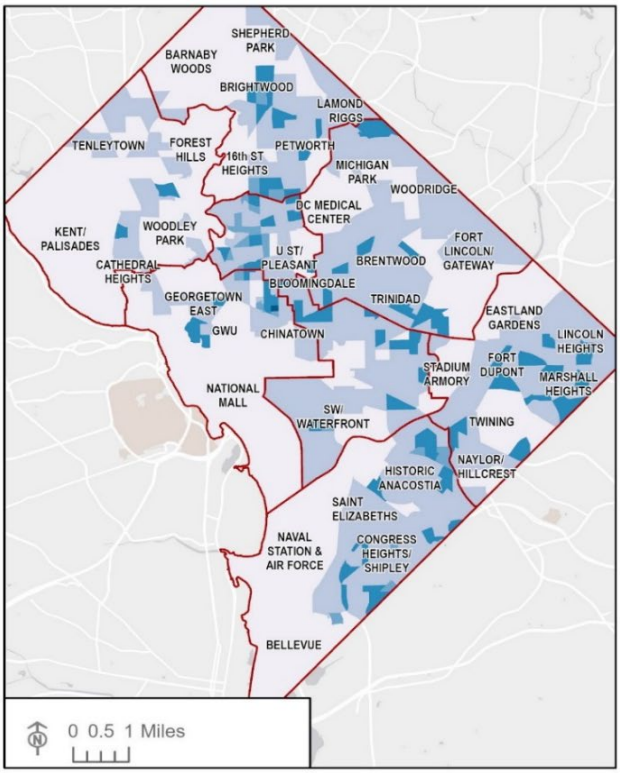
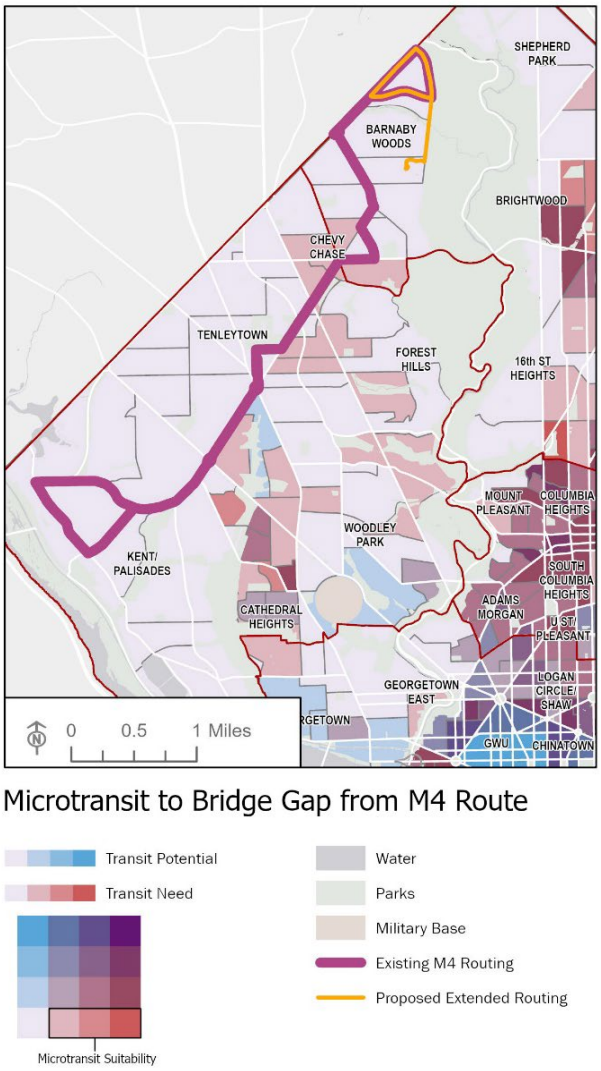


Figure 15: Transit Need and Upper Northwest Gap



Other Potentially Microtransit-Suitable Areas

Microtransit is an important connector for difficult-to-serve areas. As part of this report, additional regions of the District were evaluated for deployment of other zones. While there are pockets of microtransit suitability that are not currently served, they tend to be too small to serve as an entire zone, and not contiguous or close to existing or proposed zones. Most locations within the District are either within walking distance to at least one local bus service or have very low levels of microtransit suitability due to high income levels. This is a reflection of the ongoing efforts on the part of WMATA, DDOT, and other stakeholders to seek equitable provision of public transit services.

One potential alternative may be to evaluate external points of interest for existing zones to serve as connectors between the microtransit zones and external activity generators that fill an unmet need. These connectors can allow traveling between external sites and existing zones, either all day, as part of a recurring trip, or as a scheduled group. This would require evaluation of the current microtransit scheduling software's

capabilities and research on desirable location, means to minimize service required, and outreach to parties that may make use of more targeted service.

Another potential opportunity to adjust service may be to evaluate origin and destination utilization over time to further refine existing zones, such as potentially creating three smaller zones out of the combined area covered by the current Ward 8 Zone and the proposed Ward 7 Zone.

Level of Service Recommendations

The study team developed vehicle and operator requirements estimates for different times of day to assist DCNC with its operations and ensure that service needs are met. This level of service model incorporates existing ridership, target wait times, trip distance, trip duration, shared trip percentages, and projected deadhead distance and mileage, among other figures. This model is driven by statistics from historical trip data, as well as industry best standards. These two sets of data are used to estimate a vehicle requirement and resulting miles and hours.

The study team provided recommended staffing requirements to DCNC in a separate memo. These recommendations included driver breaks, pull-out/pull-in times, and vehicles in maximum service statistics by time-period and hour and time of day. The goal of this work was to meet existing demand due to recent increases in trip wait times. As discussed previously, trip wait times have been a subject of concern for DCNC staff and riders. Wait times are a factor of trip demand and vehicle availability. Demand for DCNC service has been trending upward. Changes in demand are not equal across all zones, however, so it is important understand trip demand across zones to evaluate vehicle requirements.

After performing this analysis of trips within existing zones (and allocating historical trips across the split Northeast), demand in the Northeast Zone has mostly stabilized, and changes in trip demand have been primarily driven by increases in the Ward 8 Zone. Ward 8 Zone trip demand grew each month that the zone was in operation during 2021 and has continued growing into 2022. In six months of operation, Ward 8 Zone completed trips have increased 400 percent. This staggering growth highlights the importance of monitoring ridership and allocating resources to control wait times.

It is important to note that the vehicle requirements model is an attempt to estimate level of service required to meet demand; however, it is always difficult to predict exactly what the level of demand will be, as this can be influenced by a variety of factors including external factors such as gas prices. Further, demand can increase or decrease over time in ways that are difficult to predict. For this reason, monitoring service performance (percentage of trips requested that are served within a target wait time, for example) is very important. Using outdated datasets can lead to incorrect service requirements, especially when one or more zones are undergoing rapid changes in utilization.

DCNC service is also currently a free service within each zone. Fares are discussed later in this document, but as the service is currently free, the only limiting factor on demand is wait times and zone extent. Charging fares, particularly if they are higher than the cost of other transit services, will undoubtedly shift the calculation for some riders deciding which mode to take for their trips. In addition, as wait times are potentially decreased by adding more operators and vehicles, it is possible that an induced demand effect may be observed. Riders may attempt to schedule a trip, see a wait time that is acceptable, and opt for DCNC over other modes or take the trip during a different time than they otherwise would have. As wait times trend downward, this induced demand effect may cause demand for DCNC service to increase, and cause wait times to further increase to an equilibrium.

Northeast Zone

The area of the Northeast Zone was recommended to have approximately 7 vehicles in service during peak operation, with additional service provided as more vehicles are available for DCNC to utilize. With the splitting of the zone into the Northern and Southern portions, service was recommended to be somewhat more concentrated in the Southern zone due to larger demands. Demand was particularly pronounced during morning and afternoon peak periods. It was recommended that operators be dedicated to each zone to minimize deadhead routing. **Table 7** and **Table 8** show the recommended number of vehicles that should be in service by time of day in both the Northern and Southern (former Northeast) Zones.

Table 9: Northern Zone Peak Vehicle Recommendation

Time of Day	Vehicles Needed
AM Peak	3
Mid-Day	2
PM Peak	3
Evening	3
Late Night	1

Table 10: Southern Zone Peak Vehicle Recommendation

Time of Day	Vehicles Needed
AM Peak	4
Mid-Day	2
PM Peak	4
Evening	4
Late Night	2

Ward 8 Zone

This zone was recommended to have four vehicles in service during peak operation. Due to rapidly increasing demand the trips booked for this zone must be closely monitored. **Table 9** shows the recommended number of vehicles that should be in service by time of day in the Ward 8 Zone, based on the most recent available service data.

Table 11: Ward 8 Zone Vehicle Requirements

Time of Day	Vehicles Needed
AM Peak	4
Mid-Day	2
PM Peak	4
Evening	3
Late Night	2

Proposed Ward 7 Zone

The Ward 7 Zone was drafted assuming similar parameters as early Ward 8 ridership. This zone must be closely monitored for changes in ridership during operation to ensure that the service provided is able to adequately meet demand and control wait times. **Table 10** shows the recommended number of vehicles that

should be in service by time of day in the proposed Ward 7 Zone. These estimates are based on both Ward 8 Zone trip data and data available about the population size within the proposed Ward 7 Zone.

Table 12: Proposed Ward 7 Zone Vehicle Requirements

Time of Day	Vehicles Needed
AM Peak	2
Mid-Day	2
PM Peak	2
Evening	2
Late Night	2

8. OTHER RECOMMENDATIONS

Establish Service Standards to Monitor Performance and Inform Service Change Decisions

The DC Neighborhood Connect program would benefit from establishing service standards or target metrics to gauge whether the service is meeting its goals and effectively addressing the needs of those it is intended to serve. Potential metrics and service standards are shown in **Table 11**.

Table 13: Proposed Service Standards for DCNC Service

Performance Metric	Potential Target/Standard
Passenger trips per vehicle revenue hour	Minimum average: 2.5 Target average: 4.0 or greater
Average cost per passenger trip	Maximum: $15.00 Target: $10.00 *Note: If desired, could also calculate average subsidy per passenger trip, which would take the payment of fares into account.*
Percentage of trips shared (aggregated)	Minimum: 20 percent Target: 30 percent
Average and maximum wait times	Average: 15 minutes Maximum: 30 minutes
Average trip distance	Target: <2.5 miles
Percentage of trips starting or ending at a fixed-route transit hub (e.g., Metrorail station)	Target: >25 percent
Alignment of rider demographics (based on target populations for the service) with service area	Riders are more likely to be low-income or have a disability compared to the entire population within their Zone
Customer satisfaction	Minimum average: 4.0 rating (out of 5.0) from riders Target average: 4.5 (or higher) rating *Note: Could also track rates of complaints and their resolutions*

Many of these service standards could also be customized by individual DCNC Zone or time of day, depending on the varied characteristics of each zone.

DC Neighborhood Connect Fare Policy Recommendations

Microtransit, as a mode, is less cost-effective on a per-trip basis than other transit modes that are widely available in the District of Columbia including Metrobus, Metrorail, and DC Circulator. In cases in which a person can make their trip on one of these more cost-effective services—safely and within a reasonable amount of time—the result is a more optimal outcome from a public policy standpoint. This is because these modes (bus and rail), compared to microtransit: have fewer negative air quality impacts on a per-passenger basis; result in more efficient use of constrained roadway space; and allow for more people to be served per public dollar invested in providing transit service. For this reason, it is most appropriate to set microtransit fares in a way that encourages the use of bus and rail in cases in which it is a viable transit option. Reducing the monetary incentive for people to use DC Neighborhood Connect *in the place of* another more cost-effective and environmentally sustainable transit mode is one of the primary reasons that it is recommended that DFHV implement fares for the DC Neighborhood Connect service.

Setting fares for microtransit service involves weighing two primary competing priorities:

- Ensuring service affordability, particularly for low-income individuals
- Managing demand to maintain a high level of system performance

The lower fares are, the higher the resulting demand will be for the service. As demand increases, providers are faced with a choice: tolerate wait time increases or deploy more vehicles to meet the demand. Neither of these options is typically desirable, as either the service quality suffers, or costs escalate significantly. **DC Neighborhood Connect has struggled with high wait times in recent months, and it is likely – even despite other changes such as reducing zone sizes – that this will continue to be the case as long as the service remains zero-fare.**

Another consideration in setting fares is that fare revenue only covers a small portion of operating expenses for a publicly provided microtransit service. Even if the fare is on the higher side (e.g., $4.00 per trip), fares are still unlikely to cover more than 20 percent of the operating cost, and often the percentage is significantly lower. As such, fares are generally more beneficial for managing demand and incentivizing outcomes that are in the public interest and less effective at covering a significant portion of the cost to operate the service.

A review of microtransit fares charged by nearly 30 other agencies from around the U.S. indicates that standard base fares for microtransit trips range from as low as $0.75 per trip to as much as $5.00 or more per trip. Most agencies, however, charge between $1.50 and $3.50 per trip. (The review also indicates that a few agencies charge fares that are distance-based; however, this is most common and most appropriate in a more suburban or rural context where trips can be significantly longer than those offered by DC Neighborhood Connect.)

As a starting point, absent extenuating factors such as major service reductions that make using other transit modes impossible or difficult, it is recommended that DCNC service be more expensive than regular Metrobus fare, which is $2.00 per trip. This is both to encourage better outcomes, as well as to reflect the fact that DCNC offers an enhanced quality of service because trips are tailored to the individual's exact origin and destination (within a zone). Interestingly, in the 2019 survey, DCNC riders said that they would be willing to pay, on average, $3.59 per trip (as well as wait, on average, 16 minutes for a trip).

For the reasons outlined above, it is recommended that DCNC charge between $3.00 and $3.50 per trip. Notably, this is still significantly more affordable than fares on comparable services including MetroAccess and TransportDC.

A concern associated with implementing fares is that they place an additional burden on low-income riders, who already face many challenges in their lives. To address this concern, it would be possible to offer targeted discounts for individuals who qualify based on their income. A relatively straightforward way to do this—which would alleviate the need for DFHV staff to verify individuals' incomes—would be to tie eligibility for the DCNC fare discount to participation in other means-tested programs such as the federal Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), or Temporary Assistance for Needy Families (TANF). Under this approach, an individual might be asked to present their ID card and a document or image such as their Electronic Benefit Transfer (EBT) card verifying their participation in one of these programs. Once a person's eligibility is confirmed, their discount-qualifying status can be tied to their DCNC account, so the app will automatically recognize and take the discount into account in determining their fare. Additionally, DFHV could work with other social services departments or organizations to find ways for other funding sources to cover the cost of fares for qualifying individuals.

Another way to ensure the service remains affordable for low-income riders, particularly those with larger families, would be to structure pricing such that the first rider is charged the regular fare, but each additional

rider who boards and alights at the same locations and times only pays a discounted fare (e.g., $1.00 - $2.00). Under this scenario, the rider would indicate the number of additional passengers traveling with them when they book the trip. Because DCNC vans are more spacious than the average number of occupants in the vehicle, the marginal impact to system performance of an additional individual riding in the vehicle to and from the same points as another is significantly lower than the addition of distinct origin and destination points. Furthermore, this encourages people to group their trips, which also results in a more productive and efficient service.

Finally, DC Neighborhood Connect currently faces the challenge of riders booking a trip but then cancelling their trip before the driver arrives. This impacts the quality of the service and increases wait times unnecessarily for other riders. To address this, it is recommended that DFHV implement a combination of either temporary suspension from using the service (e.g., after more than two cancellations in a single week or three cancellations per month) and/or a cancellation fee, such as $1.00 per cancelled trip. This will help ensure individuals only use the service when they need it and fully intend to use it. It is recommended DFHV coordinate with its technology provider to understand the best way to implement a combination of these options and see if there are any parameters that can be set on these policies. For example, it would be worth exploring whether it is possible to waive the cancellation fee if the cancelling rider has waited over 15 minutes more than they were told the wait time would be when they booked the trip.