North Bethesda
BUS RAPID TRANSIT

Corridor Foundations Report

Contents

1   BACKGROUND AND CONTEXT

1.1   INTRODUCTION

During the past decade, there has been continued economic and population growth throughout the greater Washington, DC region. The related increase in vehicle traffic and congestion due to this growth has created a need for more sustainable transportation options for those who live, work, or play in Montgomery County. North Bethesda is strategically located within Montgomery County to serve as both a vibrant community and a key through point for many vehicular and transit trips, as shown in **Figure 1**. As growth continues, there is a long-standing need in North Bethesda to accommodate travel demand through viable alternatives to single-occupancy vehicle travel.
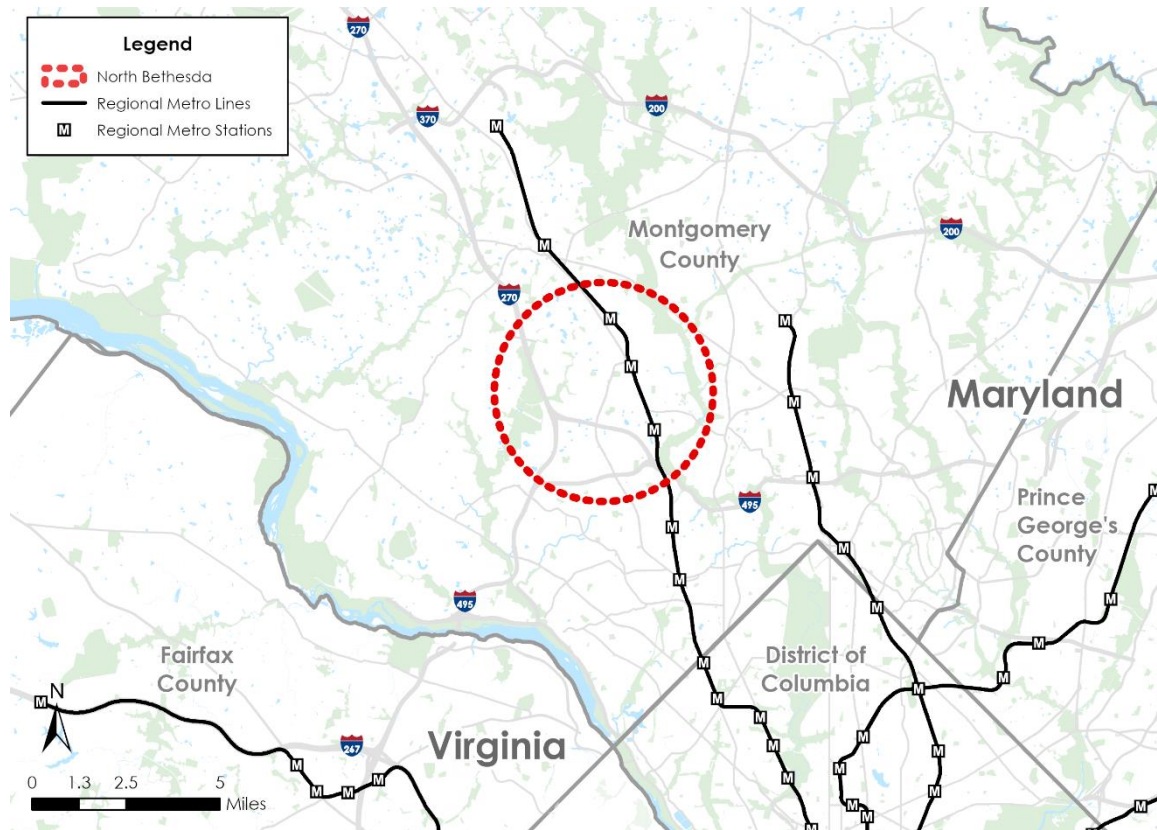

The North Bethesda Transitway was originally conceived as a connection from the Metrorail Red Line to the Rock Spring office park area and to Montgomery Mall in the 1992 North Bethesda/Garrett Park Master Plan. The concept was updated in the 2013 Countywide Transit Corridors Functional Master Plan with two alternatives identified for further study.

This study will evaluate route options such as stop locations, runningway, and eastern terminus options as an initial step in the project development process. County-wide BRT Goals and Objectives will guide project. In addition, advisory committees, stakeholder meetings, and public outreach will inform the selection of the preferred option moving forward. The Corridor Foundations Report details the current characteristics and conditions of the project area including demographics, activity centers, development, travel trends, and related projects in the study area and the corridor.

Figure 1. North Bethesda Regional Context

1.2   CORRIDOR FOUNDATIONS

In 2013, Montgomery County approved and adopted the *Countywide Transit Corridors Functional Master Plan*. This plan proposed the development of a fast, convenient, and reliable bus rapid transit (BRT) service network throughout Montgomery County. The proposed BRT network aims to achieve countywide goals related to mobility, land use, and economic growth. The North Bethesda Transitway is one of 10 recommended BRT corridors detailed in the 2013 Master Plan.

BRT corridors in Montgomery County, including the North Bethesda Transitway, are branded under the BRT network name, Flash. Flash vehicles will be uniquely branded and designed to be distinguishable from local buses, in promotion of the high-quality and high-capacity County BRT network.
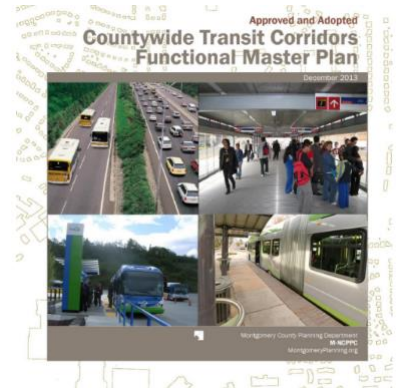
"An expansion of frequent, reliable transit service [is] needed to move greater numbers of people to and from jobs, homes, shopping, and entertainment areas, reducing the gap between transportation demand and supply and providing County residents a viable and reliable alternative to travel by auto on congested roadways."
(Countywide Transit Corridors Functional Master Plan)

Two BRT corridor alignments, potential station locations, and termini alternatives were developed for the North Bethesda Transitway in the 2013 Master Plan. **Figure 2** shows the proposed alternatives. The western terminus will be located at the Westfield Montgomery Mall Transit Center, and the eastern terminus will be located at either the Grosvenor-Strathmore or White Flint Metrorail stations. The eastern terminus, alignment type, and stop locations will be determined through screening based on the information presented in this report.
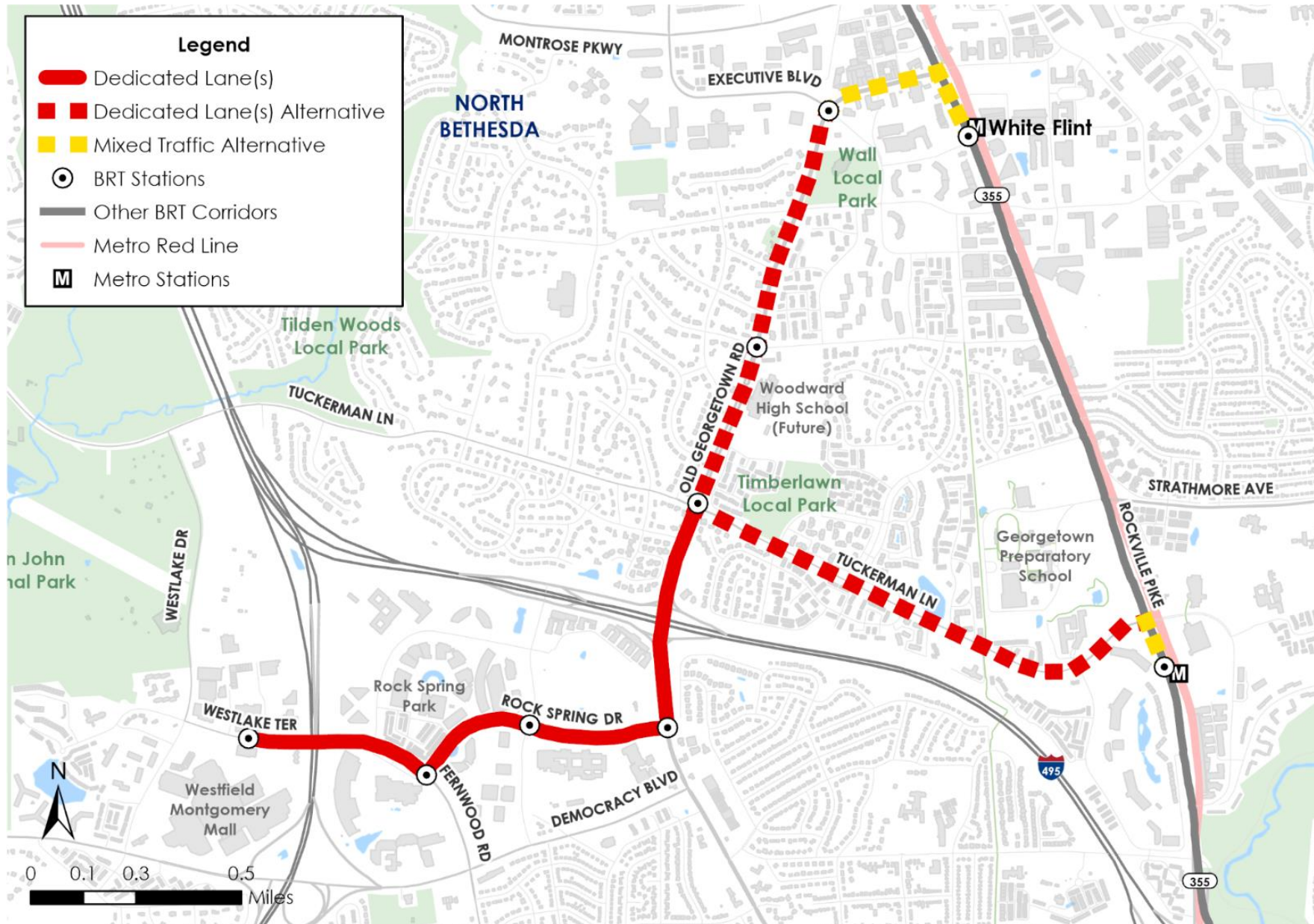
Figure 2. 2013 BRT Study Recommendations

1.2.1   BRT IMPLEMENTATION AND OTHER RELATED INITIATIVES

Since 2013, the County has made significant progress toward advancing the BRT network. The US 29 Flash BRT was implemented in 2020 and three additional BRT corridors proposed in the *2013 County Master Plan* are in either the planning or design phase. They are as follows:

- *US 29 Flash:* The Montgomery County Department of Transportation (MCDOT) completed construction and began operation of the Flash BRT service on US 29 in October 2020.

- *MD 355 Flash Bus Rapid Transit*: MCDOT completed planning and conceptual engineering of the MD 355 BRT in 2019. The project has now entered preliminary engineering, which will run through the end of 2022. Once completed, the project will advance to final design and ultimately construction, as outlined in the current proposed CIP.

- *Veirs Mill Road:* After a corridor study report was completed in 2018, MCDOT began performing preliminary engineering and design for the Flash BRT line along Veirs Mill Road (MD 586). Once completed, the project will advance to final design and ultimately construction, as outlined in the current proposed CIP.

- *New Hampshire Avenue:* A planning study to refine the Master Plan recommendation for the New Hampshire Avenue (MD 650) Corridor and determine station locations, BRT configuration, and termini began in fall of all 2021.

> Overall updates for the countywide BRT, the Flash, including the fast facts about the program and project details, can be found at:
> https://www.montgomerycountymd.gov/dot-dte/projects/brt/index.html

Figure 3 shows the planned and existing Flash BRT corridors and other related initiatives in the context of existing transit systems in the region. Locations of the aforementioned BRT corridors and the following related initiatives are specifically called out. Once funding is obtained, the Randolph Road BRT in the 2013 plan will add a connection to the White Flint termini alternative.

In addition to the MCDOT planning and design efforts for the BRT Network, advancements and new implementations of transit service and connectivity have been planned throughout Montgomery County.

- The Purple Line, owned by the Maryland Department of Transportation Maryland Transit Administration (MDOT MTA), *is a 16-mile light rail line that will extend from Bethesda in Montgomery County to New Carrollton in Prince George's County.* The service was originally scheduled to open in the spring of 2022, but its opening has now been pushed out with the hiring of a new contractor and is currently projected to open in 2026. Once operational, the Purple Line will better connect the Flash BRT network with the greater Washington, DC transit network.

- Corridor Forward is prioritizing transit projects that will increase sustainable transit opportunities to move people between home and work and leisure activities across the I-270 Corridor. The study recommends a new Maryland Area Regional Commuter (MARC) station at White Flint in support of the coming transitway and based on the county's land use goals.

- Ride On Reimagined Study is a comprehensive, forward-looking assessment of the bus network that will result in significant recommended changes to how transit operates in Montgomery County based on current and future needs. This study will be coordinated with the *North Bethesda Transitway Alternatives Analysis*.

- The Managed Lanes Study is a public-private partnership program (P3) led by the Maryland Department of Transportation State Highway Administration (MDOT SHA) to improve more than 70 miles of freeways in Maryland. The project will develop proposed alternatives along the I-495 and I-270 corridor, consider potential environmental impacts, existing traffic and long-term traffic growth, and enhance trip reliability. While the project is still in draft-preliminary stages, the preferred alternative improvements include direct access to/from managed lanes on the I-270 Spur to the Westlake Terrace interchange and transit hub. If constructed, the access would greatly improve regional transit connectivity with the North Bethesda Transitway.
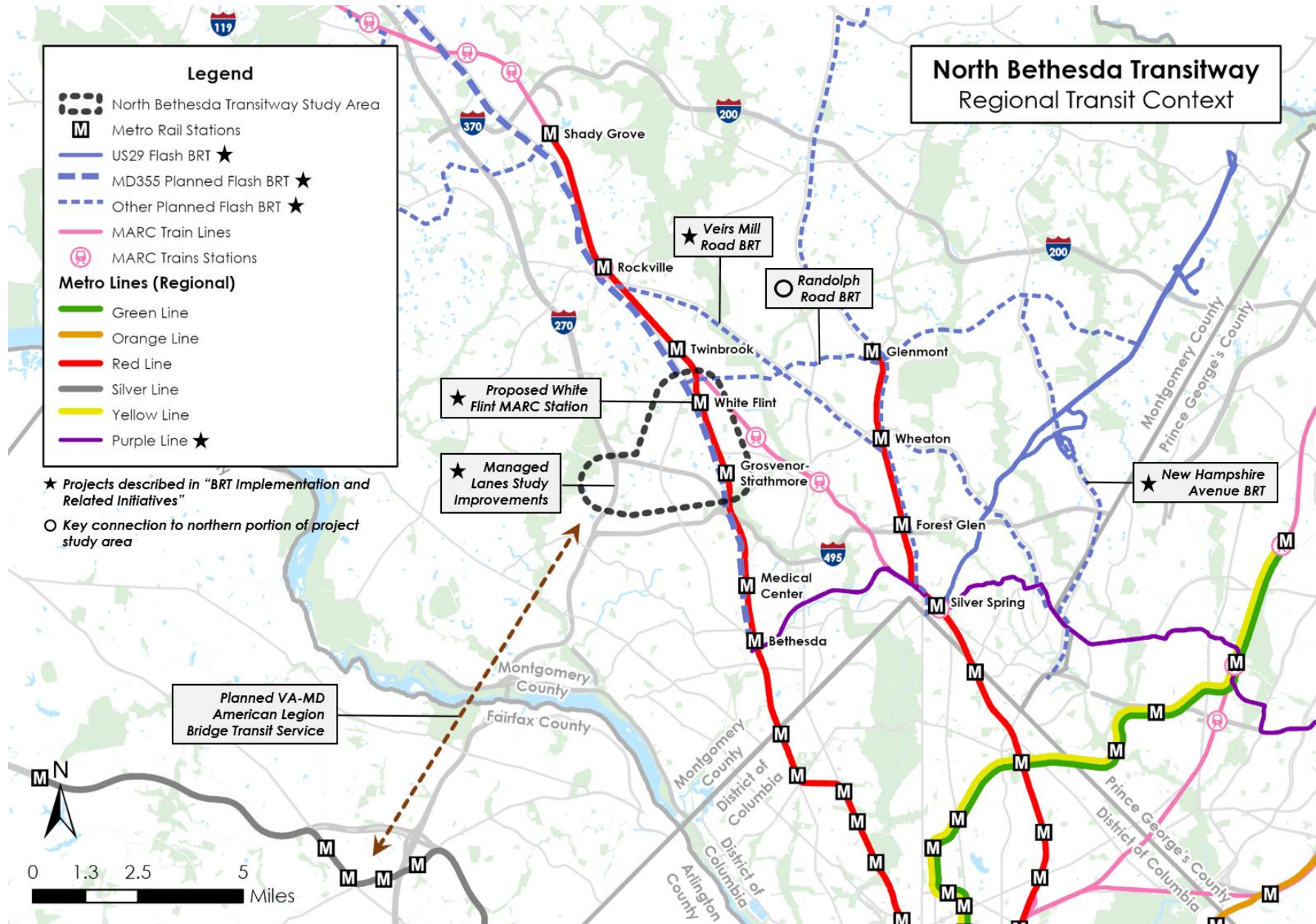
Figure 3. Flash BRT Corridors and Related Initiatives

Since 2013, there has also been a wide range of related planning efforts in Montgomery County. While not only relating to transit, each of the following plans impact and inform transit service in North Bethesda.

Thrive Montgomery 2050: Still undergoing the approval process with the Montgomery County Council and County Executive, Thrive Montgomery 2050 establishes a framework for responding to economic, demographic, social, and environmental change in ways that are rooted in enduring lessons about what has made places successful in the past, while remaining adaptable to unforeseen circumstances. Thrive Montgomery is an update the County's General Plan which was last updated in 1993. **Relevance to the North Bethesda Transitway:** *The County is dedicated to preserving and prioritizing transit access and quality service. In addition to highlighting the BRT program in Thrive Montgomery, the Planning Board also outlines its requirements[1] for new developments to set aside property needed for a transitway as a dedication, easement, or reservation. The plan recommends conversion of general travel lanes to support more sustainable methods of transportation including transit and bicycle lanes.*

Complete Streets Design Guidelines: Montgomery County published draft Complete Streets Design Guideline in February 2021. **Relevance to the North Bethesda Transitway:** *The document includes transit as a core component of a complete street and gives specific guidance on transit stop configuration on a sidewalk and transit priority and conflict resolution at intersections.*

Bicycle Master Plan: The Bicycle Master Plan sets forth a vision for Montgomery County as a world-class bicycling community, where bicycling is a viable transportation option that improves our quality of life and people in all areas of the County have access to a comfortable, safe, and connected bicycle network. **Relevance to the North Bethesda Transitway:** *The plan is a key element in Montgomery County's Vision Zero plan to eliminate traffic-related fatalities and serious injuries. **Section 6.4** addresses safety along the corridor. There is a planned bike route along a portion of our study area, allowing for great connectivity between modes and expanded network connectivity. Additionally, the Metropolitan Washington Council of Governments (MWCOG) National Capital Trails Network[2] has developed an aggregate map of all existing and planned shared-use trail connections throughout the DMV region. North Bethesda trails are a part of this.*

Pedestrian Master Plan: The Montgomery County Planning Department began developing the county's first Pedestrian Master Plan in 2019. The plan will make recommendations to make pedestrian activities safer, more comfortable, more convenient and more accessible for users of all ages and abilities in all parts of the county. **Relevance to the North Bethesda Transitway:** *Similar to components in the bicycle master plan, relevant future pedestrian plan elements are spotlights in **Section 6.3**. The County has also highlighted Bicycle and Pedestrian Priority Areas (BiPPA) of which, Rock Spring, White Flint and Grosvenor-Strathmore are included.*

Climate Action Plan: The Climate Action Plan is Montgomery County's strategic plan to cut greenhouse gas (GHG) emissions 80 percent by 2027 and 100 percent by 2035. The Climate Action Plan details the effects of a changing climate on Montgomery County and includes strategies to reduce GHG emissions and climate-related risks to the County's residents, businesses, and the built and natural environment. **Relevance to the North Bethesda Transitway:** *The plan recommends the expansion of public transit network as a key climate action to reduce GHG and recommends exploring creative funding models to support the broad expansion of the BRT program.*

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[1] https://montgomeryplanning.org/planning/transportation/transit-planning/transitway-preservation/

[2] https://www.mwcog.org/newsroom/2020/08/26/check-out-the-national-capital-trail-network/

1.2.2   LOCAL AND REGIONAL TRENDS

Regional trends, new technology, and local changes in land-use, have all influenced travel patterns and transit propensity in North Bethesda. A few of the key trends since the completion of the 2013 Master Plan include the impact of the COVID-19 pandemic on travel behavior, an increase in shared mobility, a stronger focus on equitable planning, and growth and development in the study area.

Impact of COVID-19 Pandemic: The short-term impacts of the COVID-19 pandemic to transportation include increased telework for many office-based employers and a dispersion of trips outside of the traditional morning (7 a.m. – 9 a.m.) and evening (4 p.m.- –6 p.m.) rush hour. While there is still uncertainty on how these trends will continue, with schools having returned to in-person learning, the County is proceeding forward with planned traffic studies[3] and transit projects with an understanding that there are new standards of travel behavior that will remain post-pandemic. Further description of the pandemic's impact on travel patterns within the study area is included in **Section 6.6** of this report.

Shared Mobility: Collaboration between public transit and private Transportation Network Companies (TNCs), such as Uber and Lyft, and the growing availability of micromobility services, such as e-scooters and bikeshares, have increased mobility options for shorter trips. In 2020, the County published the Montgomery County Dockless Mobility Update, which summarized a yearlong initiative to *"improve personal mobility choices, including first-mile/last-mile connections to transit and employment, and broader access for people of color and other underserved communities."* Within the North Bethesda BRT Corridor, Capital Bikeshare service began in 2018. Since then, e-bikes and e-scooters have been introduced as well as a part of a pilot program. A detailed look at multimodal connectivity in the study area is included in **Section 6.3**.

Stronger Focus on Equitable Planning: In recent years, there has been a renewed focus on the advancement of equity in transit planning. This includes ensuring that resources are distributed so that Montgomery County residents have safe and reliable options, no matter how they choose to travel and that vulnerable communities have a voice in the planning process. In 2020, the *Montgomery County Council* enacted the Racial Equity and Social Justice Act, which, among its requirements, directs the Planning Board to consider racial equity and social justice as part of master plans. Soon after, Equity Focus Areas (EFA) were developed across the County which highlight areas based on low-income households, race and Hispanic origin, and limited English proficiency. A more detailed breakdown of these characteristics within the North Bethesda Transitway Corridor and how they relate to this study is included in **Section 5.1.1** of this report.

Growth and Development in Area: Employment and population growth continue throughout the greater Washington, DC area. Changes in land-use patterns have brought an increase of mixed-use development along the North Bethesda BRT Corridor. Pike & Rose, a mixed-use destination located near the White Flint metro station, opened in 2014 and has added restaurant, retail, and multifamily land use density to the study area. In contrast, the relocation of Marriott International headquarters outside of the study area has decreased peak period office demand. A detailed overview of recent sector plans, major pipeline developments, other changes in land-use in North Bethesda, and how these changes affect this study, is included **Section 6.1.**

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[3] https://montgomeryplanningboard.org/wp-content/uploads/2020/09/COVID-19-Traffic-Count_TIS-Policy-Briefing_091720_jks_Final.pdf

2   GOALS AND OBJECTIVES

Prior to developing goals and objectives for the North Bethesda Transitway alignment, existing countywide and corridor-specific goals and objectives were identified, documented, and reviewed to assess the current state of relevant adopted goals and objectives across the County. Corridor-specific goals and objectives were compared with countywide goals and objectives using a diagnostic process to determine areas where goals from previous projects could be enhanced and tailored to the North Bethesda Transitway. *Thrive Montgomery 2050* was used as a reference point for the most up-to-date countywide vision. The *MD 355 Corridor Summary Report* is the primary planning document for the most recent Montgomery County bus rapid transit (BRT) study along MD 355, supporting the proposed BRT network development in the *2013 Countywide Transit Corridors Functional Master Plan*. The MD 355 goals and objectives were used as a guide in the development of the North Bethesda Transitway goals and objectives.

A set of short goals and associated objectives were developed to capture the vision for the North Bethesda Transitway based on the previously outlined approach. The project goals are presented in **Figure 4**.

Goals and objectives will be further used in stakeholder meetings, public engagement events, and the development of measure of effectiveness (MOEs). Stakeholders and the public will have the opportunity to comment on the formation and prioritization of the goals and objectives through the first phase of outreach, which may result in refinement of the statements. The objectives developed in association with each goal are shown in **Table 2.1.** MOEs will be developed for each objective as a means of forming the basis for screening the alternatives of the North Bethesda Transitway.

Figure 4: North Bethesda Transitway Goals

Goal Objective	
Quality Service Provide a fast, reliable, efficient, and connected transit service	**Community Equity** Provide improved and accessible transit service for traditionally underserved populations
Mobility Choices Improve access to jobs, activity centers, and community facilities	**Economic Growth** Promote economic development with appealing and functional transit
Sustainable Solutions Minimize environmental impacts and utilize cost-effective design	**Public Safety** Improve safety of our streets and the livability and wellness of our communities

Table 2.1. North Bethesda Transitway Goals and Objectives

3   ENGAGEMENT APPROACH

The North Bethesda Transitway is partnering with agencies and advisory groups to help bring everyday perspectives and other initiatives along the corridor to the project through multiple touch points. Project stakeholders include the Corridor Advisory Committee (CAC) and the Technical Advisory Group (TAG). Public engagement components include public meetings (in-person and virtual), bus stop chats, pop-up events, and a project survey. Additionally, the *North Bethesda Transportation Management District (TMD)* will serve as a platform for employers, residents, and advocacy groups in the areas to come together to discuss the ongoing project, partnership, and public outreach.

Corridor Advisory Committee (CAC): A citizens' advisory group comprised of residents, business owners, and other relevant stakeholders to provide input and make recommendations to the County on the design, construction, and proposed station locations for the North Bethesda Transitway.

Technical Advisory Group (TAG): Transportation professionals and technical staff to coordinate ongoing, overlapping, and nearby projects into the recommendations for the North Bethesda Transitway. The TAG's advisory role is to help ensure each phase of the project includes all updated and relevant information and will complement transportation improvements in the region. Members of the TAG include:

4   STUDY AREA

The project study area is the boundary around the proposed BRT corridor demarcating the analysis area. The North Bethesda Transitway study area is shown in **Figure 5**. It includes a 0.5-mile buffer around the planned and potential alignments plus portions of the MD 355 Flash BRT service that spans between the White Flint and Grosvenor-Strathmore eastern terminus alternatives.

The project's western terminus is located at the Westfield Montgomery Mall and the eastern terminus will be located at either the White Flint or Grosvenor-Strathmore metro red line stations based on future analysis as part of this study. Both eastern terminus alternatives interact with the planned MD 355 Flash BRT service along Rockville Pike, shown in the following figures.

The western terminus is in a mixed-use area, consisting of general retail locations, commercial residential properties, and offices. The White Flint Metrorail station terminus alternative is located in a dense and a nearly exclusively commercial residential area. The Grosvenor-Strathmore Metrorail station terminus alternative is surrounded by multi-story residential complexes and hotels, in addition medium density residential areas. The two alternative transitway routes pass through primarily suburban residential areas. Note that zoning and land use within the study area will be discussed in greater detail later in this report.
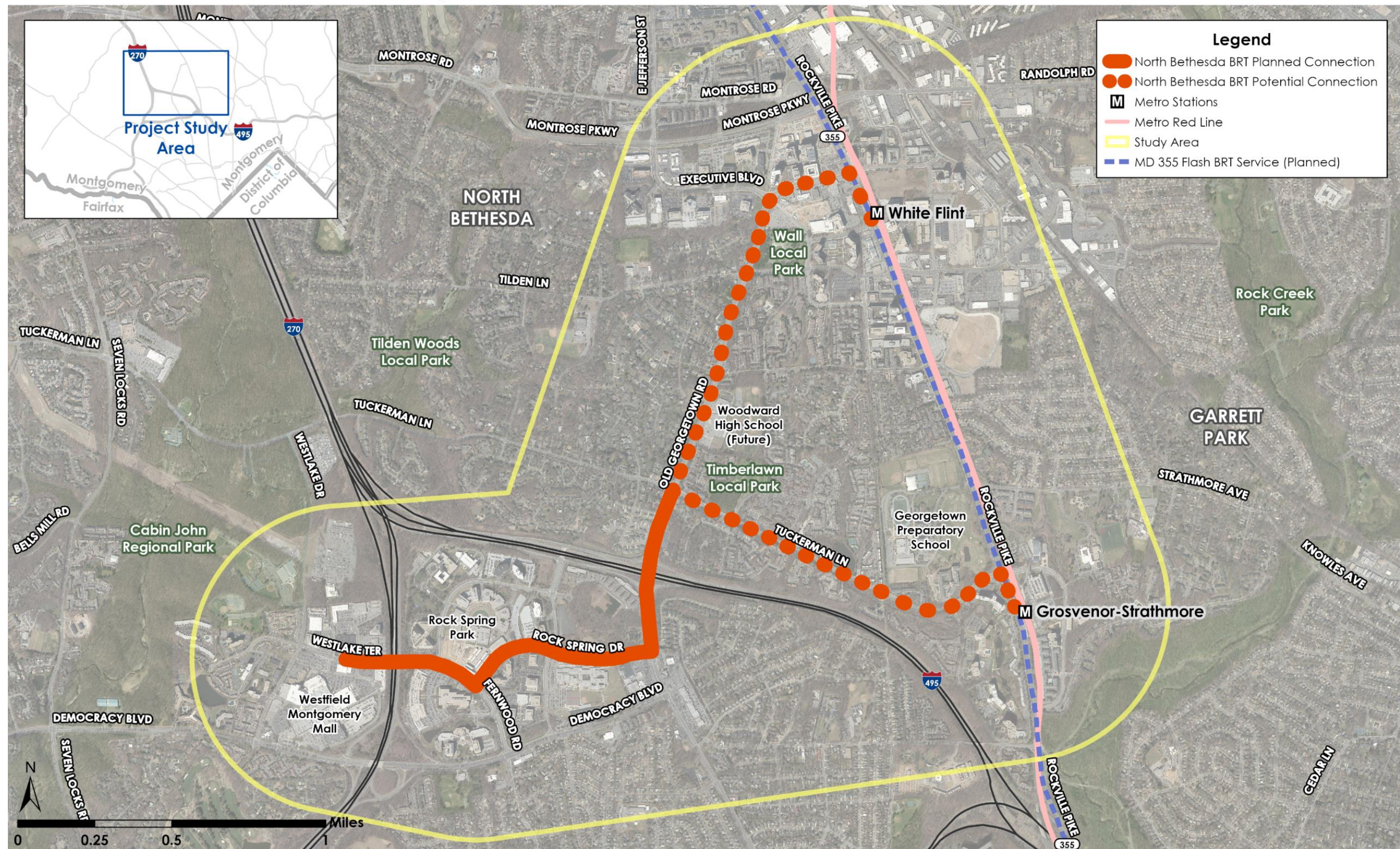
North Bethesda Transitway Corridor

Figure 5. Analysis Study Area (Aerial)

5   POPULATION AND TRAVEL TRENDS

5.1   PEOPLE AND SPACES

5.1.1   DEMOGRAPHICS

The following section compares the demographics of the study area to Montgomery County, the state of Maryland, and Washington, DC. The data comes from the American Community Survey (ACS) 2019 five-year estimates at the block group level for the study area. Because the study area includes portions of multiple block groups, the area of each block group within the study area was divided by the total area of that block group to get a multiplying factor. That factor was then applied to all of the data for that block group to determine the number of households, people, etc. that are inside the study area.

The figures below show the racial diversity, prevalence of limited English proficiency households, number of vehicles per household, and occurrence of low-income households for the study area, compared to the three jurisdictions mentioned above. This demographic information is important for determining both need for transit and propensity to use transit when it is available. Areas with a higher proportion of people of color, households with limited English proficiency, zero- or one-car households, and/or low-income households are more likely to have higher demand and need for quality transit service as they are less likely to have access to a vehicle.[4] Additionally, because of this demand, areas with higher proportions of these populations are more likely to use transit if it is available.

- *Racial and Ethnic Diversity Comparison:* As shown in **Figure 6**, the study area has a larger population of white residents than any of the comparison jurisdictions and has a significantly lower black population than any of the others. The study area's Latino population is on par with the District of Columbia and the state of Maryland, but lower than Montgomery County. The study area's Asian population is on par with Montgomery County and higher than Washington, DC or Maryland.
- *Limited-English Proficiency Comparison*: **Figure 7** shows the prevalence of households with limited English proficiency (LEP) in the study area compared to Maryland, Montgomery County, and Washington, DC. The study area has a significantly higher percentage of LEP households than Maryland or Washington, DC, but lower than Montgomery County overall. People with limited English proficiency often face difficulties obtaining drivers' licenses or other financial and legal documents required for a car, therefore increasing their likelihood to rely on and use transit.[5]
- *Car Ownership Comparison*: **Figure 8** shows the rate of car ownership by household in the study area compared to surrounding jurisdictions. The study area has a similar rate of zero-car households compared to Montgomery County overall and the state of Maryland. However, significantly fewer households in the study area have access to two or more vehicles when compared to those jurisdictions, and significantly more have access to only one vehicle per household. Households with only one vehicle are likely to still have one or several members that rely on transit to get to their destinations.
- *Low-Income Households Comparison*: **Figure 9** shows the prevalence of low-income households in the study area compared to surrounding jurisdictions. Low-income households are defined as those with income less than 80 percent of the area median income, which differs for each jurisdiction. For the study area and Montgomery County, this number is $75,000 for a family of four; for Maryland and Washington, DC, it is $68,000. The study area has a similar occurrence of low-income households compared to Montgomery County overall, and lower than Maryland and Washington, DC.

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[4] Who Rides Public Transportation? Passenger Demographics & Travel. American Public Transportation Association, 2017.
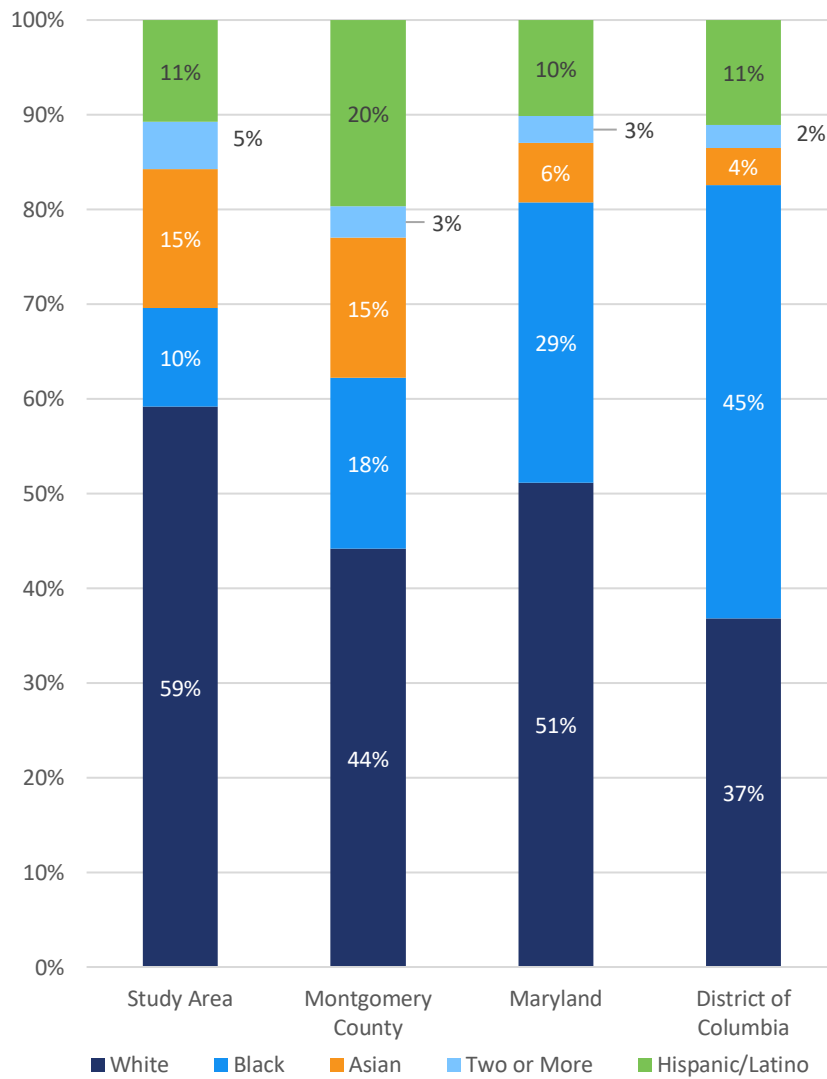
[5] Ibid.

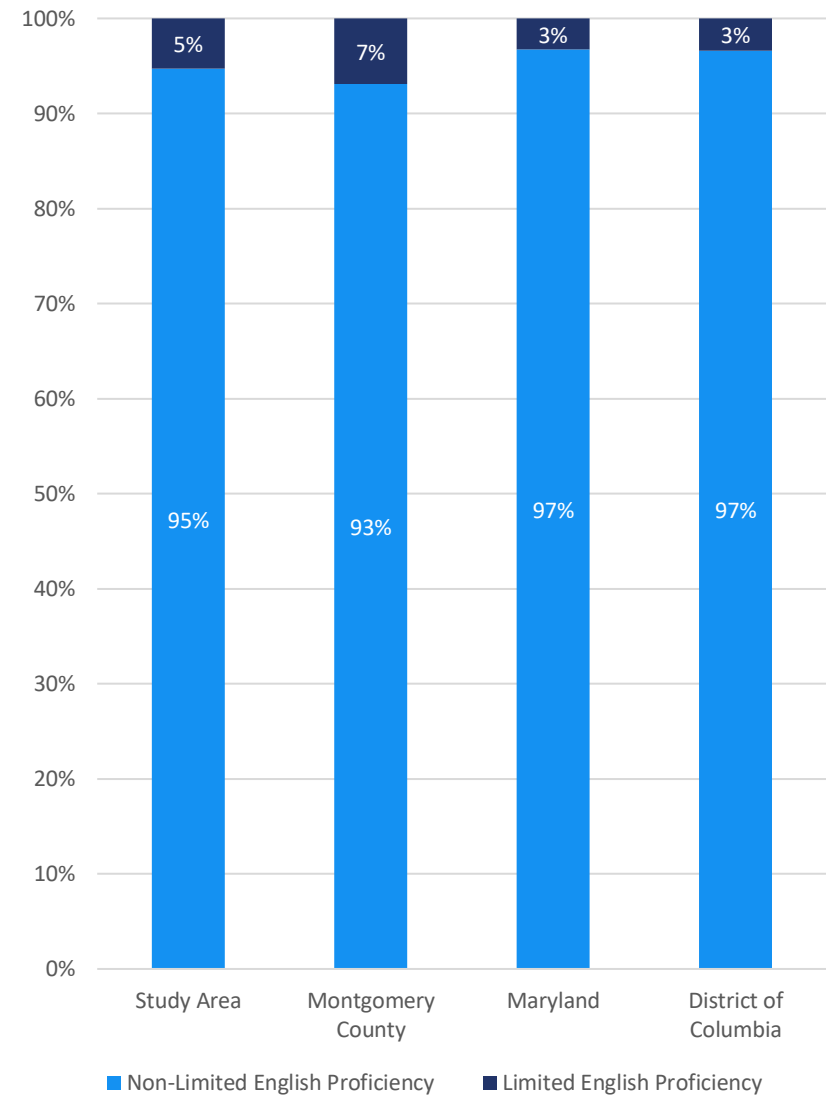Figure 6: Racial and Ethnic Diversity Comparison

Figure 7: Limited-English Proficiency Comparison
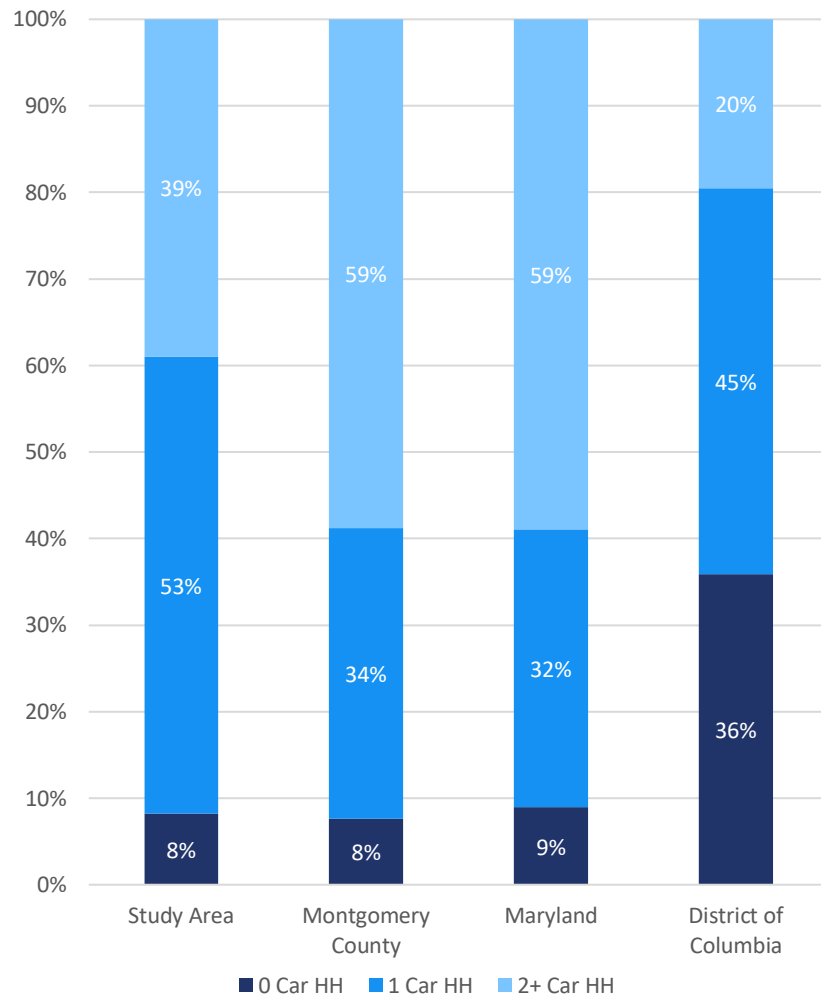
Figure 8: Car Ownership Comparison
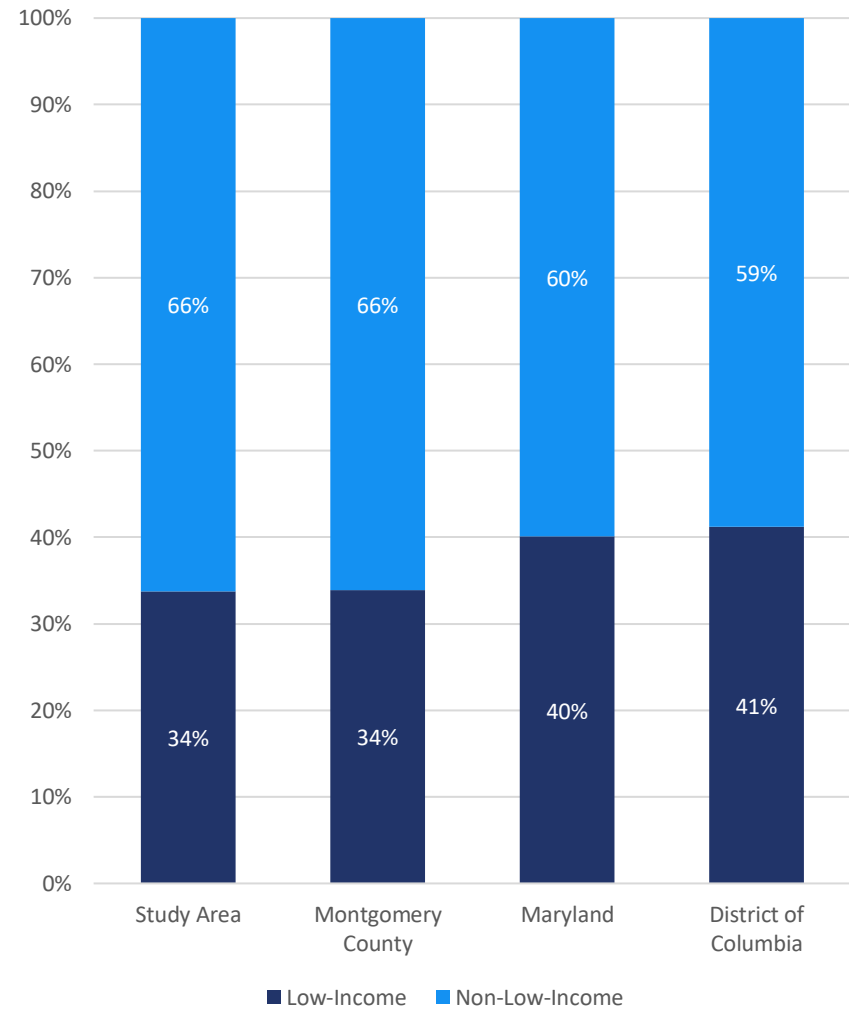
Figure 9: Low-Income Households Comparison

5.1.1.1   Equity Focus Areas

The Montgomery County Council passed the Racial Equity and Social Justice Act in 2020, which directs the County Planning Board to consider racial equity and social justice in its planning efforts. As a result, the planning board developed the Equity Focus Areas (EFAs) to identify the spatial locations of marginalized populations to support incorporating equity into ongoing and future planning efforts. The EFA analysis used the percentage of low-income households, race and ethnic origin, and English-speaking ability to determine which census tracts qualify as EFAs. It identified 56 census tracts out of 215 in the county as EFAs.

Figure 10 shows the location of EFAs in the vicinity of the study area. The study area only includes one EFA, in the southwest corner containing the Westfield Montgomery Mall. There are also two other EFAs bordering the study area to the northwest and northeast.

To align with the study's equity goals, in addition to the Westfield Montgomery Mall termini, the project will need to consider the impact the transitway will have on more diverse populations who may live outside the study area; in particular, how the North Bethesda Transitway will connect with the future Randolph Road BRT, which serves large equity emphasis areas.
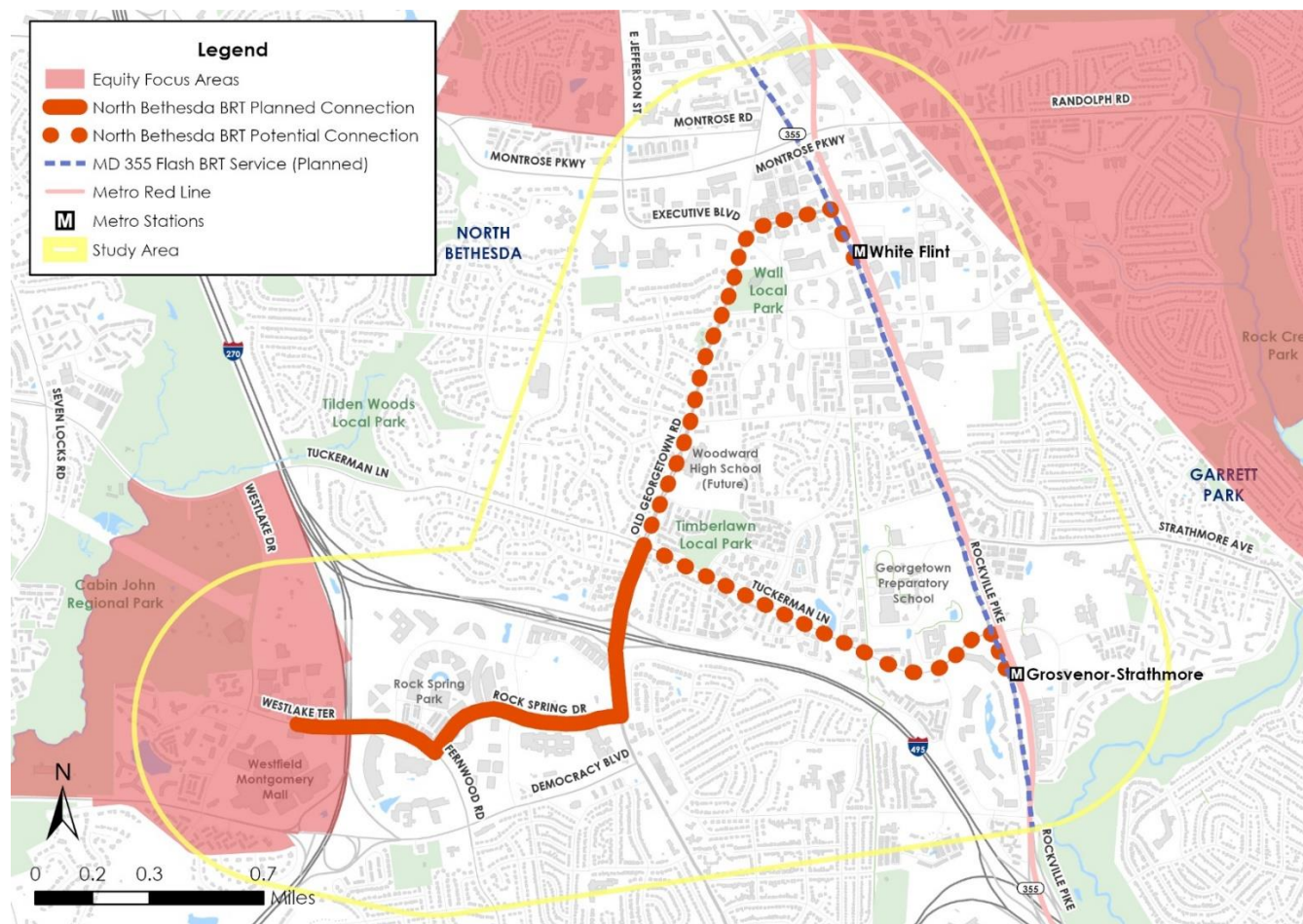
Figure 10: Montgomery County Equity Focus Areas

5.1.1.2   Transit Propensity Analysis

Transit propensity summarizes a range of factors to illustrate where transit is most likely to attract ridership. By synthesizing demographic and economic characteristics in the study area, each measure of transit propensity indicates the locations that that could serve as key origins and destinations for transit trips. The following section presents two indices to measure transit propensity: the Transit-Oriented Origin Index and the Commuter Origin Index. These two origin indices highlight where potential transit users live. The transit-oriented populations origin index shows where residents who are likely to use transit live, while the commuter origins index identifies areas likely to serve as the origin of a transit commute.

Propensity results are a combination from the U.S. Census American Community Survey (ACS) and the Longitudinal Employer-Household Dynamics (LEHD) datasets. Variables for characteristics such as age, income, vehicle ownership, work status, and employment are weighted within each index to determine how those factors contribute to transit propensity. For each index, these factors result in a propensity score for every Census tract, which are then rated from high to low relative to the tracts with the greatest propensity throughout the study area. Because of the small size of the study area, these Census tract level results were aggregated down to the Census block group level.

The Transit-Oriented Populations (TOP) Origin Index focuses in areas higher concentrations of youth, seniors, low-income households, households with low car ownership, and persons with disabilities.

Figure 11 shows the transit-oriented propensity by block group for the study area. The areas with high and moderate-high transit-oriented propensity are directly adjacent to the Grosvenor-Strathmore Metrorail station, just north of the White Flint Metrorail station east of MD 355, and in the northern tip of the study area at the intersection of Montrose Road and E Jefferson Street. Notably, almost all of the areas in the 0.25 to 0.5-mile radius of the two study area Metrorail stations and the Montgomery Mall have low to moderate transit-oriented propensity. The remainder of the study area has low transit propensity.

The Commuter Origin Index analyzes key datapoints that highlight concentration of residents in the labor force and above 16 years of age and the concentration of transit commuters. Areas with high propensity have high concentrations of residents who are part of the labor force and currently commute by transit or carpool.

Figure 12 shows the commuter propensity of the block groups in the study area. Similar to the transit propensity in **Figure 11**, the areas of highest commuter propensity are located adjacent to the Grosvenor-Strathmore Metrorail station, north of the White Flint Metrorail station, and at the intersection of Montrose Road and East Jefferson Street. Additionally, there are areas of moderate-high commuter propensity to the southwest of White Flint Metrorail station off of MD 355 and along Tuckerman Lane near Georgetown Preparatory School. There are areas of low-moderate commuter propensity to the east of the Grosvenor-Strathmore Metrorail station and to the west of the White Flint Metrorail station.
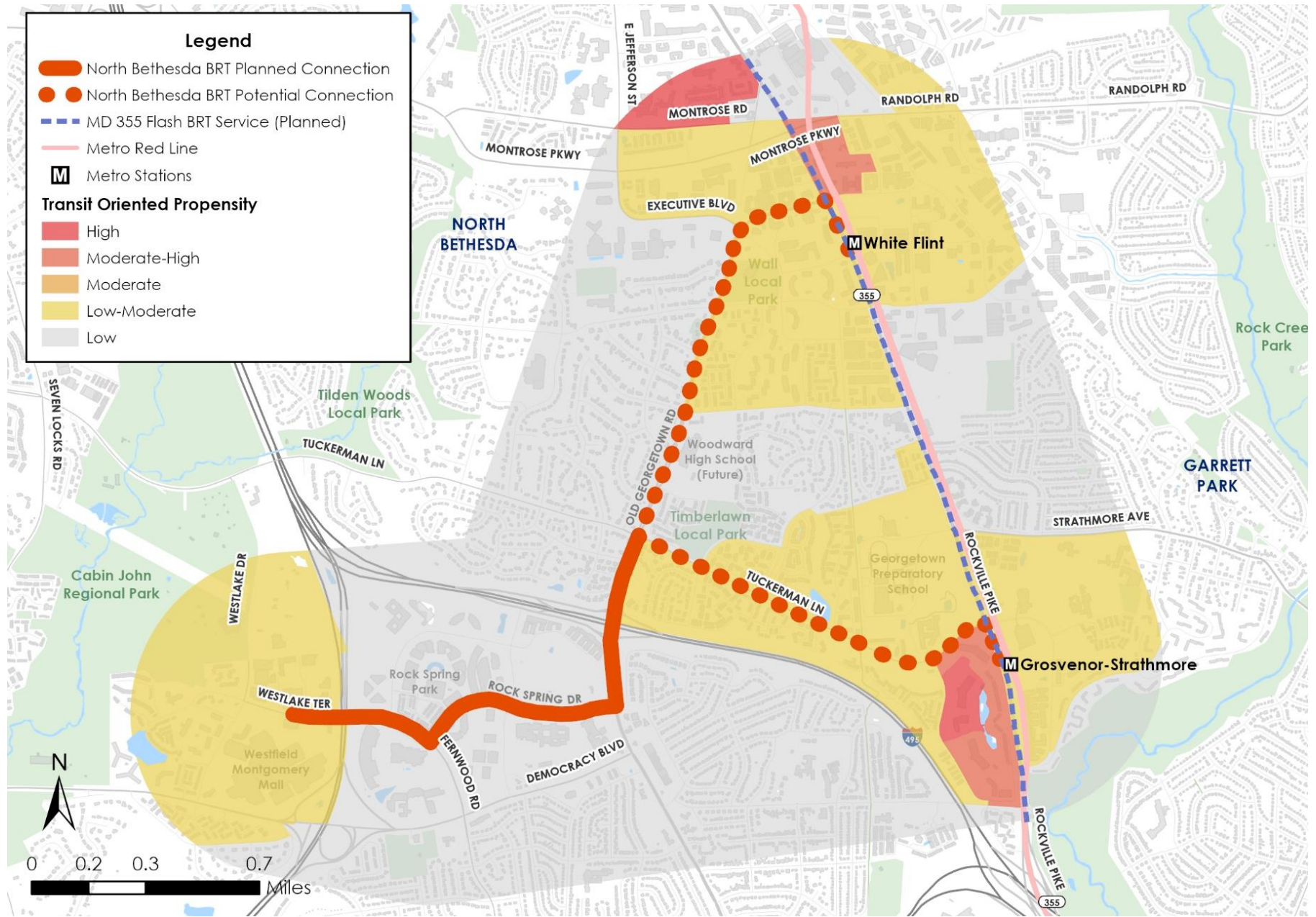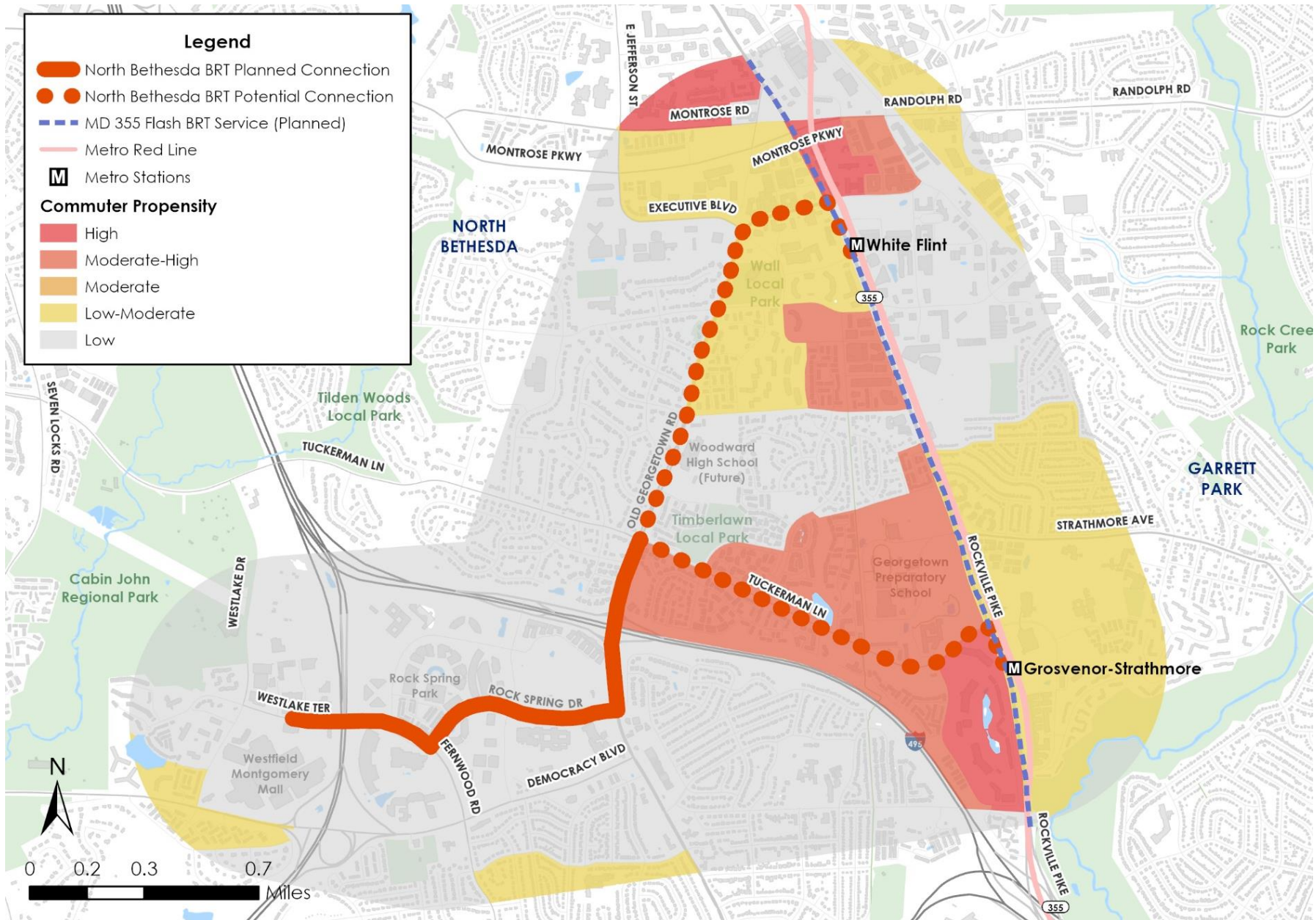
Figure 11: Transit-Oriented Propensity

Figure 12: Commuter Propensity

5.1.2   ACTIVITY DENSITY

The effectiveness and efficiency of transit is in large part determined by activity density, where larger concentrations of population and/or employment often correlate with higher transit ridership. Activity is defined as concentrations of population and jobs within the study area and is based on projections developed by the Washington Metropolitan Council of Governments (MWCOG) Cooperative Forecast Model. Due to the compact size of the study area, the results from the MWCOG model were aggregated to U.S. Census Blocks from Transportation Analysis Zones (TAZ), assuming an even distribution of jobs and population across each TAZ.

Figure 13 presents activity density in the study area in 2020. The largest concentrations of jobs and population are centered in the northern quadrant of the study area, around the White Flint Metrorail station. The area around Rock Spring Park also has a larger concentration of population and jobs compared to other areas within the study area. The western border of the study area, bounded by Executive Boulevard, Old Georgetown Road, and Interstate 495, has the lowest concentration of jobs and population.

Table 5.1: Study Area Population and Employment presents existing (2020) and projected (2030) population and jobs in absolute figures, as defined in the MWCOG regional travel model. Population is expected to increase by approximately 42 percent in the study area and employment will increase by approximately 31 percent in the study area. In general, the distribution of jobs and population remained consistent across the 10-year period.

Metric	2020	2030	% Change
Population	66,160	93,898	+42%
Employment	116,479	152,142	+31%

Table 5.1: Study Area Population and Employment

Figure 14 shows the forecasted activity density in 2030. The majority of the study area is not projected to experience large increases in activity density between 2020 and 2030. The area surrounding the White Flint Metrorail station will experience the most growth. These blocks groups are expected to increase in activity density by an average of 82 percent between 2020 and 2030. The southernmost area of the study area, bounded by Interstate 495 and Democracy Boulevard to the north, is also forecasted to experience significant growth. South of Democracy, there is a residential pipeline development contributing to the increase in density. **Section 6.1** of this report breaks down the master plan and pipeline developments identified in the study area.

Figure 15 shows points of interest within and near the study area, including education, healthcare, government, community, recreation, grocery, retail, and others[6]. The largest concentration of points of interest within the study area surround the White Flint Metrorail station. Near the Grosvenor-Strathmore Metrorail station, there are several large housing complexes, a grocery store, and two schools. Finally, along Democracy Boulevard, southwest of the study area, is the Montgomery Mall and several medical facilities, grocery stores, housing complexes, and corporate campuses.

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[6] As of March 2022.
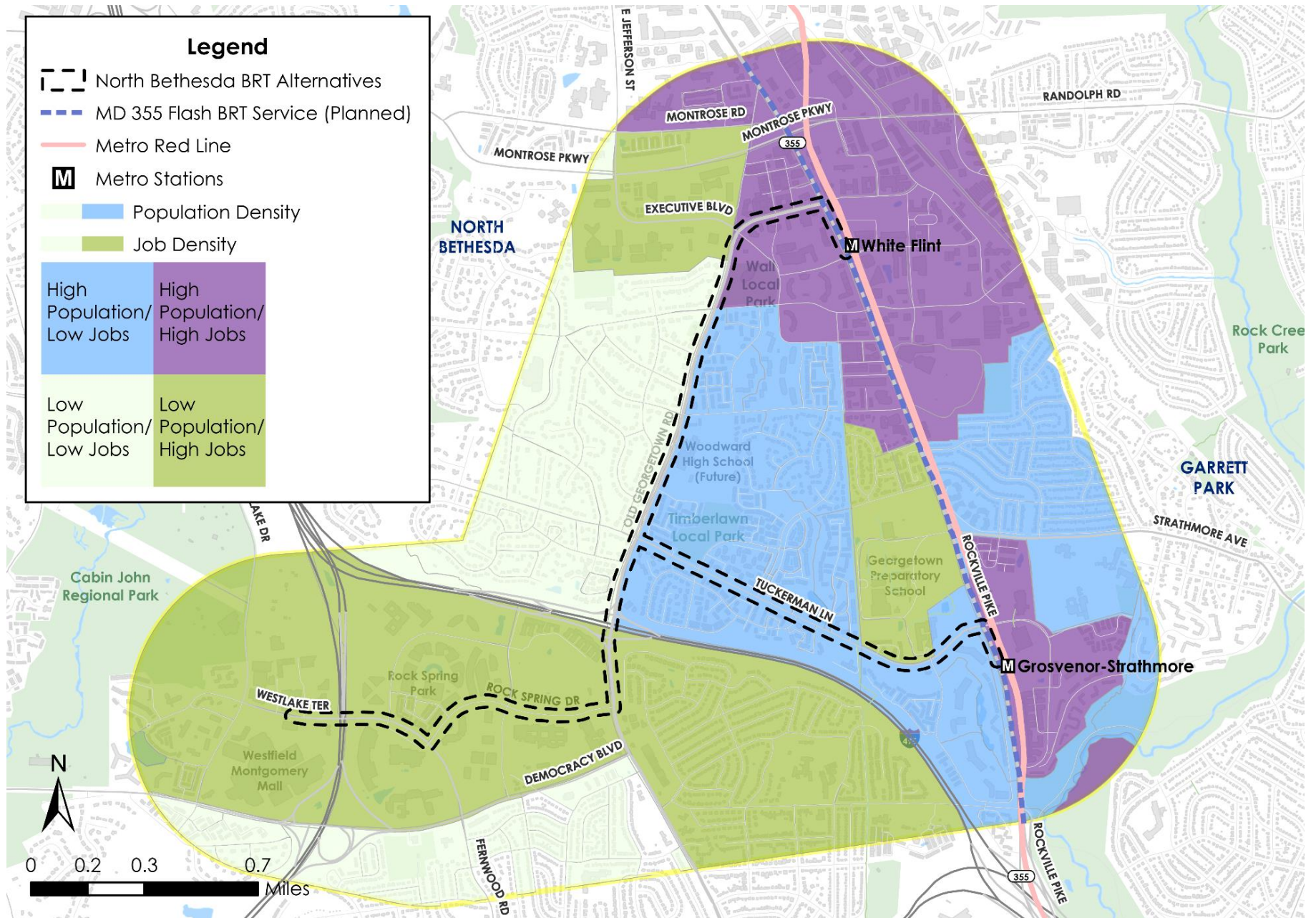
Figure 13: 2020 Activity Density
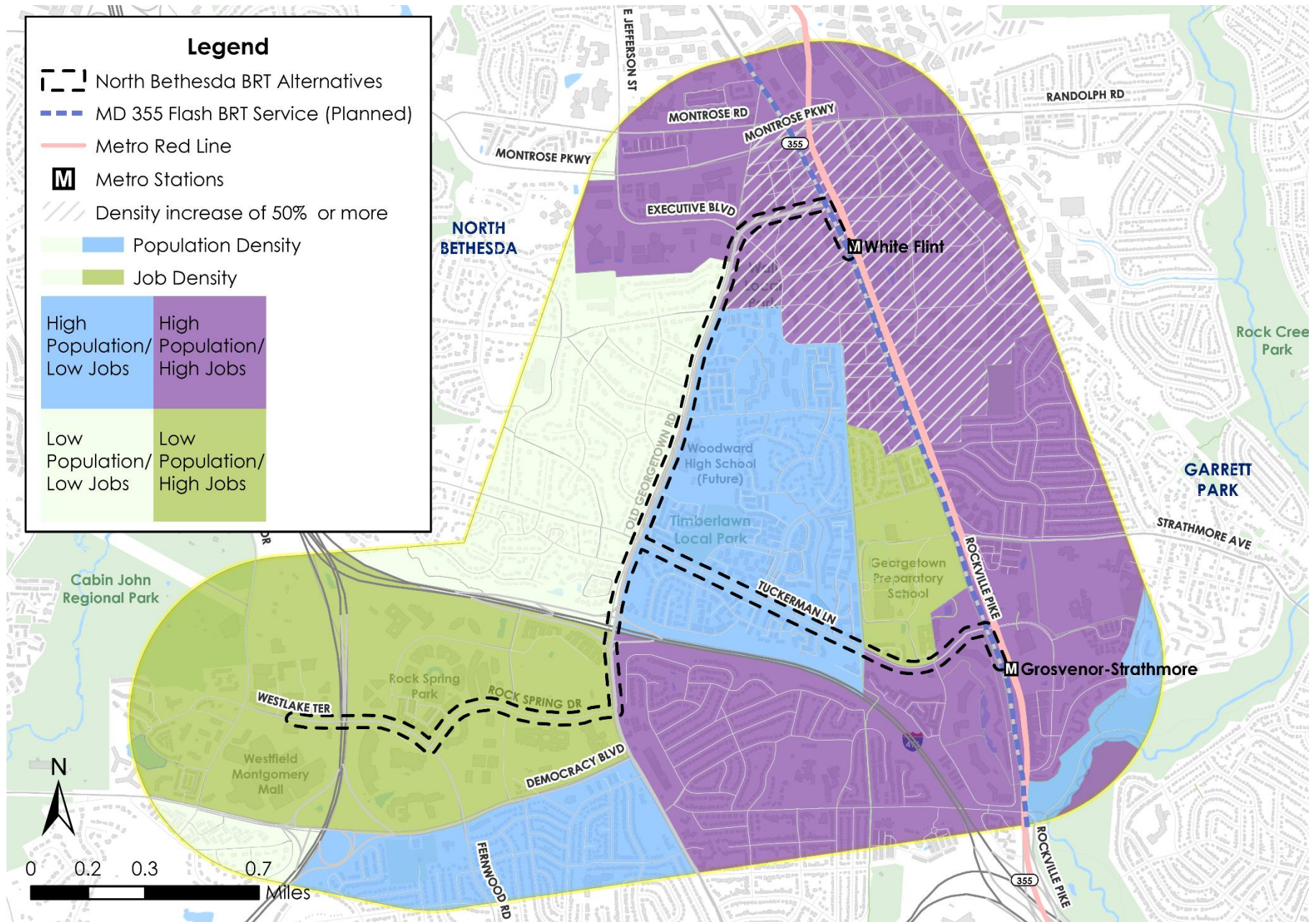
Figure 14: 2030 Activity Density
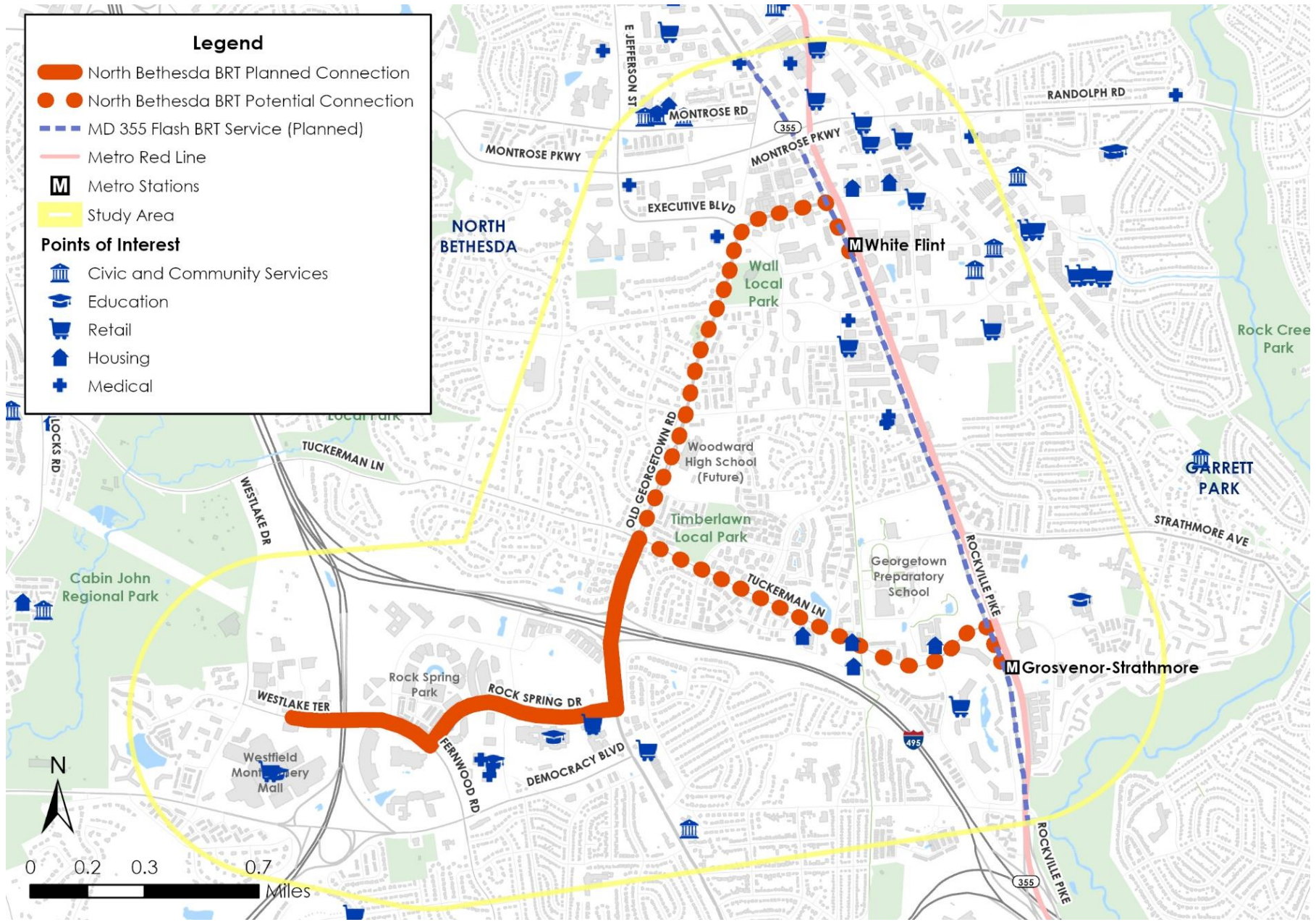
Figure 15: 2022 Points of Interest within the Study Area

5.2   TRAVEL BEHAVIOR

5.2.1   TRAVEL TRENDS FOR WORK TRIPS

To understand work travel behavior in the study area, work trip travel trend analyses were conducted using 2019 census data from the *United States Census Bureau's* On the Map tool[7]. The analysis included all census block groups that overlap with the study area. An inflow/outflow analysis shows that, of North Bethesda residents, 23,000 (88 percent) of workers commute outside of the study area where only 3,000 (12 percent) both live and work in North Bethesda. Many of those who work in the study area, 66,000 of the 69,000 (96 percent), commute from outside places. Given the large proportion of work trips in and out of the study area that go beyond the extents of the planned North Bethesda Transitway, strong connections to the regional transit network will contribute to the Transitways success.

In the study area, there is a wide range of employment sectors, as shown in **Figure 16**, and demonstrated through the high percentage of *Other Fields* which is the cumulative total of other fields of employment that rank below the single sectors shown.

Public Administration is the highest employment sector in the study area. This sector is comprised of federal, state, and local government agencies.

Professional, Scientific, and Technical Services include legal fields, accounting, engineering and design services, consulting services, and other areas that require a high degree of expertise and training.

Health Care and Social Assistance which includes any sort of health practitioner, hospitals and other care centers, diagnostic laboratories, individual and family services, and other health care facilities and services, is the third highest individual employment sector.

Figure 17 and **Figure 18** show the zip codes where workers live and where residents work respectively and highlights the existing transit connections between those key locations.
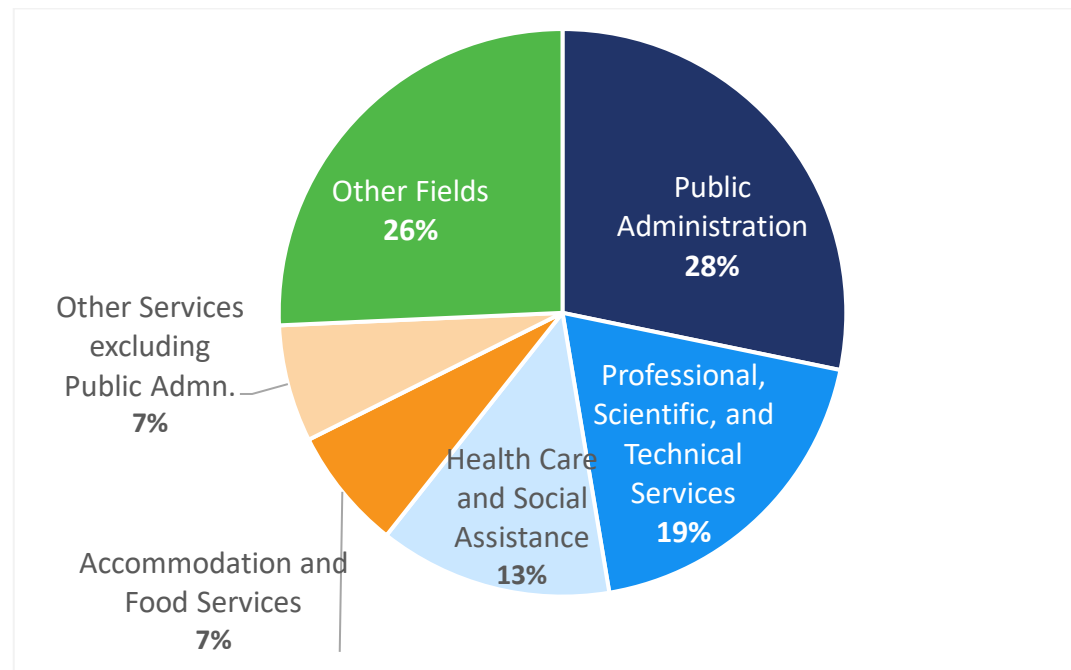
Figure 16: Top Employment Sectors in Study Area

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[7] This tool pulls data from several different sources, including Unemployment Insurance Wage Records maintained by each state, Census Bureau source data from state and federal agencies, and the Quarterly Census for Employment and Wages. The Office of Personnel Management provides employment information for most federal employees with a few exceptions. 2019 data was utilized for this study and is the most recent data in the tool. Click here for more information.
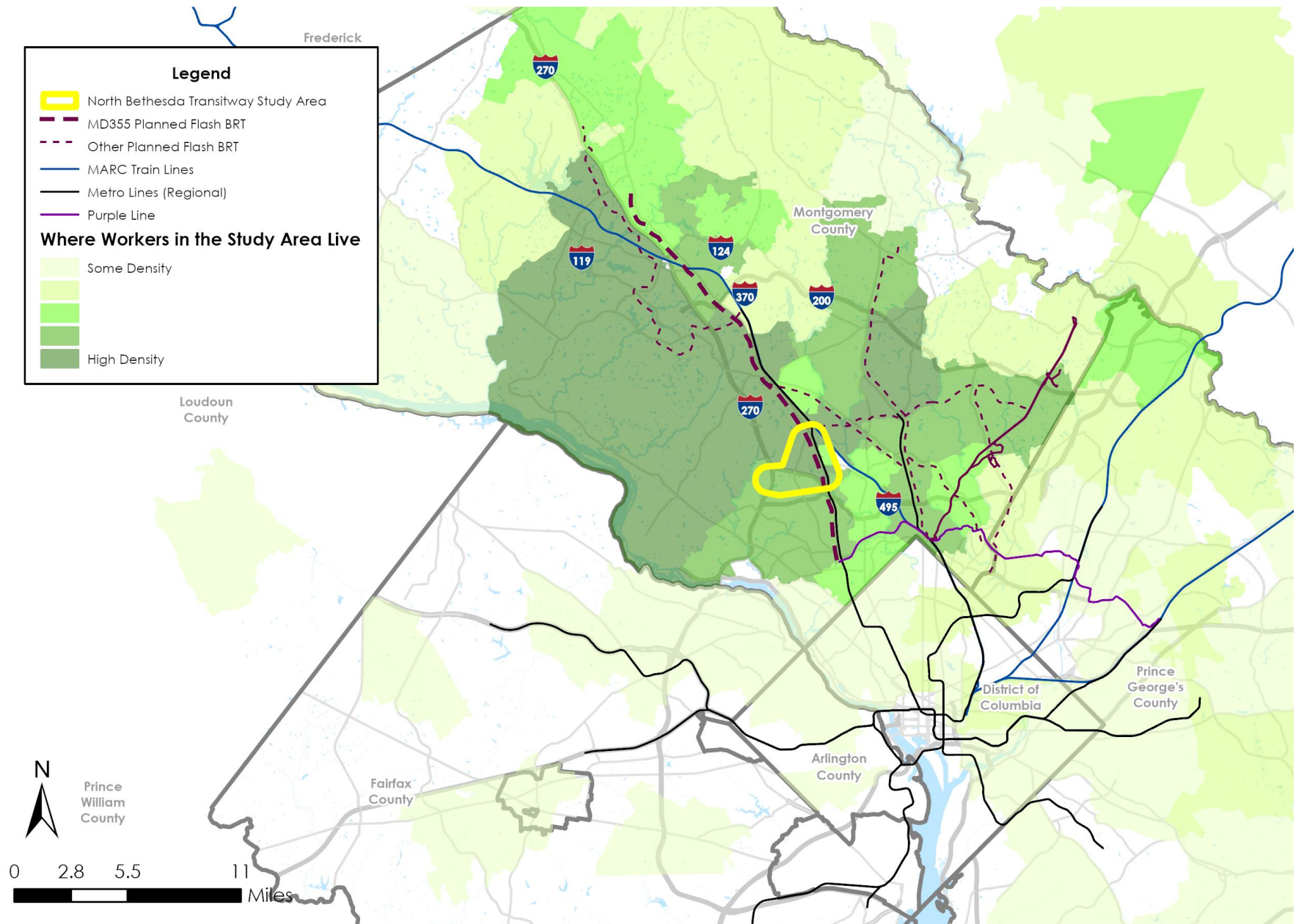
Figure 17: Place of Residence for Study Area Employees by Zip Code

Legend

North Bethesda Transitway Study Area

MD355 Planned Flash BRT

Other Planned Flash BRT

MARC Train Lines

Metro Lines (Regional)

Purple Line

Where Residents of the Study Area Work

Some Density

High Density
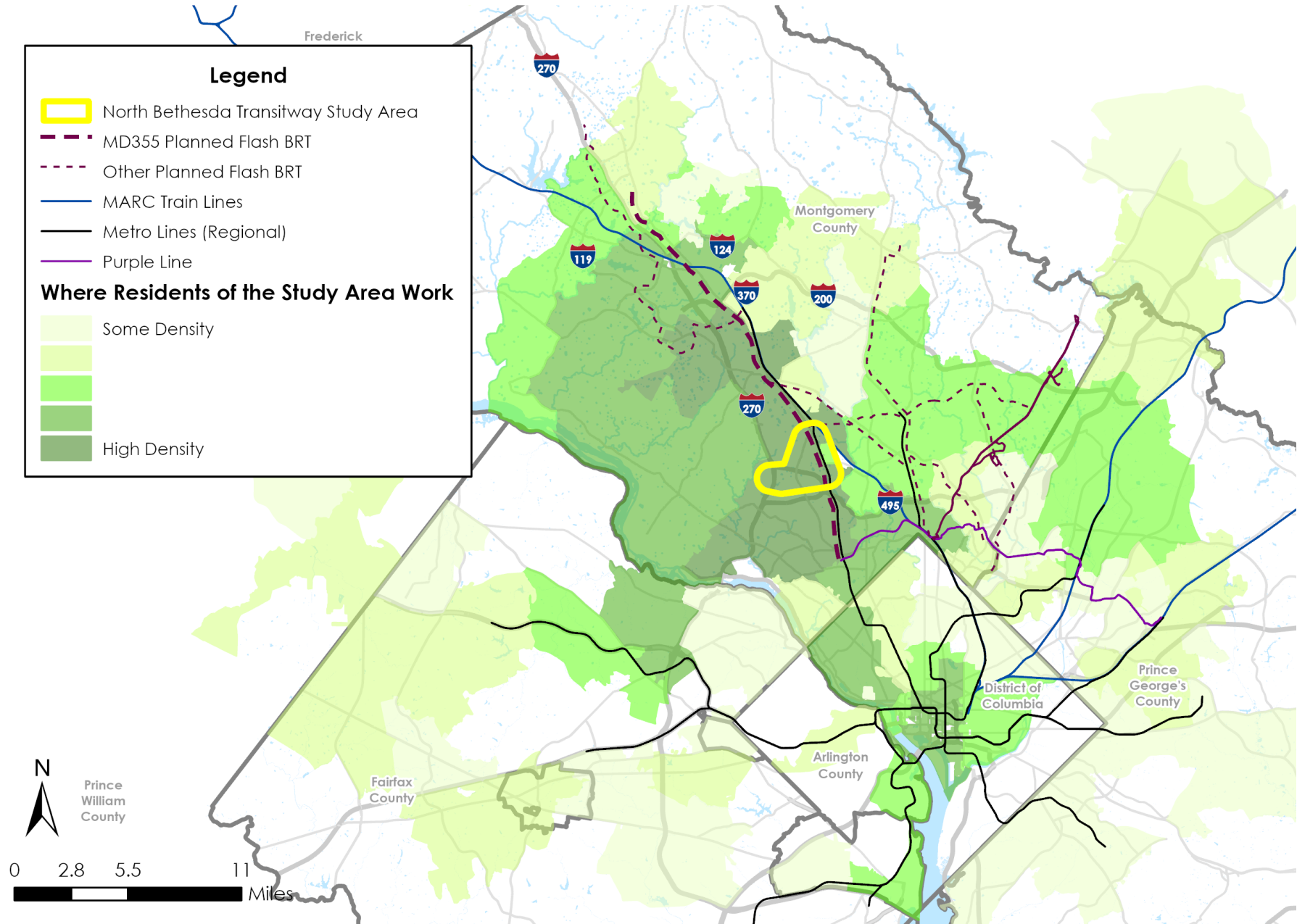
Figure 18: Places of Employment for Study Area Residents by Zip Code

5.2.1.1   Commuter Mode Share

Commuting comprises a significant proportion of all trips taken in a given area. **Figure 19** shows the commute mode share for the study area. Compared with surrounding jurisdictions, residents within the study area are less likely to drive alone and more likely to take transit, except when compared with Washington, DC. Walking and carpooling is relatively equal between all jurisdictions.
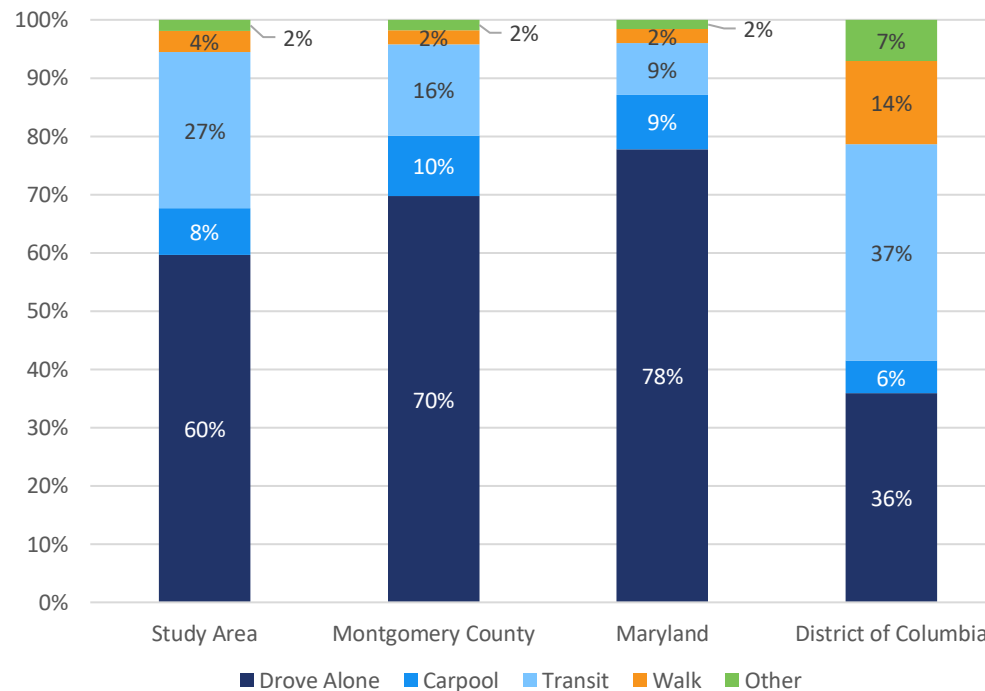
Figure 19: 2019 Commute Mode Choice Comparison

5.2.1.2   Employment Destination Propensity

Figure 20 shows the employment destination propensity for the study area. This index combines ACS and LEHD datasets to illustrate areas where jobs in all sectors are concentrated and highlights the destinations commuters are likely to go. This index includes measures for both the total number of jobs and job density. Areas with high employment destination propensity are likely to attract transit users who travel for work purposes. Similar to the transit origin indexes presented in **Figure 11**, the Employment Destination Propensity aggregates Census tract level results down to the Census block group level.

The northern and western ends of the study area have the highest employment destination propensity, especially in areas around the White Flint Metrorail station, east of the Rockville Pike and southwest of the White Flint Metrorail station, west of the Rockville Pike. The areas surrounding Montgomery Mall and Rock Spring Park also have high propensity. The remainder of the study area, including the area around Grosvenor-Strathmore Metrorail station have low propensity. In general, these higher propensity areas align with the areas with a high density of points of interest, as shown in **Figure 20.**
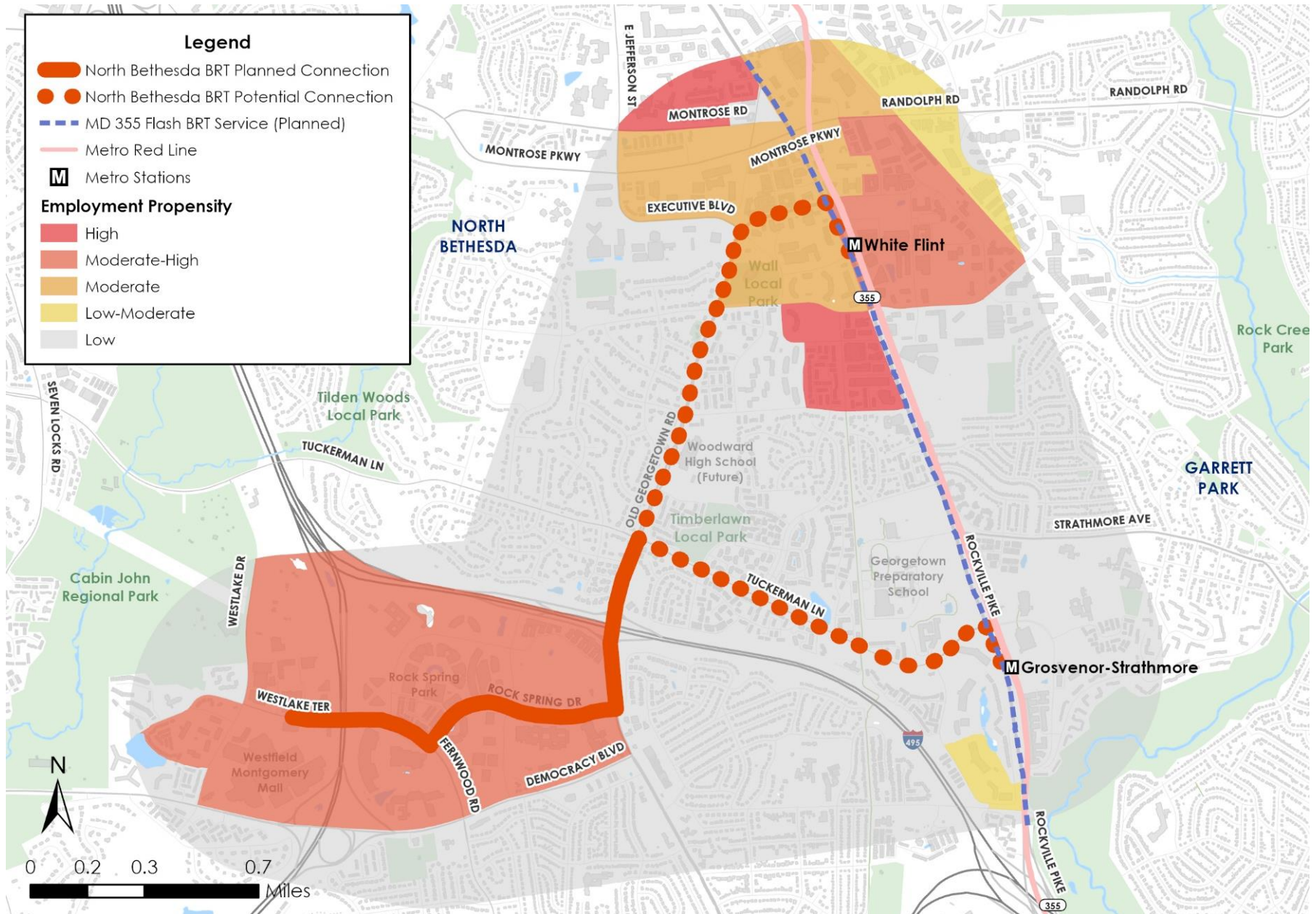
Figure 20: Employment Destination Propensity

5.2.2   TRAVEL TRENDS FOR ALL TRIP TYPES

It is important to understand high-level trends related to why people are traveling to, from, and through the project study area, and where they are traveling to and from. This information on the patterns of movement within and around the study area sheds light on existing and future transportation needs.

The following figures on trip purpose, mode share, origins, and destinations were generated using the Replica analysis platform. This platform utilizes a diverse set of third-party data from public and private-sector sources. Replica outputs are generated using a composite of these various data sources. Categories of data leveraged in this platform include mobile location data, consumer resident data, land use/real estate data, credit transaction data, and ground truth data. Replica also generates a statistically representative synthetic population using samples of census demographic data including: Public Use Microdata samples, American Census Survey (ACS), Census Transportation Planning Products Program (CTPP), and Longitudinal Employer-Household Dynamics (LEHD) data. Note that the following content for this section was estimated using data from January 2020 through the end of February 2020 (pre-COVID-19) and simply serves as an estimate for a synthetic population that is statistically representative of the true population.

5.2.2.1   Trip Purpose for All Trip Types

Figure 21 shows the estimated distribution of trip purpose for all trips originating, ending, and passing through the analysis study area on an average weekday between January 2020 and the end of February 2020.

"Home" was the most common trip purpose for trips originating in and passing through the study area. However, the most common trip purpose for trips ending in the study area was "Work," followed closely by "Shopping" and "Home." These estimated findings indicate that employment is likely the primary draw for people traveling to the study area, and that most people employed in the study area likely live elsewhere. In fact, there are roughly twice the number of work trips ending in the study area rather than originating in the study area, and vice versa for home trips. These findings are corroborated by the findings presented on work trips travel trends in **Section 5.2.1**. This estimated trip purpose data also shows that there is a much greater volume of through trips in the study area (consisting primarily of home and work trips) than trips starting or ending in the study area. This is likely due to the I-495 and the I-270 spur passing through the study area, and these trips are unlikely to impact nor be impacted by the proposed BRT.

5.2.2.2   Mode Choice for All Trip Types

Figure 22 shows the estimated mode share (by number of trips) for all trips originating, ending, and passing through the analysis study area on an average weekday between January 2020 to the end of February 2020. To estimate mode share of the synthetic population, Replica utilizes a mode choice model that accounts for the state of the transportation network, available transit options, multiple driving routes, congestion, and travel itinerary interactions to simulate movement. If multiple modes are utilized to complete a trip, the primary mode is selected through a simple ranking system. For clarity, "private auto" refers to trips made by drivers in private auto vehicles, whereas "auto passenger" refers to trips made by passengers in private auto vehicles.

The mode share for trips originating and ending in the study area mirror one another closely, while mode share for all trips passing through the study area significantly differs. Nearly all trips passing through the study area are estimated to be by private auto and auto passenger. However, private auto and auto passenger modes are estimated to make up just two-thirds of the mode share for trips originating and ending in the study area, with walking as the second most common mode choice. Transit is estimated to be one of the modes used most infrequently for trips originating and ending in the study area, and almost never used for trips passing through the study area. The North Bethesda Transitway may provide an opportunity for a partial mode shift from auto passenger and private auto to transit for trips starting or ending in the study area, especially given the planned connection to the metro red line and MD 355 Flash BRT service along Rockville Pike. The mode split of non-work trips on public transit is significantly lower than work trips
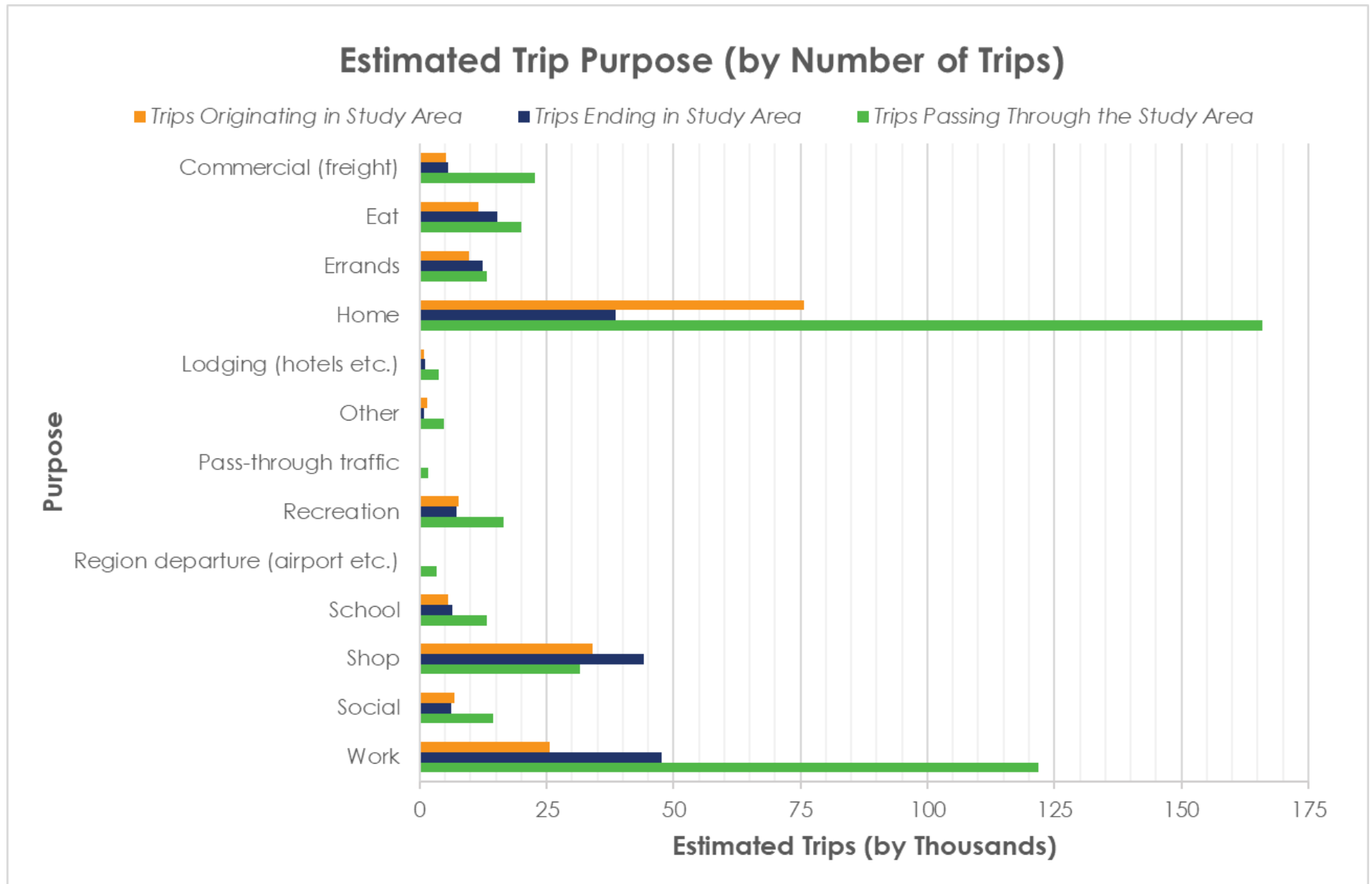
Figure 21. Estimated Trip Purpose for Trips Originating, Ending, and Passing Through the Study Area on an Average Weekday from January 2020 through February 2020
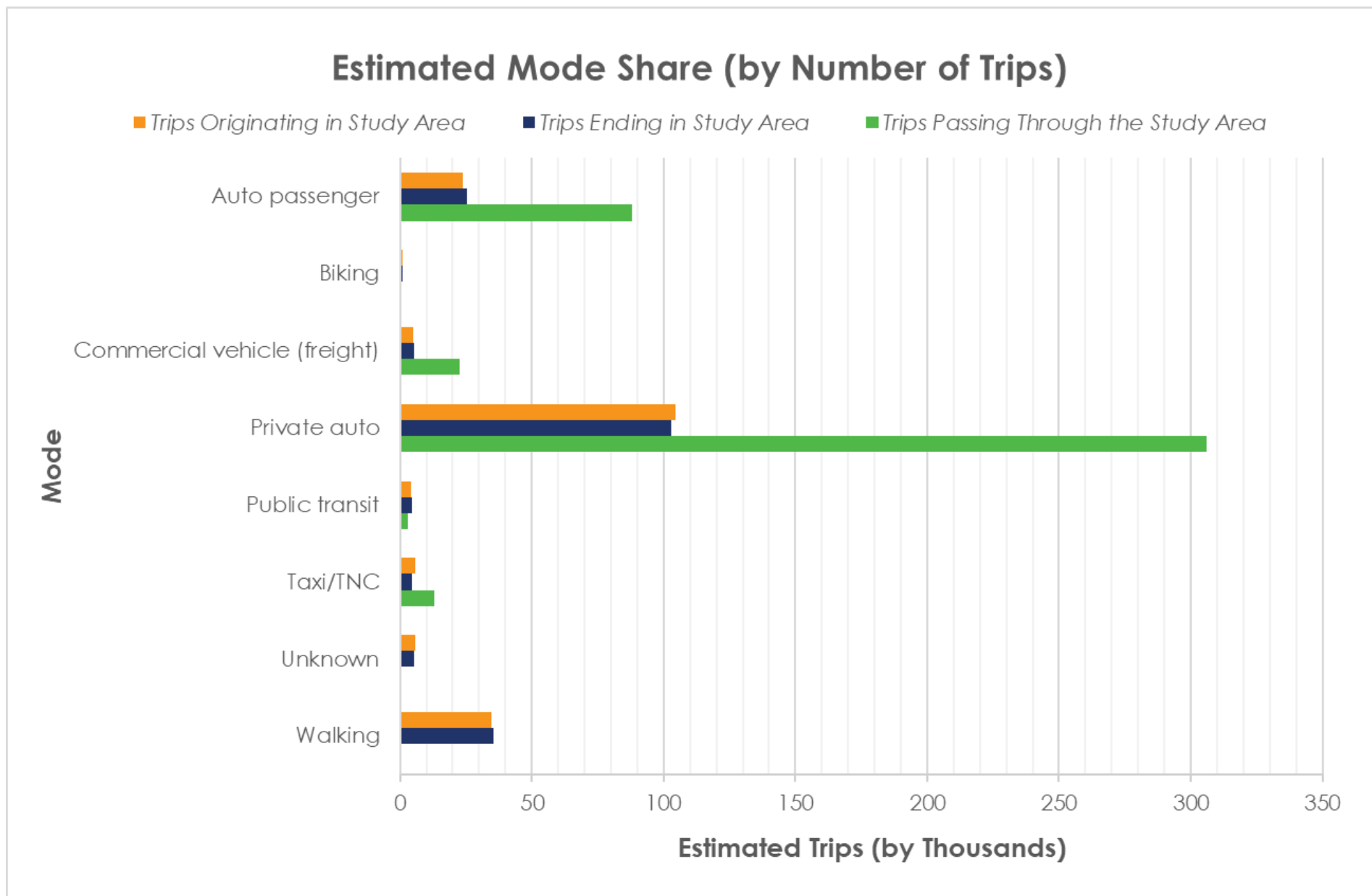
Figure 22. Estimated Mode Share for Trips Originating, Ending, and Passing Through the Study Area on an Average Weekday from January 2020 through February 2020

5.2.2.3 Origins and Destinations for All Trip Types

One of the previous sections captures information related to movement in and out of the study area due to work trips. This section discusses similar trends of travel and movement in and out of the study area for all trips, not just work trips. **Figure 23** shows the distribution of all trips in ending in Montgomery County on an average weekday between January 2020 and the end of February 2020. This figure demonstrates that North Bethesda is one of the most highly traveled to destinations in the county.
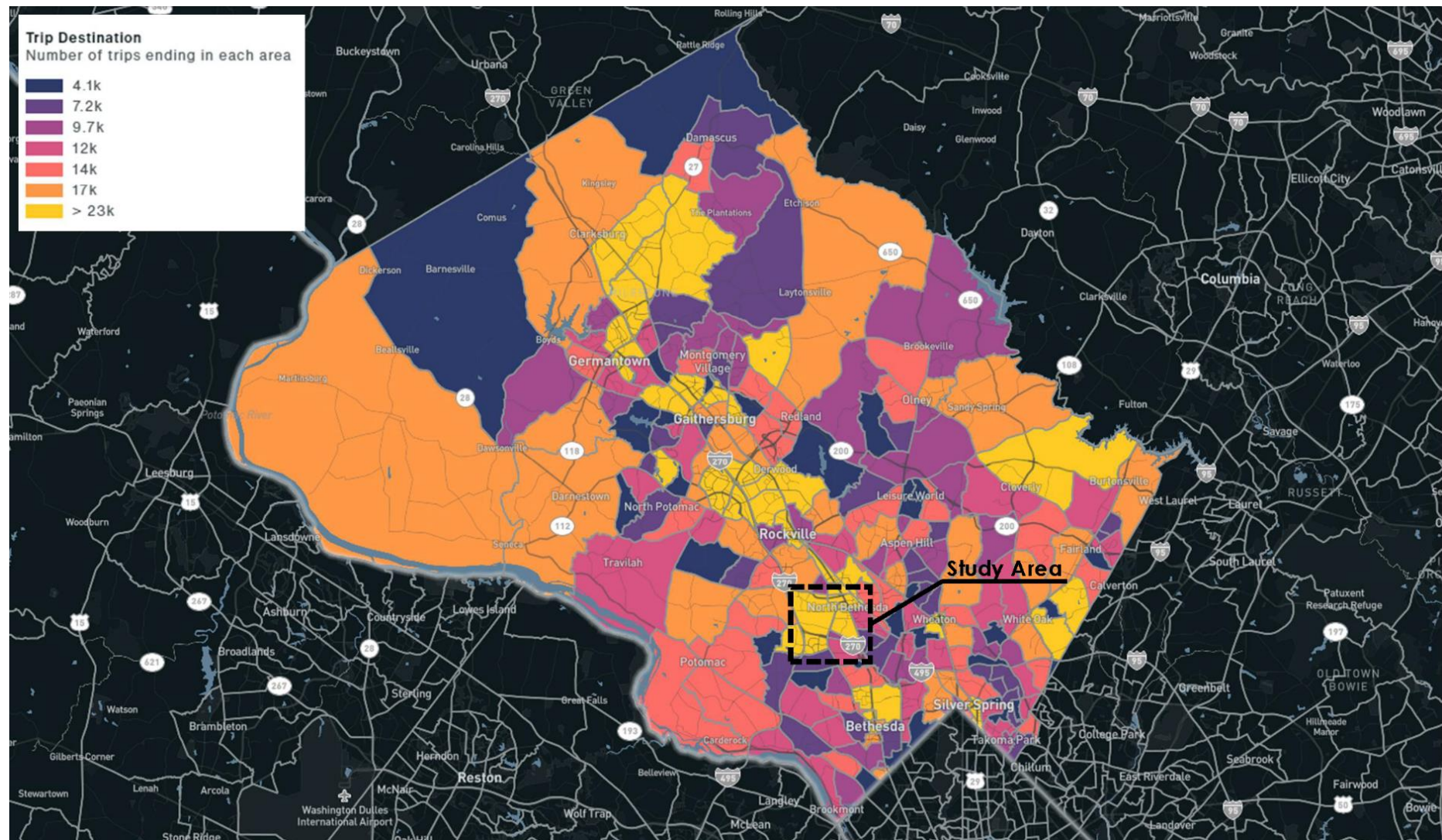
Figure 23. Total Trips Ending in Montgomery County on an Average Weekday from January 2020 through February 2020

Figure 24 and Figure 25 visually capture where people are traveling to if trips originate in the study area, and where people are coming from if trips end in the study area. Both figures demonstrate that trips to and from the study area largely originate or end in a concentrated area in or around North Bethesda. Therefore, most trips starting or ending in the study area are likely contained within the North Bethesda area. Notably, key study area origins and destinations that are located outside of the North Bethesda area appear to be approximately located in Silver Spring, Capitol Hill in Washington, DC, White Oak, and between Rockville and Gaithersburg. This aligns with the findings in **Section 5.2.2.1** that identified work locations for study area residents, and home locations for study area employees. This analysis shows significantly more shorter trips when you factor in the non-work trips.
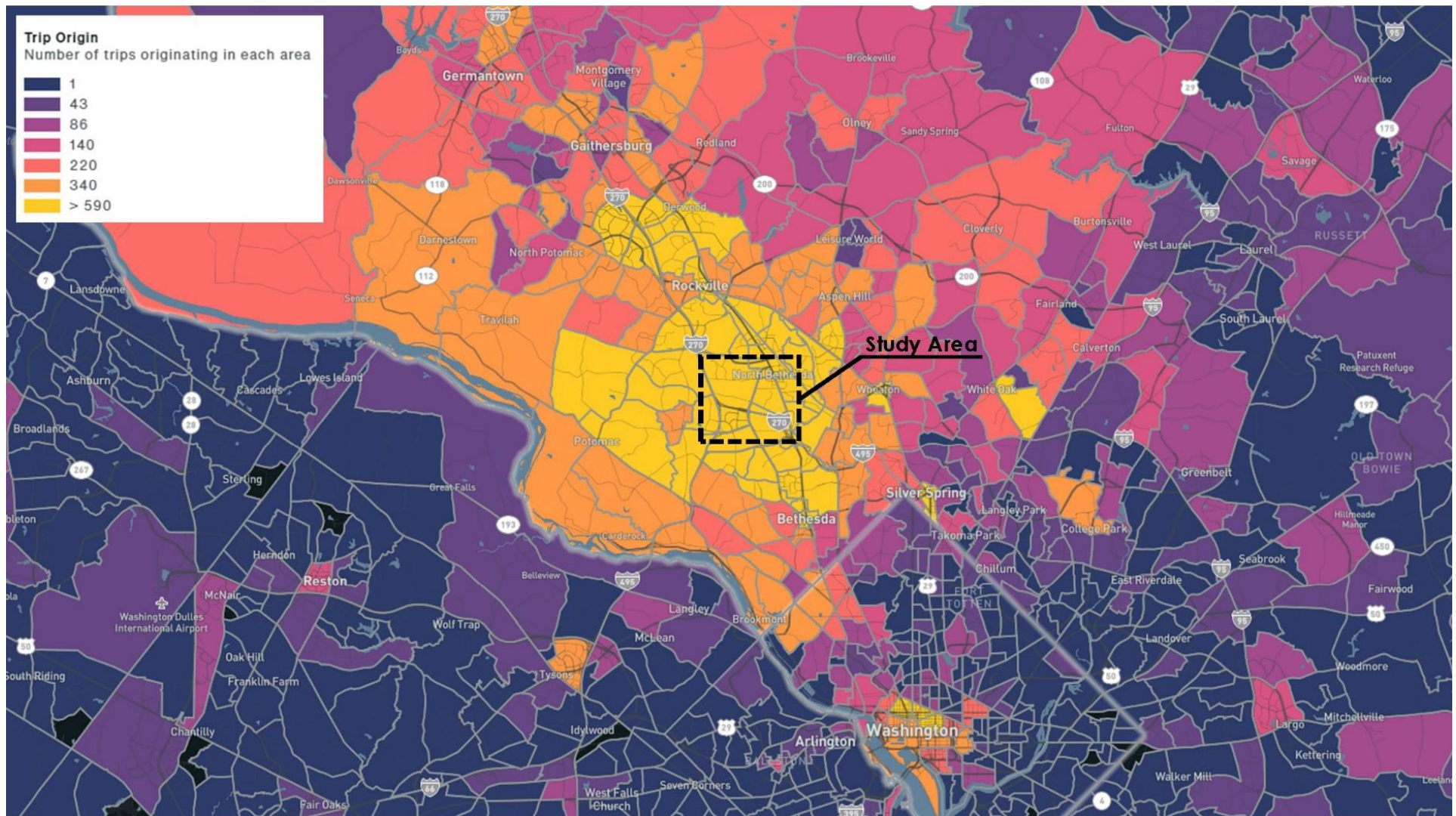
Figure 24. Estimated Origins of Trips Ending in the Study Area on an Average Weekday from January 2020 through February 2020
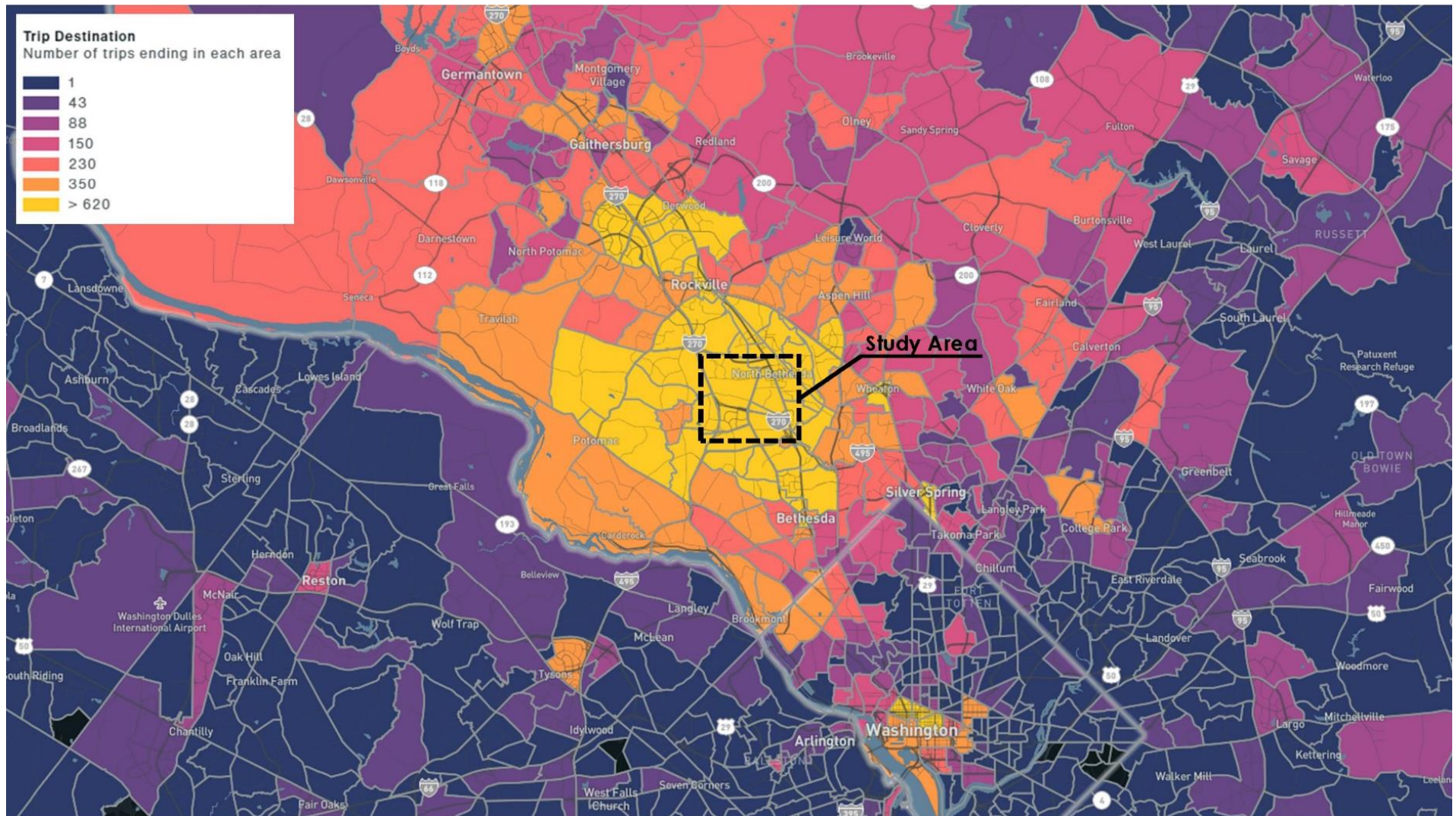
Figure 25. Estimated Destinations of Trips Originating in the Study Area on an Average Weekday from January 2020 through February 2020

5.2.2.4   COVID-19 Travel Trends for All Trip Types

The following figures, **Figure 26** and **Figure 27**, show the estimated travel trends for all trips in the study area from the end of January 2020 to the end of January 2022. Trip volumes in the study area significantly dropped due to COVID-19 in March 2020. Since then, trip volumes have returned to and slightly exceeded pre-COVID-19 trip volumes before slightly dropping in December and January of 2020, likely due to the Omicron COVID-19 variant.

Figure 26. Total Trips in the Study Area from January 2020 to January 2022

With regards to mode choice, private auto and auto passenger modes far exceed any other mode choice for trips in the study area, according to Replica data. Transit use fell to nearly zero in March 2020 and has only recovered to about half of what pre-pandemic trip volumes were, despite private auto trips recovering to exceed pre-pandemic trip volumes. A remaining hesitancy to use transit due to COVID-19 safety concerns may impact potential ridership by hindering willingness to utilize the North Bethesda Transitway.
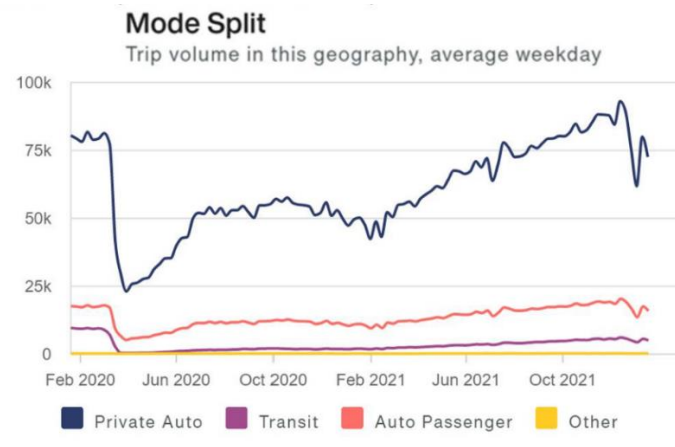
Figure 27. Mode Split in the Study Area from January 2020 to January 2022

6 EXISTING CONDITIONS AND PLANNED IMPROVEMENTS

In addition to the demographic and employment trends highlighted in **Section 5**, the current land uses, street network, and modal connectivity in the study area come together to form the corridor foundations that the North Bethesda bus rapid transit (BRT) will be integrated with. The County has concurrent plans to transform and improve many of these corridor components in the future. This study takes into consideration both existing conditions and the planned future developments to advance a well-integrated transitway that is appropriate and feasible within the context of the North Bethesda study area.

6.1 LAND USE AND DEVELOPMENT

The following section includes an overview of the adopted master plans, pipeline developments, and zoning designations in the study area.

6.1.1 MASTER PLANS AND PIPELINE DEVELOPMENT

Adopted master plans and pipeline developments that are located in and adjacent to the project study area are shown in **Figure 28**. Overall, there are five adopted master plans that fall in the study area. The three plans that have been added since the 2013 master plan are summarized below.

- *Grosvenor-Strathmore Metro Area Minor Master Plan*: The Grosvenor-Strathmore Metro Area Minor Master Plan was written in 2017 with the goal of increasing transit-oriented development. Additional recommendations in the plan include strategies to improve pedestrian linkages throughout the area, enhance visibility and connectivity to the Strathmore Music Center, and create a shared identity for this community through public space and art.

  Relevance to the North Bethesda Transitway:

  The plan considered alignments of both the MD 355 South (Corridor 4) and the North Bethesda Transitway (Corridor 6) routes when prioritizing development in the plan area.

- *2018 White Flint 2 Sector Plan:* The White Flint 2 Sector Plan will link common elements between other plan areas. This includes Rockville Pike and the proposed network of bike lanes. The plan addresses challenges and outlines strategies for improving transportation networks such as transforming Rockville Pike into a tree-lined boulevard; integrating land uses with a proposed Maryland Area Regional Commuter (MARC) station; and encouraging mixed-use, walkable developments.

Relevance to the North Bethesda Transitway:

The plan recommends construction of a second White Flint Metro station entrance on the southeast corner of the intersection of Rockville Pike and Old Georgetown Road. It also supports the implementation of a circulator or shuttle to provide local service for residents and businesses in the plan area and adjacent planning areas, including the White Flint Metro station.

Included in the plan is a rendering of Route 355 where the dedicated transitway runs in the center of the roadway and two cycle tracks are included within right-of-way (ROW).
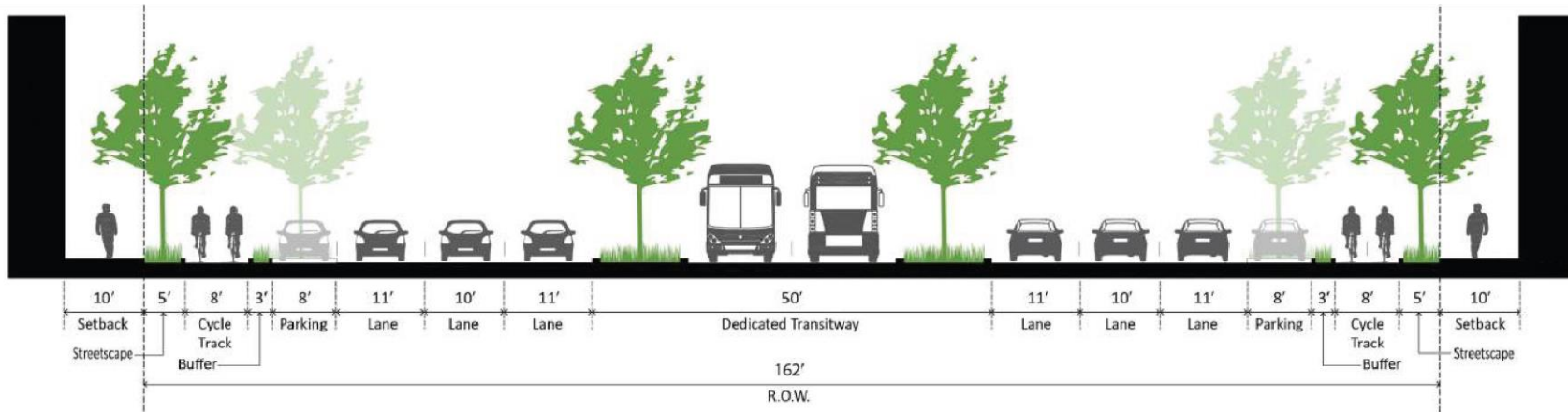
Source: 2018 White Flint 2 Sector Plan, Page 81

Reimagining Rock Spring: Office space in Rock Spring Park contributes to 7 percent of all countywide office space and 48 percent of office space in North Bethesda. The Rock Spring Sector Plan, adopted in 2017, recognizes the challenges of a typical suburban office park and examines opportunities for enhancements and improvements. The plan considers linkages to the North Bethesda BRT transitway along a central spine to transform the automotive-oriented street network into a more multi-modal one.

Relevance to the North Bethesda Transitway:

The Rock Spring Sector plan outlines that much of the right-of way for the transitway has been reserved through easements and dedications. The rendering of the central spine/Fernwood Road includes a two-lane transitway easement and a separated cycle track. This aligns with the 2013 Corridor Master Plan which calls for two dedicated lanes for the BRT.
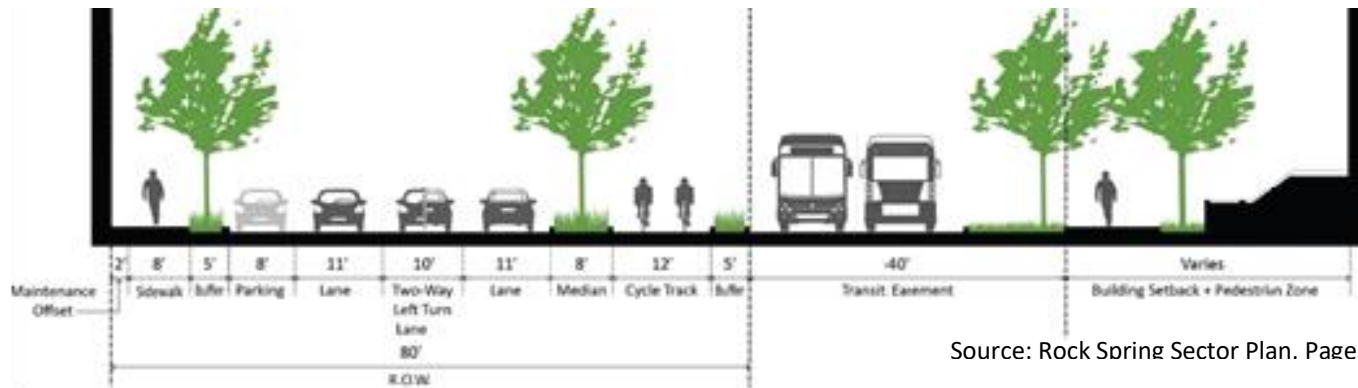
Source: Rock Spring Sector Plan, Page 70
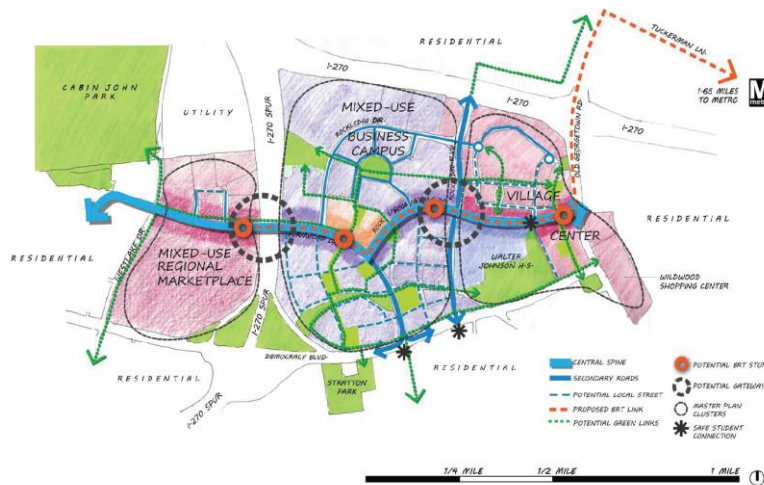
The corridor concept diagram in the sector plan demonstrates how the proposed transit nodes will concentrate activity and thread together the east and west sides of Rock Spring. The concept includes potential local streets, not yet outlined in the Master Plan of Highways, and green links throughout the area. As stated in the Sector Plan, "These proposed developments will bring a mix of uses and improvements to the public realm that will start to reshape the Plan area into a connected, cohesive community that is more pedestrian and bicycle friendly for employees, residents, students, and visitors."

Source: Rock Spring Sector Plan, Page 18

Various pipeline developments fall within the five master plan boundaries, but 10 key developments along the proposed transitway corridor are shown in **Figure 28** and detailed in **Table 6.1**. Key pipeline developments were selected by identifying all developments with more than 100,000 approved gross floor area (GFA) located in the five approved master plans in the study area, except for Development #11 which was called out due to apparent existing building footprint. It should be noted that the approved pipeline developments represent an inventory of approved, but unbuilt development projects for dwelling units and non-residential buildings. These plans and developments are important to identify to capture key changes that may impact activity along the corridor or at the termini in the future.
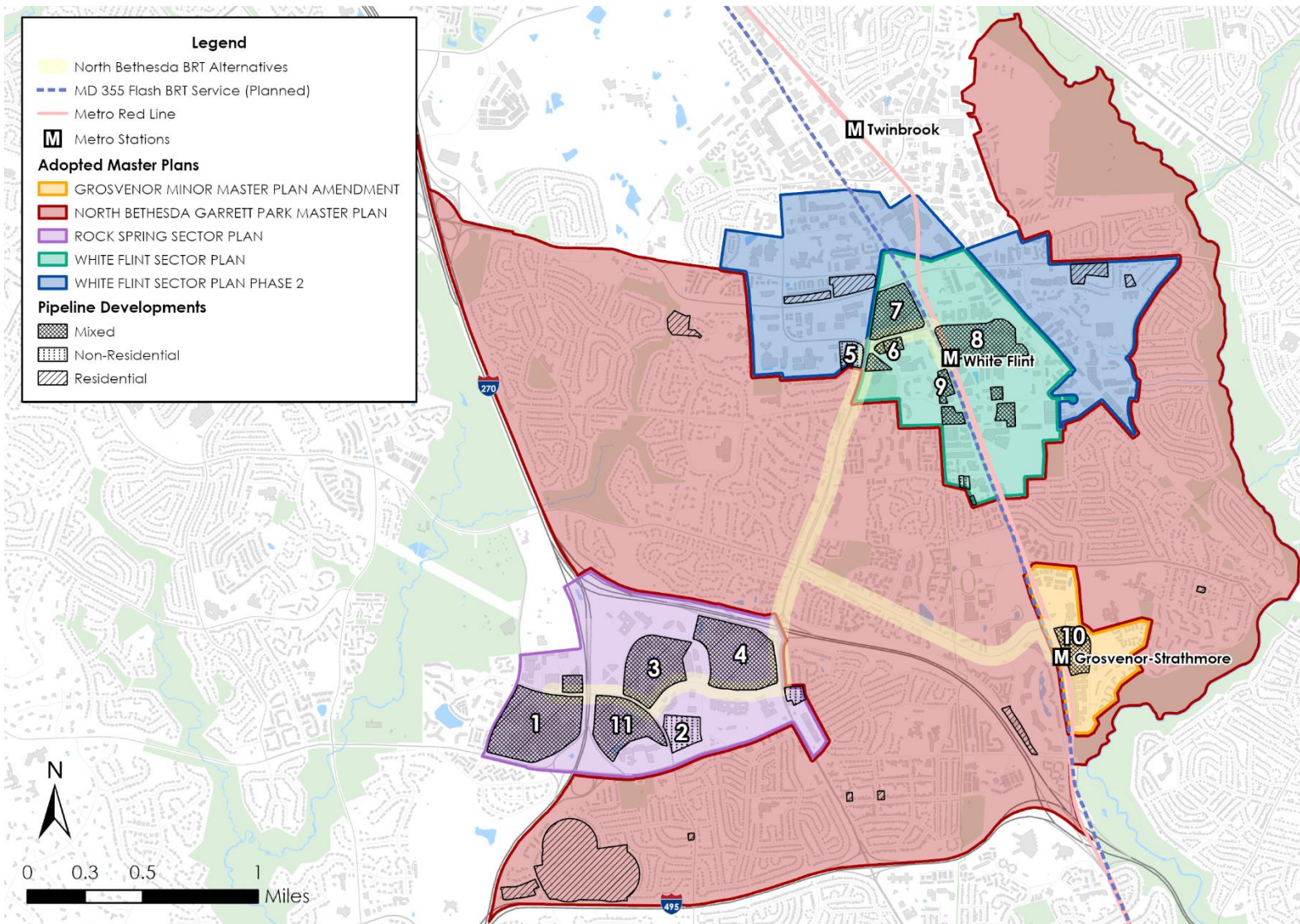
Figure 28. Master Plans and Pipeline Developments in the Study Area

ID	Development Name	Development Type	Adjacent Transitway Terminus	Submission Date	Approved GFA	Approved Units	Total Jobs
1	Westfield Montgomery Mall	Mixed	Western Terminus	12/4/2018	2,063,302	717	740
2	Rock Spring Park	Non-Residential	Western Terminus	3/4/2019	463,651	0	477
3	Rock Spring Park	Mixed	Western Terminus	5/11/1998	1,572,983	168	1,704
4	Rock Spring Center	Mixed	Western Terminus	5/8/1998	1,079,900	1,250	3,305
5	Washington Science Center	Non-Residential	White Flint Terminus	4/22/2015	141,429	0	57
6	VOB Development	Mixed	White Flint Terminus	1/15/2019	110,169	1,000	188
7	Mid Pike Plaza	Mixed	White Flint Terminus	6/30/2011	1,976,246	1,405	2,748
8	North Bethesda Town Center	Mixed	White Flint Terminus	1/13/2004	1,430,037	1,350	4,135
9	Saul Centers White Flint West	Mixed	White Flint Terminus	10/20/2015	204,000	655	683
10	Strathmore Square	Mixed	Grosvenor-Strathmore Terminus	1/11/2019	317,537	2,218	794
11*	ELP Bethesda at Rock Spring	Mixed	Western Terminus	10/7/2020	5,560	1,300	13
Rounded Total					**9,365,000**	**10,100**	**15,000**

Additional development information is outlined in the text, drawn from the Montgomery Planning document for ELP Bethesda at Rock Spring

Table 6.1. Key Pipeline Developments in the Study Area[8]

Near the western terminus, Rock Spring Park (3) and Rock Spring Center (4) mixed-use developments will collectively bring approximately 5,000 jobs to the area, with about 1-1.5 million GFA each. Both these developments were prioritized with the BRT line and proposed station locations in mind. However, even more jobs (up to approximately 7,800 jobs) will be created near the White Flint metro station eastern terminus, primarily due to the Mid Pike Plaza (7) and North Bethesda Town Center (8) mixed-use developments. There is only one forthcoming development near the Grosvenor-Strathmore eastern terminus, the mixed-use North Bethesda Town Center (10), which will generate approximately 800 jobs. Overall, pipeline developments are primarily located near the western terminus and the White Flint eastern terminus alternative.

It should be noted that ELP Bethesda at Rock Spring (11) is a developer associated with Erickson Senior Living, a senior living community that will be located at the highlighted development area 11. Some details of this development are not reflected in the inventory of pipeline developments but are outlined in Montgomery County Planning documentation. The property is currently occupied by the Marriot International headquarters, which will be relocated in the fourth quarter of 2022 to allow for development of 2,350,000 square feet for the community, including eight new buildings and one building reconstruction. About 650 full-time jobs will be generated from this development.

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[8] Montgomery County Planning Pipeline of Approved Development

6.1.2   ZONING

Figure 29 shows the zoning for the general study area. The western terminus is in a mixed-use area that consists of multi-family housing, general retail (i.e., Westfield Montgomery Mall), and commercial residential town zoning blocks. Nearby and adjacent to the transitway route are commercial residential and office blocks (i.e., Rock Spring Park). Both alignment alternatives pass through low density residential, medium density residential, and planned development areas (i.e., Woodward High School (future)).

While the White Flint metro station terminus is surrounded by commercial residential zoning blocks, the Grosvenor-Strathmore metro station terminus has more varied land uses in its adjacent area. The southern terminus alternative is surrounded by both medium density residential and multi-family zoning blocks, as well as a smaller section of commercial residential and planned development. The land use differences in the two terminus alternatives likely contribute to the variations in activity density (**Figure 13**) where White Flint has higher overall activity including population and jobs.

While not explicitly included in zoning, the presence of parking, specifically free surface parking, is an important consideration in the planning of transit service. Surface parking, when located between the roadway and building can make transit access inconvenient and discourage transit use if there is no fee for parking. Currently, plentiful free parking is present in the corridor, especially in the western portions, at Westfield Montgomery Mall and along Rock Spring Drive. This is slated to chance in the sector plan, but it should be noted that the existing conditions do not support transit access.
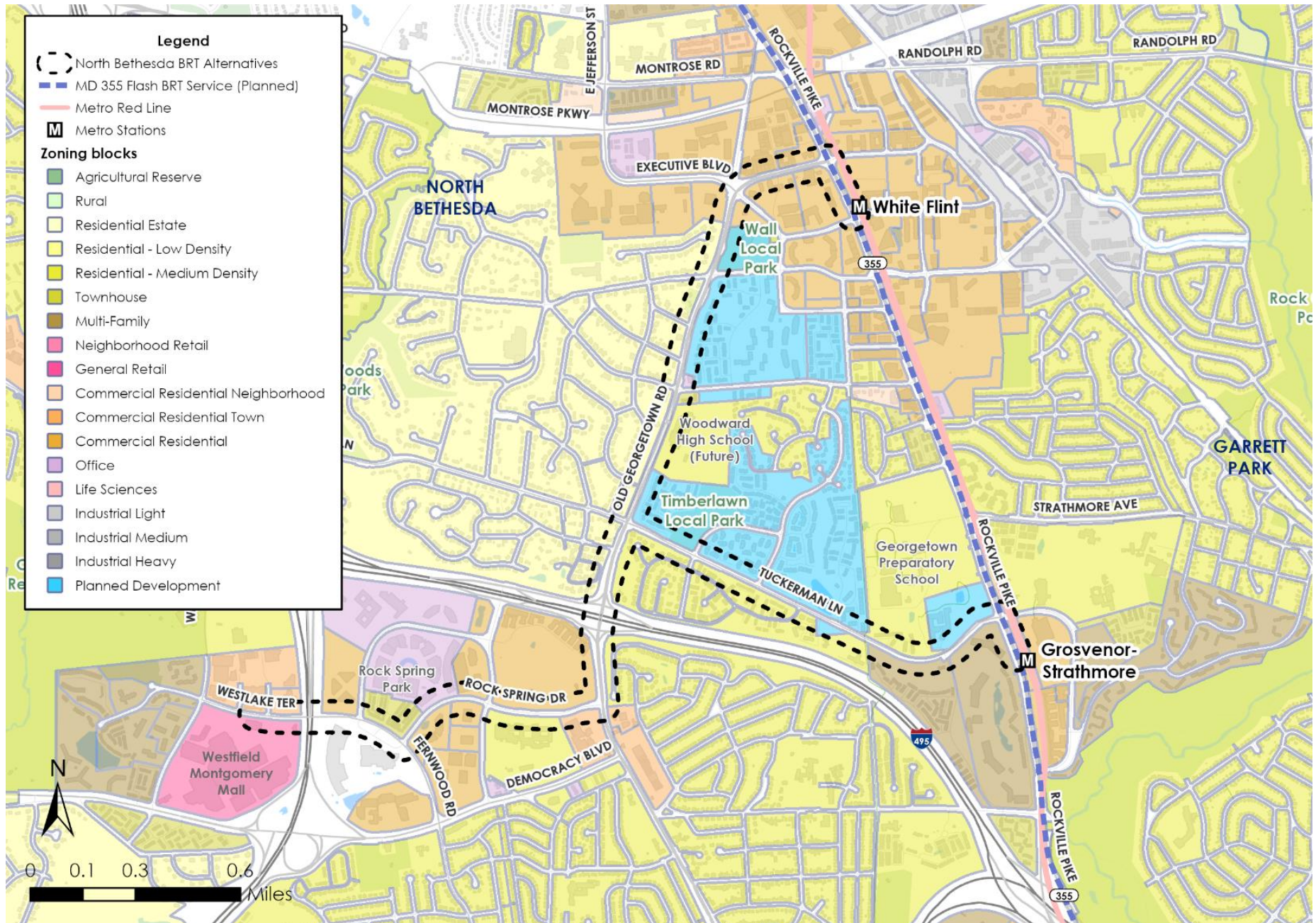
Figure 29. Zoning in the Study Area

6.2   STREET NETWORK

Montgomery County developed and approved a Master Plan of Highways that documents and classifies all of the existing and planned transportation facilities in the county. This is shown in the context of the corridor study area in **Figure 30.** The proposed North Bethesda Transitway alignment alternatives are located on an arterial, a major highway, and a business-adjacent road that all have planned BRT. In addition, the transitway interacts with another major highway with planned BRT near the two eastern termini alternatives, which is the location of the planned MD 355 Flash BRT Service along Rockville Pike. It should also be noted that there are several planned streets connecting to Old Georgetown Road and Rockville Pike (MD 355) near the White Flint Metro station terminus alternative, highlighted as "Business (Planned)" in **Figure 30**. These planned streets may have the potential to serve as transit routes in the future.

The Master Plan of Highways also outlines the minimum right-of-way planned for each road segment in Montgomery County, in addition to existing lanes and planned lanes. **Table 6.2** summarizes this information for each segment along the North Bethesda Transitway corridor. All but four of the corridor segments include at least one or two planned transitway lanes. Both the White Flint Metro station alternative and the Grosvenor-Strathmore Metro station alternative corridor segments are on median-divided roadways with 4–6 lanes that are to be retained as such. The minimum right-of-way is adequate for the planned lanes and transitway lanes, but additional acquisition of easement may be required to allow for turn lanes and stations. However, the western portion of the North Bethesda Transitway corridor (starting at Westlake Terrace and ending at Old Georgetown Road) is slated to undergo a conversion of two existing travel lanes to transitway lanes.
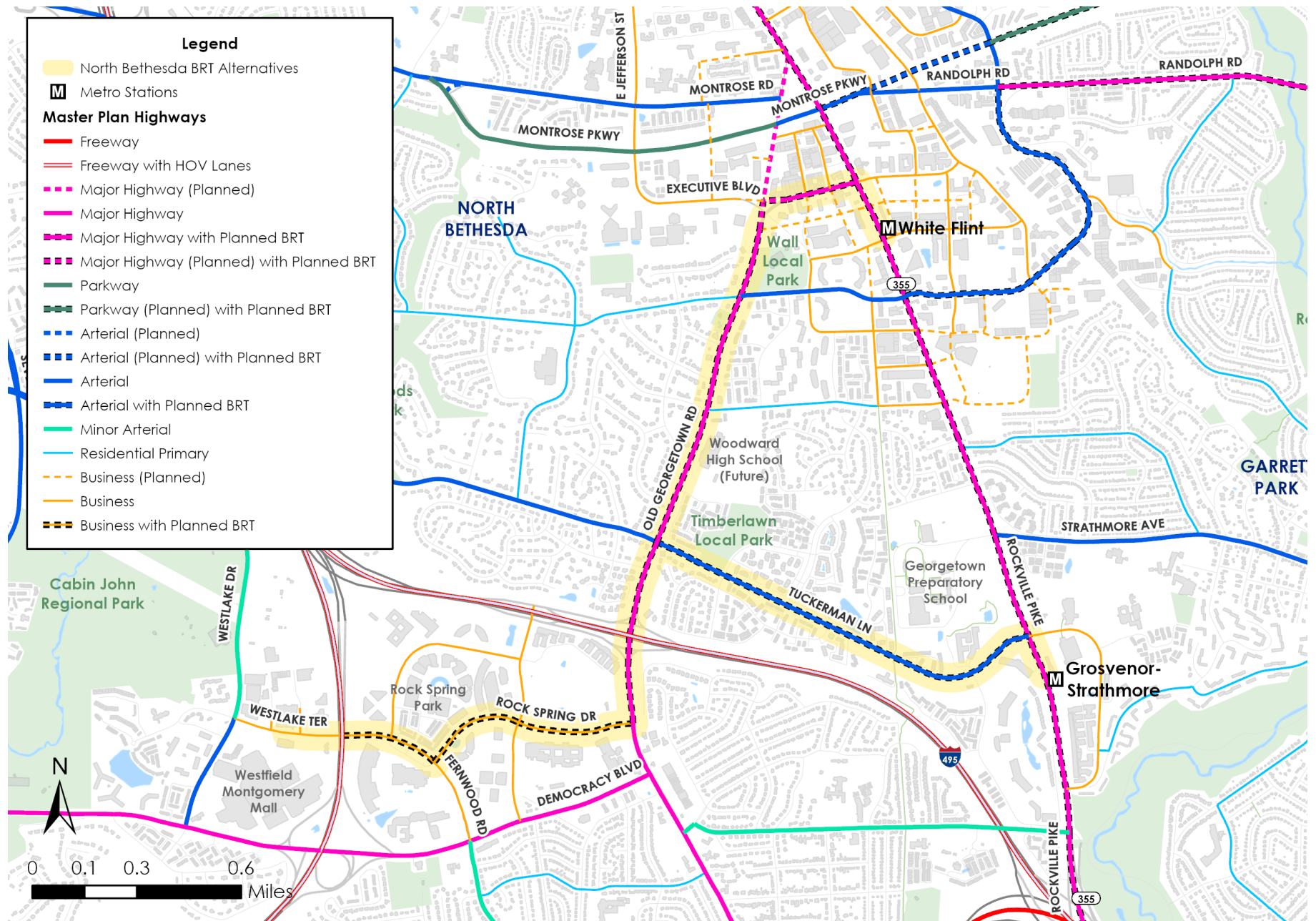
Figure 30. Master Plan of Highways

Table 6.2. Master Plan of Highways Corridor Segments Right-of-Way, Existing Lanes, and Planned Lanes

Road Segment			Master Plan ROW*	Existing Lanes	Planned Lanes
Name	From	To			
Westlake Terrace *(Western Terminus Location)*	Westlake Drive	I-270 Spur	90	4	2
	I-270 Spur	Rockledge Drive	90 + 40**	4	2 + 2T[1]
Fernwood Road	Rockledge Drive	Rock Spring Drive	80 + 40**	4	2 + 2T
Rock Spring Drive	Fernwood Road	Old Georgetown Road	80 + 40**	4	2 + 2T
Old Georgetown Road	Rock Spring Drive	I-270	150	6D[2]	6D + 2T
	I-270	Tuckerman Lane	130	6D	6D + 1T
White Flint Metro station Alternative					
Old Georgetown Road	Tuckerman Lane	Nicholson Lane	126	6D	6D + 1T
	Nicholson Lane	Market Street (Planned)	150	6D	6D + 1T
	Market Street (Planned)	Executive Boulevard	150	6D	6D + 1T
	Executive Boulevard	Rockville Pike (MD 355)	120	4D	4D
Rockville Pike (MD 355)	Old Georgetown Road	White Flint Metro station	150 (162***)	6D	6D + 2T
Grosvenor-Strathmore Metro station Alternative					
Tuckerman Lane	Old Georgetown Road	Bethesda Trolley Trail	80	4D	4D + 0T
	Bethesda Trolley Trail	Rockville Pike (MD 355)	80	4D	4D + 0T
Rockville Pike (MD 355)	Tuckerman Lane	Grosvenor-Strathmore Metro station	150 (162***)	6D	6D + 2T

Reflects minimum right-of-way outlined in the Master Plan of Highways, and may not include land needed for spot improvements (i.e., turn lanes/stations)

**Indicates additional 40-ft easement for side-running transitway*

***The Rockville Pike 150-ft right-of-way can be expanded to 162-ft (additional space can be obtained through reservation)*

[1] *T indicates a transitway lane*

[2] *D indicates a median-divided lane*

6.3   MULTIMODAL CONNECTIVITY

Pedestrian and bicycle infrastructure is a critical component in creating a holistic transportation network. In 2014, Montgomery County identified Bicycle and Pedestrian Priority Areas (BiPPA), where the enhancement of pedestrian and bicyclist traffic and safety is a priority. The objective of the BiPPA program is to improve safe bicyclist and pedestrian access to support cohesive neighborhoods and vibrant communities.

While there is a low level of comfort provided by existing bicycle and pedestrian facilities in the North Bethesda Transitway study area, by 2045, initiatives like BiPPA, walking, and biking will be a more viable option for part or all of a trip along the corridor.

6.3.1   WALKABILITY

Sidewalks along the corridor are mostly complete and connected with crosswalks at all major intersections. However, even with sidewalk infrastructure in place, there are areas near or along the corridor that are less pedestrian friendly due to narrow sidewalks and busy crossings where people must walk across multiple lanes of traffic. There are also more pedestrian welcoming segments in the study area, including the Bethesda Trolley Trail, which is more comfortable for people walking.

As shown in **Figure 31**, all three termini locations are within County Bicycle-Pedestrian Priority Areas. The Grosvenor-Strathmore area was one of the first five BiPPA areas considered for evaluations for enhanced pedestrian and bicycle facilities. **Figure 31** also shows that there is one segment on Rock Spring Drive where sidewalks are only constructed on the eastbound side of the roadway.

In the Montgomery County Pedestrian Master Plan, the County developed a Pedestrian Level of Comfort Map (PLOC). Factors to determine level of comfort include traffic speeds, number of lanes, and the presence of a buffer between a pathway and the street. According to that PLOC map, shown in **Figure 32**, much of the sidewalks along the BRT corridors are rated "undesirable" for walking, signifying a need for improved pedestrian infrastructure and design. The planned path along Old Georgetown Road and Tuckerman Lane shown in **Figure 31** may reduce the current undesirable nature of these segments.
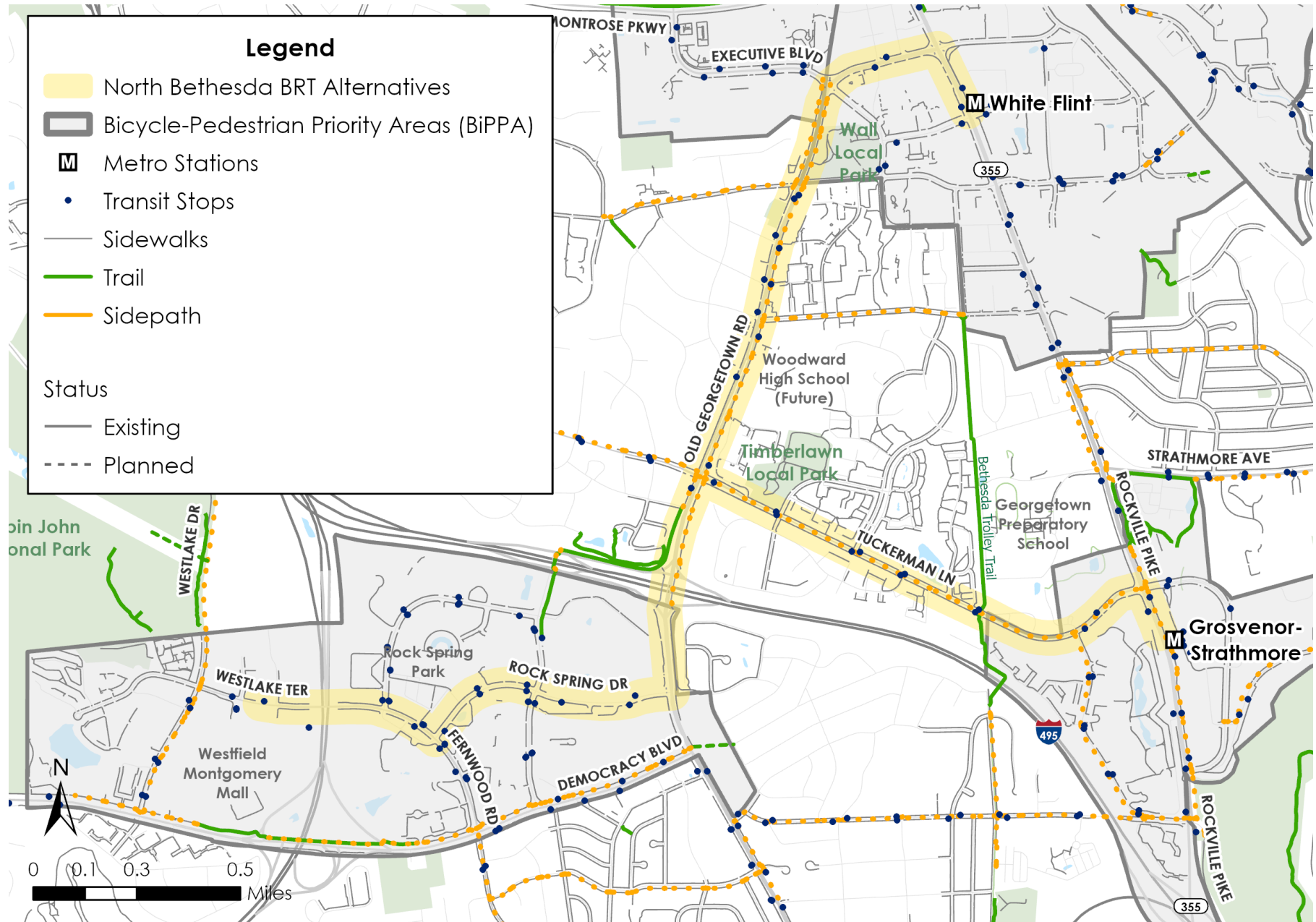
Figure 31: Existing Pedestrian Infrastructure in the Study Area
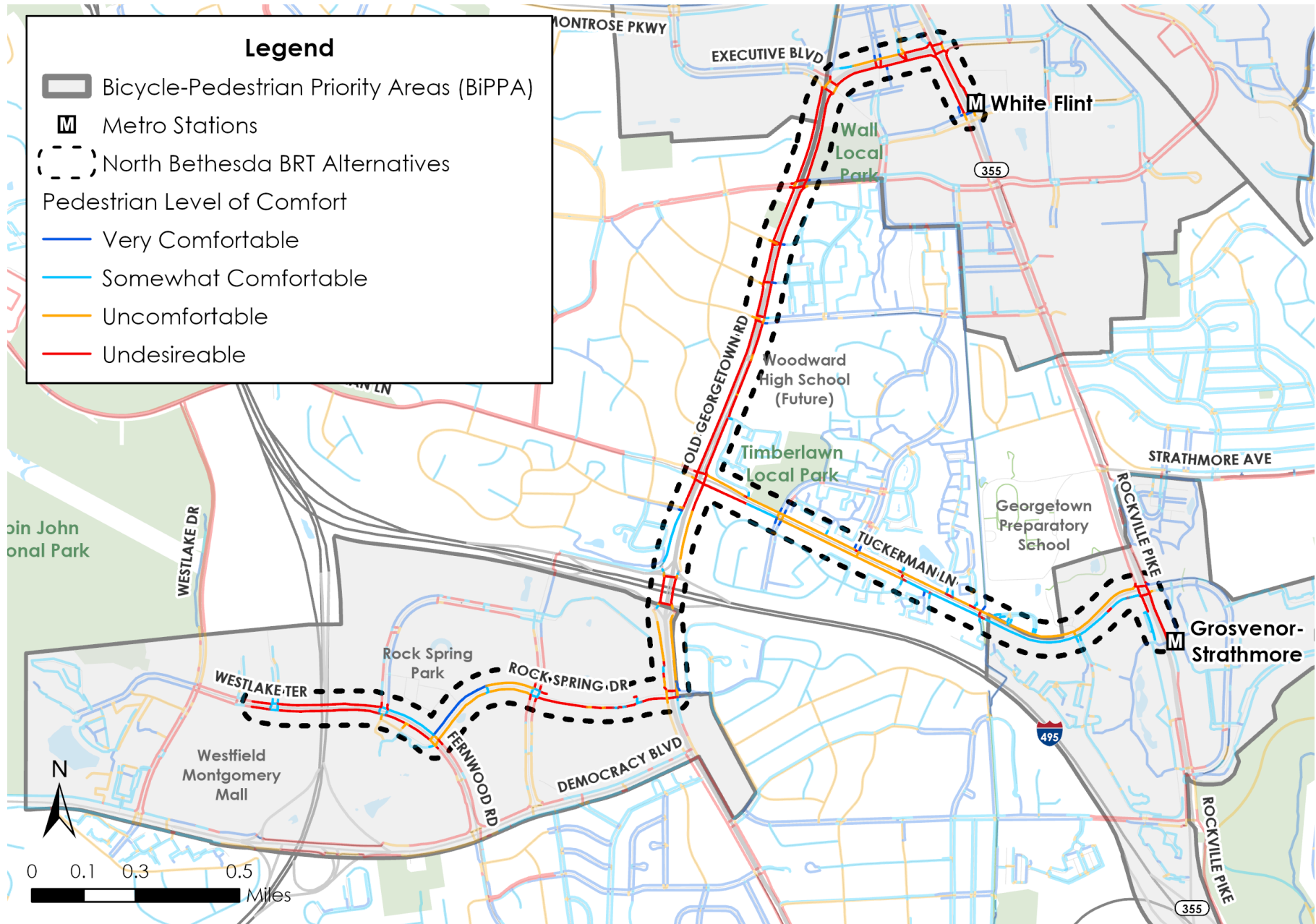
Figure 32: Montgomery County Pedestrian Level of Comfort

Walk Score is a walkability measurement tool used across the country. Its scoring system is based on the length of time it takes to walk to nearby amenities and pedestrian friendliness measures such as block length and intersection density. Overall, North Bethesda is considered *Somewhat Walkable* (Walk Score of 50) in which some errands can be accomplished on foot. However, the area is on the low end of *Somewhat Walkable,* meaning the study area is heavily car-dependent with some opportunities to walk to key destinations. The Walk Score heat map shown in **Figure 33** shows address-specific Walk Scores within the study corridor and demonstrates the wide range in walkability in North Bethesda.
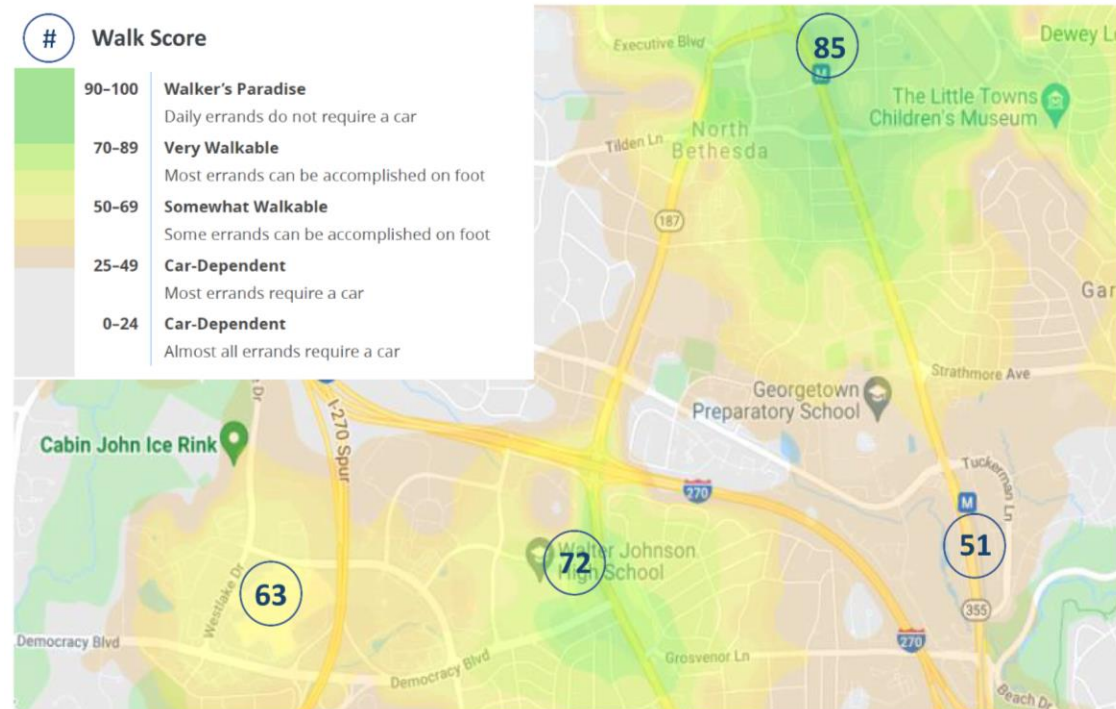
Figure 33: Walk Score Heat Map for North Bethesda[9]

6.3.2   EXISTING BIKE NETWORK

The existing bike network in the study area (**Figure 34**) includes shared-use paths, separated bike lanes, and on-street sharrows. Capital Bikeshare is present in the northern section of the study area near the White Flint metro station and Pike and Rose development. While there are existing bike facilities, there is not corridor-wide connectivity. However, planned expansion of the bike network will improve connectivity significantly by 2045. All three termini locations are included in the County Bicycle-Pedestrian Priority Areas. Notably, there is a proposed shared-use path along Old Georgetown Road identified in the Bicycle Master Plan and separated bike lanes along Rock Spring Drive and Westlake Terrace.

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[9]https://www.walkscore.com/MD/North_Bethesda
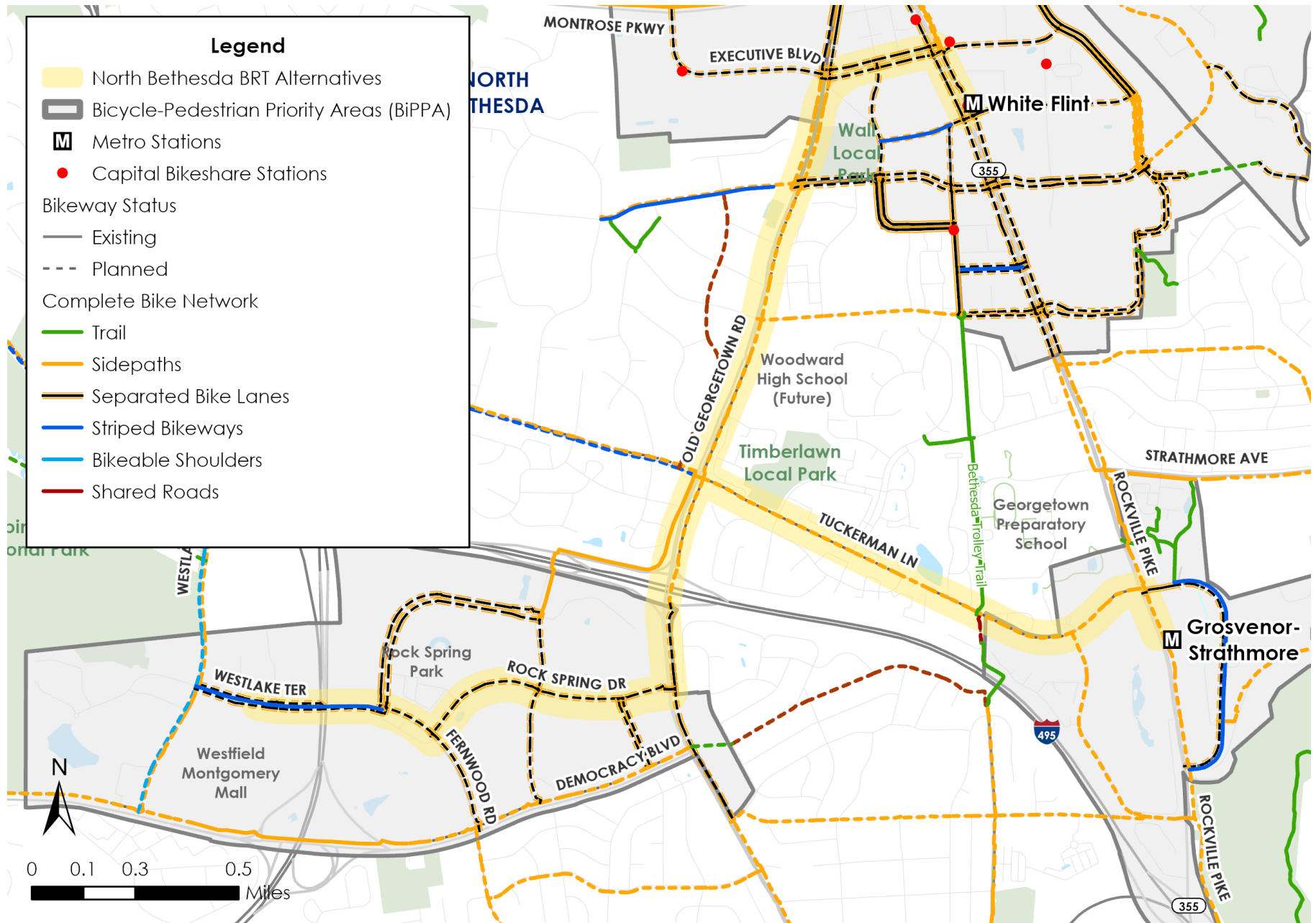
Figure 34: Existing and Proposed Bike Network in the Study Area

6.4   TRANSPORTATION SAFETY

During the past five years (2017 to 2021), there were 365 total crashes along the alignment alternatives. Of those total crashes, there were seven bicyclist injuries, five pedestrian injuries, and two pedestrian fatalities, as shown in **Figure 35**. During the past five years, there have been no driver or vehicle occupant fatalities along the corridor. Montgomery County is one of the first county governments in the United States to initiate a Vision Zero plan. Out of that initiative, the County has identified a High Injury Network[10], which are roadway segments with five or more severe or fatal collisions and one or more collisions per mile per year. Old Georgetown Road within the BRT study area is included in the high injury network and is listed as low to low-medium crash rate. For context, in all of Montgomery County from 2015 to 2019, there were nearly 1,500 collisions that resulted in 160 fatalities to drivers, passengers, and bicyclists according to the Vision Zero plan[11].

The County has dedicated resources to eliminate serious and fatal collisions on County roads for vehicle occupants (drivers and passengers), pedestrians, and bicyclists by the end of 2030. The North Bethesda BRT corridor planning and design process has safety as an identify goal to align with this County initiative.

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[10] https://www.montgomerycountymd.gov/visionzero/Resources/Files/Vision_Zero_Data_Analysis.pdf page 3

[11] https://www.montgomerycountymd.gov/visionzero/Resources/Files/vz2030-plan.pdf page 6
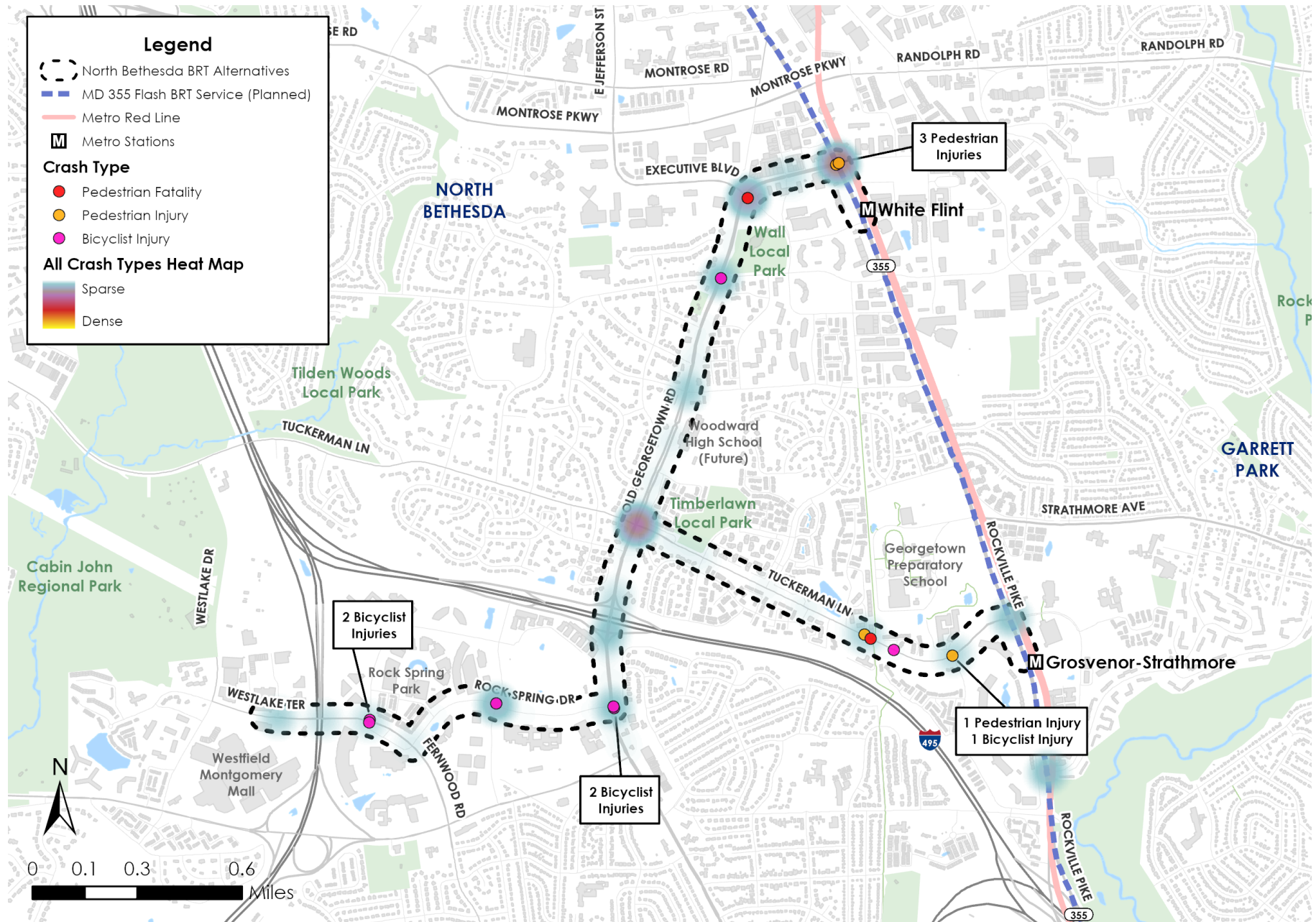
Figure 35. Crash Density and Locations Along Corridor from 2017 to 2021

6.5   TRANSIT SERVICE

6.5.1   SERVICE EVALUATION

The North Bethesda transitway will link an upcoming area surrounding the Westfield Montgomery Mall with new developments close to the White Flint and Grosvenor-Strathmore Metro stations. **Figure 36** shows current and planned high-capacity rapid transit in the vicinity of the study area, including the existing Metro Red Line, and MARC Brunswick Line; as well as the planned Maryland Transit Administration (MTA) Purple Line, MD 355, Veirs Mill Road, and New Hampshire Avenue Flash BRT lines. As shown in **Figure 36**, the western portion of the study area currently lacks access to high-capacity rapid transit. The transitway will provide fast and convenient access to the Metro Red Line and to the planned MD 355 BRT between Bethesda and Clarksburg. It will be a vital transit link between the study area to the rest of the region.

Figure 37 shows local transit routes operated by Ride On and WMATA in the study area and **Table 6.3** elaborates on the numbers, names, endpoints, and operational dates for the routes. As shown, the Montgomery Mall Transit Center, White Flint Metro, and Grosvenor-Strathmore Metro are all hubs of local transit routes and the planned transitway will enhance connectivity between the three. WMATA operates three Metrobus routes in the study area, the J1, J2, and C8; the former two connect the Westfield Montgomery Mall Transit Center to the Silver Spring Transit Center while the latter connects White Flint Metro to College Park Metro.

Ride On operates 12 routes in the study area, five of which operate Monday through Sunday, while the remaining seven routes operate weekday only (or weekday plus Saturday for Ride On 42). Ride On's Monday through Sunday routes are 5, 26, 38, 46, and 47. In addition to those routes, Ride On also operates six weekday-only routes (6, 37, 70, 81, 96, 101) and one weekday and Saturday-only route (42) in the study area. In the study area, four Ride On routes (6, 26, 42, 96) serve trips along the proposed BRT corridor and/or between the proposed endpoints (Montgomery Mall Transit Center and Grosvenor-Strathmore/White Flint Metro stations).

Ride On 6 provides weekday service between the Montgomery Mall Transit Center and Grosvenor-Strathmore using portions of the proposed transitway alignment on Westlake Terrace and Rock Spring Drive. Ride On 26 provides Monday through Sunday service from the Montgomery Mall Transit Center to White Flint Metro using the proposed transitway alignment on Westlake Terrace, Rock Spring Drive, and Old Georgetown Road. Ride On 42 provides Monday through Saturday service from the Montgomery Mall Transit Center to White Flint Metro on a U-shaped route that does not follow any of the proposed transitway alignment. Ride On 96 provides weekday peak service from Rock Spring Park to Grosvenor-Strathmore Metro and weekday off-peak service from the Montgomery Mall Transit Center to Grosvenor-Strathmore Metro. The route follows the proposed transitway alignment on Westlake Terrace, Rock Spring Drive, Old Georgetown Road, and Tuckerman Lane, albeit with loops on Rockledge Drive, Fernwood Road, and Democracy Boulevard.

Overall, the study corridor is primarily served by Ride On routes operating Monday through Saturday, as well as several frequent Metrobus routes which operate along the corridor. Most of the nearby service connects to, or operates adjacent to, the study corridor and its termini. The White Flint Metrorail station sees the most bus trips per hour along the corridor and among the three terminus points.
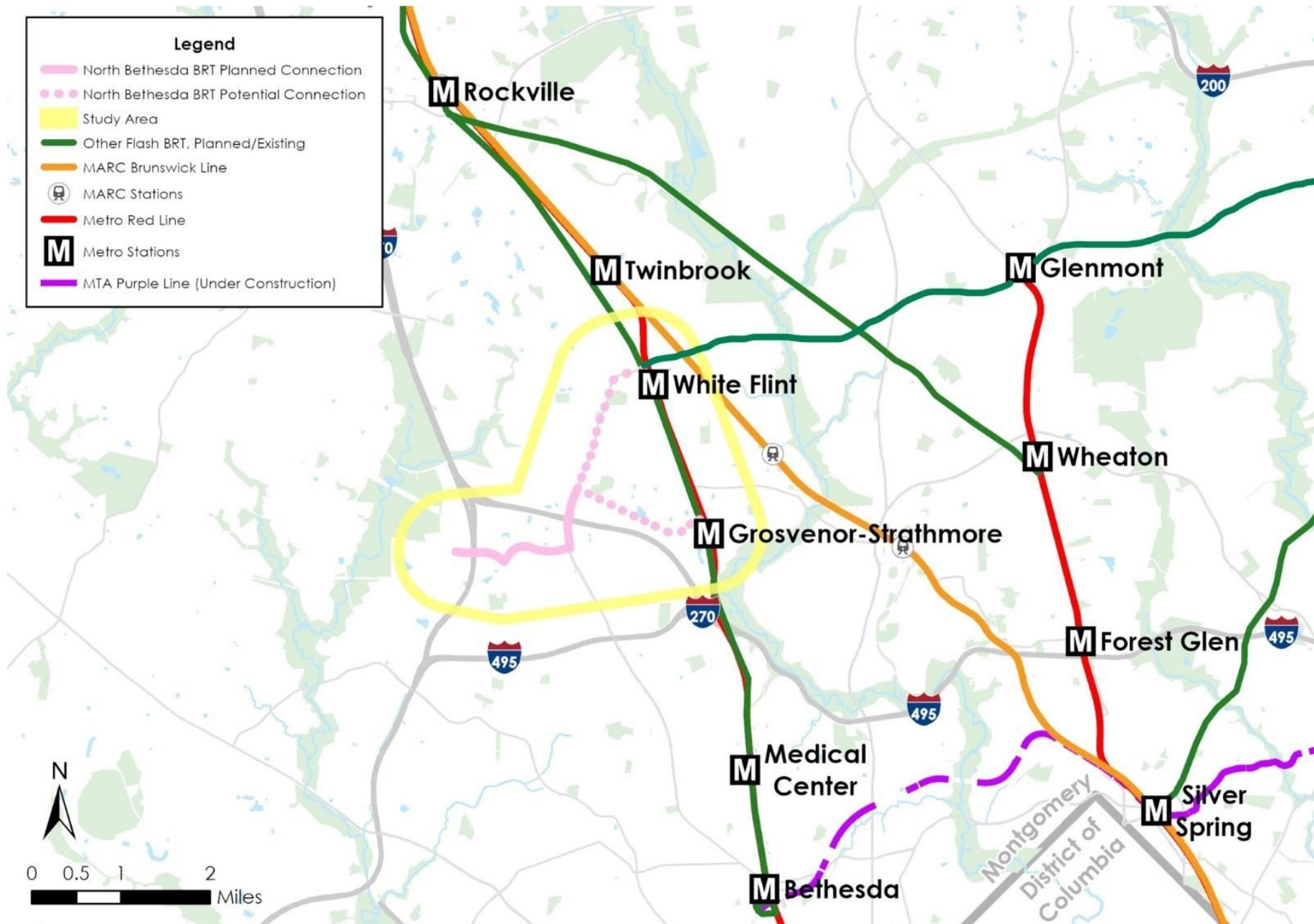
Figure 36: Regional Rapid Transit Connections

Figure 37: Study Area and Local Transit Routes

Agency	Route	To	From	Service	Operates
Ride On	5	Silver Spring Metro	Twinbrook Metro	Weekday, Saturday, Sunday	Adjacent/connects to study corridor
Ride On	6	Westfield Montgomery Mall	Parkside	Weekday Only	Along study corridor
Ride On	26	Westfield Montgomery Mall	Glenmont Metro	Weekday, Saturday, Sunday	Along study corridor
Ride On	37	Potomac	Grosvenor-Strathmore Metro/Wheaton Metro	Weekday Only	Along study corridor
Ride On	38	Wheaton Metro	White Flint Metro	Weekday, Saturday, Sunday	Adjacent/connects to study corridor
Ride On	42	Westfield Montgomery Mall	White Flint Metro	Weekday, Saturday	Adjacent/connects to study corridor
Ride On	46	Montgomery College	Medical Center Metro	Weekday, Saturday, Sunday	Adjacent/connects to study corridor
Ride On	47	Bethesda Metro	Rockville Metro	Weekday, Saturday, Sunday	Along study corridor
Ride On	70	Germantown	Bethesda Metro	Weekday Only	Adjacent/connects to study corridor
Ride On	81	White Flint Metro	Rockville Metro	Weekday Only	Adjacent/connects to study corridor
Ride On	96	Westfield Montgomery Mall	Grosvenor-Strathmore Metro	Weekday Only	Along study corridor
Ride On	101	Lakeforest	Medical Center Metro	Weekday Only	Adjacent/connects to study corridor
WMATA	J1	Westfield Montgomery Mall	Silver Spring Metro	Weekday Only	Adjacent/connects to study corridor
WMATA	J2	Westfield Montgomery Mall	Silver Spring Metro	Weekday, Saturday, Sunday	Adjacent/connects to study corridor
WMATA	C8	College Park Metro	White Flint Metro	Weekday, Saturday	Adjacent/connects to study corridor

Table 6.3: Study Area Routes

6.5.1.1   Operational Characteristics

The Covid-19 pandemic had a significant impact on transit operation across the country, resulting in significant reductions in transit services since March 2020. Ride On and Metrobus have made significant strides in bringing back service as appropriate. The following tables illustrate the March 2022 headways by hour for each route on weekdays, Saturdays, and Sundays. As shown in **Table 6.4**, Ride On 5, 26, and 46 operate all-day service with headways in the 20 to 30-minute range for most of the day. Ride On 6, 38, 42, 47, and 96 also operate all-day service, but with headways 30 minutes or greater most of the day. Ride On 37, 70, 81, and 101 offer peak-only service, and the three former (37, 70, 80) have headways of greater than 30 minutes while the latter (101) has a 20 minute headway. For WMATA, Metrobus J1 offers peak-only service with a 20-minute headway, while Metrobus J2 operates all-day with headways less than 15 minutes from 6:00 a.m. to 10:00 p.m. Route C8 offers all-day service every 30 minutes.

Table 6.5 shows headways by hour and route for Saturdays. Ride On 26 and 46 operate from 6:00 a.m. and 5:00 a.m., respectively, to 12:00 a.m. and 1:00 a.m., respectively, with 30-minute headways most of the day. Ride On 5 operates from 6:00 a.m. to 11:00 p.m. with a 40-minute headway all day. Ride On 38, 42 and 47 operate from around 7:00 a.m. to 8:00 p.m. with 35 to 50-minute headways all day. Metrobus J2 operates from 6:00 a.m. to 1:00 a.m. with 12-minute headways until 9:00 p.m. and every half hour after that. Metrobus C8 operates from 6:00 a.m. to 10:00 p.m. with 30-minute headways all day. **Table 6.6** shows headways on Sundays, which are nearly identical to Saturdays, with some exceptions: Ride On 42 and WMATA C8 do not operate, and Ride On 46 operates every 40 minutes all day.

Frequency of Service	<=12 min	13-15 min	16-20 min	21-30 min	31-45 min	46-59 min	>=60 min	No Service

Frequency of Service	<=12 min	13-15 min	16-20 min	21-30 min	31-45 min	46-59 min	>=60 min	No Service

Hours of Operation

Agency	Route	AM 4	5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10	11	AM 12	1
Ride On	5	gray	green	green	green	green	yellow	yellow	yellow	yellow	yellow	yellow	yellow	green	green	green	yellow	yellow	yellow	yellow	orange	gray	gray
Ride On	6	gray	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	gray	gray
Ride On	26	yellow	lt green	green	green	green	lt green	lt green	lt green	lt green	lt green	green	lt blue	lt blue	lt blue	green	lt green	orange	orange	orange	red	lt green	gray
Ride On	37	gray	gray	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	gray	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	gray
Ride On	38	gray	yellow	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	yellow	yellow	gray	gray	gray	gray
Ride On	42	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray
Ride On	46	gray	yellow	yellow	lt green	green	green	green	green	lt blue	lt blue	dk blue	lt blue	lt blue	lt blue	lt blue	green	lt green	yellow	yellow	yellow	yellow	gray
Ride On	47	gray	yellow	lt green	lt green	yellow	yellow	yellow	yellow	yellow	yellow	yellow	lt green	lt green	lt green	yellow	yellow	yellow	yellow	orange	gray	gray	gray
Ride On	70	gray	yellow	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	yellow	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	gray
Ride On	81	gray	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	gray	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	gray	gray
Ride On	96	gray	lt green	green	green	green	yellow	yellow	yellow	yellow	yellow	yellow	yellow	green	green	green	yellow	yellow	gray	gray	gray	gray	gray
Ride On	101	gray	lt green	green	green	green	green	green	gray	gray	gray	gray	green	green	green	green	green	gray	gray	gray	gray	gray	gray
WMATA	J1	gray	gray	green	green	green	green	green	green	gray	gray	gray	green	green	green	green	green	green	gray	gray	gray	gray	gray
WMATA	J2	gray	lt green	lt blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	lt blue	lt blue	green	lt green	lt green
WMATA	C8	gray	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	gray	gray	gray	gray	gray

Table 6.4: Weekday Route Headways by Hour, March 2022

Frequency of Service

Color	Category
Dark blue	<=12 min
Light blue	13-15 min
Green	16-20 min
Light green	21-30 min
Yellow	31-45 min
Orange	46-59 min
Red	>=60 min
Gray	No Service

Hours of Operation

(Colors in cells indicate the frequency-of-service category per the legend above. AM: 4–11, PM: 12–11, AM: 12–1)

Agency	Route	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Ride On	5	gray	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	gray
Ride On	26	gray	gray	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	yellow	yellow	yellow	yellow	yellow	gray
Ride On	38	gray	gray	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray
Ride On	42	gray	gray	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	yellow	yellow	yellow	gray	gray
Ride On	46	gray	dk gray	yellow	yellow	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	yellow	yellow	yellow	yellow	yellow	gray
Ride On	47	gray	gray	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	yellow	yellow	yellow	yellow	gray
WMATA	J2	gray	gray	lt blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	lt green	lt green	lt green	lt green	lt green	gray
WMATA	C8	gray	gray	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	gray	gray	gray	gray	gray	gray

Table 6.5: Saturday Route Headways by Hour, March 2022

Hours of Operation

Agency	Route	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Ride On	5	gray	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	gray
Ride On	26	gray	gray	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	lt green	yellow	yellow	yellow	yellow	yellow	gray
Ride On	38	gray	dk gray	dk gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	gray	gray	gray	gray	gray
Ride On	46	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	lt green	lt green	lt green	lt green	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray
Ride On	47	gray	gray	gray	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow	gray	gray	gray	gray
WMATA	J2	gray	gray	green	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	dk blue	lt green	lt green	lt green	lt green	lt green	lt green

Table 6.6: Sunday Route Headways by Hour, March 2022

6.5.1.2   Service Characteristics

Reliability is an important factor for the success of a transit service. Along major corridors, reliability can give us a sense of where there might be major issues slowing down transit services and highlight the areas that could benefit the most from transit priority treatments. **Table 6.7** shows the on-time performance (OTP) by route for Ride On and Metrobus. Data is divided into peak and off-peak for weekdays, and Metrobus data also includes weekends. For Metrobus, a bus is on time if it arrives up to 2 minutes before or 5 minutes after its scheduled arrival time. The Metrobus routes both have very high OTP (>90 percent) on weekdays, though this drops to 87 percent on weekends. Ride On routes have a wider range of OTP by route and by time period. Ride On 5 and 6 both have peak period OTP more than 80 percent, but during the off-peak period this drops to 72 and 65 percent, respectively. Ride On 37, 42, 46, 47, and 70 all have OTP in the 70 to 80 percent range during peak periods. For the off-peak period, the OTP rate drops for Ride On 37, 47, and 70 but increases for Ride On 42 and 46. Ride On 26, 38, 81, 96, and 101 have the lowest OTP, in the 62 to 67 percent range for the peak period and remain relatively the same off-peak. Overall, Metrobus provides the most reliable transit service to the study corridor. Ride On's service in the study area is more reliable during the peak weekday than during off-peak, although some peak service sees reliability rates as low as 62 percent.

Agency	Route	Weekday		Saturday	Sunday
		Peak	Off Peak		
Ride On	5	82%	72%	-	-
Ride On	6	85%	65%	-	-
Ride On	26	65%	62%	-	-
Ride On	37	71%	69%	-	-
Ride On	38	67%	70%		
Ride On	42	70%	77%	-	-
Ride On	46	71%	79%	-	-
Ride On	47	77%	74%	-	-
Ride On	70	77%	61%	-	-
Ride On	81	65%	64%	-	-
Ride On	96	62%	63%	-	-
Ride On	101	62%	63%	-	-
WMATA	J1	99%	93%	-	-
WMATA	J2	95%	98%	87%	87%
WMATA	C8	97%	98%	96%	-

Table 6.7: On-Time Performance by Route, Time of Day, and Day of Week

Evaluating the bus trips per hour of the existing services within the study area gives us a sense of the varying frequency at different times. **Figure 38** shows buses per hour for each route in the study area during the weekday peak and off-peak, Saturday, and Sunday. Metrobus J2 and Ride On 101 have the highest number of buses per hour during the weekday peak period, with more than 10 buses each. Ride On 5, 26, 46, 70, and 81 all have around six buses per hour during the weekday peak while Ride On 6, 37, 38, 42, 47, 96, and Metrobus J1 all have four or fewer. During the weekday off-peak period, Metrobus J2 and Ride On 101 and 46 have the highest rate, with more than six buses per hour each. The remaining routes all have around four or fewer buses per hour during the weekday off-peak. Of the routes that operate on the weekend, Metrobus J2 has the highest number of buses per hour with around five on Saturdays and four on Sundays. The remaining Ride On routes all have around four buses per hour on Saturdays and Sundays (except route 42, which does not operate on Sundays).
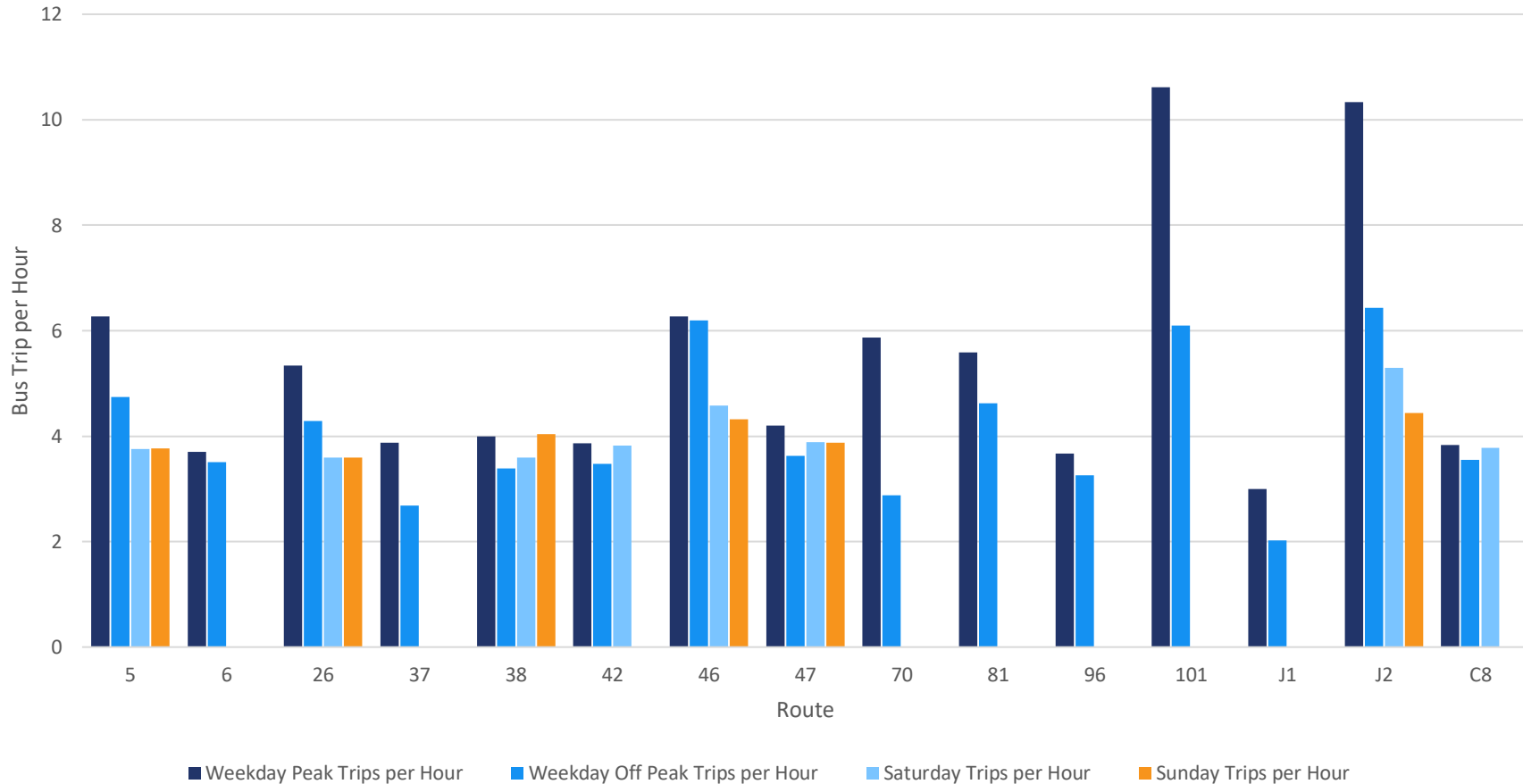

Figure 38: Buses per Hour per Time Period by Route

6.5.1.3   Ridership

The following section will elaborate on the ridership trends by route and by stop in the study area. This data can help determine what areas people are accessing via transit and when they are accessing them. This makes it easier to determine where and when transit service should be enhanced or where it can be decreased to free up resources for other locations.

Table 6.8 shows the average daily ridership for each route by day of the week. This data is ridership for the route's entire alignment, not just the portion within the study area. On weekdays, Washington Metropolitan Area Transit Authority's (WMATA's) Metrobus J2 is highest with more than 4,600 average daily boardings; the route runs from the Montgomery Mall to Silver Spring via Bethesda. Following that are Ride On 26 and 46, both with 2,500 to 3,300 average daily riders; Ride On 26 runs from Montgomery Mall to Glenmont and Ride On 46 runs from Medical Center to Montgomery College. The other three routes with 1,500-2,100 average daily riders are Ride On 47, 5, and 101; Ride On 47 runs from Bethesda to Rockville via Montgomery Mall, Ride On 5 runs from Twinbrook to Silver Spring, and Ride On 101 operates limited stop service from Medical Center to Lake Forest Transit Center on Rockville Pike. The remaining routes, which only operate weekdays, have fewer than 1,000 average daily riders. On weekends, seven routes operate (Ride On 42 only operates on Saturday). Of these, Metrobus J2 has the highest ridership, with nearly 2,800 on Saturday and more than 1,900 on Sunday. Second and third highest are Ride On 26 and 46, with nearly 2,300 and 1,800 riders on Saturday, and 1,800 and 1,200 on Sunday, respectively. Ride On 5, 38, and 47 have fewer than 1,000 daily riders on Saturday and 600 on Sunday, and Ride On 42 has only 130 average daily riders on Saturday.

Provider	Route	Average Daily Ridership Monday - Friday	Average Daily Ridership Saturday	Average Daily Ridership Sunday
Ride On	5	1,844	991	610
Ride On	6	288	-	-
Ride On	26	3,284	2,270	1,793
Ride On	37	222	-	-
Ride On	38	704	442	329
Ride On	42	348	134	-
Ride On	46	2,585	1,773	1,237
Ride On	47	1,558	761	606
Ride On	70	842	-	-
Ride On	81	109	-	-
Ride On	96	388	-	-
Ride On	101	2,058	-	-
WMATA	J1	570	-	-
WMATA	J2	4,625	2,798	1,939
WMATA	C8	2,675	1,427	-

Table 6.8: Average Daily Ridership by Route and Day of Week[12]

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[12] Ride On ridership reflects July – December 2019 APC data. WMATA ridership reflects September 2019 APC data.

Figure 39 shows bus passenger stop activity in the study area split into Metrobus and Ride On routes. The highest activity is at White Flint Metro station, with the next highest at Grosvenor-Strathmore Metro and the Montgomery Mall Transit Center. There are also stops with notable levels of activity along Rockville Pike directly north and south of both study area Metro stations, along Rock Spring Drive, and on Executive Boulevard. Some of the lowest passenger activity is along Old Georgetown Road and Tuckerman Lane, signaling that most people riding the routes on those roads are travelling between other destinations near the endpoints.
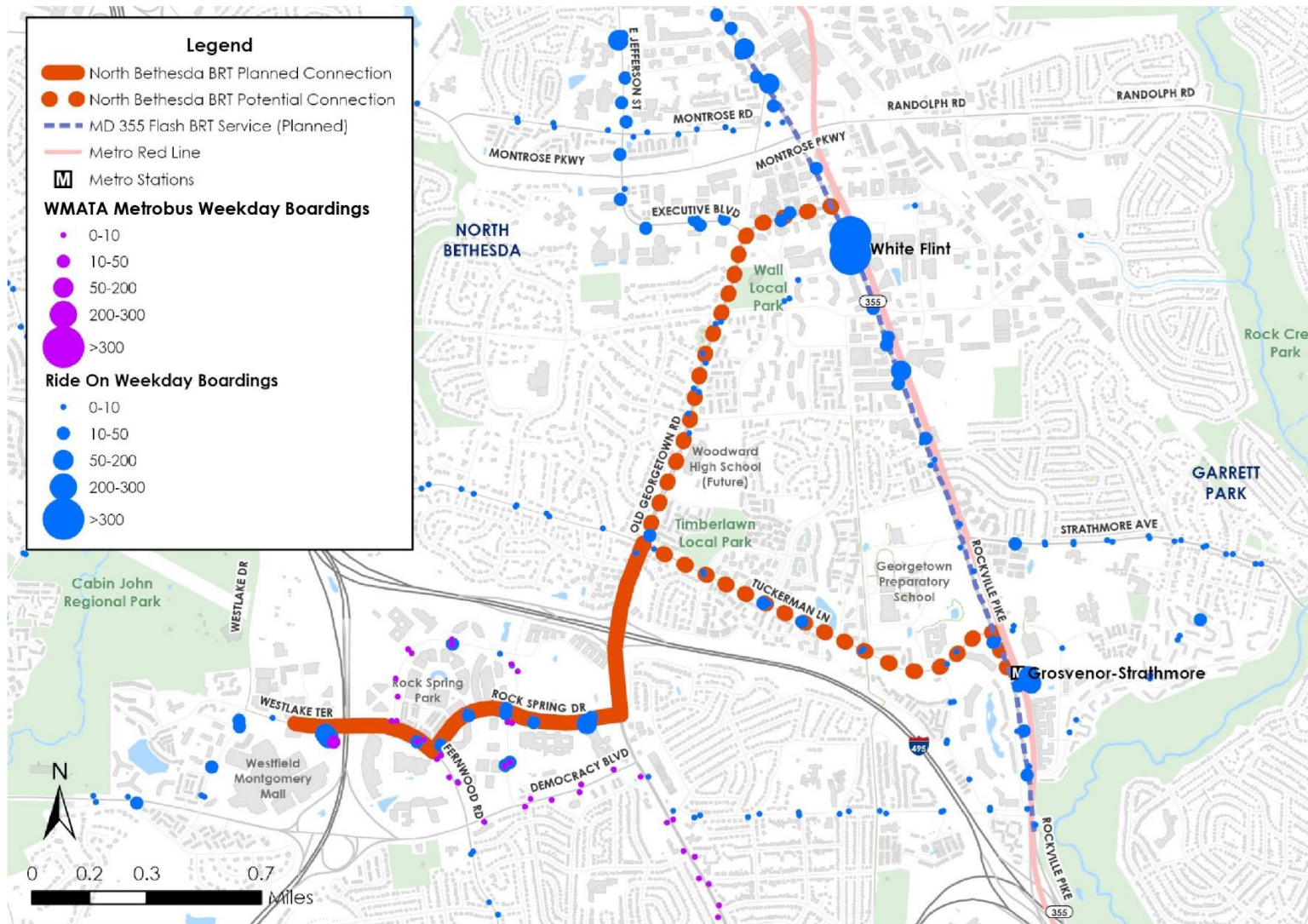

Figure 39. Bus Stop Activity

6.5.2   TERMINUS EVALUATION

The following analysis focuses specifically on the three termini of the North Bethesda transitway: Montgomery Mall Transit Center, White Flint Metrorail station, and Grosvenor-Strathmore Metrorail station. The analysis focuses specifically on the routes that currently serve the three termini and sheds light on the existing level of bus service, station level ridership, and capacity at the bus bays, highlighting any potential opportunities and challenges for implementing additional transit service at these stations.

6.5.2.1   Montgomery Mall Transit Center

The Montgomery Mall Transit Center is located off I-270, adjacent to the Westfield Montgomery Mall. It offers facilities such as commuter parking (245 spaces), bike racks, and passenger amenities.

The facility serves as a major transfer point within Montgomery County served by both Ride On and Metrobus. It has six bus bays that are served by seven routes, with layover bays along the edge of the facility, as shown in **Figure 40**. As part of an MDOT project, there is planned expansion of both the commuter parking lot and bus bays associated with the facility. The routes serving the Montgomery Mall Transit Center have connections to major destinations and transfer points including: Rockville, Grosvenor, White Flint, Twinbrook, Glenmont, and Bethesda.

On weekdays, bus service is provided at the facility between the hours of 4:00 a.m. and 2:00 a.m., with a bus coming every 35 minutes. On Saturday and Sunday service, the facility operates between 6:00 a.m. and 2:00 a.m., with a bus coming approximately every 30 minutes.

Figure 40: Montgomery Mall Transit Center

Figure 41 shows connecting transit service weekday span and frequency for routes serving the Montgomery Mall Transit Center. The transit center is served by five Ride On routes (6, 26, 42, 47, and 96) and two Metrobus routes (J1 and J2). Metrobus J2 and Ride On 26 provide the highest level of all day service, with frequencies from less than 12 minutes to 20 minutes during the peak periods, and at least 30-minute frequencies in the midday.

Frequency of Service	<=12 min	13-15 min	16-20 min	21-30 min	31-45 min	46-59 min	>=60 min	No Service

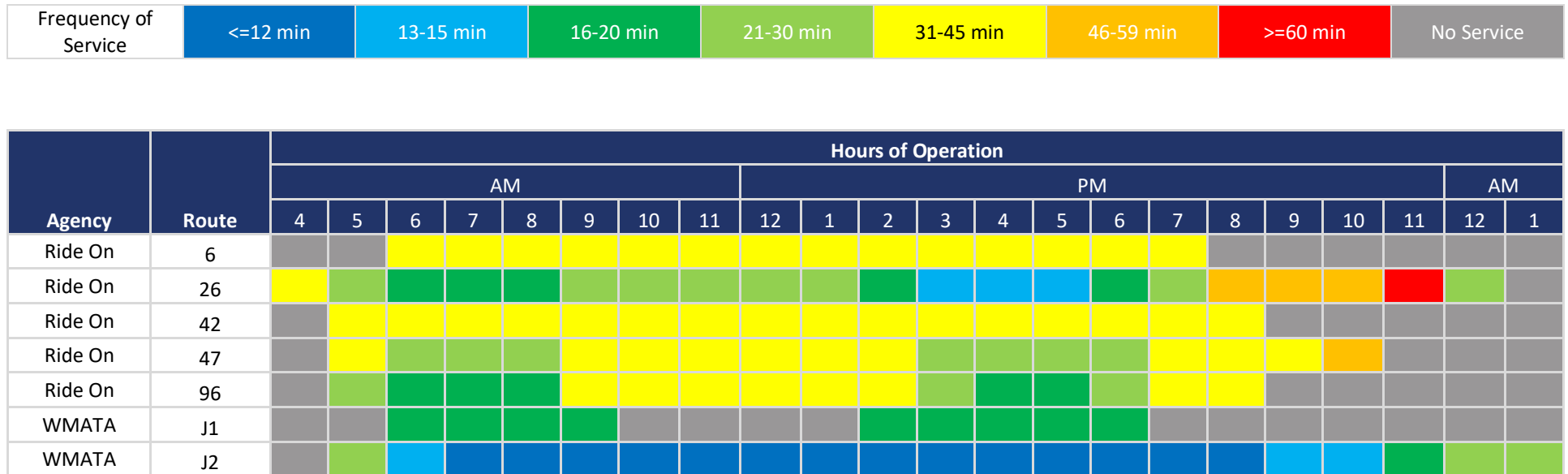| Agency	Route	AM 4	5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10	11	AM 12	1
Ride On	6	—	—	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	—	—	—	—	—	—
Ride On	26	31-45	21-30	16-20	16-20	16-20	21-30	21-30	21-30	21-30	21-30	16-20	13-15	13-15	13-15	16-20	21-30	46-59	46-59	46-59	>=60	21-30	—
Ride On	42	—	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	—	—	—	—	—	—
Ride On	47	—	31-45	21-30	21-30	21-30	31-45	31-45	31-45	31-45	31-45	31-45	21-30	21-30	21-30	31-45	31-45	31-45	31-45	46-59	—	—	—
Ride On	96	—	21-30	16-20	16-20	16-20	31-45	31-45	31-45	31-45	31-45	31-45	21-30	16-20	16-20	21-30	31-45	31-45	—	—	—	—	—
WMATA	J1	—	—	16-20	16-20	16-20	16-20	—	—	—	—	16-20	16-20	16-20	16-20	16-20	—	—	—	—	—	—	—
WMATA	J2	—	21-30	13-15	<=12	<=12	<=12	<=12	<=12	<=12	<=12	<=12	<=12	<=12	<=12	<=12	<=12	<=12	13-15	13-15	16-20	21-30	21-30

Figure 41: Montgomery Mall Transit Center | Connecting Transit Service Weekday Span & Frequency

Ridership on routes that serve the Montgomery Mall Transit Center varies significantly by route. **Figure 42** shows average weekday ridership by route based on APC data from July-December 2019 for Ride On and September 2019 for Metrobus. Ride On 26, which operates between the Montgomery Mall Transit Center and the Glenmont Metrorail, with intermediary stops at the Twinbrook and White Flint Metrorail stations and the Aspen Hill and Wheaton Woods neighborhoods, had the highest overall average weekday ridership, totaling about 180 passengers daily. Ride On 47, which operates between the Rockville and Bethesda Metrorail stations with an intermediary stop at the Montgomery Mall Transit Center, has ridership totaling approximately 80 passengers daily. Of the Ride On routes serving the Montgomery Mall Transit Center, Ride On 26 and 47 providing the highest level of service, in terms of both span and average frequency. Metrobus J1 has the lowest average weekday ridership; however, this route only provides service during the morning and afternoon peak periods.
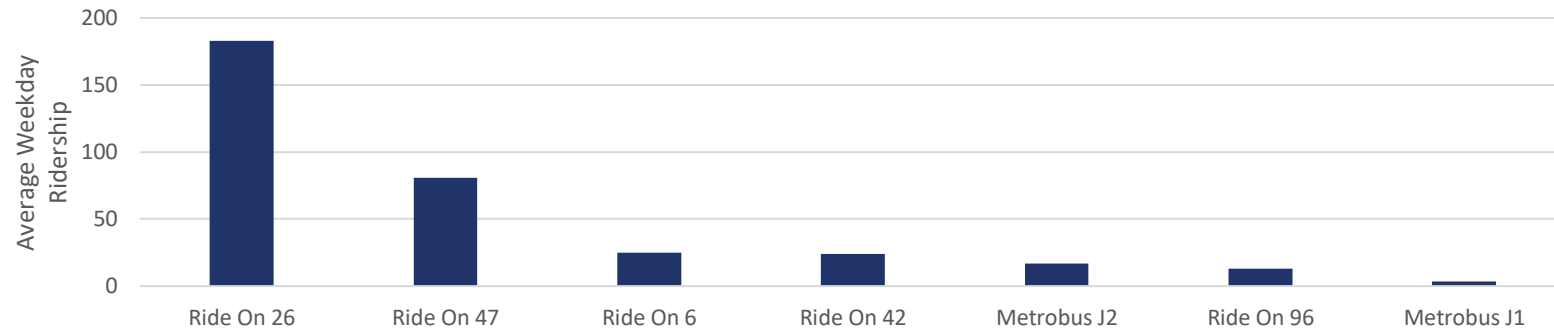

Figure 42: Montgomery Mall Transit Center | Average Weekday Ridership

6.5.2.1.1 Station Capacity

Table 6.9 presents the current capacity (buses per hour) for the six bus bays at the Montgomery Mall Transit Center on weekdays. One of the bus bays is able to accommodate articulated buses. Buses per hour uses data from Ride On and WMATA's General Transit Feed Specification (GTFS) and is calculated based on the total number of trips a route makes during a service period divided by the total number of hours in that service period. Understanding how many buses currently serve a given station helps determine if there is sufficient capacity for additional bus service.

In sum, there are six bus bays (A-F) at the Montgomery Mall Transit Center, which have varying levels of activity during the weekday Peak and Off-peak service periods. Bus Bay E, which services Metrobus J1 and J2, is served by the highest number of trips per hour during both service periods, 11 buses and six buses, respectively. This is unsurprising given that Metrobus J2 has all day headways of less than 12 minutes. No route currently serves Bus Bay F, which allows for future growth of transit service at the Montgomery Mall Transit Center. Layover capacity constraints will be coordinated with Ride-On staff as a part of the Ride-On Reimagined study and future BRT service planning.

Bus Bay	Routes Served	Buses per Hour	
		Peak	Off-peak
A	Ride On 6 and 96	6	4
B	Ride On 26	5	4
C	Ride On 42	3	2
D	Ride On 47	4	3
E	Metrobus J1 and J2	11	6
F	-	-	-

Table 6.9: Montgomery Mall Transit Center | Station Capacity

6.5.2.2   White Flint Metrorail Station

The White Flint Metrorail station is located along the Rockville Pike, in the center of a major transit-oriented development site as part of the 2010 White Flint Sector Plan. It will provide a connection to the planned MD 355 Flash BRT service. It offers facilities such as parking (982 spaces), bike racks, and passenger amenities.

The facility serves as a transfer point within served by Ride On, including the high frequency Flash service, Metrobus, and the Metrorail Red Line. It has three bus stops, two on the Rockville Pike and one on Marinelli Road, that are served by eight routes, as shown in **Figure 43**. The routes serving the White Flint Metro station have connections to major destinations and transfer points including: Silver Spring, Rockville, Twinbrook, Glenmont, Montgomery Mall Transit Center, Wheaton, Montgomery College, Bethesda, and Medical Center.

On weekdays, bus service is provided at the facility between the hours of 4:00 a.m. and 1:00 a.m., with a bus coming approximately every 30 minutes. On Saturday and Sunday, bus service operates between 5:00 a.m. and 1:00 a.m., with a bus coming approximately every 40 minutes.
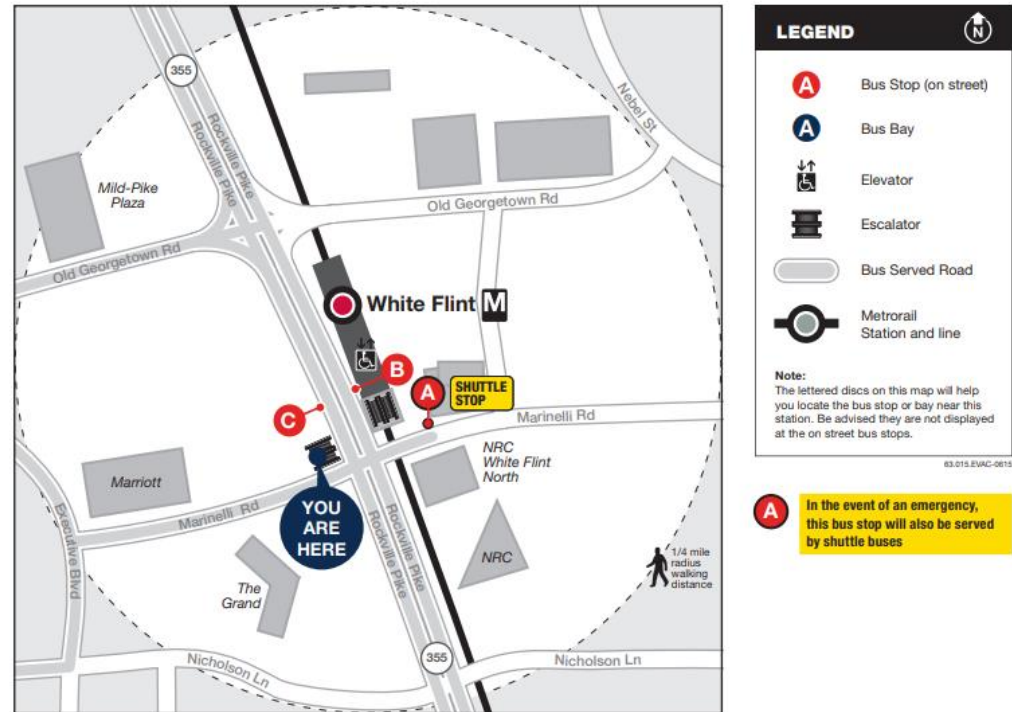
Figure 43: White Flint Metrorail Station

Figure 44 shows connecting transit service weekday span and frequency for routes serving White Flint Metrorail station. White Flint Metrorail station is served by seven Ride On routes (5, 26, 38, 42, 46, 81, and 101) and one Metrobus route (C8). Most routes that serve this Metrorail station have frequencies of 45 minutes or less for more than 12 hours a day. Ride On 26 has the longest weekday span of service, operating from roughly 4:00 a.m. until 1:00 a.m. daily. Ride On 46 has the highest overall frequency; headways on this route range from less than 12 minutes to 30 minutes for most of the day, with headways less than 15 minutes between 12:00 p.m. and 7:00 p.m. Ride on 42 has the lowest frequency, providing service to the Metrorail station every 45 to 60 minutes from roughly 5:00 a.m. to 9:00 p.m.
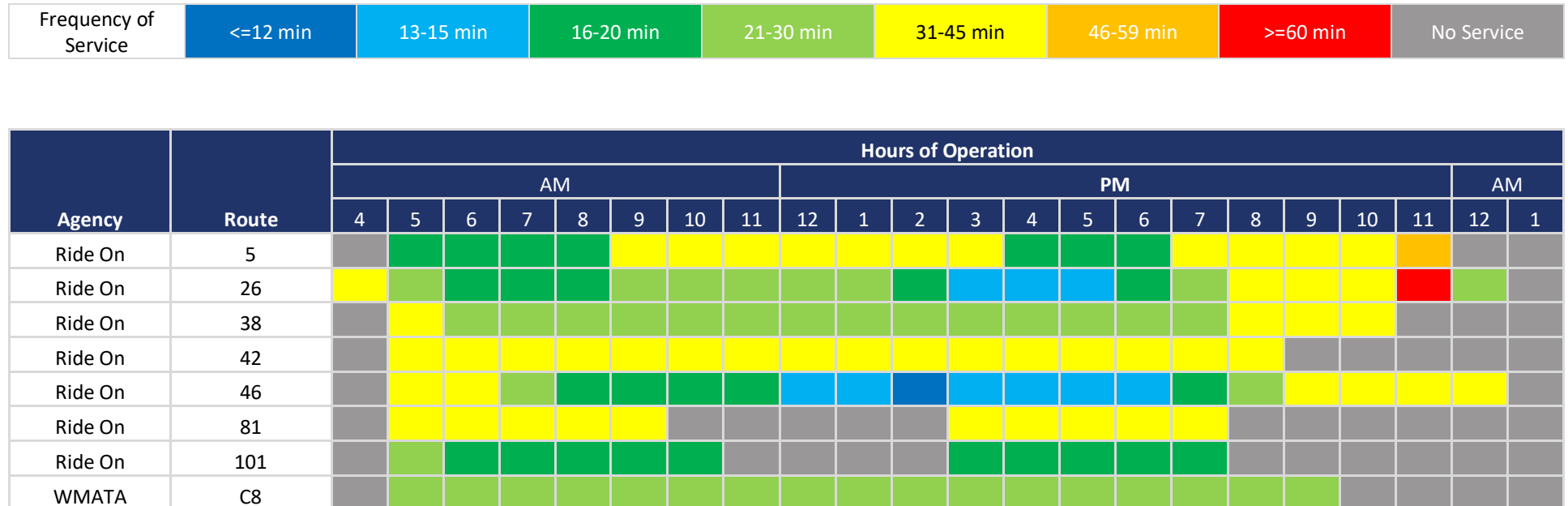
Frequency of Service	<=12 min	13-15 min	16-20 min	21-30 min	31-45 min	46-59 min	>=60 min	No Service

Figure 44: White Flint Metrorail Station | Connecting Transit Service Weekday Span & Frequency

Figure 45 presents average weekday ridership by route for the Ride On routes that serve the White Flint Metrorail station, based on APC data for FY 2020. Ride On 5, which operates between the Twinbrook and Silver Spring Metrorail stations, has the highest average weekday ridership, approximately 217 passengers daily, followed closely by Ride On 26, which has an average of approximately 204 passengers daily and operates between the Glenmont and Twinbrook Metrorail stations, and the Montgomery Mall Transit Center. Ride On 42 and 81 have significantly lower average daily ridership compared to the other Ride On routes that serve the White Flint Metrorail station; however, these routes operate with a shorter span and/or lower frequencies compared to other routes serving the Metrorail station.
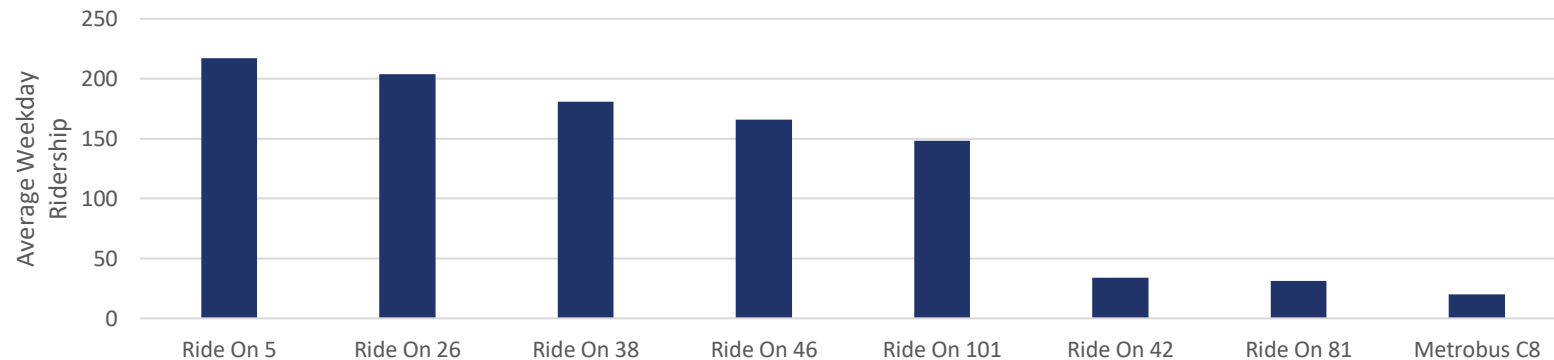

Figure 45: White Flint Metro Station | Average Weekday Ridership

6.5.2.2.1   Station Capacity

Table 6.10 presents existing capacity at the White Flint Metrorail station's three bus bays, based on the number of buses per hour during the weekday peak and off-peak periods. This metric is calculated using GTFS feeds for Ride On and WMATA, and trips were split evenly amongst bus bays if a route served more than one bay.

All three bus bays at the White Flint Metrorail station are busy compared to the bus bays at the Montgomery Mall Transit Center and Grosvenor-Strathmore Metrorail station. At White Flint, each bus bay has a minimum of 10 buses per hour during the peak period, which roughly correlates to a bus arriving every 6 minutes (at a minimum). Bus bay B currently has the most buses per hour, 16 during the peak period, and eight during the off-peak period. Bus bay B is used by six Ride On routes: Route 5, Route 26, Route 42, Route 46, Route 81, and Route 101. Generally, WMATA allocates between six to 12 vehicles per bay per hour as a general threshold, although this can vary depending on schedules, layover, and staging needs.

Bus Bay	Routes Served	Buses per Hour	
		Peak	Off-peak
A	Metrobus C8, Ride On 38, 42, 81	10	6
B	Ride On 5, 26, 42, 46, 81, 101	16	8
C	Ride On 5, 26, 46, 101	12	7

Table 6.10: White Flint Metrorail Station | Station Capacity

6.5.2.3   Grosvenor-Strathmore Metrorail Station

The Grosvenor-Strathmore Metrorail station is located along the Rockville Pike, just before the I-495 interchange, and is directly connected to the Music Center at Strathmore. It will provide a connection to the planned MD 355 Flash BRT service. It offers facilities such as parking (1,951 spaces), park and ride facility, bike racks and passenger amenities.

The facility serves as a transfer point within served by Ride On, Metrobus, and the Metrorail Red Line. It has four bus bays within the facility and one bus bay in the northbound direction on the Rockville Pike, as shown in **Figure 46**. This facility is served by five routes which have connections to major destinations and transfer points such as: Lake Forest Transit Center, Rockville, Twinbrook, White Flint, Montgomery Mall Transit Center, Wheaton, and Medical Center.

All week long, bus service is provided at the facility between the hours of 5:00 a.m. and 1:00 a.m., with a bus coming every 30 to 40 minutes.
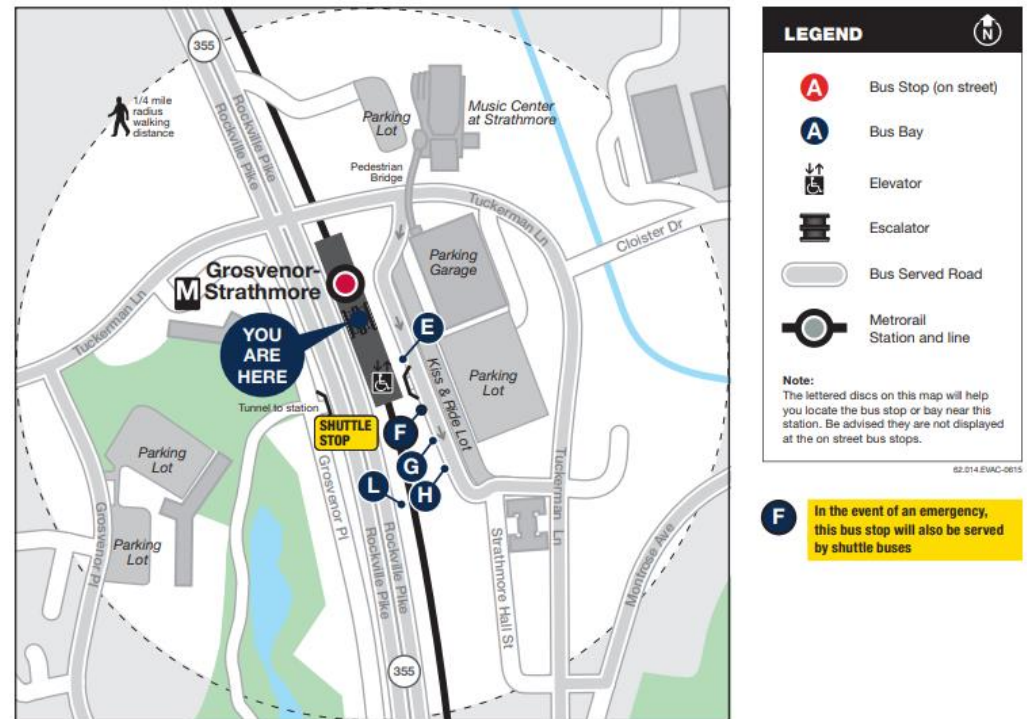

Figure 46: Grosvenor-Strathmore Metrorail Station

Figure 47 shows connecting transit service weekday span and frequency for routes serving the Grosvenor-Strathmore Metrorail station. This Metrorail station is served by five Ride On routes (6, 37, 46, 91, and 101) and no Metrobus routes. Ride On 46, provides the highest level of service both in terms of span and frequency, operating from roughly 5:00 a.m. until 1:00 a.m. on weekdays, with frequencies between 12 and 30 minutes for most of that period. Ride On 6 and 96 also provide all-day service at the Metrorail station, but at lower frequencies, while Ride On 37 and 101 provide service largely during the morning and afternoon peak periods.
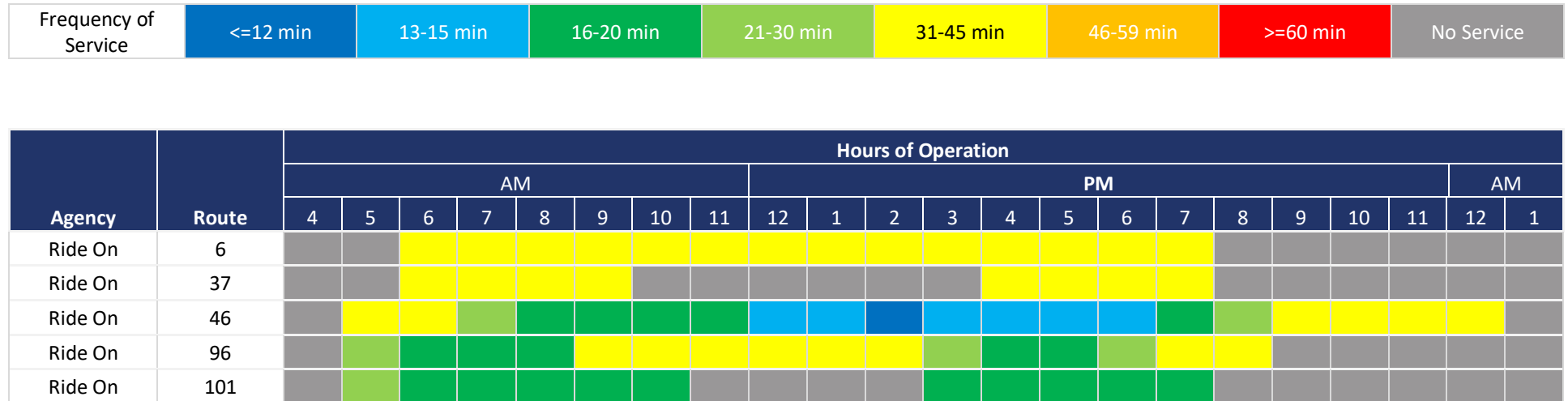
Frequency of Service	<=12 min	13-15 min	16-20 min	21-30 min	31-45 min	46-59 min	>=60 min	No Service

Agency	Route	Hours of Operation																					
		AM								PM												AM	
		4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Ride On	6	gray	gray	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	31-45	gray	gray	gray	gray	gray	gray
Ride On	37	gray	gray	31-45	31-45	31-45	31-45	gray	gray	gray	gray	gray	gray	31-45	31-45	31-45	31-45	gray	gray	gray	gray	gray	gray
Ride On	46	gray	31-45	31-45	21-30	16-20	16-20	16-20	16-20	13-15	13-15	<=12	13-15	13-15	13-15	13-15	16-20	21-30	31-45	31-45	31-45	31-45	gray
Ride On	96	gray	21-30	16-20	16-20	16-20	31-45	31-45	31-45	31-45	31-45	31-45	21-30	16-20	16-20	21-30	31-45	31-45	gray	gray	gray	gray	gray
Ride On	101	gray	21-30	16-20	16-20	16-20	16-20	16-20	gray	gray	gray	gray	16-20	16-20	16-20	16-20	16-20	gray	gray	gray	gray	gray	gray

Figure 47: Grosvenor-Strathmore Metrorail Station | Connecting Transit Service Weekday Span & Frequency

Figure 48 presents average weekday ridership by route for Grosvenor-Strathmore Metrorail station based on FY 2020 APC data. Ride On 96 has the highest overall average weekday ridership, with approximately 150 passengers daily, followed by Ride On 6, which has approximately 88 passengers daily. The other Ride On routes serving the station have somewhat lower ridership, particularly Ride On 46, which has an average weekday ridership of less than 20 passengers daily. While both Ride On 6 and 96 provide all-day service to the Metrorail station, they do so at a much lower frequency than Ride On 46.
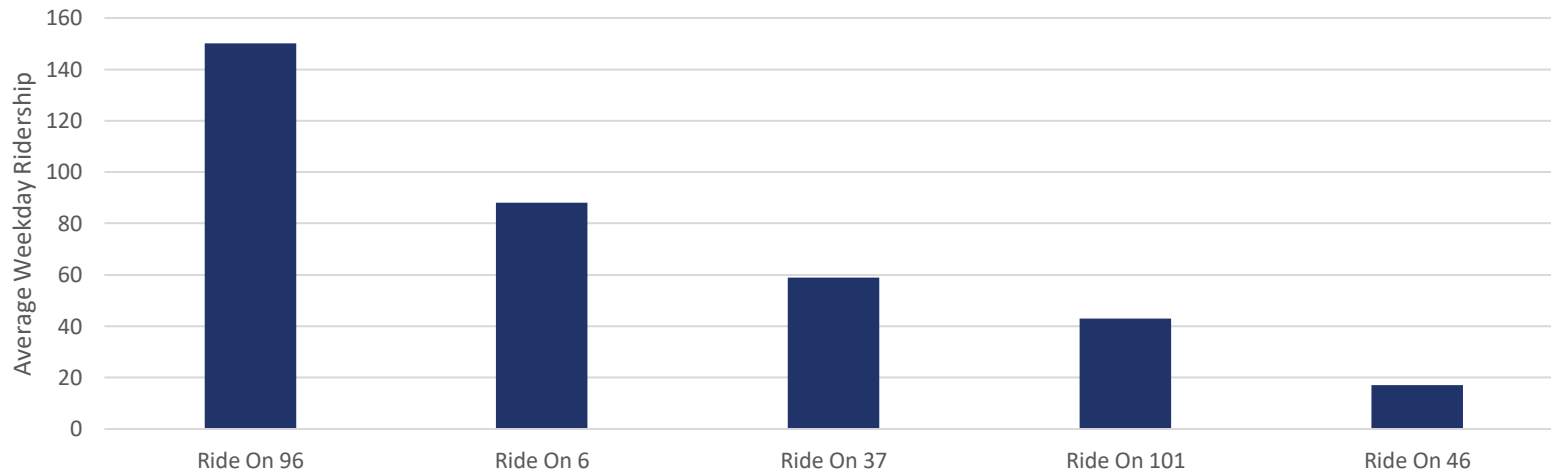
Figure 48: Grosvenor-Strathmore Metrorail Station | Average Weekday Ridership

6.5.2.3.1   Station Capacity

Table 6.11 presents capacity at the bus bays at the Grosvenor-Strathmore Metrorail station. The metric is based on data from Ride On's GTFS feed; buses per hour is calculated using the number of trips per hour per route divided by the number of hours in the service period. Trips are split evenly across routes that serve more than one bus bay.

In total, Grosvenor-Strathmore Metrorail station has 10 bus bays, six of which do not currently serve any routes on weekdays, allowing for ample space for new bus service in the future. Of the four bus bays that do currently have service, bus bay L is the busiest, serving Ride On 46 and 101. This bay has 11 buses per hour in the peak period and four in the off-peak period. This equates to buses roughly every 5 to 6 minutes in peak hours. The number of buses per hour at the Metrorail station is similar to that of the Montgomery Mall Transit Center.

Bus Bay	Routes Served	Buses per Hour	
		Peak	**Off-Peak**
A-D	-	-	-
E	Ride On 46	3	2
F	-	-	-
G	Ride On 6 and 37	6	2
H	Ride On 96	3	2
I	-	-	-
L	Ride on 46 and 101	11	4

Table 6.11: Grosvenor-Strathmore Metrorail Station | Station Capacity

6.5.3 TRANSIT ACCESS SHEDS

Transit access from four locations— the Montgomery Mall Transit Center, the Wheaton and Grosvenor-Strathmore Metro stations, and the center of the study area—was modeled using GTFS feeds for regional Ride On and WMATA service. The transit sheds represent travel from each of the four starting locations by public transit and walking.

The following figures show the portion of the region accessible from the study area in 15-, 30-, and 60-minutes for weekday peak, weekday off-peak, Saturday, and Sunday service. **Figure 49** shows the area accessible during the weekday peak period. Within 15 minutes, only certain portions of the study area and the immediate vicinity near the White Flint and Grosvenor-Strathmore Metro stations are accessible. Within 30 minutes, the range extends nearly contiguously as far as Rockville, Silver Spring, Bethesda, Wheaton, and Glenmont. The 30-minute range also includes the immediate vicinity of Red Line stations in Upper Northwest Washington, DC, and surrounding various bus corridors in the vicinity of the study area. Within 60 minutes, the range expands dramatically to include Clarksburg, Germantown, Colesville, Aspen Hill, and Potomac in Montgomery County, as well as most of Washington, DC and portions of Prince George's County, Arlington County, Fairfax County, Falls Church, and Alexandria, immediately adjacent to Metro stations.

Figure 50 shows the weekday transit shed for the off-peak period, during the midday. For this time period, the 15-minute transit shed is mostly unchanged. The 30-minute range is contracted compared to the peak period; Silver Spring and Rockville are still accessible, but the accessible radii surrounding Metro stations on the western portion of the Red Line are smaller and access to areas west of the study area slightly diminished. The 60-minute transit shed only extends as far as Shady Grove Metro instead of Clarksburg. Accessibility in southeast Washington, DC improved, but access to Prince George's, Arlington, and Fairfax Counties is remained the same compared to the peak period.

Figure 51 shows the transit shed for Saturdays. Within 15 minutes, access is limited to major corridors within or immediately adjacent to the study area. The 30-minute shed expands to include most of the study area and the area extending to the northwest as well as immediately adjacent to Red Line Metro stations between Woodley Park and Rockville. Within 60 minutes, the range extends to Montgomery County between Shady Grove, Potomac, Glenmont, Colesville, and Washington, DC. It also includes most of Washington, DC west of the Anacostia River as well as portions of southeast Washington, DC, Alexandria, and Prince George's and Arlington Counties within a mile of Metro stations.
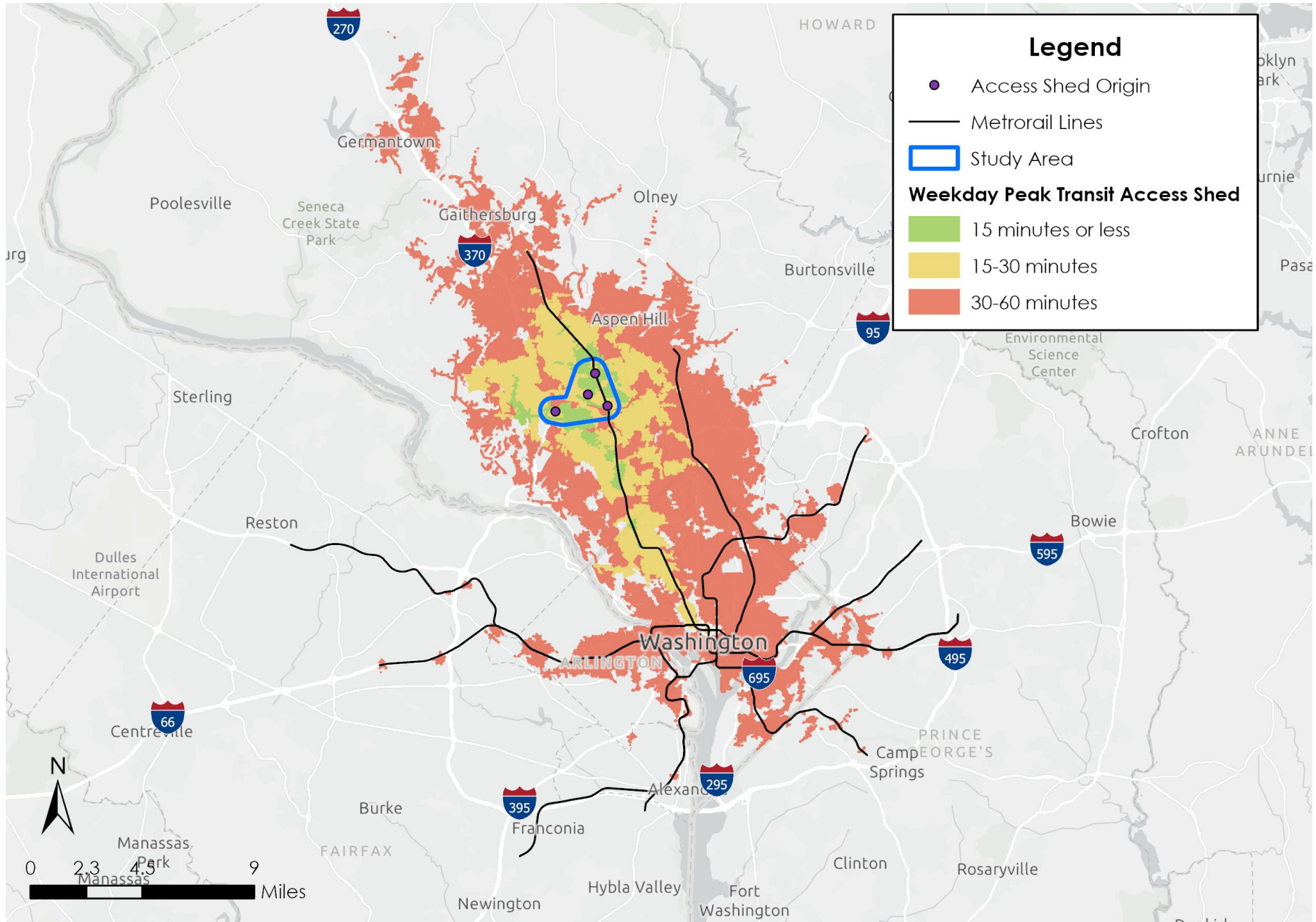
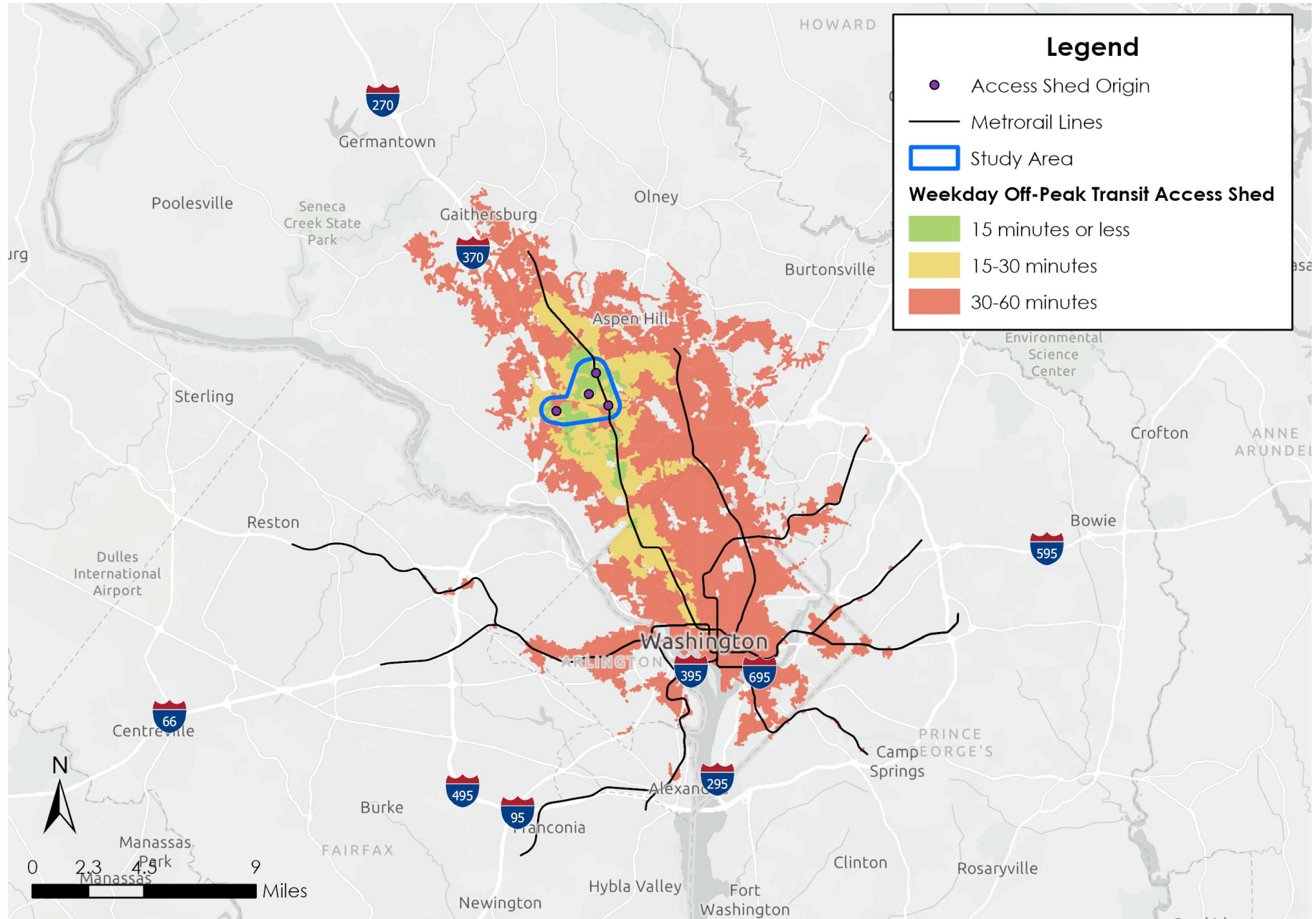**Figure 49: Weekday Peak Transit Access Shed**

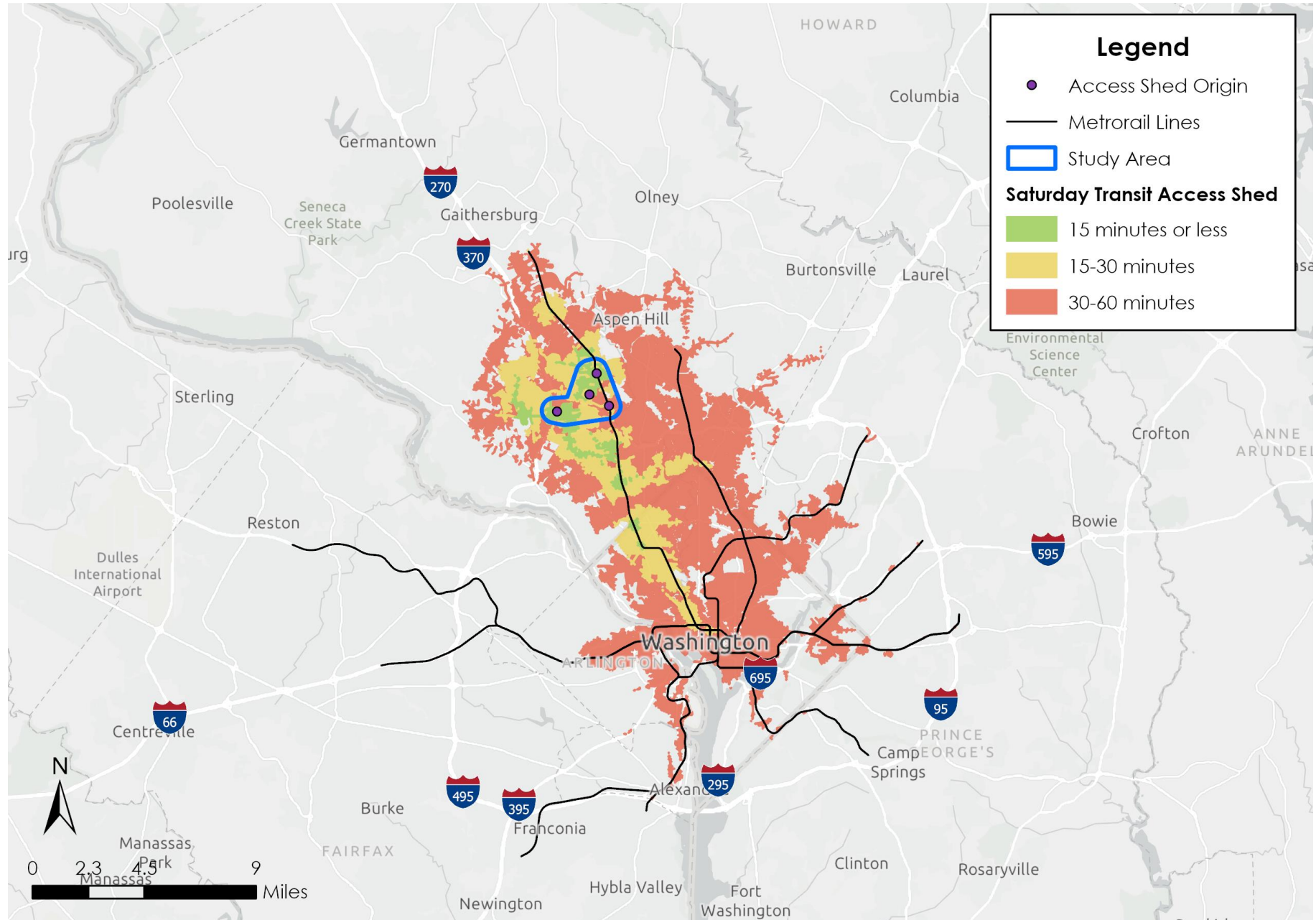**Figure 50: Weekday Off-Peak Transit Access Shed**

Figure 51: Saturday Transit Access Shed

6.6   VEHICLE TRAFFIC

Traffic congestion throughout Montgomery County was one of the primary reasons for prioritization of the BRT network. An impact of the COVID-19 pandemic has been a change in travel and traffic patterns throughout the region, such as an increase in telework and wider range of when trips occur throughout the day. According to a University of Maryland study, as of April 20, 2021, 29 percent of Montgomery County residents were still staying at home during most weekdays. Based on Replica data, total trip volumes have returned to and slightly exceeded pre-COVID-19 trip volumes before slightly dropping in December and January 2020, likely due to the Omicron COVID-19 variant. Despite some unknowns regarding the long-lasting pandemic impacts on travel patterns, the County understands that a "new normal" is in effect.

To capture a snapshot of existing vehicle traffic in the study area, average annual daily traffic (AADT) volumes were summarized. Detailed, turning movement traffic counts for 30 key intersections along the two potential BRT routes will be collected as a part of the **Initial Termini Screening**. These counts will be spot-checked against 2019 pre-pandemic volumes to better understand the current impact of the pandemic on travel patterns in the study area.

There are 24 signalized intersection along the proposed North Bethesda Transitway Corridor. **Figure 52** shows the location of all signalized intersections within a quarter mile of the proposed and potential alignments. Signalized intersections along the corridor are prioritized for turning movement count locations. As shown in the figure, Rockville Pike (Route 355) and Old Georgetown Road (Route 187) experience a similar amount of traffic volume over a year with an AADT of approximately 45,000 vehicles. Tuckerman Lane and Rock Spring Drive have smaller AADTs closer to 15,000 vehicles.
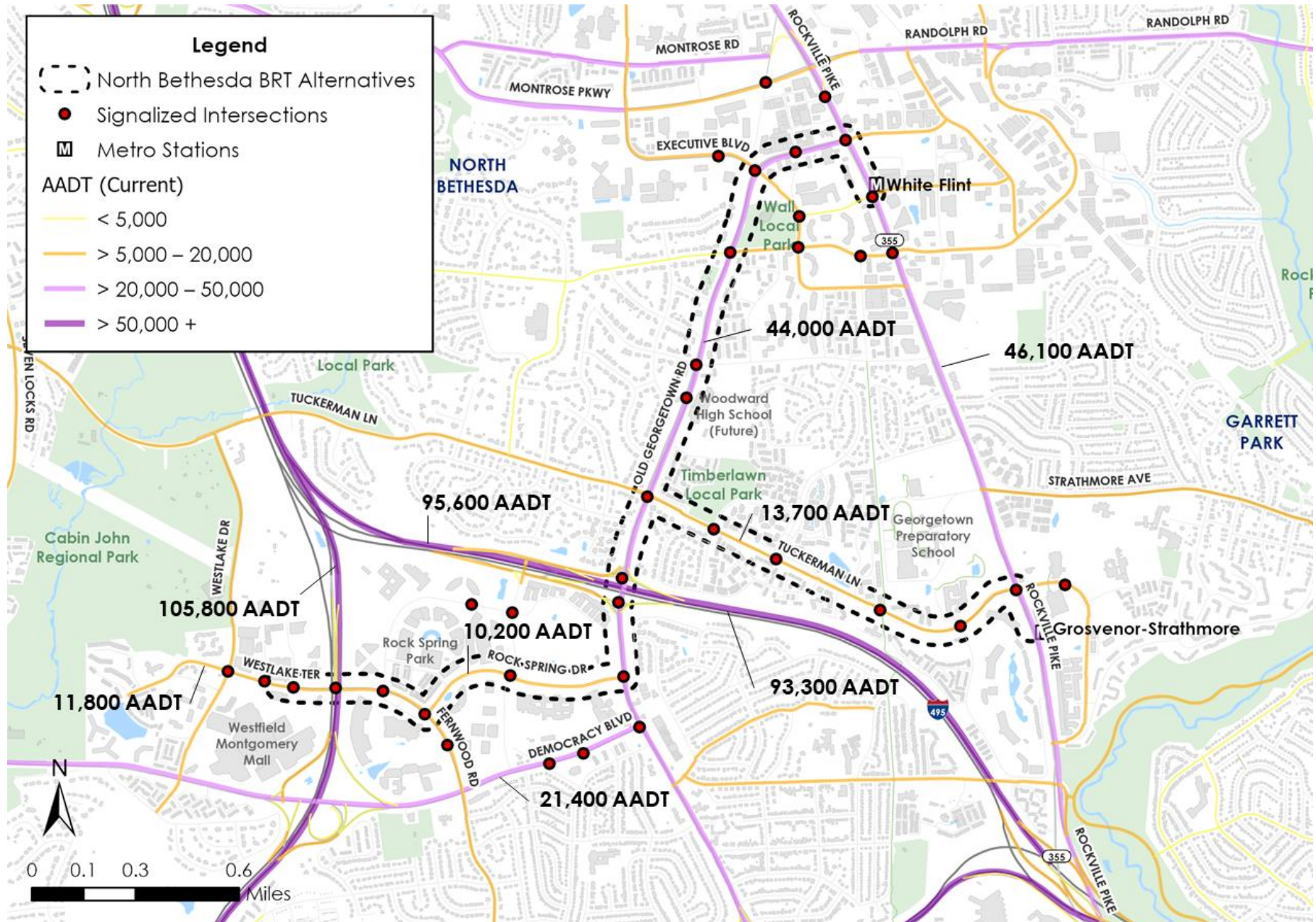
Figure 52: 2019 MDOT SHA Annual Average Daily Traffic Volumes along the Corridor

The Regional Integrated Transportation Information System (RITIS) is equipped with a set of analysis and visualization tools (Probe Data Analytics Suite) that can be leveraged in the analysis of INRIX[13] traffic data. The roadways along the North Bethesda Transitway corridor were analyzed using the RITIS Trend Map tool to identify typical weekday traffic conditions along each segment of the corridor. **Table 6.12** presents the worst average travel speed conditions for AM, midday, and PM peak periods in 2019 and 2021 for each segment of the corridor. The posted speed limits are also presented for reference. The hours referenced for the AM, midday, and PM peak periods were 8 a.m., 12 p.m., and 5 p.m., respectively. Average travel speeds that were 15 mph or greater below the posted speed limit are highlighted in orange.

For every peak period and on every segment, average speeds are faster in 2021 than in 2019 (excluding the Fernwood Road segment during the AM peak, which remained the same). Nonetheless, average speeds only improved by a few miles per hour, with many segments still operating at approximately 15 mph or more below the speed limit. Based on this high-level traffic conditions analysis, traffic speeds along the corridor are approaching pre-COVID-19 levels. In addition, travel speeds are typically slightly worse during the midday and PM peaks, but this is not true for all corridor segments.

Roadway Segment	Posted Speed Limit (mph)	AM Peak Period		Midday Peak		PM Peak	
		2019 (mph)	2021 (mph)	2019 (mph)	2021 (mph)	2019 (mph)	2021 (mph)
Route 355 (Rockville Pike)	40	21	23	20	21	19	20
Route 185 (Old Georgetown Rd)	40	14	15	13	14	11	16
Tuckerman Lane	40	22	27	25	27	23	25
Rock Spring Drive	30/25*	16	21	17	22	15	22
Fernwood Road	30	20	20	16	20	14	19
West Lake Terrace	30	17	18	15	16	15	17

Rock Spring Drive has two speed limits posted on different segments of the roadway.

🔶 *Average Travel Speeds >= 15 mph below posted speed limit*

Table 6.12. Traffic Conditions Along the Corridor on a Typical Weekday in 2019 and 2021

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[13] INRIX is a company that "delivers innovative products for the automotive and transportation industries such as real-time parking and traffic information and solutions that facilitate the safe testing and deployment of autonomous vehicles."

7 SUMMARY OF CHALLENGES AND OPPORTUNITIES

The following section summarizes the challenges and opportunities along the North Bethesda Transitway corridor and adjacent study area.

Demographics

The study area is less diverse (41% non-white) compared to the rest of Montgomery County (56% non-white). However, while only one of the County's Equity Focus Areas (EFAs) is overlapping or adjacent to the corridor at the western terminus, future connecting BRT lines serve several EFAs nearby. **To align with the study's equity goals, the project will need to consider the impact the transitway will have on more diverse populations who may live outside the study area.** Equity population employees who work in the study area will benefit from service; especially if there is fast and reliable connection transit service to their residence. Note that race and ethnicity are not the only considerations for equity.

While there are small pockets of moderately-high to high transit propensity near the White Flint and Grosvenor-Strathmore termini in the study area, most commuters (60%) drive alone. Compared regionally, 70% of Montgomery County commuters drive alone. For all trip types starting or ending in the study area, the portion of trips made by private auto drivers or passenger is even higher (70-74%), with transit seldom utilized (<3%). **The North Bethesda Transitway has the potential to increase transit mode share by providing high-quality, frequent, reliable transit service.**

Land Use and Development

The County has been strategic in its planning efforts surrounding the planned transitway, especially in the Rock Spring and White Flint Sector Plans, which call out stop locations specifically. **Dedicated right-of-way for the transitway and transit-oriented development planning has been a coordinated priority in the North Bethesda Transitway study area.**

Planned pipeline developments are estimated to bring 9.6 million gross floor area (GFA) of residential, commercial, and office space to the study area, in addition to almost 15,000 office and retail jobs. **There is an opportunity for North Bethesda Transitway ridership to come from commuter trips connecting to these new developments.**

Pipeline developments are primarily concentrated around the western terminus and White Flint terminus. Existing land uses such as low-medium density housing and retail/commercial uses with surface parking do not represent supportive high-capacity transit usage although the development plans aim to shift this makeup. **There is an opportunity for the North Bethesda Transitway to provide a transit connection between two highly developing areas.**

Travel Patterns

96 percent of people who work in the study area commute from other locations, primarily from Washington, DC, Silver Spring, MD, and other Montgomery County locations north and south of the study area. The high inflow of work trips into the study area from elsewhere shows need to **connect the North Bethesda Transitway with other commuter-based transit service in the region.** This will be made possible through connections to the Metrorail red line, planned MD 355 Flash BRT service, planned Randolph Road BRT and proximity to the Maryland Area Regional Commuter (MARC) train lines.

The highest concentration of all trips is within a 3-mile radius of the study area. The North Bethesda Transitway will need to be **well integrated with local transit and pedestrian and bicycle facilities to convert these mid-distance trips to BRT ridership.**

Non-work trips in the study area are shorter, internal to the study, and more likely to use single-occupant vehicles than work-trips. **These shorter trips represent a potential mode shift and ridership base for BRT service that can provide more frequent service with longer spans during the weekday and weeknight.**

Employment destination propensity and existing walkability in White Flint make North Bethesda Transitway service desirable at that terminus location for commuters, while high transit propensity at Grosvenor-Strathmore also makes that terminus location a strategic location for BRT service for residents.

Transit Service

The study area is served by three Metrobus Routes and 12 Ride On routes which provide varying levels of service Monday through Sunday. Ride On 6, 26, 37, 47, and 96 operate along the study corridors. Most notably, Route 26 operates from the Montgomery Mall to White Flint with 15- to 20-minute frequencies in the peak and 30-minute off-peak and Route 96 operates from Montgomery Mall to Grosvenor-Strathmore Metrorail station every 20-minutes during the peak and 35-minutes off-peak. Service in the study area significantly reduces or is not present after 7:00 p.m. on weekdays.

Ridership in the study area is highest along Rock Spring Drive and at the White Flint and Grosvenor Metrorail stations. The lowest passenger boarding and alighting activity is along Old Georgetown Road and Tuckerman Lane, signaling that most people riding the routes on those roads are travelling between other destinations near the endpoints. Moderate passenger throughput is seen along Rock Spring Drive, east of the Montgomery Mall Transit Center. Passenger throughput is highest at the White Flint and Grosvenor Metrorail stations. **With new frequent service on the corridor, there is opportunity to enhance transit connections and lengthen weekday service spans between the Montgomery Mall and its surrounding areas to the WMATA Metrorail System, MARC, and planned MD-355 BRT service.**

At corridor termini, there appears to be existing bus bay capacity at the Montgomery Mall and Grosvenor, but capacity is more limited at White Flint. Proposed MD 355 BRT service will occupy some of this space at Grosvenor and White Flint. A more detailed assessment of this capacity will occur in the next phase of the study.

Traffic

The corridor continues to experience traffic congestion during peak periods— especially along Rockville Pike and Old Georgetown Road where average speeds in 2021 are more than 20 mph below the posted speed limit. The presence of existing congestion along corridor should be a significant consideration when selecting the BRT alignment types (i.e., mixed traffic versus dedicated lane). **If a mode shift occurs, there is an opportunity for the transitway to alleviate some of the existing congestion along the corridor.**

Street Network and Multimodal Connectivity

The planned future bicycle and pedestrian infrastructure improvements, and the planned connector streets that will shorten distance between intersections, will make non-driving modes more viable in the study area. Pedestrian level of comfort and Bike Level of Traffic stress indicate uncomfortable conditions along the main roadways. Separated bike lanes or side path facilities are planned for all roadways in the study area. **There is an opportunity for the North Bethesda Transitway to fill the gap in multimodal connectivity and improve comfort levels in conjunction with these other planned initiatives.**

While right-of-way has already been obtained for much of the transitway according to the County's Master Plan of Highways, **additional easements for the North Bethesda spot improvements (i.e., turn lanes/stations) may be required.**

Safety

Seven bicyclist injuries, five pedestrian injuries, and two pedestrian fatalities occurred along the corridor in the past five years. **The North Bethesda Transitway has an opportunity to help achieve the county's Vision Zero goals** by providing a safe alternative to biking and walking along the corridor, possibly creating a buffer between pedestrians and vehicle traffic, and/or integrating with ongoing plans to improve multimodal conditions and connectivity in the study area.