Market Assessment

Technical Report

January 2023

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Overview

To create a bus network that meets the region's needs, it is important to understand the potential market for transit in the region. This document investigates the underlying market for transit in the WMATA Compact Area[1], using multiple datasets on regional travel in 2019, demographics, land use, and bus performance in fiscal year 2022[2]. It looks at where existing and potential customers live, where and when they travel, and how well transit is currently serving these trips. Ultimately, this analysis will be used – in conjunction with an analysis of existing conditions – to redesign the region's bus network to better leverage the system's strengths and meet diverse travel needs across the region.

The Market Assessment evaluates:

- The density, spatial distribution, and characteristics of the region's population and employment.
- Demand for travel across all modes, by time of day and day of week.
- The extent to which Metrobus services meet those demands.

These factors are important to understand where bus service should be improved, added, or altered to better align resources with demand and design the bus network that the region needs. This market assessment will support the planning effort by:

- Identifying markets with higher current densities of population, employment, and equity focus communities as well as where growth is planned to occur.
- Highlighting where commuters and transit-oriented populations live and work.
- Focusing on places and times of day when lots of people are making trips between the same areas.
- Identifying strong transit markets where buses can provide a convenient end-to-end trip.

All of these will build upon each other to identify areas of improvement within the current system and opportunities for the redesigned network. This is being done in coordination with an evaluation of the current system. Together these assessments, alongside customer and stakeholder input, will provide an overview of the ways in which bus service can be improved to better serve our region.

What did we find?

There is a lot of potential for transit throughout the Washington D.C. region. Seventy-six percent of daily weekday[3] trips in the region could have used transit, but only eight percent of trips actually did. To achieve a higher market share, improvements to the bus service are needed. Key areas of focus based on this analysis include:

1. Provide access to high-frequency service.

    o   While 74 percent of residents live near a bus stop, only 22 percent of the region's residents have access to high-frequency (12-minutes or better) service.

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[1] District of Columbia, Prince Georges and Montgomery Counties Maryland, Arlington and Fairfax Counties, Cities of Alexandria, Fairfax, and Falls Church, and Dulles Airport in Virginia.
[2] LBS Travel Flow data is based on 2019 conditions. This report will be updated with 2022 LBS data and additional data will be summarized in an appendix in Spring 2023.
[3] Weekday for this analysis is defined as Monday thru Thursday.

2. Make bus service convenient and useful, including on weekends and during periods outside of the peak on weekdays.

   o On average bus trips take 4.5 times longer than driving, when travel times between auto and transit are comparable the share of transit trips increases.
   o Market share is disproportionately low on weekends and in the midday and evening periods.
   o Numerous untapped (inconvenient transit options but low market share) and underserved (high market share and inconvenient transit options) markets exist where bus improvements could have significant gains.

3. Integrate the network across bus providers and Metrorail.

   o Approximately 42 percent of survey respondents use multiple bus providers.
   o 11 percent of bus passenger trips connect to Metrorail.
   o Current transit usage is consolidated along major corridors and along the Metrorail system.

4. Advance equity.

   o Residents of Equity Focus Communities have fewer jobs, grocery stores, and educational institutions conveniently[4] accessible by transit.
   o Trips from areas with significant transit-oriented populations take more than four times as long by transit as auto, with improvements needed in southeast DC and the Virginia and Maryland suburbs.

5. Build on existing successes.

   o Average trip lengths throughout the region are well suited for bus transit. Through fast, reliable, and frequent bus service, transit can be a convenient alternative to other modes for short trips.
   o During the peak period as much as 10 percent of all weekday trips in the region are taken on transit.
   o In transit rich areas[5],13 percent of all weekday trips are taken on transit.
   o Access to frequent bus service is highest for low-income residents and residents of Equity Focus Communities.
   o On average four percent of jobs with earnings of $1,250 or less per month are accessible within 30 minutes of transit and around six percent of overall jobs are accessible within 30 minutes of transit[6].

Over the last few years travel patterns have changed dramatically across the region. Being able to react to these market changes with a redesigned network will allow Metro to create a visionary network the meets the region's changing needs.

Travel Market of the WMATA Compact Area

How are people traveling in the region, and what role does bus play?

More than 13.4 million trips were made in the WMATA Compact Area on an average weekday in 2019. Of those trips, more than 10 million of them (or 76 percent) could be made using transit[7] but only eight percent of

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[4] Within a 30-minute trip.

[5] At least 80 percent of the zone is within 0.5 miles of a rail stop or 0.25 miles of a bus stop.

[6] Analyzed at the census block group level.

[7] A viable transit path is defined as any trip with a total walk distance of five miles or less across all legs of the journey (access, transfers, egress), has fewer than five transfers, involves no more than 60 minutes of total wait time, and is at least a quarter mile in

trips (or just over one million trips) are actually made using transit as people choose other modes for a variety of reasons. Approximately half of those transit trips use the bus system for at least a portion of their trip, connections to Metrorail are important but bus needs to function as an independent mode. Only 11 percent of bus passenger trips connect to Metrorail. This signifies there is a lot of potential for transit, but to achieve a higher market share, improvements to bus are needed.

Figure 1: Travel in the WMATA Compact Area

The bus system is a regional asset and needs to be integrated across providers.

42% of survey respondents report regular use of **multiple bus providers.**

Connections to Metrorail are important, but bus needs to function as an independent mode.

Only **11%** of bus passenger trips **connect to Metrorail.**

*Transit = All bus + all rail operators
**Bus = All bus providers
Excludes Loudoun County

13.4M Trips
made for all modes

10M Trips
could be made on transit

>1M Trips
are made on transit*

Almost 500k
use the bus**

Average Weekday in 2019

Much growth potential exists for transit, but to achieve higher market share, improvements to bus are needed.

While **76%** of all weekday trips in the region **could have used transit**, only **8%** of trips **actually did.**

Opportunities exist to make bus service **more convenient** and useful to customers; for example, **on the weekend.**

Only **4% of trips** are **made on transit on weekends**, compared to **8% on weekdays**.

Throughout the region, there are somewhat fewer average daily trips made on the weekends (11.3 million) than on weekdays (13.4 million). Additionally, a smaller portion of weekend trips could be made by transit (63 percent versus 76 percent). Yet transit mode share is reduced by over half from the weekday to weekend (eight percent vs four percent). This can be attributed to two factors:

1. Less transit service is provided on the weekends, especially in the off-peak periods (which is when two out of three trips happen).
2. People tend to go to different types of places on the weekend[8] that are not served as well by the transit system.

There is an opportunity to make bus service more convenient and useful to customers on the weekend. **Table 1** provides an overview of various market sizes by service day.

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length (trips less than a quarter mile do not yield transit paths through the routing engine). These assumptions are not meant to represent a realistic customer trip, but instead show an upper bound of where transit could be used.
[8] Based on the top 15 origin-destination geomarket pairs by total trips.

Table 1: Market Size and Share by Day

	Average Weekday[9]	Average Weekend
Total trips made in the region	13M	11M
Trips that could be made on transit	10M (76%)	7M (63%)
Trips that are made on transit	1M (8%)	370k (4%)
Trips that use the bus	500k (4%)	200k (2%)

Figure 2 shows the total trips and trip densities in trips per square mile in the WMATA Compact Area. While there are more trips originating from or destined to the non-urban core, on a per square mile basis, the urban core has more trips compared to the non-urban core.

Figure 2: Total Trips and Trips Per Square Mile

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[9] Weekday for this analysis is defined as Monday thru Thursday.

Customers are more likely to use the bus at peak times and for a weekday commute trip than for other trip purposes[10]. As shown in **Figure 3**, almost half (49 percent) of all trips occur during the peak periods, while more than half (56 percent) of bus trips occur during the peak periods. In terms of trip purpose, about 25 percent of all trips on an average weekday are commute trips (trips between home and work or school), while a much higher portion of bus trips are commute trips, 46 percent on an average weekday. In transit rich areas,13 percent of all weekday trips are taken on transit. A smaller percentage of weekend trips are commute trips – less than seven percent on Saturdays and less than six percent on Sundays. While midday has the highest percentage of total trips, 57 percent of bus trips occur during peak periods and only 29 percent occur during midday.

Trip lengths throughout the region are well-suited for bus transit. Bus trips, on average, tend to be between 3.8 miles (weekends) and 4.7 miles (weekdays) – more than 60 percent of weekday trips and 75 percent of weekend trips in the region are less than five miles. Other modes have the average following weekday trip lengths:

- Walking - 0.6 miles
- Biking - 2.5 miles
- Rail - 10.4 miles
- Auto - 6.0 mile

Opportunity exists for fast, reliable, and frequent bus service to be a convenient alternative to other modes for short trips.

Figure 3: Distribution of Trips by Time of Day (Weekdays)
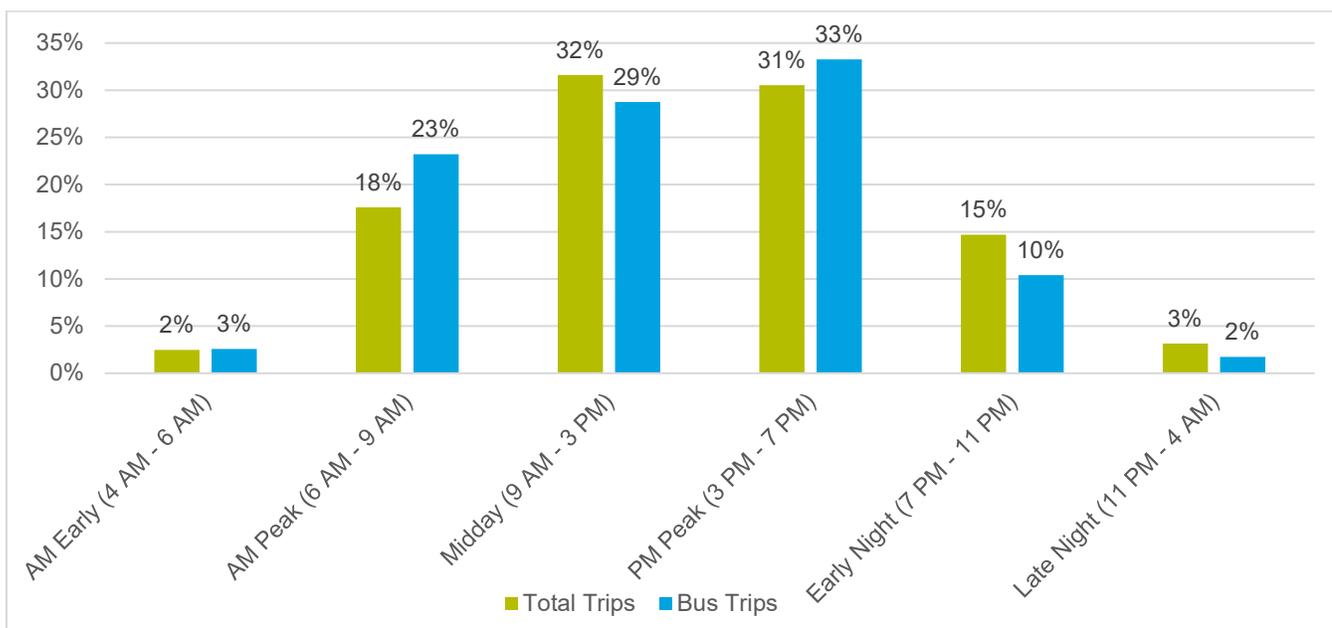
[10] Trip purpose is inferred from the LBS data such that "Home" refers to the location that the phone is at most often during nighttime hours, "Commute" is the most common location of the phone during traditional business hours, and "Other" is any other location. This differs from self-reported trip purpose in customer surveys.

Of the 13.4 million total trips in the WMATA Compact Area on a typical weekday, almost four out of five trips start and end within the same jurisdiction. Transit trips are more likely to cross jurisdictional boundaries, particularly into DC. **Figure 4** and **Figure 5** illustrate movement of total trips and transit trips, respectively, between and within jurisdictions of the WMATA Compact Area. The thickness of the line is proportional to the number of trips between or within jurisdictions. As an example, of the total trips (**Figure 4**) that originate in the District of Columbia, a majority of trips stay within the District of Columbia, and the remaining trips end in Montgomery, Prince George's, and Fairfax Counties. The commute-focused nature of transit service and average trip lengths in the region are likely factors for large share of trips that stay within the same jurisdiction.

Figure 4: Total Trip Flows between Jurisdictions
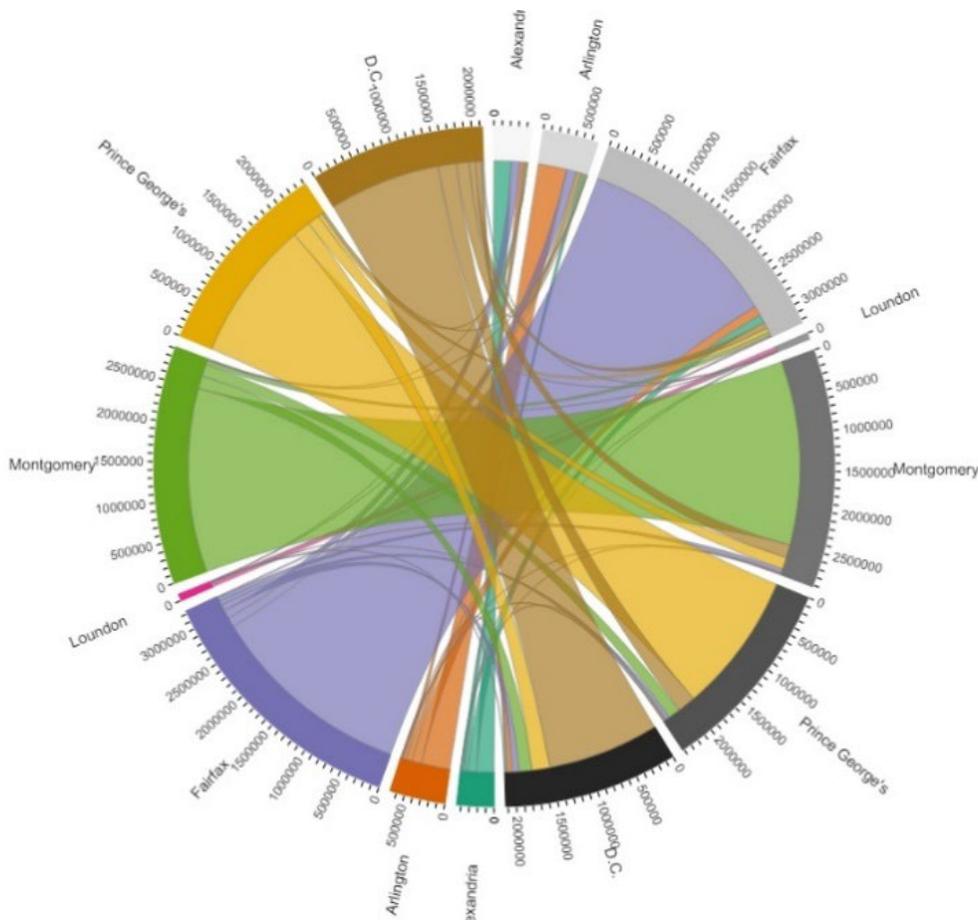
Figure 5: Transit Trip Flows between Jurisdictions
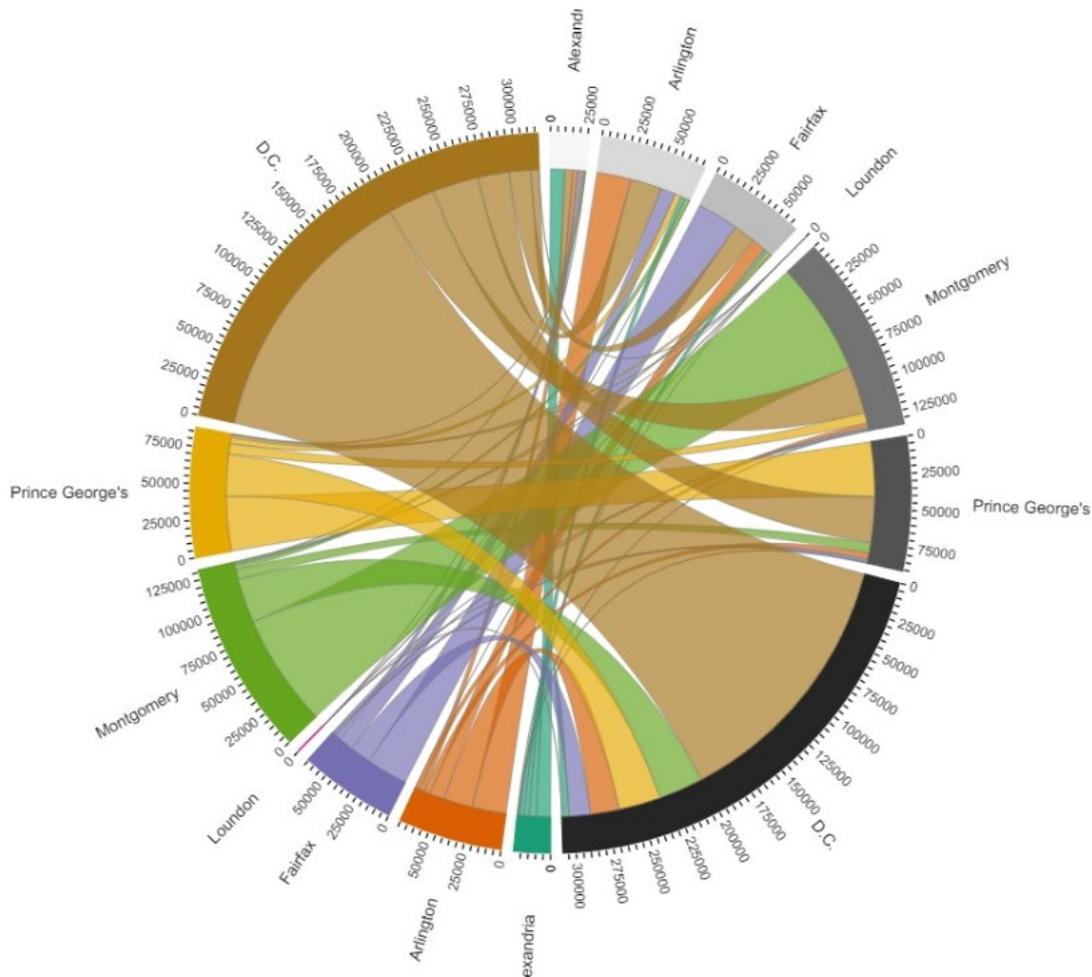
Throughout the region, existing transit usage is consolidated along major corridors and the Metrorail system (**Figure 6**). Places where people already make a lot of transit trips correlate with the higher frequency, higher capacity services that already exist. This trend highlights an opportunity to create better connections throughout the region with various types of service, including Coverage and Commuter services.

Figure 6: Level of Service and Density of Transit Activity
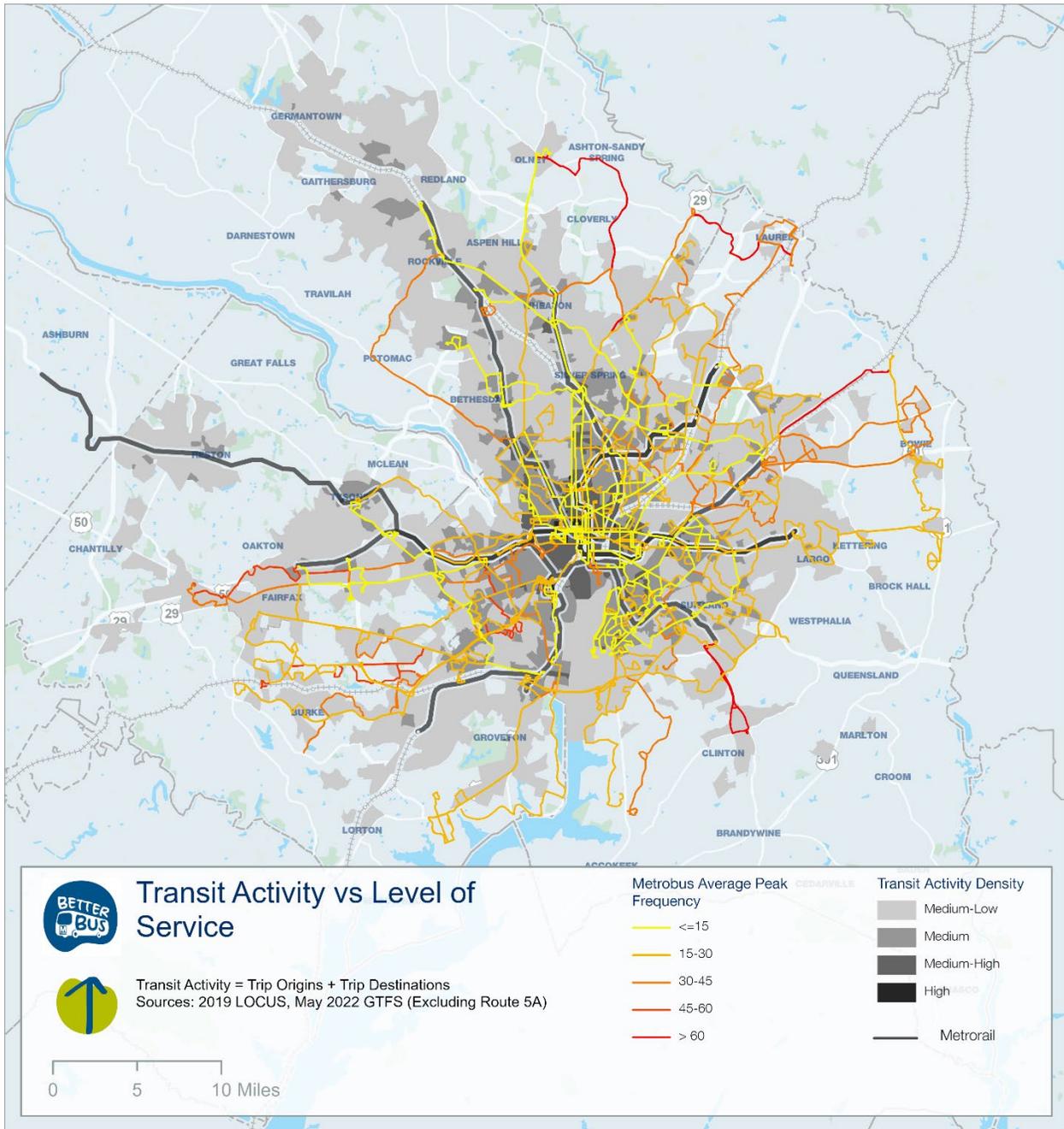
Do buses serve the communities who are most likely to ride?

Bus service needs (i.e., route design and availability) differ for different people and different destinations. Certain population sub-groups—such as low-income residents, zero-vehicle households, and residents with disabilities—are more transit-oriented and tend to use transit to a greater degree than other groups. These residents are not only more likely to use transit to get to work but also to access other daily needs. Places with a large number of transit-oriented populations and other activity centers warrant all-day services aimed at

accommodating people who rely on transit to participate in jobs and other activities. While places with a large proportion of commuters may need services tailored to those who only use transit during traditional peak periods. This needs analysis takes into account various demographic and socioeconomic factors to identify areas with concentrations of four key population and employment groups:

Population Groups
• Transit-oriented populations (low-income residents, zero-vehicle households, and residents with disabilities) • Commuter populations

Employment
• Activity destinations (retail, medical, educational, and government facilitiies) • Employment destinations

All-Day Service Need

The need for all-day transit service (including midday, evening, late night, and weekend service) is high among transit-oriented populations and in areas with higher concentrations of jobs in the retail, medical, educational, and government sectors for several reasons:

- Transit-oriented populations depend more on transit to get around.
- Jobs in the retail, medical, and education sectors tend to start and end at times outside of the typical peak periods and throughout the entire week, including weekends.
- Areas with a high density of retail, medical, educational, and government jobs also generate trips for other purposes, such as shopping, healthcare, and other significant needs which generally happen outside of a typical peak period.

Many parts of the Washington, DC region are suitable for all-day and weekend service, particularly in Downtown DC. There are high concentrations of transit-oriented populations along several north-south corridors in DC, including Georgia Avenue NW, 16th Street NW, and 14th Street NW.

In Virginia, Arlington and Alexandria have several large concentrations of transit-oriented populations as well as activity centers which makes them great candidates for the deployment of all-day transit service. While most of these areas have Metrorail service (i.e., the Rosslyn-Ballston corridor and the Blue/Yellow line corridor from Pentagon City to King Street in Alexandria), some do not, including the Metroway corridor, the Columbia Pike corridor, and the Fairlington neighborhood. Additionally, **Figure 7** shows three east-west corridors that could support all-day service in Virginia, including the Rosslyn-Ballston corridor through Arlington/Wilson/Clarendon Boulevard towards Fairfax County, the Silver Line corridor from Tysons Corner to Reston, and a southern corridor that covers developments arounds I-395 and can serve Fairlington-Shirlington, Alexandria West, and Seminary Hill.

In Maryland, several areas outside the Metrorail corridors also stand out, including Veirs Mill Road in Montgomery County, and Laurel in Prince George's County.

Figure 7: All-Day Service Suitability Index

Areas Suitable for All-Day Services

Based on 2020 ACS Data and 2019

Activity Destination
Transit-Oriented Population Origin

Most Suitable

High
Low
Low   High

Metrorail

0   5   10 Miles
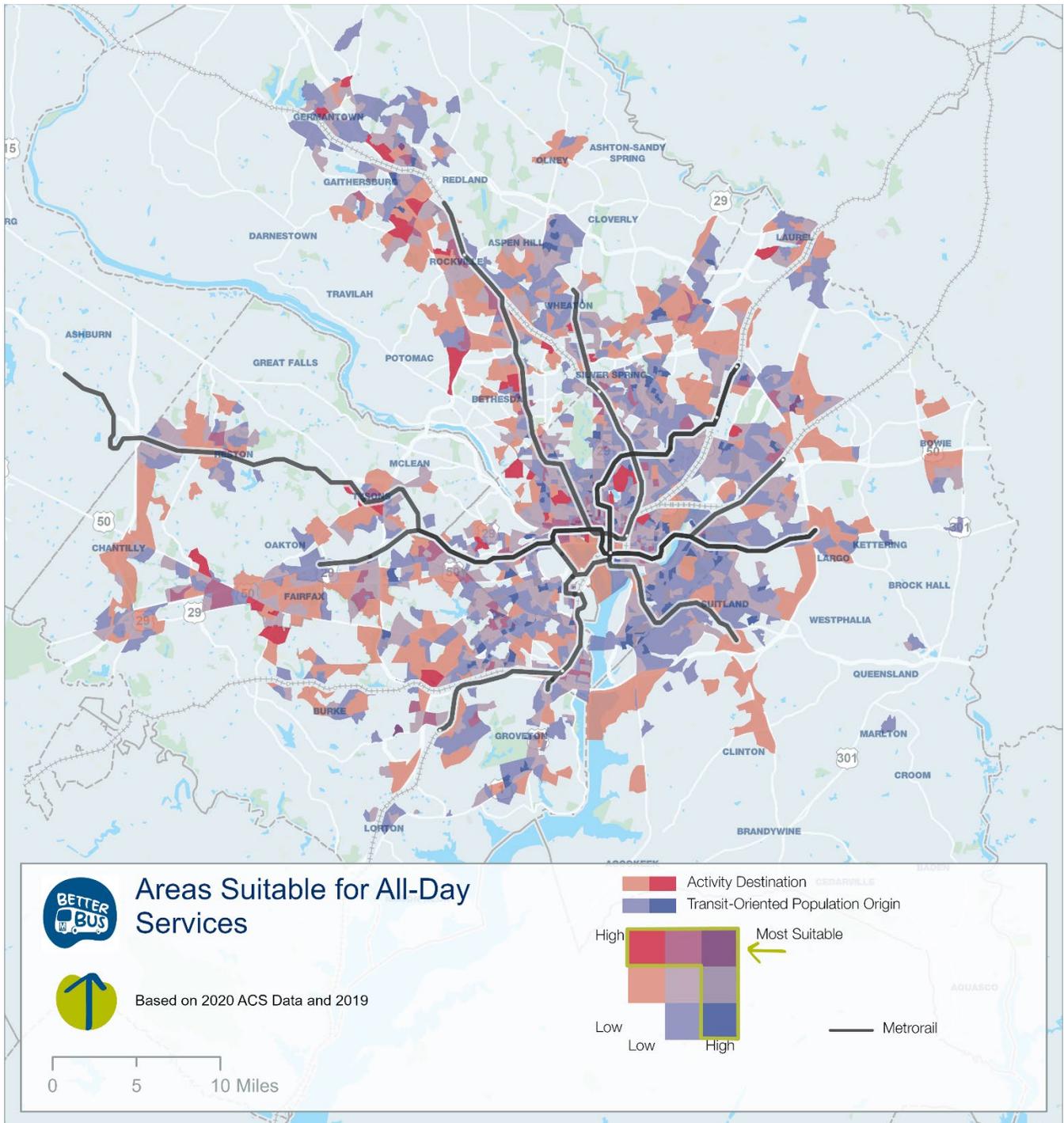
Peak Service Need

Commuter transit services that focus on meeting the needs of riders during the peak period are most suitable in places that have high concentrations of jobs and/or commuters. The peak period service suitability analysis identifies various locations throughout the region with a high peak service need, as illustrated in **Figure 8**. Most notably in DC, along the 16th Street NW, and 14th Street NW corridors, and southeast in Dupont Park. Within Virginia, along the VA-7 corridor from Seven Corners all the way to Shirlington, and the Richmond Highway/US-1 corridor from Old Town Alexandria to Hybla Valley. In both Montgomery and Prince George's counties, peak service needs are more scattered, with pockets of commuter populations being prevalent in areas like Hillandale/Adelphi, Laurel and Bowie.

Figure 8: Peak-Period Service Suitability Index
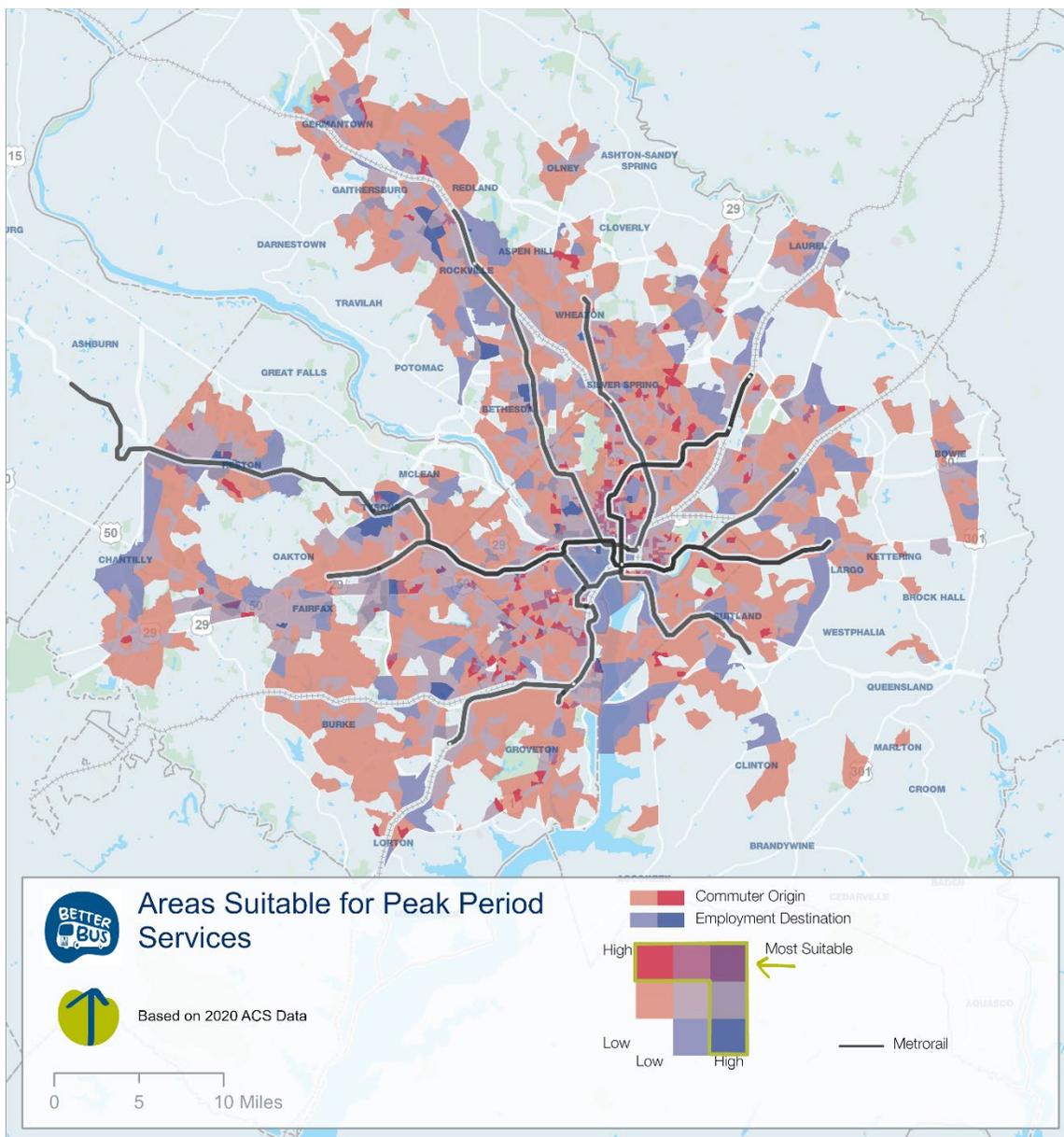
Does transit provide an adequate level of service?

Generally, the level of transit (inclusive of bus and rail) service needed in an area is commensurate with the density of population and jobs. **Table 2** illustrates service frequency targets for bus based on different levels of job and population density. These targets were set based on the guidelines for frequent and base coverage established in the 2020 Metrobus Service Guidelines.

Table 2: Target Bus Headway (minutes) by Population and Employment Density

		Jobs per Acre					
		0 - 2	2.1 - 4	4.1 - 8	8 .1- 16	16.1 - 24	> 24
Population per Acre	0 – 3	60 / On-Demand	30	20	15	12	10
	3.1 – 8	30	30	20	15	12	10
	8.1 – 15	20	20	20	15	12	10
	15.1 – 25	15	15	15	15	12	10
	25.1 – 35	12	12	12	12	12	10
	> 35	10	10	10	10	10	10

To identify areas that would benefit from improved bus service, existing service levels in the region (across all bus service providers) were compared to these targets. **Figure 10** and **Figure 11** illustrate where bus service is sufficiently matched to density versus where density can support improvements at the weekday peak or midday periods. As service levels are less frequent during midday compared to peak periods, the service gaps are more pronounced for midday. Both maps indicate that the outer areas of the region may require additional transit service, especially in Virginia. The following areas are identified for improvements in service frequency (**Figure 9**).

Figure 9: Key Locations by Jurisdiction

DC	Arlington	Alexandria	Fairfax	Montgomery	Prince George's
• DuPont Park (SE) • Takoma (NE) • Foxhall Village (NW)	• Highland Park/ Westover • Radnor Heights	• Cameron Station (East of Van Dorn)	• Centreville • Chantilly (Walney Rd) • Dulles East (Sully Rd to Centreville Rd) • Fair Oaks to Fairfax City Center • S Merrifield (Prosperity Ave) • Falls Church (Broad St) • Annandale • Bren Mar Park Industrial Area	• S Bethesda • S Rockville (Wooton Pky) • King Farm/ Shady Grove Rd • Chestnut Hill (Wheaton)	• Chillum • Laurel • Hyattsville (Edmonston Area) • Landover (Landover Hills and Pennsy Dr) • Glendale (Lanham Severn Rd)

Figure 10: Areas to Better Match Service with Peak Needs
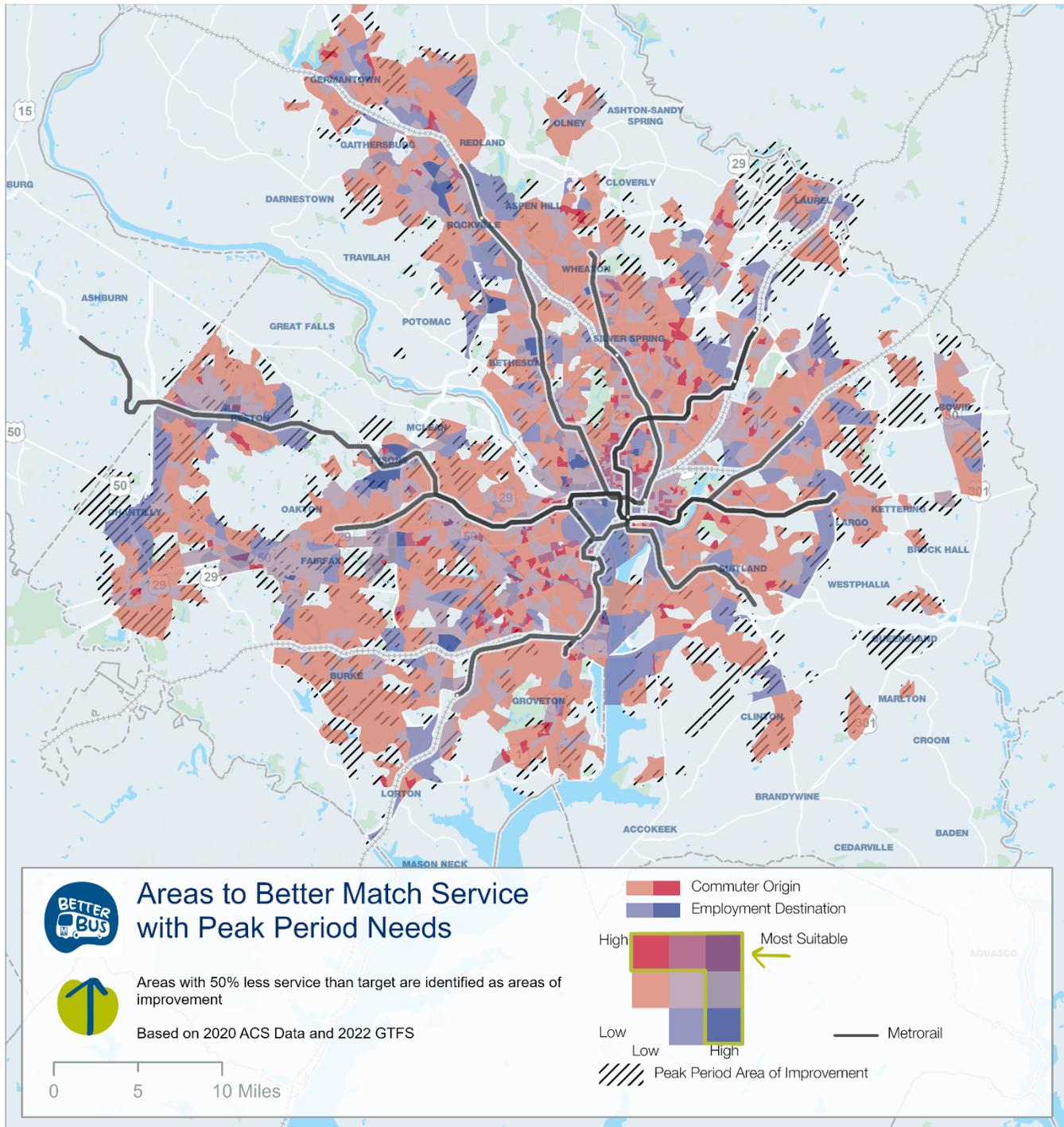
Figure 11: Areas to Better Match Service with Midday Needs

Areas to Better Match Service with Midday Needs

Areas with 50% less service than target are identified as areas of improvement

Based on 2020 ACS Data and 2022 GTFS

0   5   10 Miles

Activity Destination
Transit-Oriented Population Origin

High — Most Suitable
Low
Low   High

Metrorail

Midday Areas of Improvement
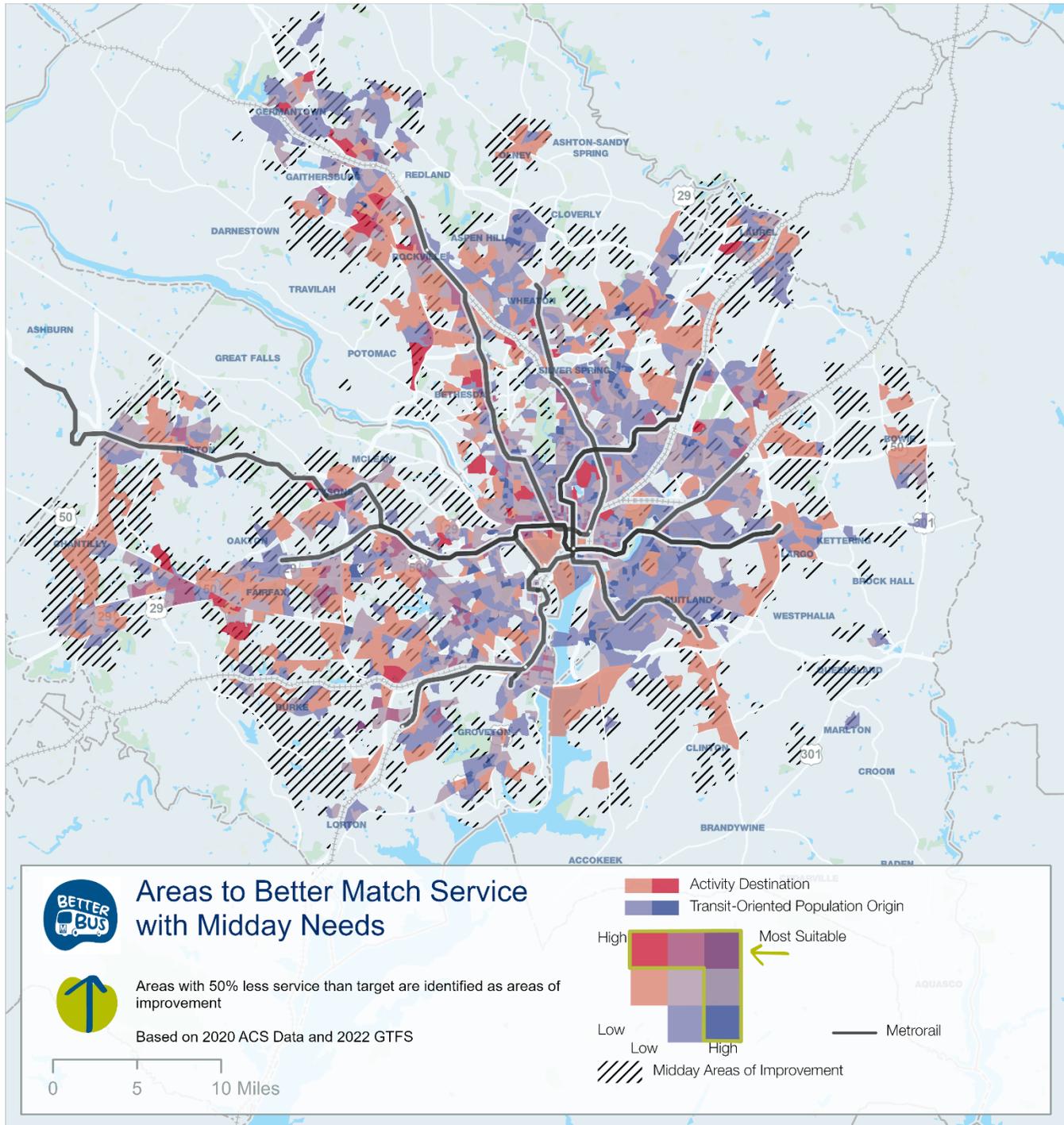
Where could transit provide a better option for people's trips?

When choosing how to travel, customers are more likely to choose transit when it is a convenient option for their trip. Inconvenient trips that take too long (especially when compared to other competing modes such as driving) are still seen as unpleasant and represent an undesirable experience that customers would prefer to avoid, leading them to take other more convenient modes if they have that option. During the public survey conducted as part of the BBNR study, lapsed riders indicated that long travel times and a preference for other modes were the biggest reasons they stopped riding the bus (73 percent cited wait times, 65 percent cited the total amount of time to get to their destination on the bus, and 65 percent citied a preference for another mode). This analysis uses travel time as a proxy for convenience and compares door-to-door travel time via transit to the same trip by driving[11]. The ratio between these two times is calculated for each trip as the Travel Time Ratio (TTR).

As shown in **Figure 12,** transit mode share is higher when the TTR is lower, and transit is more convenient. However, **Figure 12** also shows that most of the more convenient transit trips (lower TTRs) involve rail in the transit journey. Additionally, as shown in **Figure 13**, for most of the trips where a viable transit path is available the TTR is higher than 3.0, where mode share is expected to be low.

Figure 12: Transit Share Compared to Travel Time Ratio

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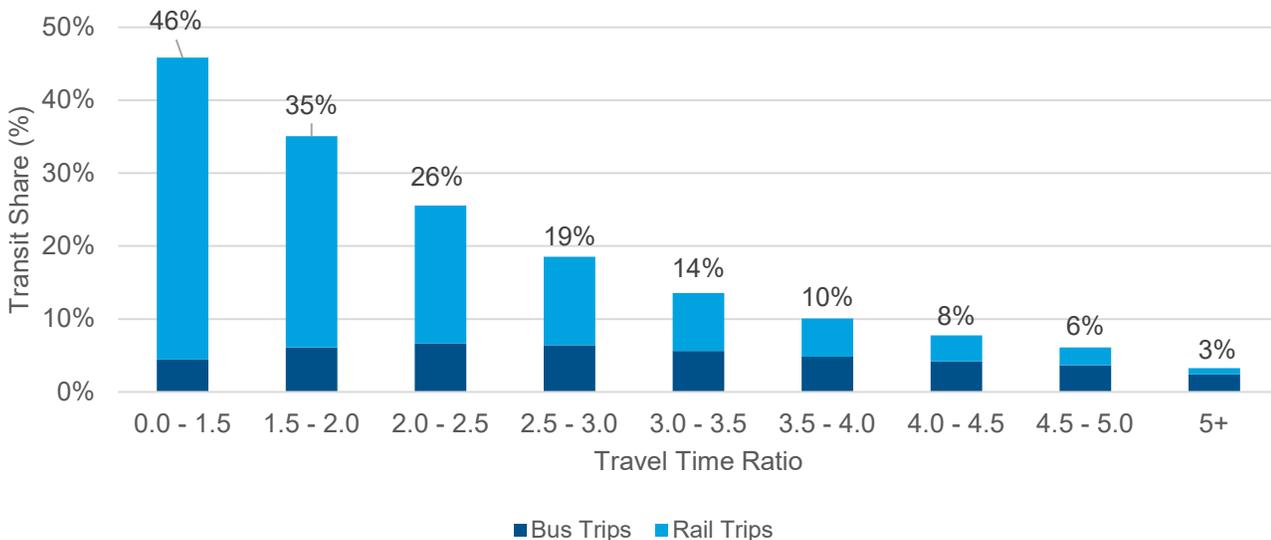
[11] Driving time is only the in-vehicle time and excludes parking which can add additional travel time to the overall trip compared to transit.

Figure 13: Percent of Total Trips with Viable Transit Paths by Travel Time Ratio
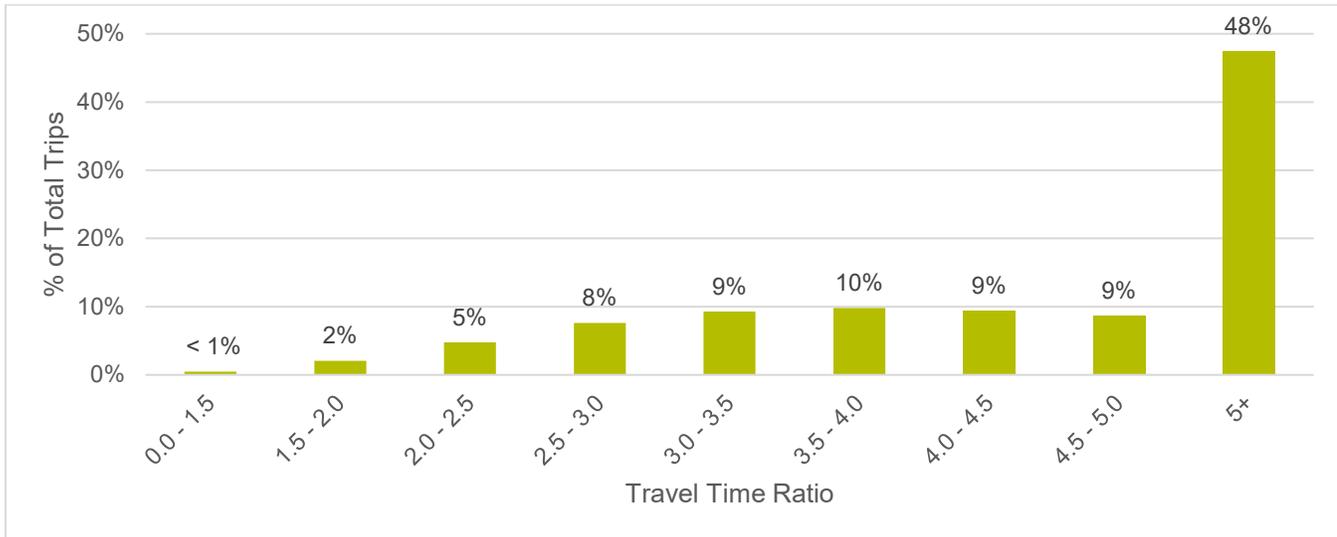
Areas with at least a mid-high to high level of transit-oriented populations have an average TTR of almost 4.5, on par with the average for the region as a whole (TTR of 4.2). These areas have an average transit mode share of approximately 11 percent. **Figure 14** compares average TTR and transit mode share for areas with mid-high to high levels of transit-oriented populations. Similar to what we see across the rest of the region, as the TTR increases, mode share decreases. In general, the higher transit-oriented population areas in the Virginia and Maryland suburbs have a higher TTR and lower transit mode shares, whereas in DC the TTR is generally lower, and the transit mode share is higher. In southeast DC, portions of Arlington County, and along the Prince Georges and Montgomery Counties border there are higher TTRs and higher transit mode shares, indicating that the current transit network in those areas is not providing convenient options for the trips that people make most often. This analysis highlights opportunities to improve service to these transit-oriented populations, to not only increase transit mode share, but to provide a better service to customers with limited transportation options.

Figure 14: Transit-Oriented Populations Compared to Travel Time Ratio and Transit Mode Share
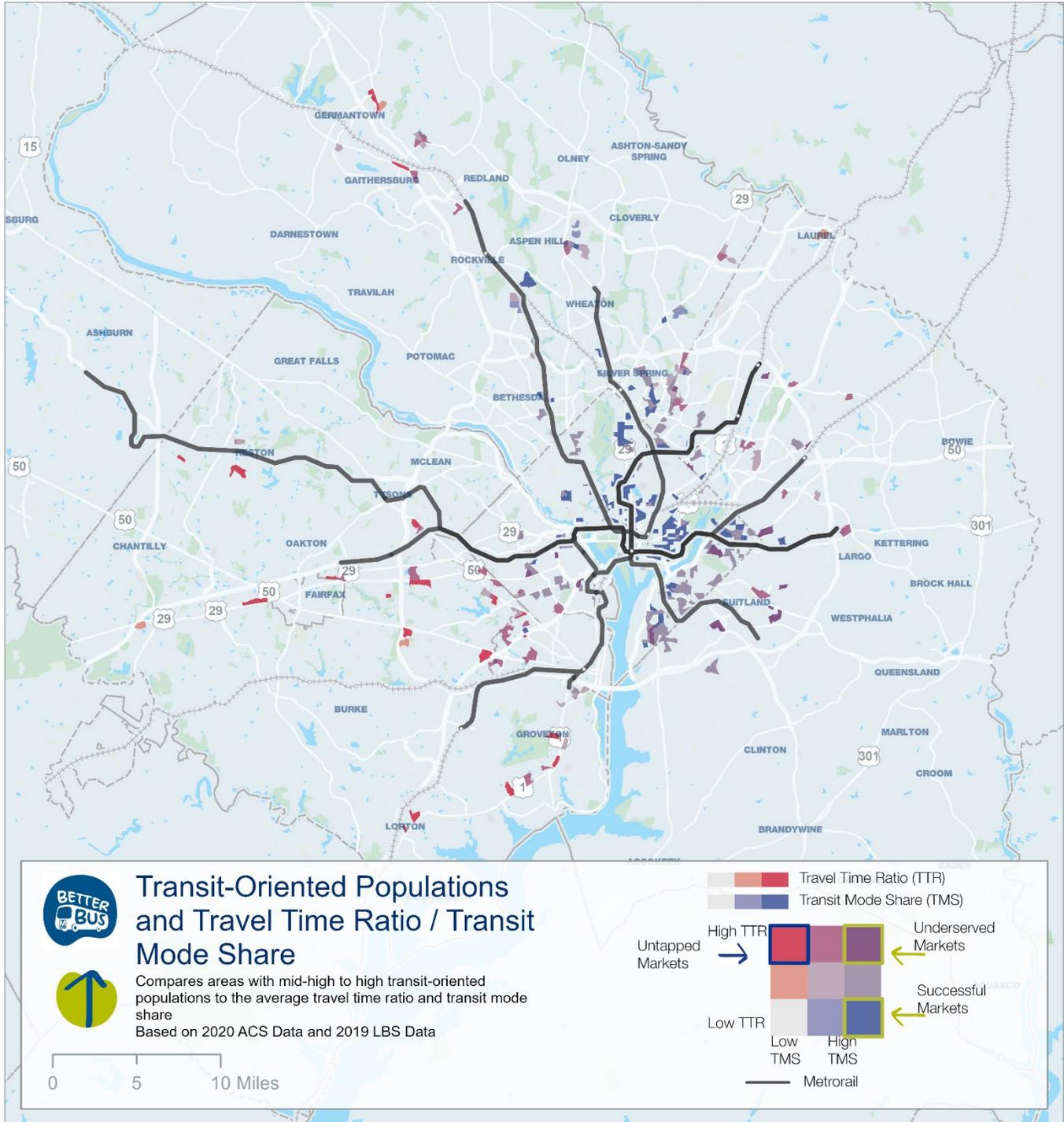
Examining market share by trip purpose and trip distance, we see that transit is successful at capturing a high share of commute trips, which are typically longer and concentrated in the peak periods (Monday through Friday, 6:00 a.m. – 9:00 a.m. and 3:00 p.m. – 7:00 p.m.), however commute trips only account for 23 percent of the total trip activity in the region[12].

Trips for other purposes make up 77 percent of the total trips in the region, but, as seen in **Figure 15,** depending on the length of the trip only three to five percent of these trips are taken on transit. Non-commute trips are typically shorter and more evenly distributed across the day (including midday and evening periods). Transit is not providing a convenient option in the biggest potential market.

Figure 15: Market Profiles by Purpose and Trip Length
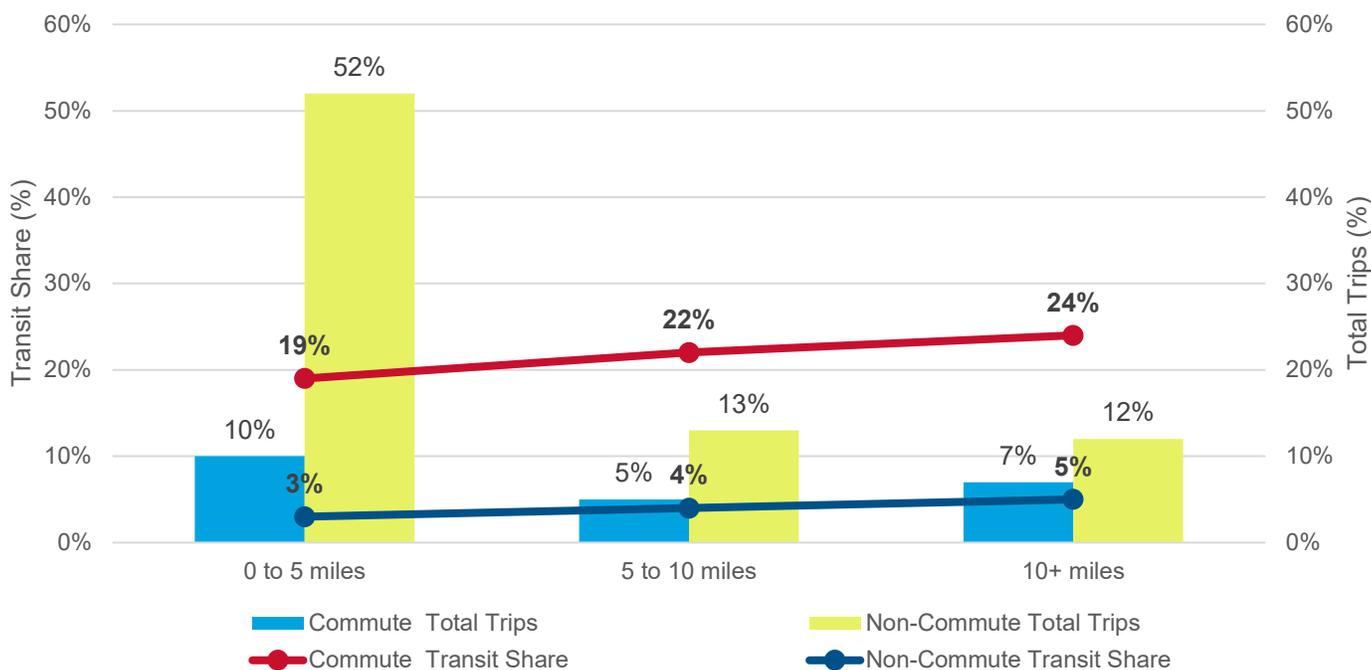
In order to help understand the concepts of market share and convenience, three categories of markets are evaluated in conjunction with total market demand. These three markets are:

- **Successful Markets**: Encompasses areas with good market share and convenient transit options (TTR is low).
- **Untapped Markets**: Encompasses areas with low market share and inconvenient transit options (TTR is high).
- **Underserved Markets**: Encompasses areas with good market share and inconvenient transit options (TTR is high).

The sections below provide additional detail on these assessments and examples of how the analysis is applied.

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[12] This 22 percent is close to the 21 percent commute reported in MWCOG's Regional Travel Survey. (https://www.mwcog.org/documents/2020/01/21/regional-travel-survey-presentations-regional-travel-survey-tpb-travel-surveys/)

Successful Markets

This market analysis identifies successful transit markets, focusing on where transit offers a convenient trip, and therefore mode share is high. One example of this type of successful transit market is the connection from Montgomery County's Glenmont/Wheaton/White Oak to DC's Chinatown/Dupont Circle (**Figure 16**). During the average weekday, transit trips take twice as long as driving would, and we see high rates of transit usage. Approximately 52 percent of the 16,900 average weekday trips between these locations occur on transit. While some trips in this market use both the bus and Metrorail system to make their trips, Metrobus S9 and S2 provide convenient and frequent options from Silver Spring along 16th Street and account for a large number of daily trips.

Another successful market pair is Bowie/Mitchellville in Prince George's County to DC's L'Enfant Plaza/Waterfront where transit trips take twice as long as driving, and 67 percent of trips between these locations use transit. This trip is relatively long (more than 21 miles) and is predominantly made for travelers commuting to work (59 percent of the total daily trips). Direct bus service feeding into Metrorail combined with intense congestion and difficult parking at the destination make this an attractive trip for transit use.

Figure 16: Glenmont – Wheaton – White Oak and Chinatown – Dupont Geomarkets

The design of the existing transit system, inclusive of Metrobus, regional service providers, and Metrorail, provides higher levels of peak service and service into Downtown DC, as a result most trips to downtown have low TTRs and high transit mode share. Other examples of successful transit markets outside of DC include:

- Arlington County's Ballston-Courthouse-Rosslyn to Fairfax County's Burke (22 percent transit mode share and a TTR of 2.5)
- Montgomery County's Bethesda-Potomac-White Flint to Arlington County's Ballston-Courthouse-Rosslyn to (18 percent transit mode share and a TTR of 3.0)
- Prince George's County's Largo-Glenarden to Montgomery County's Bethesda-Potomac-White Flint (12 percent transit mode share and a TTR of 3.0)
- Fairfax County's Lorton-Fort Belvoir to Arlington County's Ballston-Courthouse-Rosslyn (13 percent transit mode share and a TTR of 3.0)

Untapped Markets

There are also places where transit could be more successful if a good bus option were provided. These potential untapped markets include those where transit mode share is low, TTR is high and are predominantly located in areas that do not have Metrorail service. An example of this is the connection between Fairfax County's Baileys Crossroads/Lincolnia and Mount Vernon/Springfield/Franconia (**Figure 17**) where there is a high demand of approximately 11,300 average daily trips. Although these areas are directly adjacent to one another, trips by transit take six times longer than driving. Not surprisingly, only one percent of trips between these areas use transit. There are a few potential solutions to help untapped transit markets, including:

Figure 17: Bailey's Crossroads – Lincolnia and Mount Vernon – Springfield/Franconia Geomarkets

- Providing direct service to where people want to go.
- Coordinating transfers between bus routes and other modes.
- Providing more frequent service.

Other examples of this type of untapped transit market include:

- Fairfax County's Annandale/Falls Church to Baileys Crossroads/Lincolnia (three percent transit share and a TTR of 5.6)
- Montgomery County's Glenmont/Wheaton to Prince Georges County's Beltsville/Laurel (one percent transit mode share and a TTR of 4.3)
- Alexandria's Brookville – Landmark/Van Dorn to Fairfax County's Baileys Crossroads – Lincolnia to (three percent transit mode share and a TTR of 6.1)
- Prince Georges County's Largo/Glenarden to Suitland/Capitol Heights (three percent transit mode share and a TTR of 5.2)

Underserved Markets

Connections with high TTRs and high mode share are markets where customers have inconvenient travel times yet take the bus anyway. These are connections where improvements to service may attract even more riders while improving the quality of life for current customers. An example of this type of market is the connection between Congress Heights - Anacostia Naval Station and Anacostia - Good Hope (10,000 average daily trips). As seen in **Figure 18**, these areas are directly adjacent to each other, yet transit trips take almost five times longer than driving. Despite this, 19 percent of trips between these two locations use transit, reflecting high transit demand in this area. The high TTR (4.8) of this market is driven primarily by the short average trip distance (2.2 miles) and relative ease of driving between these two areas. In short-distance markets like these, transit often has difficulty offering a convenient option because any one element of the transit trip (walking to the bus stop, waiting for the bus) can take longer than the end-to-end drive trip. In this case, almost 90 percent of trips have transit itineraries with high walk times or waiting times.

Figure 18: Congress Heights - Anacostia Naval Station and Anacostia - Good Hope Geomarkets
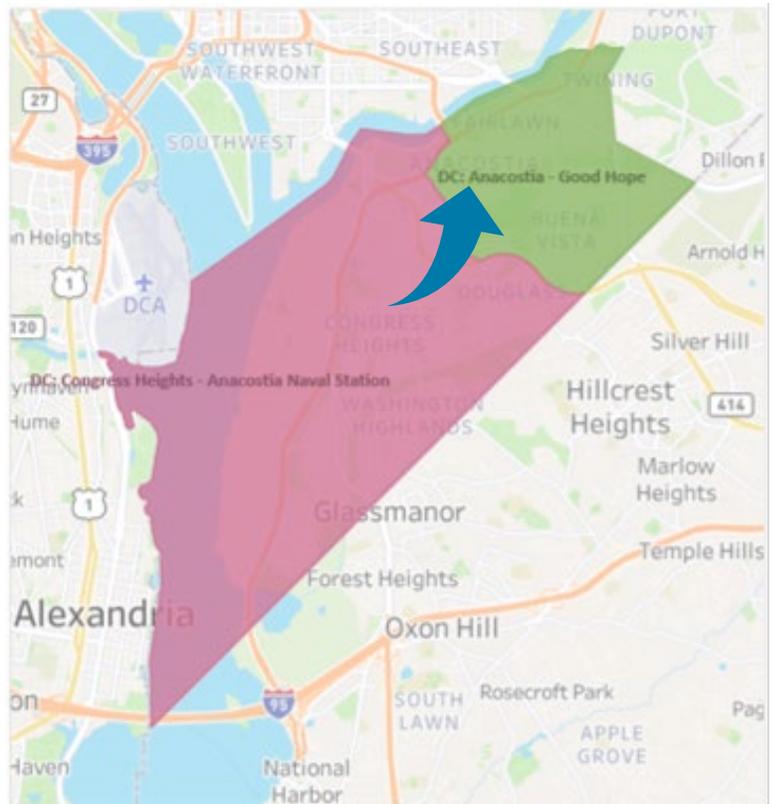
To support markets like this one, transit travel times should be made more reasonable. This can be done by:

- Improving frequency
- Putting bus stops closer to people's origins and destinations.
- Making bus routes more direct.
- Decreasing transfers.
- Speeding up buses stuck in traffic.

All of these will be considered in identifying where service should be improved as part of the BBNR.

Other examples of this type of underserved transit market include:

- DC's Navy Yard - Potomac Avenue to L'Enfant Plaza – Waterfront (20 percent transit mode share and a TTR of 4.8)
- DC's Anacostia-Good Hope to Navy Yard - Potomac Avenue to (19 percent transit mode share and a TTR of 4.8)
- Arlington County's Ballston-Courthouse-Rosslyn to Crystal/Pentagon Cities-Shirlington (16 percent transit mode share and a TTR of 4.5)
- Prince George's County's College Park-Hyattsville to DC's Brookland-Fort Totten (11 percent transit mode share and a TTR of 4.6)

Where does the transit system allow people to access essential services and economic opportunity?

An efficient and reliable bus network allows users to access jobs and essential services in the region – including educational institutions (schools, colleges, and universities), medical facilities (hospitals, urgent care), and grocery stores. **Figure 20** shows the average number of activity centers of each type that can be accessed for block groups in the region within 30-minutes of travel on transit. Summarizing these accessibility metrics for block groups tagged as Equity-Focus Communities (EFC)[13] and low-income communities[14] allows us to understand how well the bus system serves communities that are more likely to depend on transit for fulfilling their mobility needs. The results show that Equity-Focus Communities, on average, have access to fewer than the regional average of activity centers. Such areas that do not have easy transit access to these types of essential destinations warrant improved service and/or new connections.

Figure 19: Average Number of Essential Destinations Accessible within 30-Minutes on Transit
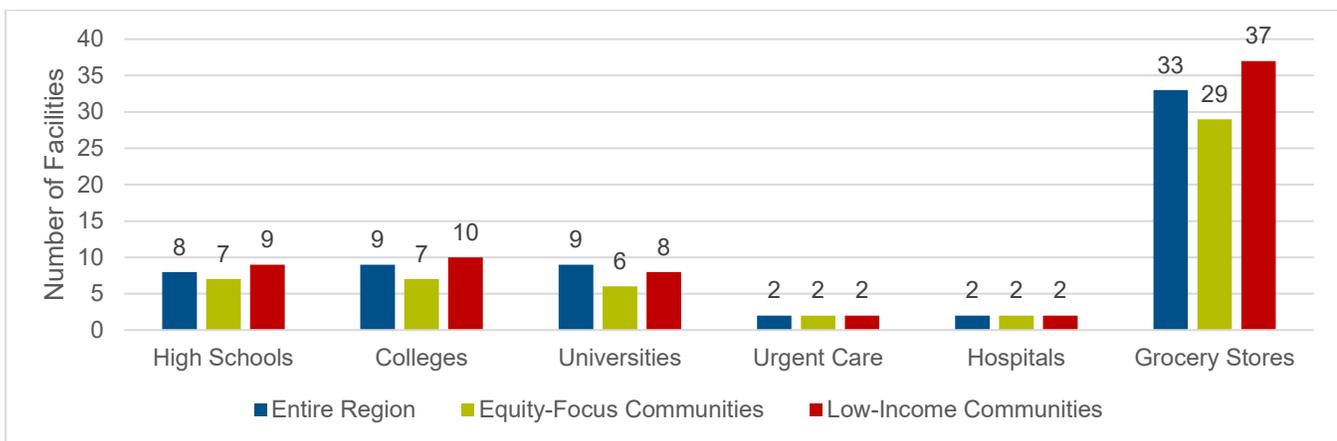
Figure 21 shows the average number of jobs accessible within 30-minutes of transit. Within 30-minutes, transit on average provides access to 141,000, or six percent, of jobs in the region. For both categories of jobs (all jobs and jobs with earnings less than $1,250 a month), we see that Equity-Focus Communities have access to fewer jobs compared to the overall population and low-income communities have high levels of access to jobs by transit.

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[13] Are where the highest concentrations of low-income residents, people of color, and people with disabilities live. The census block groups that are home to 30 percent of the region's population and that rank the highest for these three-population metrics are designated as EFCs. Within the LBS data, this is designated by the census block group of the phone's home location.

[14] Defined as have annual household income of less than 200 percent of the federal poverty line. Census block groups (CBGs) that are flagged as Majority Low-Income are block groups where 50 percent or more of the households are low-income and include 6.6 percent (or 167) of block groups in the WMATA Compact Area. The Low-Income flag includes block groups where 31 percent or more of the households are low-income.

Figure 20: Average Number of Jobs Accessible within 30 Minutes on Transit
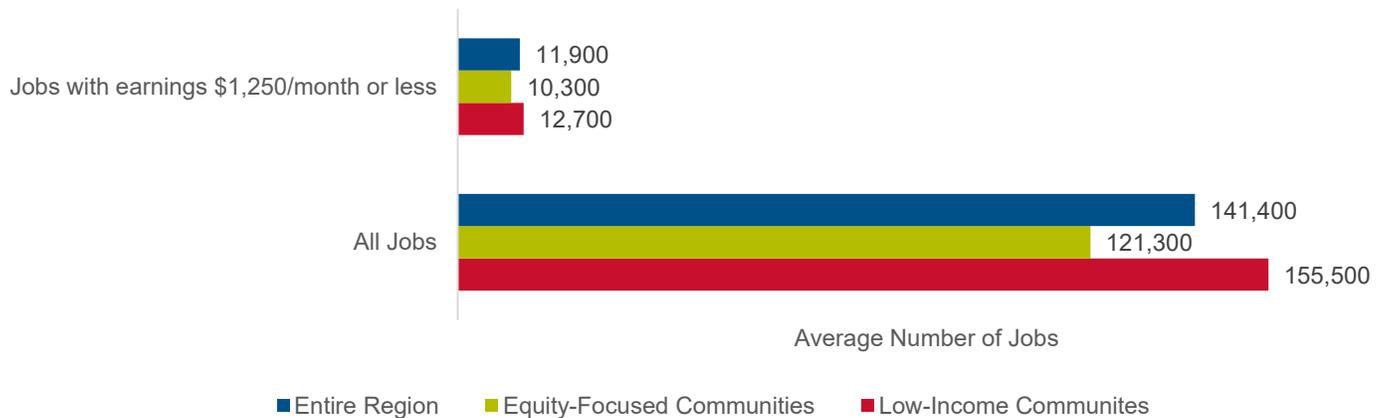
Where is growth planned that would necessitate better bus service?

The current bus network was designed to serve neighborhoods and travel patterns of years past. Places that are expected to experience increased growth by adding new residents and/or jobs should be considered for improved service as development occurs. **Figure 22** and **Figure 23** illustrate population and employment growth expected, respectively, between 2020 and 2035. Generally, employment in Fairfax and Alexandria is expected to grow, with a large increase around Dulles Airport. In Arlington, Lyon Park and Boulevard Manor will see a decrease in employment. Large areas of Prince George's County and areas adjacent to Montgomery County in DC are projected to have negative employment growth. Population numbers, however, follow a different pattern and the changes are more sporadic with a decrease in the Reston-Herndon region, Pentagon, Old Town Alexandria, and southeast of Prince George's County. **Table 3** provides an overview of population and employment growth by region.

Table 3: Population and Employment Changes by Jurisdiction

Jurisdiction	2020 Population	2035 Population	Population Growth	% Growth	2020 Jobs	2035 Jobs	Growth in Employment	% Growth
District of Columbia	729,501	893,898	164,397	**22.5%**	846,280	978,223	131,943	15.6%
Montgomery County	1,051,989	1,167,704	115,715	**11.0%**	543,467	627,351	83,884	15.4%
Prince George's County	923,144	967,842	44,698	**4.8%**	349,048	385,542	36,494	10.5%
City of Alexandria	159,169	180,463	21,294	**13.4%**	110,119	135,254	25,135	22.8%
Arlington County	238,295	274,563	36,268	**15.2%**	216,874	248,902	32,028	14.8%
Greater Fairfax[15]	1,201,565	1,374,998	173,433	**14.4%**	738,884	861,586	122,702	16.6%

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[15] Fairfax County, City of Fairfax, City of Falls Church

Figure 21: Population Growth (2020 to 2035)
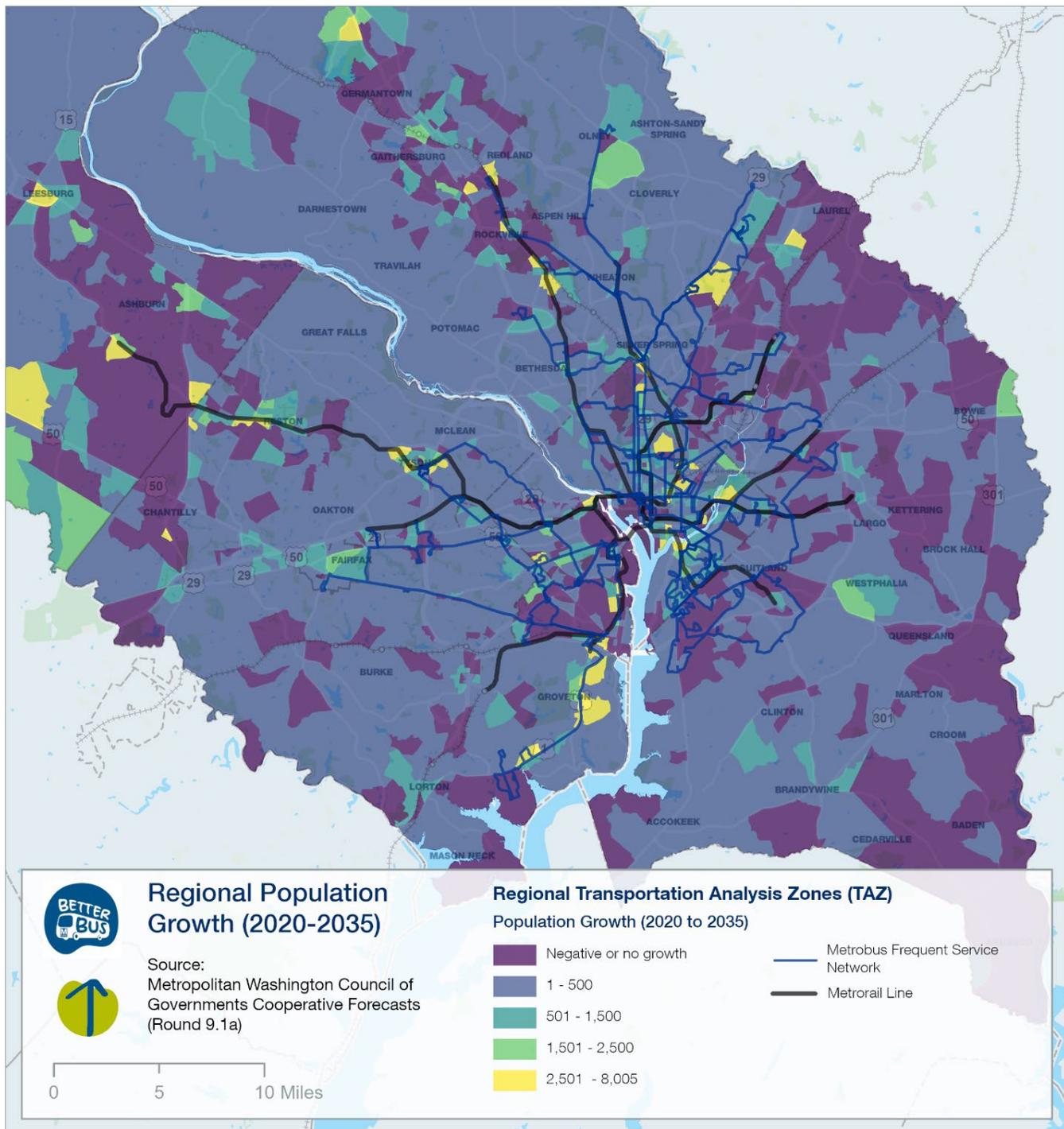
Figure 22: Employment Growth (2020 to 2035)

Regional Employment Growth (2020-2035)

Source: Metropolitan Washington Council of Governments Cooperative Forecasts (Round 9.1a)

0   5   10 Miles

Regional Transportation Analysis Zones (TAZ)

Employment Growth (2020 to 2035)

- Negative or no growth
- 1 - 1,000
- 1,001 - 2,500
- 2,501 - 5,000
- 5,001 - 10,859

— Metrobus Frequent Service Network
— Metrorail Line
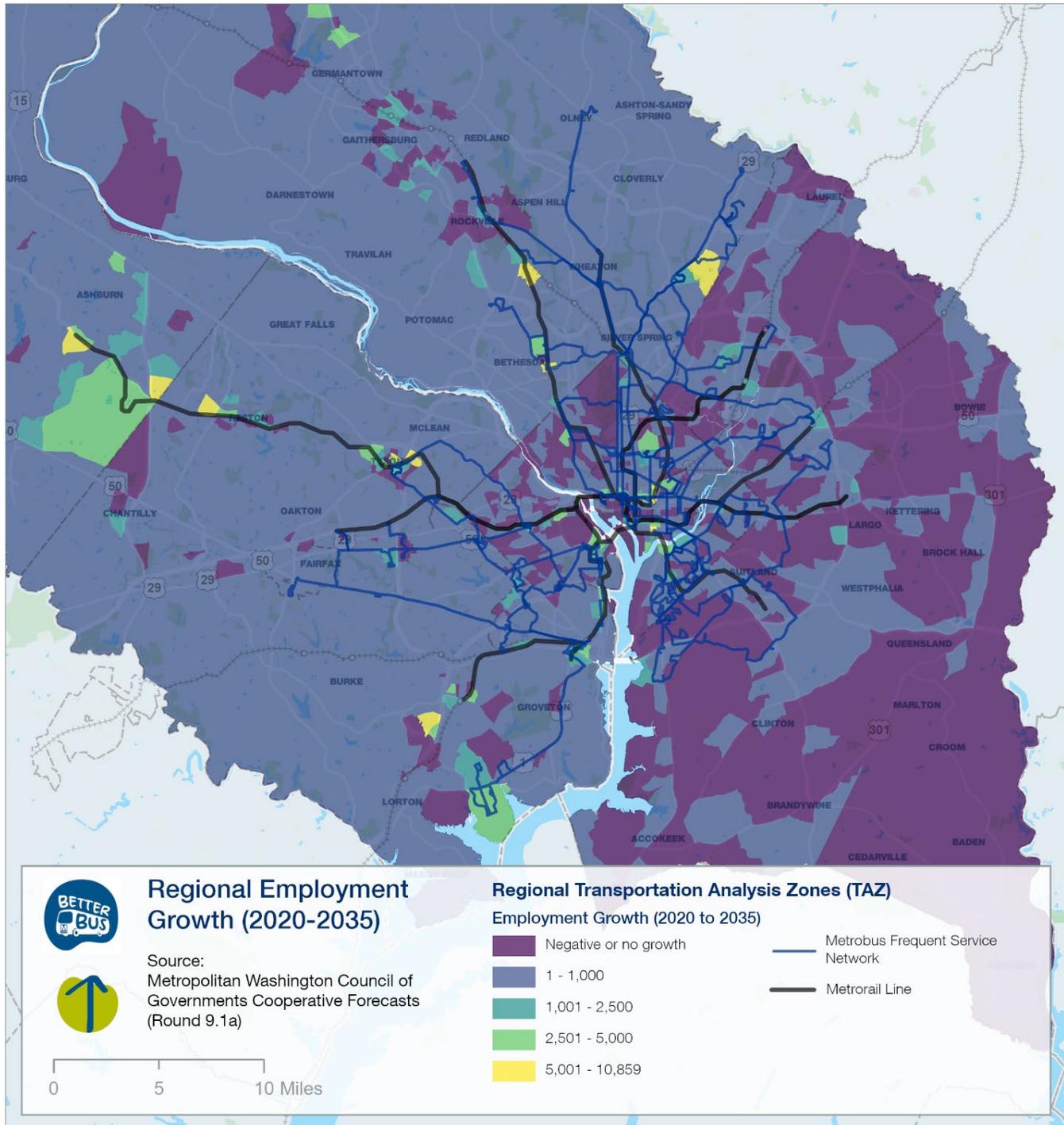
What does this mean for the Better Bus Network Redesign?

The market assessment identifies markets where transit service improvements can better **serve the populations that rely on it, provide convenient service in markets that can build ridership, and improve the experience for customers.** The work done as part of the market assessment helps identify the populations who have a greater need to take transit and identifies, from a service perspective, how service quality prevents transit from having a greater mode share of the total travel demand. These analyses will be used in the service design process to identify locations, times of day, and specific connections where service should be improved, added, or redesigned in order to provide service that better aligns with market demand across the region.