

MONTGOMERY COUNTY'S PEDESTRIAN PLAN

PLANNING BOARD DRAFT | MAY 2023

Montgomery Planning

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ABSTRACT



The Pedestrian Master Plan contains the text and supporting maps and tables for a comprehensive amendment to all past functional plans, area master plans and sector plans, bringing Montgomery County in line with leading practices in pedestrian planning. The plan is a key element in Thrive Montgomery 2050 and Montgomery County's Vision Zero Action Plan to eliminate traffic-related fatalities and serious injuries.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION



The Maryland-National Capital Park and Planning Commission is a bicounty agency created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties; the Maryland-Washington Regional District (M-NCPPC planning jurisdiction) comprises about 1,001 square miles, while the Metropolitan District (parks) comprises about 919 square miles, in the two counties.

The Commission prepares, adopts, and amends or extends The General Plan (Thrive Montgomery 2050) for the physical development of the Maryland- Washington Regional District in Montgomery County. The Commission operates in each county through Planning Boards appointed by the respective county governments. The Planning Boards are responsible for implementation of local plans, recommendations on zoning map amendments, zoning text amendments and subdivision regulation amendments, and the general administration of their respective park systems.

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EXECUTIVE SUMMARY

The Pedestrian Master Plan is the first countywide plan in Montgomery County to make recommendations to improve the pedestrian experience in a holistic way. An important element in the county's 2017 Vision Zero Action Plan and 2021 Climate Action Plan, the Pedestrian Master Plan supports the Thrive Montgomery 2050 goal to "develop a safe, comfortable and appealing network for walking, biking and rolling." The plan documents the pedestrian experience in Montgomery County today, and makes recommendations in line with national and international best practices so being a pedestrian here is even better in the years ahead.

The plan envisions a county where walking (and rolling using a mobility device) is safer, more comfortable, more convenient and more accessible for pedestrians of all ages and abilities. In line with this vision, the plan includes the following goals:

1) Increase Walking Rates and Pedestrian Satisfaction
2) Create a Comfortable, Connected, Convenient Pedestrian Network
3) Enhance Pedestrian Safety
4) Build an Equitable and Just Pedestrian Network

The plan featured significant in-person and virtual engagement to understand the issues important to pedestrians in all areas of the county and from people of different backgrounds, ages, and types of mobility. A description of engagement activities can be found in the Engagement appendix.

In addition to community engagement, the plan included first-of-its-kind data collection and analysis to support effective plan recommendations. These innovative efforts included:

a) **Countywide Pedestrian Level of Comfort (PLOC) Analysis**
The project team collected information about streetscape features (sidewalk width, traffic buffer width, etc.) for all county roadways and intersections to estimate pedestrian comfort. This data collection supported analysis around comfortable access to schools, transit stations, libraries, and other community destinations – identifying disparities in comfortable access countywide.

b) **Montgomery County Public Schools (MCPS) Student Travel Tally**
The project team worked closely with MCPS to understand student travel patterns by distributing and analyzing a survey that was completed by more than 70,000 students in late 2019. The survey results provide unique insights into which schools already see significant arrivals and departures on foot, and where opportunities for improvement lie.

c) **2015-2020 Pedestrian Crash Analysis**

The project team summarized the number and severity of pedestrian crashes in Montgomery County over this five-year period. Analysis identified important context, like presence of lighting and roadway speed limit, to underscore factors related to crash severity and likelihood.

d) **Countywide Pedestrian Survey**
The project team designed, distributed, and analyzed a statistically-valid countywide survey with questions about type and frequency of pedestrian activity, satisfaction with different elements of the pedestrian environment (sidewalks, crosswalk presence, vehicle speed, etc.), knowledge of traffic laws, and others. The survey was distributed to 60,000 randomly-selected households countywide and the results were weighted in line with the county's demographics.

The engagement and data collection efforts are the foundation of the Pedestrian Master Plan. Together, they identify the issues that the plan's recommendations address.

Building on the county's Complete Streets Design Guide – a document that identifies the type and appropriate size of pedestrian facilities for each street type across the county – the Pedestrian Master Plan recommendations are focused on helping the county achieve systemic improvement to the pedestrian experience in several ways:

1) **Design, Policy, and Programming**
These recommendations address systemic issues that negatively affect the pedestrian experience by recommending changes to how pedestrian amenities are designed and constructed, the policies that guide transportation engineering in the county, as well as opportunities for expanded traffic safety education and more robust programming. The design, policy, and programming recommendations are the heart of the Pedestrian Master Plan because they address at a countywide level the issues highlighted through public engagement and existing conditions data collection.

Particularly significant recommendations in this section include:

- Providing more time for younger pedestrians, older pedestrians, and those with mobility issues to cross the street safely
- Updating pedestrian pathway and intersection lighting standards
- Improving driver education, particularly for people driving vehicles with identified pedestrian safety issues
- Adopting a more proactive, data-driven sidewalk construction and maintenance approach
- Increasing the number of places pedestrians can safely cross the street
- Identifying opportunities to change the streetscape to help mitigate climate impacts that affect pedestrians, such as extreme heat.
- Beginning a conversation on the transfer of state highways in more urban areas to county control to provide improved design flexibility and accountability
- Developing a plan to provide public restrooms countywide
- Reimagining Safe Routes to School programming

- Increasing the number of Automated Traffic Enforcement locations countywide
- Removing obstructions like utility poles from pedestrian pathways

2) **Bicycle Pedestrian Priority Area Prioritization**
   These recommendations identify where in the county bicycle and pedestrian capital improvement projects should be prioritized in a data-driven way based on equity, comfortable access, safety and other metrics.

3) **Complete Streets Design Guide Area Type Classification**
   These recommendations advance the transition from the Road Code area type classification (Urban, Suburban, Rural) to the Complete Streets Design Guide classifications (Downtown, Town Center, Suburban, Industrial, Country) to ensure that pedestrian-friendly streets are provided as roadways are reconstructed in the years ahead.

4) **Pedestrian Shortcut Identification**
   These recommendations identify locations where public or private investment will shorten pedestrian trips and make the pedestrian network more accessible.

5) **Country Sidepath Identification**
   These recommendations indicate where sidepaths—shared pedestrian and bicycle pathways—should be built along roadways in the more rural parts of the county, in line with guidance in the Complete Streets Design Guide

The Montgomery County Planning Department will track progress in implementing the Pedestrian Master Plan's vision using a biennial monitoring report and interactive website. The two tools will document how the county is implementing the plan recommendations and striving to achieve the plan's performance measure targets.

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INTRODUCTION



The Pedestrian Master Plan is an opportunity to make walking safer, more comfortable, more convenient, and more equitable by improving policy and programming, prioritizing infrastructure investments, and insisting on pedestrian-oriented design in all Montgomery County communities. Whether walking to a bus stop on Veirs Mill Road, rolling to work on a mobility scooter in Germantown, or making the trip to school in Burtonsville, all Montgomery County residents are pedestrians at some point during the day. A safe, comfortable, and convenient walking experience is a fundamental right.

The Pedestrian Master Plan lays out the specific steps the county should take to eliminate the barriers to walking that have developed since the 1950s. Through ideas big and small, the plan knits together communities with new sidewalks, safe street crossings, and direct pedestrian routes. The plan connects people to where they learn, shop, play, and work in ways difficult to imagine today. It will make walking a viable option to nearby schools, shops, parks, and businesses where that choice does not currently exist.

Prioritizing walking is essential to achieving many county goals from transportation safety and greenhouse gas reduction to equity. Pedestrians are the most vulnerable people using the transportation system. Improving pedestrian safety will have an outsized effect on black and brown communities as they bear the most significant impact of the county's severe and fatal pedestrian injuries. More Montgomery County residents walking also means improved public health, increased economic competitiveness, and better quality of life. Today, only 7.5% of weekday trips in the county take place on foot, even though 20% of all trips are shorter than 1 mile—a walkable distance for most people. By implementing the plan, this number should grow as walking becomes a more practical option for more people.

Achieving the vision in Downtown Silver Spring may look different from achieving it in Hyattstown, but by implementing the recommendations in this plan, we will achieve it in both places and everywhere in between.

The plan's goals aim to increase walking, build a connected pedestrian network, and improve pedestrian safety, all in an equitable and just way. Each goal has associated performance measures to ensure accountability and allow the community to track implementation progress. Each plan recommendation is related to one or more goals.

Yet, this is not a traditional transportation master plan.

While the 2018 *Bicycle Master Plan* provides recommendations for specific bikeways and the *Master Plan of Highways and Transitways* does the same for roadways and transit lines, the Pedestrian Master Plan instead focuses on policies, programs, and priorities to improve walking. These recommendations support the larger goals of Thrive Montgomery 2050 and specific policies the general plan envisions, including "a safe, comfortable and appealing network for walking, biking and rolling" and to "prioritize the provision of safe, comfortable and attractive sidewalks… roadway crossings… and other improvements to support walking… in capital budgets, development approvals

and mandatory referrals. With some limited exceptions, the plan prioritizes *areas for investment*, rather than what those specific investments should be. The plan is complemented by the county's *Complete Streets Design Guide* (CSDG), a document that defines the appropriate speed limit, sidewalk width, and other roadway characteristics for every road in the county. With those more specific nuances already addressed, the Pedestrian Master Plan's recommendations will improve the pedestrian experience systematically, not one street at a time. By changing approaches and procedures, routine maintenance and other ongoing efforts will yield major pedestrian benefits.

The plan is organized into several sections:

1. **Vision and Goals**
   This section describes what the pedestrian experience in Montgomery County will be once the plan recommendations are implemented and identifies performance measures to track implementation progress.
2. **Existing Conditions**
   This section provides a baseline understanding of the pedestrian experience in Montgomery County today using an array of data sources, including several developed specifically for this planning effort.
3. **Recommendations**
   This section includes a suite of policy, design, infrastructure, and programming improvements that the county should make to address the issues described in the Existing Conditions section and work toward achieving the master plan vision.
4. **Implementation**
   This section explains the different opportunities that exist to implement plan recommendations.
5. **Monitoring**
   This section identifies how community members will be able to track plan implementation progress.
6. **Appendices**
   This section provides additional technical information about different elements of the plan.

The plan affirmatively furthers the goals of the Racial Equity and Social Justice Act and is responsive to the county's climate assessment requirements.

Creating a more walkable Montgomery County where pedestrians are the priority is a long-term endeavor. The decisions that led to the current pedestrian circumstances have accumulated over the course of many decades and reflect the priorities of a different time. This plan presents a new path forward, but progress will take persistence, investment, advocacy, and political will. Pushing ahead will be the work of community members, public employees, private developers, and elected officials.

We are all walking here.

RACIAL EQUITY AND SOCIAL JUSTICE



The Montgomery County Council passed the Racial Equity and Social Justice Act in November 2019. The act requires the Planning Board to consider the impact of a plan on racial equity and social justice in the county. This is accomplished through changes in policy, practice, and allocation of county resources to ensure that all people have the same rights and opportunities regardless of race, socioeconomic status, age, sex, religion, or other characteristics.

The Pedestrian Master Plan considers a transportation mode that has not been prioritized in the recent development of Montgomery County. For much of the 20th century, the Montgomery County transportation system was designed for motor vehicle travel to the exclusion of people walking and biking. Walking is the most universal form of transportation. The ability to walk safely, comfortably, and conveniently in one's community is the minimum expectation a Montgomery County resident should have. Today, that expectation is not being met equally across the county.

Equity is a major consideration throughout the development of the Pedestrian Master Plan. It underpins the entire planning effort. The plan goals are to increase walking, to create a comfortable pedestrian network, to enhance pedestrian safety, **and to do all of these things in an equitable and just way**.

Throughout the planning process, Montgomery Planning has actively sought out opportunities to identify disparities in pedestrian access and safety and to better understand issues that affect particular pedestrian communities. This effort goes beyond race and socioeconomic background to engage members of the disability community with the goal of making Montgomery County a truly accessible place for people of all ages, backgrounds, and walking abilities.

The Existing Conditions Report includes analysis to determine if countywide findings also hold true ~~for equity communities~~across race, ethnicity, income, English language proficiency, and disability. This work relied on several data sources:

- Montgomery Planning's Equity Focus Areas (EFAs) are areas of the county where "lower income communities of color who may speak English less than very well" live. These data points were combined with pedestrian comfort and crash data to better understand disparities in comfortable access and pedestrian safety.
- Montgomery County Public Schools (MCPS) Title I/Focus Schools/High FARMS Rate Schools designations allow for school mode choice (how students are arriving at and departing from school) comparisons and comfortable access analysis between schools that have different population characteristics.
- The Countywide Pedestrian Survey asked questions about the pedestrian experience, activity, and perception—breaking out responses by race, age, ethnicity, and reported disability.

The Existing Conditions and associated public engagement activities identified disparities throughout the county. The plan recommendations were developed to address these issues. While many of the recommendations are broad in scope—affecting how different agencies function—other recommendations are specifically responsive to disparities identified in the Existing Conditions

Report. The plan guides the county to update policies and procedures that may currently benefit connected individuals and communities that have the time and resources to advocate for themselves at the expense of communities that may have greater need for pedestrian infrastructure and amenities. In addition, the plan includes a data-driven approach to prioritize where future pedestrian and bicycle capital projects should be constructed, giving particular weight to projects within EFAs.

Montgomery Planning will continue to assess how these recommendations are being implemented. Many plan performance measures will track how equitably the county is progressing toward a pedestrian-friendly future with a biennial monitoring report. Planning staff will take advantage of additional opportunities to ensure that racial equity and social justice remain at the forefront of pedestrian planning in the years to come.

VISION AND GOALS



Defining the Pedestrian Master Plan vision is about more than just a statement on a piece of paper. A transparent framework supports the vision and will allow comprehensive plan implementation monitoring. The different levels of that framework are defined here:

The **Vision Statement** paints a clear picture of what the plan intends to achieve. Specific goals expand on this statement.

Goals are broad conditions that must be met to achieve the plan's vision. Goals can always be improved. They articulate the conditions that will lead to the vision being achieved. Each goal has several objectives.

Objectives are specific conditions that must be met to advance a goal. Objectives are achievable, measurable, and time specific. They do not prejudge a solution but articulate the conditions that may lead to a solution. Objectives are carefully designed and avoid subjective interpretation.

Metrics are the data points that measure how well objectives are being met.

Targets are specific numbers that indicate when an objective has been achieved. Specific targets will be revisited through the Pedestrian Master Plan Biennial Monitoring Report.

Data Collection is the gathering of specific information required to assess each metric. It indicates the data source and whether it is currently available, could be available through changes to existing processes, or needs to be collected through new methods.

Vision Statement

Walking and rolling (using a mobility device) are safe, comfortable, convenient, and accessible for pedestrians of all ages and abilities across Montgomery County.

Goals

The vision is defined by four goals.

Goal 1: Increase Walking Rates and Pedestrian Satisfaction in Montgomery County

Goal 2: Create a Comfortable, Connected, Convenient Pedestrian Network

Goal 3: Enhance Pedestrian Safety

Goal 4: Build an Equitable and Just Pedestrian Network

These goals are not listed in order of importance. Rather they are intended to show that the ultimate success of this plan will be reflected in higher rates of walking in Montgomery County (Goal 1), which will come about only if we are successful in creating a more comfortable, connected and convenient pedestrian network (Goal 2) that enhances public safety (Goal 3) in a way that is equitable and just (Goal 4).

Goal 1: Increase Walking Rates and Pedestrian Satisfaction in Montgomery County

Making it easier and safer to walk across the county will allow walking to be a viable option for more people in their daily lives. High rates of walking are associated with improved health, lower greenhouse emissions, and a vibrant economy. As a result, an important measure of success for the Pedestrian Master Plan is the extent to which walking rates and pedestrian satisfaction increase in Montgomery County.

Objective 1.1:

Countywide, 12.0% of all trips by Montgomery County residents will be pedestrian trips, up from 7.5% in 2018. 22.0% of trips in urban areas will be pedestrian trips compared to 11.3% in 2018 12.0% along transit corridors compared to 7.3% in 2018, and 7.0% in exurban/rural areas compared to 4.6% in 2018.

Metric

Pedestrian trips as a percentage of all trips

Data Requirement

Regional Travel Surveys, Metropolitan Washington Council of Governments

Objective 1.2:

Countywide, 3.0% *(30.0% including the use of public transportation)*[1] of residents will commute on foot, up from 2.2% *(17.0%)* in 2019.

Metric

Percentage of residents who commute on foot (including the use of public transportation)

Data Requirement

Means of Transportation to Work: American Community Survey, United States Census

[1,2] People commuting by public transportation are very likely to walk or roll as part of their commute journey, either to or from a transit station. So, including public transportation commute share helps provide a more complete picture of pedestrian travel.

Objective 1.3:

The percentage of people who commute on foot *(including the use of public transportation)*[2] to a Montgomery County Transportation Management District (TMD) will be:

- 10.0% *(40.0% including the use of public transportation)* in the Bethesda TMD, up from 4.9% *(23.9%)* in Fiscal Year 2019
- 10.0% *(50.0%)* in the Silver Spring TMD, up from 4.8% *(36.4%)* in Fiscal Year 2019
- 4.0% *(35.0%)* in the Friendship Heights TMD, up from 2.3% *(27.0%)* in Fiscal Year 2019
- 1.5% *(7.0%)* in the Greater Shady Grove TMD, up from 0.9% *(5.1%)* in Fiscal Year 2019
- 4.0% *(25.0%)* in the North Bethesda TMD, up from 1.3% *(14.8%)* in Fiscal Year 2019
- 2.0% *(10.0%)* in the White Oak TMD, up from N/A *(N/A)* in Fiscal Year 2019

Metric

Percentage of TMD employees who commute on foot or using public transportation

Data Requirement

TMD Commuter Surveys, Montgomery County Department of Transportation (MCDOT)

Objective 1.4:

The percentage of people walking to access transit will be:

- 50.0% to WMATA Metro Red Line stations
- 10.0% to MARC Brunswick Line stations
- 70.0% to MDOT Purple Line stations

Metric

Percentage of transit riders arriving at a public transportation station on foot

Data Requirement:

User Surveys, Washington Metropolitan Area Transit Authority (WMATA) and Maryland Transit Administration (MTA)

Objective 1.5:

The percentage of students walking ~~*(including public transportation)*~~[3] to school will be:

- 50.0% ~~*(55.0%)*~~ for elementary school students, up from 16% ~~*(16.7%)*~~ in 2019
- 30.0% ~~*(35.0%)*~~ for middle school students, up from 11.0% ~~*(12.5%)*~~ in 2019
- 15.0% ~~*(25.0%)*~~ for high school students, up from 8.0% ~~*(11.0%)*~~ in 2019

Metric

Percentage of MCPS students walking ~~[or using public transportation]~~ to arrive at school

Data Requirement

Annual Travel Tally, MCPS

Objective 1.6:

The percentage of students walking ~~*(including public transportation)*~~[4] from school will be:

- 55.0% ~~*(60.0%)*~~ for elementary school students, up from 19.0% ~~*(19.6%)*~~ in 2019
- 40.0% ~~*(45.0%)*~~ for middle school students, up from 15.5% ~~*(17.8%)*~~ in 2019
- 20.0% ~~*(35.0%)*~~ for high school students, up from 12.2% ~~*(20.8%)*~~ in 2019

Metric

Percentage of MCPS students walking ~~or using public transportation~~ to depart from school

Data Requirement

Annual Travel Tally, MCPS

Objective 1.7:

Satisfaction with various elements of the pedestrian experience will be:

Overall

- 75.0% overall, up from 52.0% in 2020

Pathways

- 60.0% for Access to Retail, Restaurants, Parks, Other Destinations, up from 44.0% in 2020
- 60.0% for Amount of Sidewalks along Route, up from 44.0% in 2020
- 60.0% for Width of Sidewalks, up from 44.0% in 2020

~~[3] Students traveling to or from school by public transportation are very likely to walk or roll as part of their journey, either to or from a transit station. So, including public transportation commute share helps provide a more complete picture of pedestrian travel.]~~

~~[4] Students traveling to or from school by public transportation are very likely to walk or roll as part of their journey, either to or from a transit station. So, including public transportation commute share helps provide a more complete picture of pedestrian travel.~~

- 50.0% for Shading by Trees or Buildings, up from 39.0% in 2020
- 50.0% for How Often Driveways Cross Sidewalks, up from 35.0% in 2020
- 50.0% for Distance between Sidewalks and Cars, up from 31.0% in 2020
- 50.0% for Snow Removal, up from 28.0% in 2020
- 50.0% for Speed of Cars along Sidewalks and Paths, up from 21.0% in 2020

Crossings

- 60.0% for Distance to Cross the Street, up from 49.0% in 2020
- 65.0% for Time to Cross the Street at Pedestrian Signals, up from 47.0% in 2020
- 65.0% for Number of Marked Crosswalks, up from 46.0% in 2020
- 60.0% for Wait Time for a Pedestrian Walk Signal, up from 44.0% in 2020
- 60.0% for Number of Places to Safely Cross the Street, up from 42.0% in 2020
- 50.0% for Drivers Stopping for Me when I Cross the Street, up from 34.0% in 2020
- 50.0% for Places to Stop Partway while Crossing, up from 33.0% in 2020
- 50.0% for Number of Vehicles Cutting across the Crosswalk, up from 22.0% in 2020

Lighting

- 50.0% for Overhead Lighting along Sidewalks and Pathways, up from 32.0% in 2020
- 50.0% for Overhead Lighting at Crossings, up from 31.0% in 2020

Metric

Satisfaction with elements of the pedestrian experience

Data Requirement

Biennial Countywide Pedestrian Survey, Montgomery Planning

Goal 2: Create a Comfortable, Connected, Convenient Pedestrian Network

County residents, employees, and visitors will have a comfortable pedestrian experience, whether walking for recreation, to work, or for other purposes. Improving the pedestrian network can be achieved by building new pathways or reconstructing old ones, reducing vehicular travel speeds along and across pedestrian routes, and increasing separation between pedestrians and motor vehicles, among other things.

Objective 2.1:

Comfortable[5] pedestrian connectivity will be:

- 70.0% for pathways, up from 58.0% in 2020
- 55.0% for crossings, up from 44.0% in 2020

Metric

Miles of comfortable pathways and crossings in Montgomery County divided by length of all pathways and crossings in Montgomery County

Data Requirement

Pedestrian Level of Comfort Data, Montgomery Planning

Objective 2.2:

Comfortable pedestrian access to schools (pathway/crossing) will be:

- 80.0%/60% for elementary schools, up from 40.0%/32.0% in 2020
- 65.0%/50% for middle schools, up from 21.0%/13.0% in 2020
- 30.0%/20% for high schools, up from 7.0%/5.0% in 2020

Metric

Percentage of pedestrian trip lengths that are comfortable within one mile of elementary schools, one and a half miles of middle schools, and two miles of high schools, in line with Montgomery County Public Schools student walking criteria. ~~a certain distance of schools~~

Data Requirement

Pedestrian Level of Comfort Data, Montgomery Planning

[5] Comfort is described using the Pedestrian Level of Comfort (PLOC) methodology. A variety of pathway and crossing factors are considered to determine a comfort score for each crossing and street segment. The four main scores are: undesirable, uncomfortable, somewhat comfortable, and very comfortable. A detailed methodology can be found in the Pedestrian Level of Comfort appendix.

Objective 2.3:

Comfortable pedestrian access to parks (pathway/crossing) will be:

- 80.0%/40.0% for parks, up from 71.0%/34.0% in 2020
- 85.0%/70.0% for libraries, up from 77.0%/62.0% in 2020
- 90.0%/70.0% for recreation centers, up from 79.0%/62.0% in 2020

Metric

Percentage of pedestrian trip lengths that are comfortable within a certain distance of parks, libraries, and recreation centers

Data Requirement

Pedestrian Level of Comfort Data, Montgomery Planning

Objective 2.4:

Comfortable pedestrian access to transit stations (pathway/crossing) will be:

- 100.0%/80.0% for WMATA Metro Red Line stations, up from 86.0%/66.0% in 2020
- 90.0%/80.0% for MARC Brunswick Line stations, up from 84.0%/72.0% in 2020
- 95.0%/90.0% for MDOT Purple Line stations, up from 79.0%/79.0% in 2020

Metric

Percentage of pedestrian trip lengths that are comfortable within a certain distance of transit stations

Data Requirement

Pedestrian Level of Comfort Data, Montgomery Planning

Objective 2.5:

Tree canopy will shade 40.0% of sidewalks, up from 28.0% in 2020

Metric

Percentage of sidewalks that are shaded by tree canopy

Data Requirement

Pedestrian Level of Comfort and Tree Canopy Data, Montgomery Planning

Goal 3: Enhance Pedestrian Safety

Montgomery County has a goal of eliminating transportation-related fatalities and severe injuries by 2030. This "Vision Zero" policy starts with the ethical belief that everyone has the right to move safely in their communities.

Objective 3.1:

Pedestrian fatalities and severe injuries will be reduced to zero, down from 80 in 2019

Metric

Pedestrian fatalities and severe injuries

Data Requirement

Crash Data, Montgomery County

Objective 3.2:

Residents satisfied or very satisfied with their personal safety while walking will be 75.0%, up from 52.0% in 2020

Metric

Percentage of respondents satisfied or very satisfied with personal safety while walking

Data Requirement

Biennial Countywide Pedestrian Survey, Montgomery Planning

Goal 4: Build an Equitable and Just Pedestrian Network

Providing community members with a pedestrian network that meets everyone's needs is a critical aspect of achieving the county's racial and social justice goals.

Objective 4.1:

All pathways countywide will be accessible to persons with disabilities, up from TBD~~6.2% in 2020~~[6].

Metric

Percentage of sidewalks countywide with Americans with Disabilities Act faults

Data Requirement

Sidewalk Quality Data, MCDOT

Objective 4.2:

Title 1/Focus/High FARMS-designated ("designated") schools will be as comfortable to access as non-designated schools. Currently, the following disparities exist:

Destination School Type	Percentage of Trips to Each School Type Along Completely Comfortable Pathways and Crossings			
	Pathways		Crossings	
	Title I/Focus and High FARMS Rate Schools	All Other Schools	Title I/Focus and High FARMS Rate Schools	All Other Schools
Elementary Schools	43.0%	36.0%	34.0%	30.0%
Middle Schools	18.0%	20.0%	11.0%	14.0%
High Schools	6.0%	7.0%	3.0%	7.0%

Metric

Comparison of comfortable pathway/crossing connectivity to schools between designated and non-designated schools

Data Requirement

Pedestrian Level of Comfort Data, Montgomery Planning

[6] Sidewalks traveling up steep slopes are considered accessible as long as they follow the adjacent roadway grade.

Objective 4.3:

Transit stations will be as comfortable to access from Equity Focus Areas (EFAs) (Figure 2~~Figure 2~~) as from outside EFAs. Currently, the following disparities exist and are **bolded**:

- WMATA Metro Red Line stations
  - Pathways (88.0% comfortable EFA/85.0% non-EFA)
  - **Crossings (73.0% comfortable EFA/80.0% non-EFA)**
- MARC Brunswick Line stations
  - Pathways (88.0% comfortable EFA/83.0% non-EFA)
  - Crossings (79.0% comfortable EFA/69.0% non-EFA)
- MDOT Purple Line stations
  - **Pathways (73.0% comfortable EFA/81.0% non-EFA)**
  - **Crossings (73.0% comfortable EFA/80.0% non-EFA)**
- Montgomery County BRT Stations
  - Pathways (82% comfortable EFA/85% non-EFA)
  - Crossings (58% comfortable EFA/63% non-EFA)

Metric

Comparison of comfortable pathway/crossing connectivity to transit stations from EFAs and other areas

Data Requirement

Pedestrian Level of Comfort Data, Montgomery Planning

Objective 4.4:

Parks, libraries, and recreation centers will be as comfortable to access from EFAs (Figure 2~~Figure 2~~) as from outside EFAs. Currently, the following disparities exist and are **bolded**:

- Parks
  - Pathways (83.0% comfortable EFA/66.0% non-EFA)
  - Crossings (34.0% comfortable EFA/34.0% non-EFA)
- Libraries
  - Pathways (77.0% comfortable EFA, 77.0% non-EFA)
  - **Crossings (55.0% comfortable EFA, 66.0% non-EFA)**
- Recreation Centers
  - Pathways (82.0% comfortable EFA, 77.0% non-EFA)
  - **Crossings (49.0% comfortable EFA, 68.0% non-EFA)**

Metric

Comparison of comfortable pathway/crossing connectivity to parks, libraries, and recreation centers from EFAs and other areas

Data Requirement

Pedestrian Level of Comfort Data, Montgomery Planning

Objective 4.5:

Eliminate the disparity in the rate of pedestrian fatalities and severe injuries between EFAs (Figure 2~~Figure 2~~) and non-EFAs. In 2020, there were 4.8 times more severe pedestrian injuries and fatalities inside EFAs than outside them.

Metric

Ratio of pedestrians killed or severely injured per mile of roadway inside EFAs compared with outside EFAs

Data Requirement

Crash Data, Montgomery County

Objective 4.6:

People with disabilities will be at least as satisfied with their pedestrian experience as those without disabilities. In 2020, people with disabilities were 10.0% less satisfied.

Metric

Difference in overall pedestrian satisfaction between people with disabilities and those without

Data Requirement

Biennial Countywide Pedestrian Survey, Montgomery Planning

EXISTING CONDITIONS



The Pedestrian Master Plan establishes an ambitious vision for future pedestrian conditions in the county, supported by four goals and 20 objectives. But what does the pedestrian experience look like today? The Existing Conditions section of the Pedestrian Master Plan provides an in-depth look at the state of walking in Montgomery County in 2019 and 2020 based on the plan's goals and objectives.

In addition to various national and regional data sources, the Existing Conditions analysis includes several data sources developed specifically for this planning effort, including:

- A statistically valid pedestrian survey to document pedestrian activity for the county as a whole and for different land use types, sent to 60,000 randomly selected households countywide
- A student travel tally to understand how students arrive to and depart from school on a daily basis, completed by over 70,000 Montgomery County Public School (MCPS) students
- A Pedestrian Level of Comfort (PLOC) analysis cataloguing pedestrian conditions along the entirety of the pedestrian transportation network in Montgomery County
- A pedestrian crash analysis to understand the circumstances surrounding pedestrian-involved crashes occurring between 2015 and 2020

In addition to analyzing existing conditions at the countywide level, this section also identifies more specific distinctions based on land use and equity.

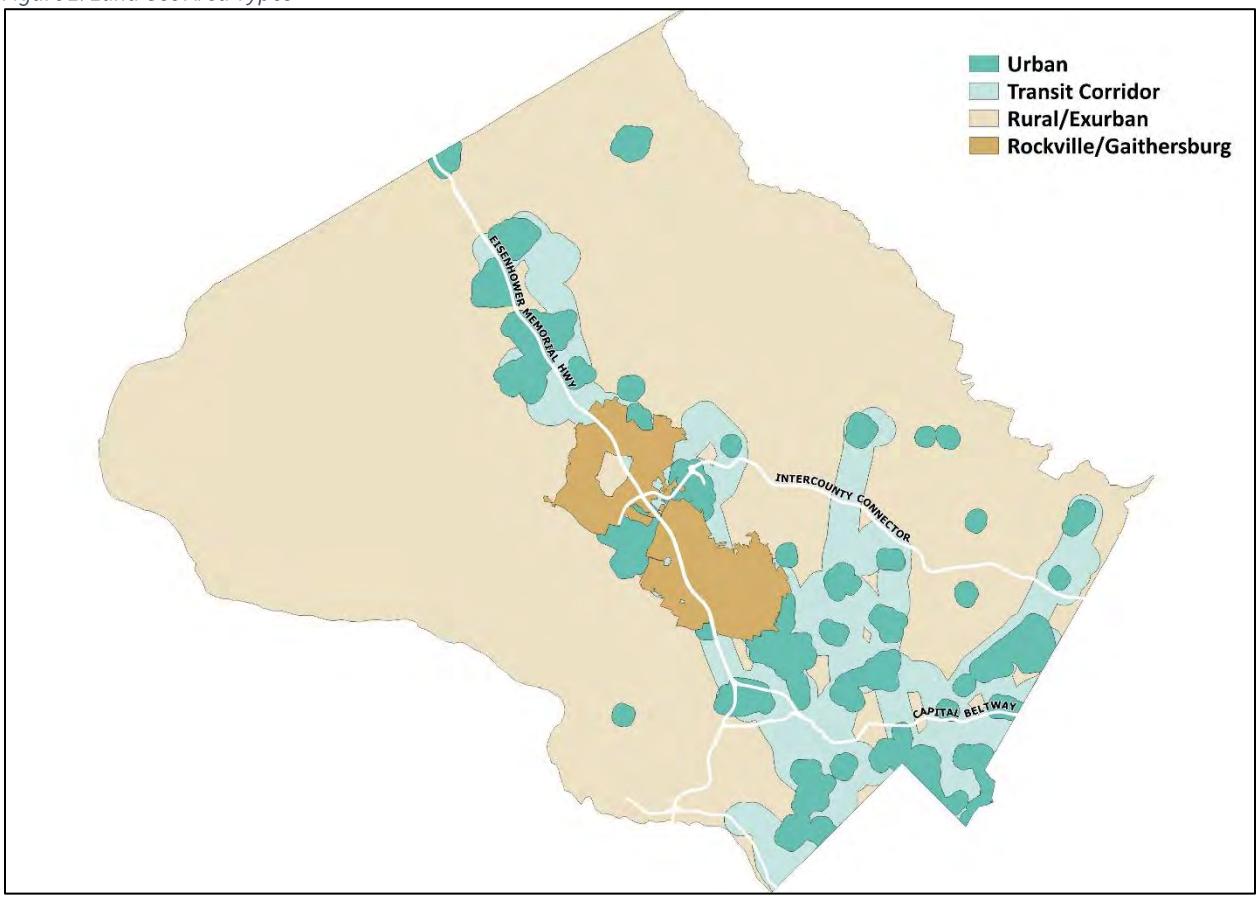
Land use is categorized as urban, transit corridor, or exurban/rural. These are defined below and illustrated in Figure 1.

Urban areas include the county's downtowns and town centers, as well as their immediate surroundings. Downtowns are envisioned as Montgomery County's highest-intensity areas with dense, transit-oriented development and a walkable street grid. Town centers are similar to downtowns but generally feature less intensive development and cover a smaller geographic area.

Transit corridors are more suburban and include areas within a half-mile of Washington Metropolitan Area Transit Authority and MCDOT RideOn transit services arriving at least every 20 minutes during the busiest time of day.

The remainder of the county, apart from the cities of Rockville and Gaithersburg (shown in dark brown in Figure 1), is defined as **exurban/rural**.[7]

Figure 1: Land Use Area Types

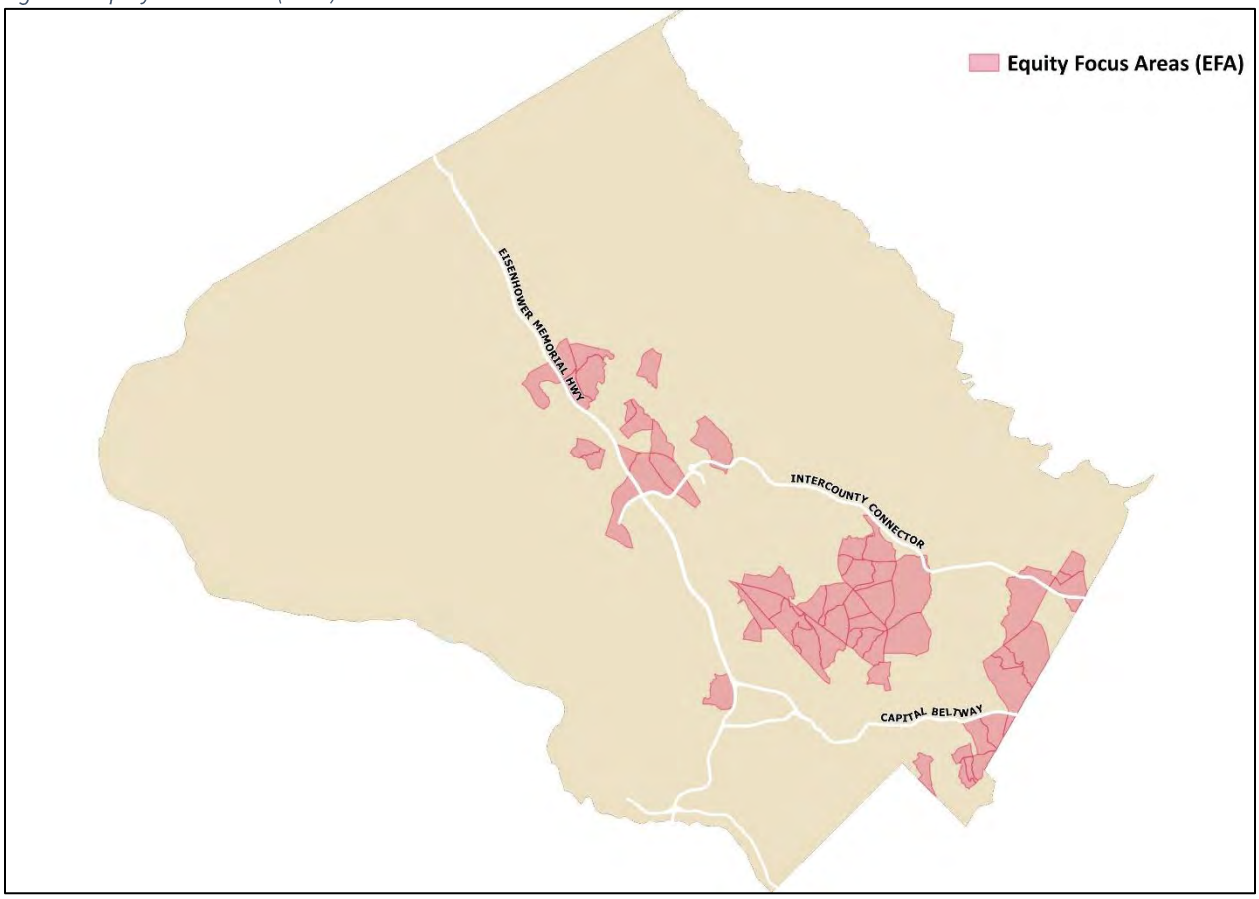


[7] Rockville and Gaithersburg have been excluded from the analysis except where noted, as Montgomery Planning does not have planning authority in these jurisdictions.

Equity

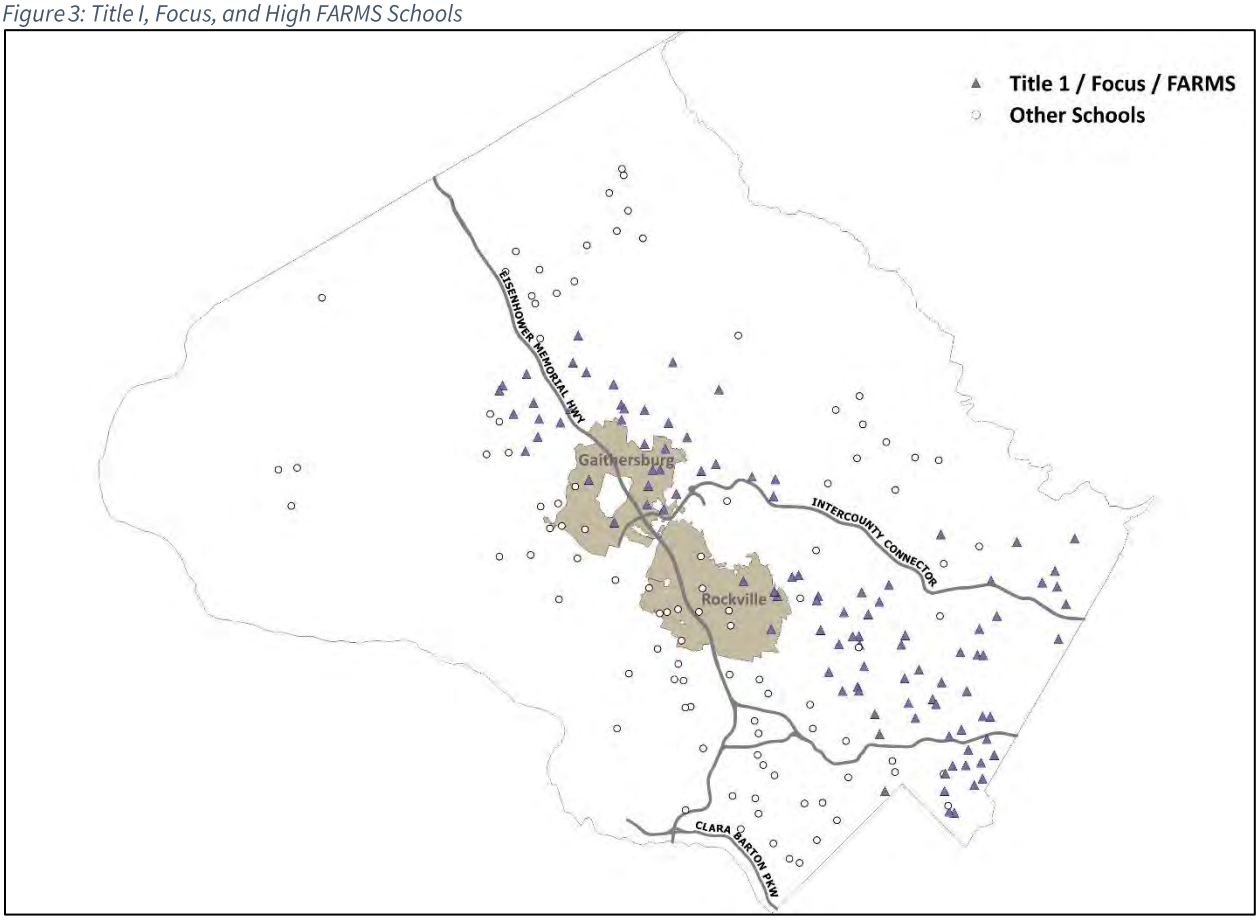
Equity is typically analyzed by comparing Equity Focus Areas (EFAs)[8] with the rest of the county on several metrics (Figure 2~~Figure 2~~) to highlight any disparities that may exist. Additionally, for school access measures, high Free and Reduced Meal Services (FARMS) rates and Title I/Focus School status are used to make equity comparisons (Figure 3). Lastly, some of the results from the countywide pedestrian survey are broken out based on reported disability status. Because equity is a foundational goal of the Pedestrian Master Plan, equity analyses are highlighted throughout this section.

Figure 2: Equity Focus Areas (2021)



[8] Equity Focus Areas (EFAs) are parts of Montgomery County that are characterized by high concentrations of lower-income people of color who may also report speaking English less than "very well." About 26% of the county's population live in EFAs.

Figure 3: Title I, Focus, and High FARMS Schools



Existing Conditions Findings

The existing conditions analysis is organized around the Pedestrian Master Plan goals described in the previous section.

Walking Rates and Satisfaction

The Pedestrian Master Plan aims to increase the number of trips made by walking and rolling (using a mobility device). The following is a summary of current pedestrian behavior, including what portion of trips residents—and students, specifically—make by walking, for what purposes residents walk, and resident satisfaction with the pedestrian environment.

Mode Share

The Countywide Pedestrian Survey found that 98% of respondents had taken at least one pedestrian trip in the past month.

Overall, 7.5% of weekday trips are made by walking (Table 1~~Table 1~~) and 2.2% of commute trips are made by walking in Montgomery County. Walking rates vary greatly by land use type, with a greater share of trips made by walking in urban areas (11.3%) compared with transit corridors (7.3%) and exurban/rural areas (4.6%). In addition, residents in urban areas make up a greater share of commute trips by walking (3.7%) than those in transit corridors (1.8%) or exurban/rural areas (1.1%).

Walking rates also vary depending on whether an area is an EFA. Residents in EFAs make 9.6% of trips by walking, while residents in non-EFAs make 7.0% of trips by walking. The share of commute trips by walking is only slightly greater in EFAs (2.4%) than in non-EFAs (2.1%).

Table 1. Pedestrian Mode Share by Area Types

	Total	Land Use Type			Equity Focus Areas	
		Urban	Transit Corridor	Exurban/ Rural	EFAs	Non-EFAs
Overall Weekday Trips*	**7.5%**	11.3%	7.3%	4.6%	9.6%	7.0%
Commute Trips**	**2.2%**	3.7%	1.8%	1.1%	2.4%	2.1%

* Regional Travel Survey, 2017-2018

** American Community Survey, 2019 Five-Year Estimates

Note: County mode share (the percentage of trips made by different travel modes) includes Rockville and Gaithersburg.

While the county's pedestrian commuter mode share is low, it is higher than all other counties in the region, except Arlington County (Table 2). In urban areas such as the City of Rockville and Silver Spring Census Designated Place, commuter mode share is higher. For instance, the 2019 American Community Survey reports that the rate of walking is 3.2% in these areas.[9]

[9] Silver Spring Census Designated Place includes Downtown Silver Spring, East Silver Spring, Woodside, Woodside Park, Lyttonsville, North Hills Sligo Park, Long Branch, Indian Spring, Goodacre Knolls, Franklin Knolls, Montgomery Knolls, Clifton Park Village, New Hampshire Estates, and Oakview.

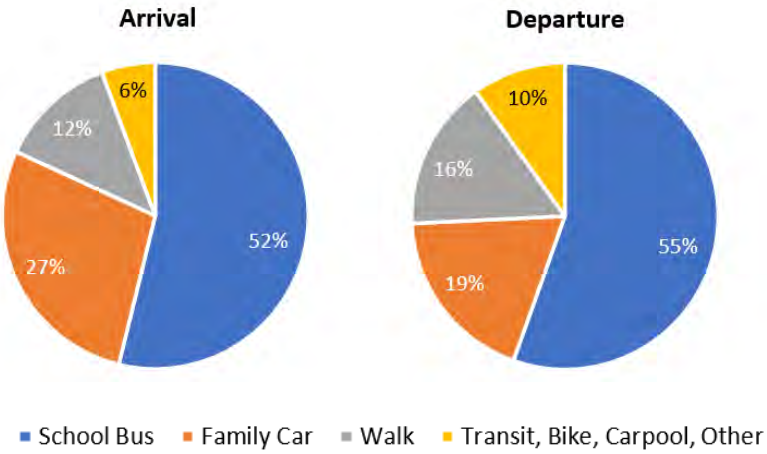
Table 2. Commute Mode Share of Jurisdictions in the Metropolitan Washington Region

Jurisdiction	Pedestrian Mode Share
Washington, D.C.	13.4%
Arlington County, VA	5.0%
Montgomery County, MD	**2.2%**
Prince George's County, MD	2.0%
Fairfax County, VA	1.9%
Frederick County, MD	1.8%
Howard County, MD	1.0%

Source: American Community Survey, 2019 Five-Year Estimates
Note: County mode share (the percentage of trips made by different travel modes) includes Rockville and Gaithersburg.

In addition to evaluating travel to work, Montgomery Planning also analyzed travel to school. Figure 4 shows that walking is the third-most common mode of transportation to and from school, with 12% of students arriving and nearly 16% of students departing on foot, compared with 52% arriving and 55% departing by school bus and 27% arriving and 19% departing by family car. Students are more likely to walk in the afternoon. This is the case for students at every grade level from kindergarten to 12th grade.

Figure 4. Student Mode Share by Arrivals and Departures



Source: Montgomery County Student Travel Tally
Note: Analysis includes schools in Rockville and Gaithersburg.

Walking is most prevalent with elementary school students, with 16% of arrivals by walking and 18% of departures by walking (Table 3). Walking is least prevalent with high school students, with 8% of arrivals by walking and 12% of departures by walking. By comparison, surveys of other jurisdictions in the region found the following rates of walking to school: 23% of Washington, D.C., public school

students in 2017[10]; 21% of Alexandria public school students in 2019[11]; and 20% of students in Arlington in 2019.[12] These communities are more compact than Montgomery County, but their walk mode shares provide context for the county's own results.

Table 3. Walking Arrivals and Departures by School Level

School Level	Arrival	Departure
Elementary School	16%	18%
Middle School	11%	16%
High School	8%	12%
Total	12%	16%

Source: Montgomery County Student Travel Tally
Note: Data include schools in Rockville and Gaithersburg.

Walking rates to school vary slightly based on whether schools are designated as Title I/Focus or have a high FARMS rate. For elementary school students, those at designated schools have higher walk rates both to school (18% vs. 13%) and from school (21% vs. 15%) than at non-designated schools (Table 4). For middle school and high school students, non-designated schools have slightly higher rates of walking. Overall, walk rates are higher at designated schools than non-designated schools.

Table 4. Walking Arrivals and Departures for Title I/Focus and High FARMS Rate Schools and Non-Designated Schools

School Level	*Title I/Focus and High FARMS Schools*		*Non-Title I/Focus and Low FARMS Schools*	
	Arrival	Departure	Arrival	Departure
Elementary School	18%	21%	13%	15%
Middle School	10%	14%	13%	18%
High School	7%	11%	8%	12%
Total	13%	17%	11%	15%

Note: Data include schools in Rockville and Gaithersburg.

While walking departure rates from school are generally below 20%, there is wide variation in walking rates among individual schools. In some cases, walking rates exceed 30 or 40% of school access mode share. Table 5 shows those elementary, middle, and high schools with the highest walking departure rates. Many of the schools with the highest walking rates are schools designated as Title I/Focus or high FARMS rate schools. High walking rates may be related to shorter walking distances, neighborhood conditions conducive to comfortably and safely walking to/from school, and whether

[10] "How Many Public School Students in DC Could Walk to Their School?" 10/2019. dme.dc.gov/sites/default/files/dc/sites/dme/publication/attachments/DME_Edsight%20Distance%20to%20School%20FINAL.pdf
[11] "Student Travel Tally Report: Combining Schools in One Data Collection Season," Fall 2019. virginiadot.org/programs/resources/safe_routes/2016-2017/Resources/STTW-2019/Fall_2019_STTW_Alexandria.pdf
[12] "Arlington County Public Schools Student Travel Tally," 2/21/2020. virginiadot.org/programs/resources/safe_routes/2016-2017/Resources/STTW-2019/Fall_2019_STTW_Arlington.pdf

walking is the only option because busing is not provided (within a certain distance of the school) and parents or guardians are not available to drive the student.

Table 5. Schools with the Highest Walking Departure Rates by School Type

Schools	Walk Mode Share
Elementary Schools	
Glen Haven Elementary School	50%
Snowden Farm Elementary School	49%
Gaithersburg Elementary School	48%
New Hampshire Estates Elementary School	43%
Middle Schools	
Montgomery Village Middle School	46%
Hallie Wells Middle School	43%
Takoma Park Middle School	36%
Gaithersburg Middle School	34%
High Schools	
Bethesda-Chevy Chase High School	24%
Wheaton High School	20%
Albert Einstein High School	19%
Rockville High School	17%

Source: Montgomery County Student Travel Tally
Note: Data include schools in Rockville and Gaithersburg.
Italics indicates that a school is designated as a Title I/Focus and high FARMS rate school.

Table 6 lists those elementary, middle, and high schools that have the lowest walking departure rates.[13] Additional findings from the student travel tally can be found in the Student Travel Tally appendix.

Table 6. Schools with the Lowest Walking Departure Rates by School Type

Schools	Walk Mode Share
Elementary Schools	
Luxmanor Elementary School	<1%
Bel Pre Elementary School	1%
Cedar Grove Elementary School	1%
Maryvale Elementary School	1%
Middle Schools	
William H. Farquhar Middle School	1%
Redland Middle School	2%
Briggs Chaney Middle School	3%
Benjamin Banneker Middle School	4%
High Schools	
Col. Zadok Magruder High School	2%
James Hubert Blake High School	2%
Sherwood High School	4%
Paint Branch High School	5%

Source: Montgomery County Student Travel Tally
Note: Data include schools in Rockville and Gaithersburg.
Italics indicates that a school is designated as a Title I/Focus or high FARMS rate school.

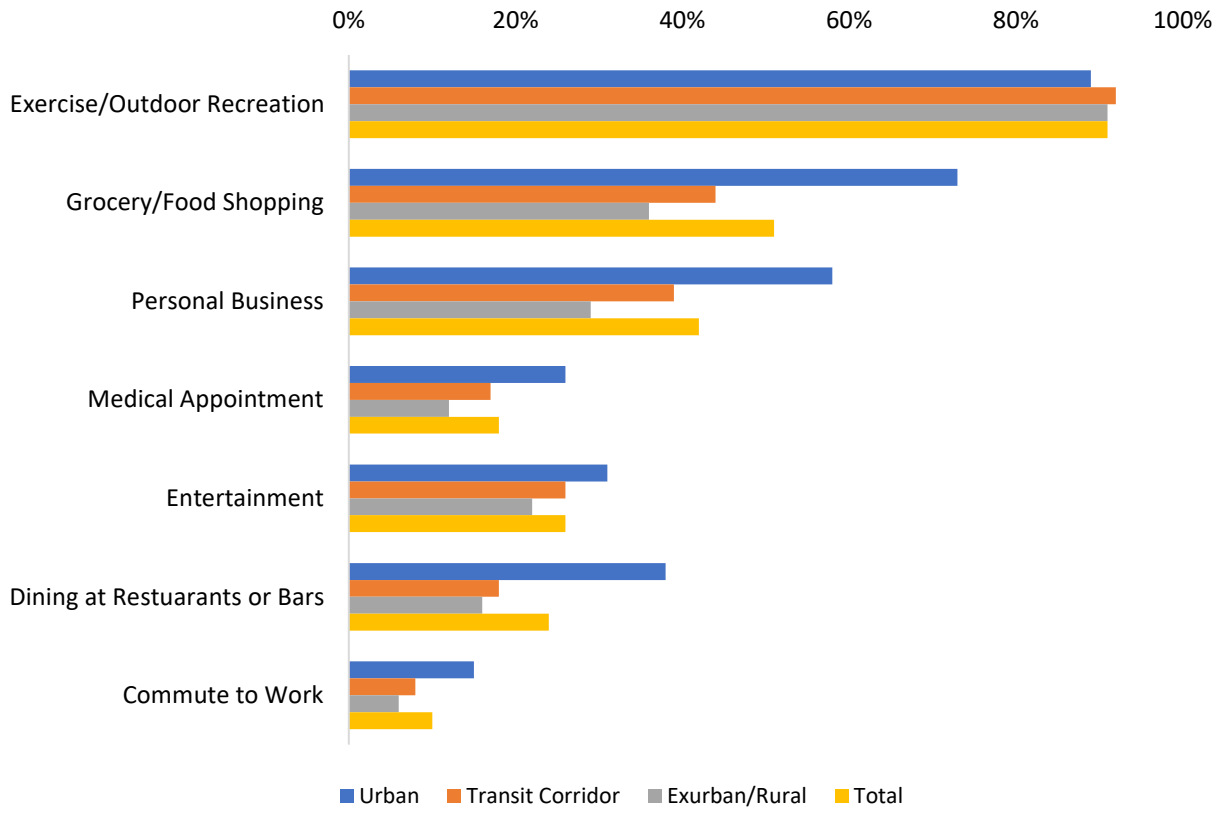
Walk Purpose

Pedestrian trips are made for many reasons, from recreational walking and exercise to walking to work or to complete errands. Figure 5 summarizes why respondents have taken trips in the past month. No matter the land use type, exercise and outdoor recreation are the most common reasons for walking. More than 90% of respondents walked for recreation in the past month.

Utilitarian pedestrian trips—where the purpose of walking is accomplishing errands or getting to a destination—are more common for residents in urban areas (shown in blue in Figure 5) than residents of transit corridors or exurban/rural areas (shown in orange and grey, respectively).

[13] Schools included in this table have established walk zones where school bus service is not provided by MCPS.

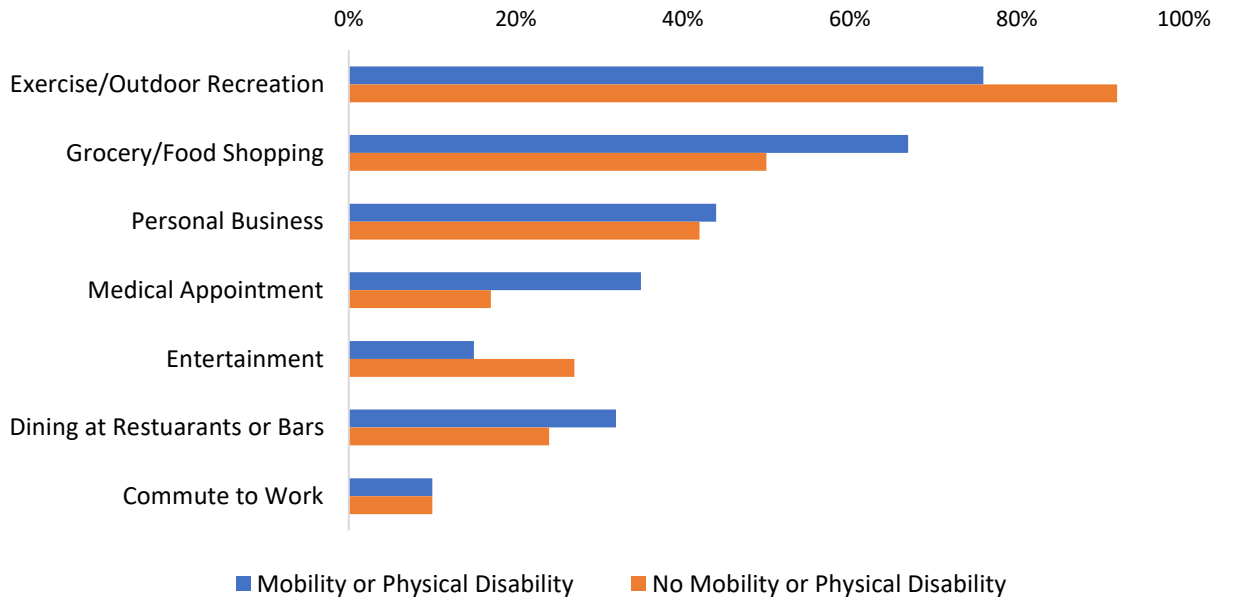
Figure 5. Pedestrian Trip Purpose by Land Use Type in the Prior Month



Source: Countywide Pedestrian Survey, 2020

Respondents with reported disabilities were more likely to walk for non-recreational trips than people without reported disabilities, as seen in Figure 6~~Figure 6~~. In fact, respondents with disabilities were twice as likely as others to walk to a medical appointment (35% to 17%), significantly more likely to walk to the grocery store/food shopping (67% to 50%) and to dine at restaurants (32% to 24%). However, respondents with disabilities take 16% fewer trips for exercise or outdoor recreation than respondents without reported disabilities (76% to 92%).

Figure 6. Pedestrian Trip Purpose by Reported Disability



Source: Countywide Pedestrian Survey, 2020

Trip Frequency and Length

Exercise/recreation trips are also the most frequently made pedestrian trip. Overall, 58% of pedestrian travel was for exercise or recreation.

There is a marked difference between urban areas and the rest of the county when it comes to the number of pedestrian trips taken and their purpose. Urban area respondents take about 32% more pedestrian trips than those in transit corridors and 27% more than those in exurban/rural areas. Also, the majority of trips taken in urban areas were for a utilitarian purpose: 53% compared with 37% in transit corridors and 32% in exurban/rural areas.

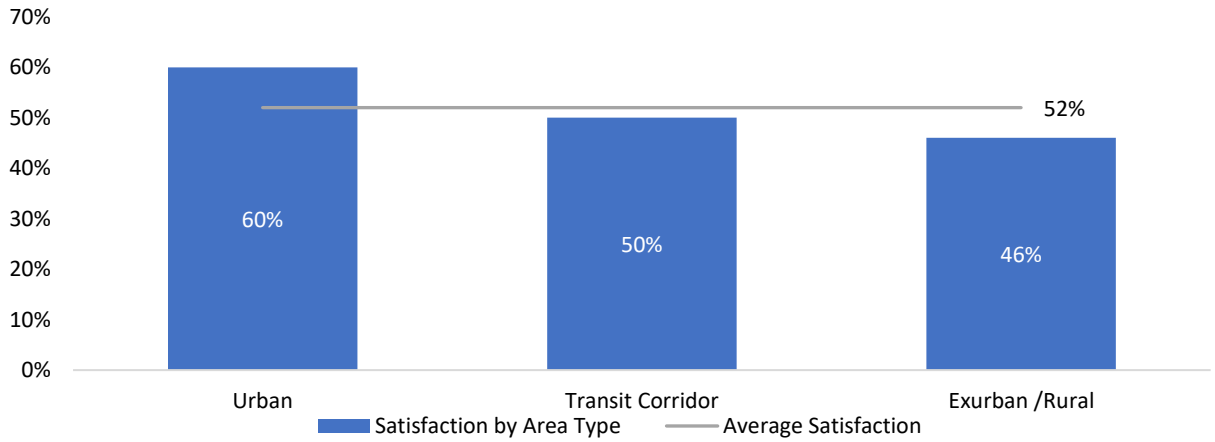
Countywide, exercise/recreational walking trips are longer than utilitarian trips. While 86% of recreational trips are longer than 20 minutes, the majority of trips for grocery/food shopping, personal business, medical appointments, entertainment, dining, and commuting are 20 minutes or less. This makes intuitive sense because the purpose of a recreational walk is the walk itself, while for other trip types, the purpose is to reach a destination. If a utilitarian pedestrian trip takes too long, it's likely the trip will not be taken or would instead become a car or transit trip.

Travel-time differences are also apparent between urban areas and the rest of the county. For example, 62% of trips for grocery/food shopping in urban areas are 20 minutes or less, while in transit corridors and exurban/rural areas, 39% and 42% of these trips are 20 minutes or less, respectively. So, not only are there more pedestrian trips to grocery/food stores in urban areas but these trips are also shorter. With more destinations within that 20-minute walking distance in the more urban areas of the county, it makes sense that residents are taking more of these trips.

Satisfaction

The Countywide Pedestrian Survey also included questions about how satisfied respondents are with different elements of the pedestrian experience. As shown in Figure 7, 52% of respondents are satisfied with the overall pedestrian experience in Montgomery County, with respondents in urban areas reporting the highest rates of satisfaction (60%) and those in exurban/rural areas reporting the lowest (46%). Higher satisfaction rates in urban areas are not surprising, considering that these areas are the best endowed with both pedestrian accommodations and destinations.

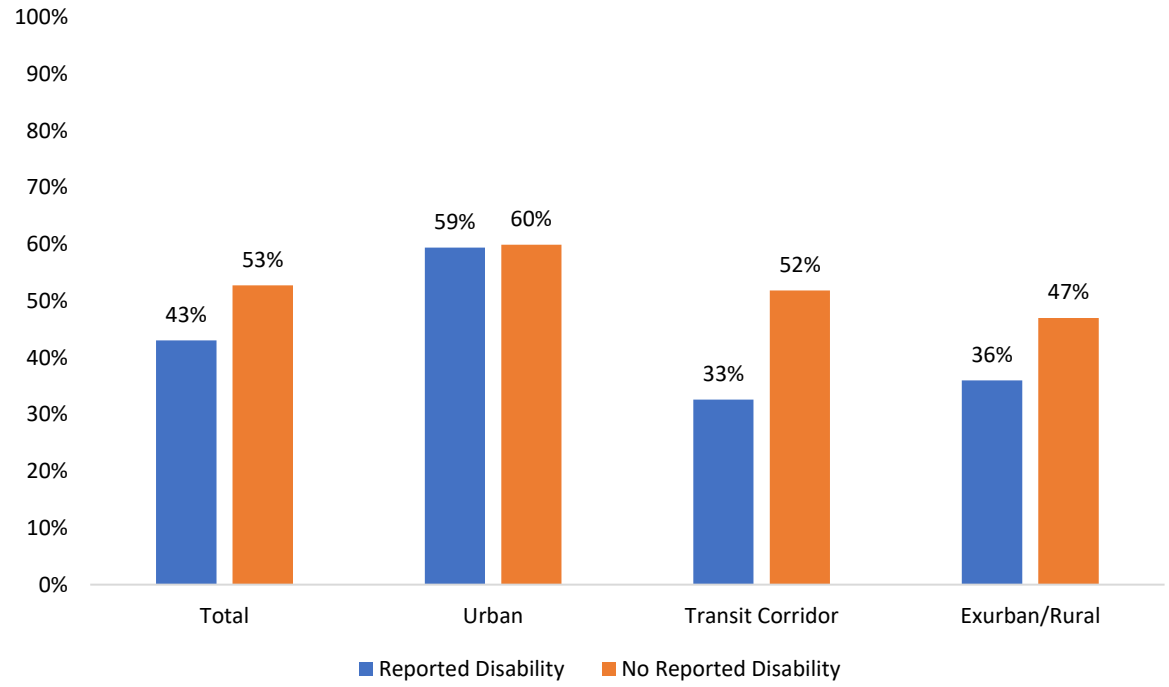
Figure 7. Satisfaction with the Overall Pedestrian Experience



Source: Countywide Pedestrian Survey, 2020

As shown in Figure 8, only 43% of pedestrians with reported disabilities are satisfied with their overall pedestrian experience in Montgomery County, compared with 53% of respondents without reported disabilities. However, there are notable differences based on land use type with respondents in urban areas reporting the same level of satisfaction whether they have a reported disability (59%) or not (60%). In contrast, respondents with reported disabilities in transit corridors are substantially less satisfied (33%) than respondents without reported disabilities (52%). Respondents with reported disabilities in exurban/rural areas are also less satisfied (36%) than respondents without reported disabilities (47%), but the differences are less pronounced.

Figure 8. Overall Satisfaction by Reported Disability Status and Land Use Type



Source: Countywide Pedestrian Survey, 2020

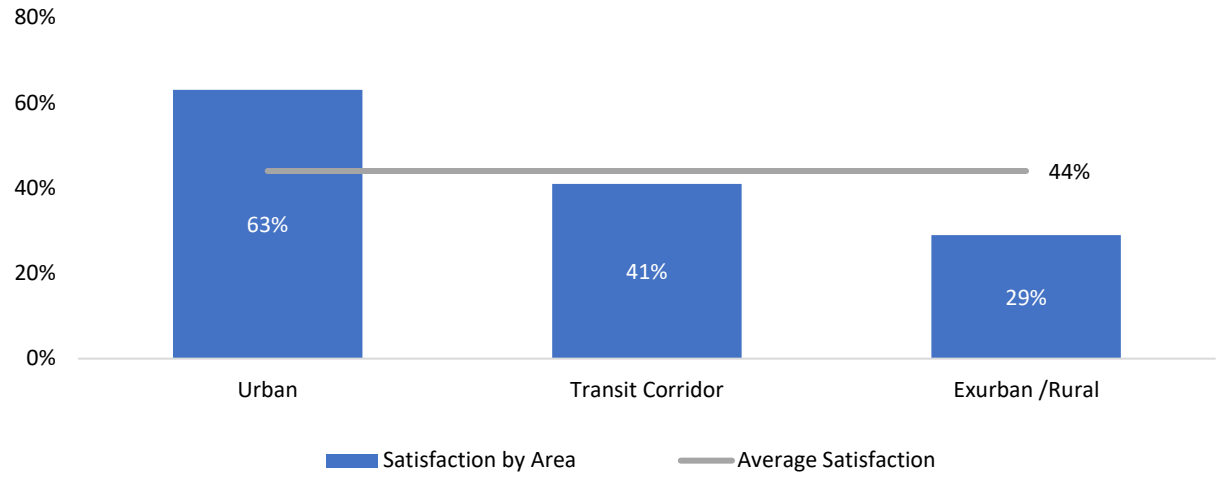
In addition to overall satisfaction, the Countywide Pedestrian Survey broke down the pedestrian experience into different elements:

- access to destinations
- the experience walking and rolling along streets
- the pedestrian experience at intersections and crossings
- the presence of lighting

Access to Destinations

As shown in Figure 9, 44% of respondents are satisfied with walking to retail, restaurants, parks, etc., with respondents in urban areas reporting the highest rates of satisfaction (63%) and respondents in exurban/rural areas reporting the least satisfaction (29%).

Figure 9. Pedestrian Satisfaction with Access to Retail, Restaurants, Parks, Etc.



Source: Countywide Pedestrian Survey, 2020

Walking Along a Street

Several elements define the experience of walking along a street: the amount and width of pathways along a route, the distance between sidewalks and cars, and the speed of those vehicles. Table 7 compares pedestrian satisfaction while walking along the street in different areas of the county.

While satisfaction rates for this experience are less than 50%, county residents are most satisfied with the "amount of sidewalks on their route" (44%) and the "width of sidewalks" (44%) but least satisfied with the "speed of cars along sidewalks and paths" (21%) and "snow removal" (28%). Satisfaction levels across land use types are generally similar, except that urban residents express greater satisfaction with the "amount of sidewalk on their route" (55%) than transit corridor (45%) and exurban/rural (31%) residents.

Table 7. Pedestrian Satisfaction Walking Along the Street

Experience Walking Along the Street	Urban	Transit Corridor	Exurban/ Rural	Total
Amount of sidewalks on pedestrian route	55%	45%	31%	**44%**
Width of sidewalks	45%	45%	43%	**44%**
Shading by trees or buildings	39%	42%	38%	**39%**
How often driveways cross sidewalks	36%	34%	34%	**35%**
Distance between sidewalks and cars	33%	31%	28%	**31%**
Snow removal	28%	30%	26%	**28%**
Speed of cars along sidewalks and paths	23%	19%	22%	**21%**

Source: Countywide Pedestrian Survey, 2020.

Pedestrian Experience at Intersections and Crossings

Similar to the experience walking along the street, the crossing/intersection experience is made up of several elements. Table 8 compares pedestrian satisfaction at intersections and crossings in different areas of the county. As with walking along the street, the majority of residents expressing

dissatisfaction with all elements of intersections and crossings that they were asked about. Survey respondents indicated that they are most satisfied with the "distance to cross the street" (49%) and the "time to cross the street at pedestrian signals" (47%) and are least satisfied with the "number of vehicles cutting across the crosswalk" (22%), "places to stop partway while crossing" (33%), and "drivers stopping for me when I cross the street" (34%).

While urban respondents tend to have greater levels of satisfaction than exurban/rural respondents for "number of places to safely cross the street," "number of marked crosswalks," "distance to cross the street," and "places to stop partway while crossing," respondents in transit corridors have slightly higher levels of satisfaction with the "time to cross the street at pedestrian signals" and the "wait time for a pedestrian walk signal" than urban or exurban/rural respondents.

Table 8. Pedestrian Satisfaction at Intersections and Crossings

Experience at Intersections and Crossings	Urban	Transit Corridor	Exurban/ Rural	Total
Distance to cross the street	53%	50%	45%	**49%**
Time to cross the street at pedestrian signals	47%	52%	43%	**47%**
Number of marked crosswalks	50%	48%	39%	**46%**
Wait time for a pedestrian walk signal	43%	47%	43%	**44%**
Number of places to safely cross the street	46%	43%	35%	**42%**
Drivers stopping for me when I cross the street	32%	34%	35%	**34%**
Places to stop partway while crossing	39%	32%	27%	**33%**
Number of vehicles cutting across the crosswalk	20%	22%	23%	**22%**

Source: Countywide Pedestrian Survey, 2020

Lighting

While survey respondents expressed low satisfaction with lighting levels along sidewalks/pathways and at crossings (32% and 31%), urban respondents (40% and 39%) are more satisfied with lighting than transit corridor (30% and 28%) or exurban/rural (28% and 26%) respondents (Table 9).

Table 9. Pedestrian Satisfaction with Lighting

Lighting Experience	Urban	Transit Corridor	Exurban/ Rural	Total
Overhead lighting along sidewalks and pathways	40%	30%	28%	**32%**
Overhead lighting at crossings	39%	28%	26%	**31%**

Source: Countywide Pedestrian Survey, 2020

From the pedestrian satisfaction responses from the Countywide Pedestrian Survey, it is clear that there is room for improvement. While a slim majority of respondents were satisfied overall with their experience as pedestrians, when asked to consider the elements that define that overall experience, they reported much lower satisfaction.

A Comfortable, Connected, Convenient Pedestrian Network

Montgomery County's current walking rates and degree of satisfaction with the pedestrian experience may be, in part, explained by the low level of comfort that pedestrians experience when walking and rolling in the county. This section details the specific pedestrian accommodations and resulting pedestrian comfort levels that exist along streets, trails, and at roadway crossings.

Comfort is described using the Pedestrian Level of Comfort (PLOC) methodology. A variety of pathway and crossing factors are considered to determine a comfort score for each crossing and street segment. The four main scores are: undesirable, uncomfortable, somewhat comfortable, and very comfortable.[14]

"Comfort" is not the same as "safety." While safety will always be the bedrock principle of the transportation system (and is the focus of Goal 3), increasing pedestrian comfort can also help create a pedestrian experience in Montgomery County that residents and visitors enjoy and look forward to, *not just tolerate or overcome*.

Pedestrian Accommodations

Pedestrian accommodations are the parts of the environment that pedestrians use to travel. They include elements along roads, like sidewalks or sidepaths; elements that cross roads, such as marked crosswalks and pedestrian refuge islands; and elements away from roads, like trails and connections between culs-de-sac.

Pedestrian Accommodations Along the Street

Table 10 summarizes sidewalk mileage by street classification,[15] as well as where there are sidewalk gaps (sections of missing sidewalk). Countywide, there are nearly 2,200 miles of sidewalks (primarily on local—or residential—streets) and 218 miles of sidewalk gaps on non-local streets. Many of these gaps are located on roads that connect people to destinations, including major highways, arterials, and primary residential streets.

[14] The existing pedestrian network can be viewed on the Pedestrian Level of Comfort Map at mcatlas.org/pedplan. A detailed methodology can be found in Pedestrian Level of Comfort appendix.

[15] A street's classification is determined by the *Master Plan of Highways and Transitways,* which was comprehensively updated in 2018. A street's classification reflects its function in the county's transportation network. Some streets, like local streets, exist to provide access to/from residences, while others, like major highways, facilitate higher-speed travel between regional destinations and provide access to businesses. Other streets balance access and mobility in different ways.

Table 10. Sidewalk Mileage by Street Classification

Street Classification	Street Mileage	Existing Sidewalks (miles)	Sidewalk Gaps (miles)
Controlled Major Highway	19	20	1
Major Highway	159	214	50
Parkway	9	3	0
Arterial	243	205	98
Minor Arterial	48	62	8
Business	50	79	2
Primary Residential	215	227	56
Industrial	7	12	1
Country Road	35	2	3
Rustic Road	149	2	0
Exceptional Rustic Road	40	0	1
Local Streets	2,121	1,367	N/A
Total	**3,095**	**2,193**	**220**

Source: Pedestrian Level of Comfort Analysis

Note: Missing sidewalks on local streets are not classified as sidewalk gaps because traffic volumes and speed limits often allow for a comfortable experience for those pedestrians traveling in the roadway.

These sidewalk gaps are not evenly distributed across the county; 79% of the sidewalk gap mileage is in the exurban/rural part of the county. The highlighted cells in Table 11 call out those sidewalk gaps in urban and transit corridor communities along busier, faster streets and locations with more pedestrian activity.

Table 11. Sidewalk Gap Mileage by Street Classification and Land Use

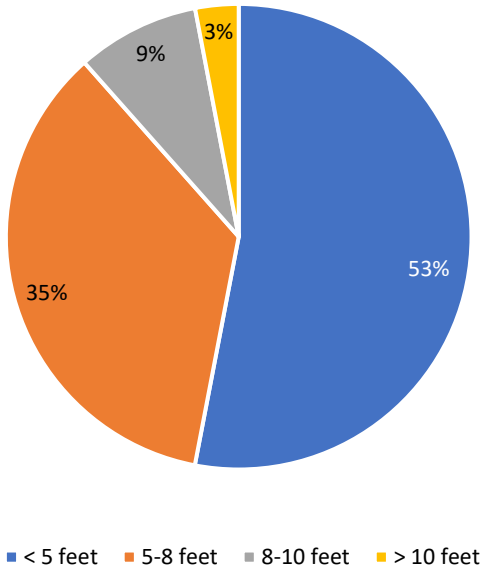
Street Classification	Existing Sidewalks (miles)	Gap Mileage			
		Urban	Transit Corridor	Exurban/ Rural	Total
Controlled Major Highway	20	1	0	0	**1**
Major Highway	214	5	7	38	**50**
Parkway	3	0	0	0	**0**
Arterial	205	7	11	80	**98**
Minor Arterial	62	1	2	5	**8**
Business	79	2	0	0	**2**
Primary Residential	227	4	7	45	**56**
Industrial	12	0	0	1	**1**
Country Road	2	0	0	3	**3**
Rustic Road	2	0	0	0	**0**
Exceptional Rustic Road	0	0	0	1	**1**
Local Streets	1,367	N/A	N/A	N/A	**N/A**
Total	**2,193**	**20**	**27**	**173**	**220**

Source: Pedestrian Level of Comfort Analysis

Note: Missing sidewalks on local streets are not classified as sidewalk gaps ~~because traffic volumes and speed limits often allow for a comfortable experience for those pedestrians traveling in the roadway~~.

Not all sidewalks are equal. Factors such as how wide a sidewalk is and how far away it is from a parallel street affect the pedestrian experience. Wider sidewalks and wider buffers are associated with greater comfort. As depicted in Figure 10, over half the sidewalks in the county are less than five feet wide (53%). Of the remaining sidewalks, most are five- to eight-feet wide (35%).[16]

Figure 10. Sidewalk Width



[16] Sidewalks less than five feet wide are less likely to be compliant with the Americans with Disabilities Act. While these narrower sidewalks (three feet or more) are allowed, five-foot wide passing spaces every 200 feet or less must be constructed. The proposed Public Rights-of-Way Accessibility Guidelines (PROWAG) increases the minimum allowable sidewalk width to four feet from the current three. The county's *Complete Streets Design Guide* includes a six-foot default sidewalk width for all street types.

As Table 12 highlights, local streets tend to have narrower sidewalks: 61% of sidewalks along local streets are less than five feet wide. While higher classification streets tend to have wider sidewalks, there are still many sidewalks along major highways (23%), arterials (26%), business streets (18%) and similar streets that are narrower than five feet.

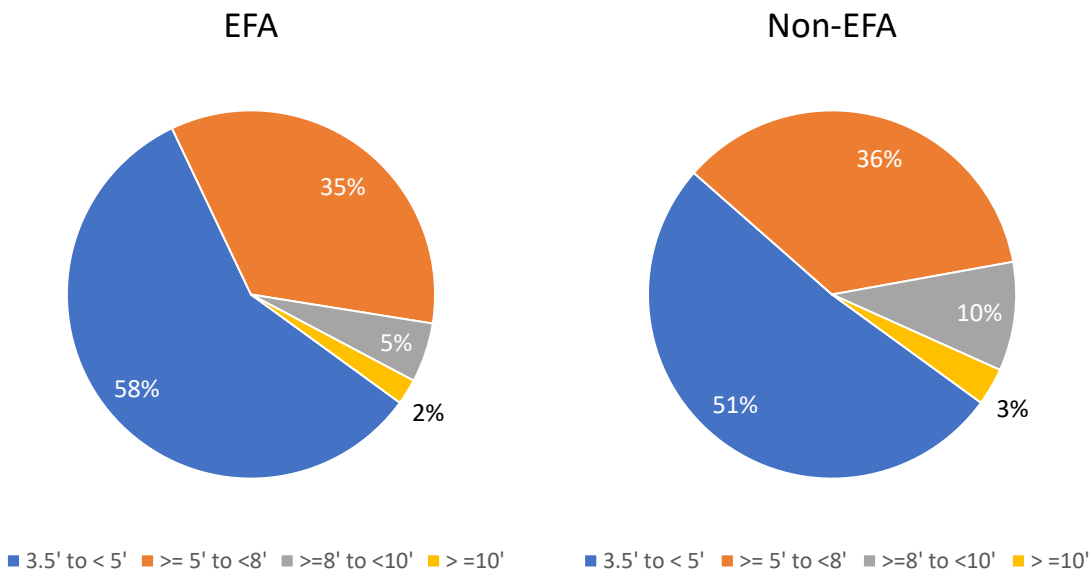
Table 12. Sidewalk Width by Street Classification

Street Classification	Mileage	Sidewalk Width			
		3.5' to < 5'	>= 5' to <8'	>=8' to <10'	>=10'
Controlled Major Highway	20	17%	40%	38%	5%
Major Highway	214	23%	54%	19%	5%
Parkway	3	3%	46%	10%	41%
Arterial	205	26%	47%	25%	3%
Minor Arterial	62	57%	39%	3%	1%
Business	79	18%	57%	14%	11%
Primary Residential	227	74%	21%	5%	0%
Industrial	12	14%	68%	12%	6%
Country Road	2	0%	18%	82%	0%
Rustic Road	2	0%	96%	0%	4%
Exceptional Rustic Road	0	48%	52%	0%	0%
Local Street	1,367	61%	32%	5%	3%
Total Mileage	**2,193**	**1,175**	**784**	**189**	**67**

Source: Pedestrian Level of Comfort Analysis

As Figure 11 indicates, sidewalks in EFAs tend to be somewhat narrower than sidewalks in other areas of the county. In EFAs, 58% of sidewalks are between three and a half and five feet wide, while 51% of sidewalks outside EFAs are in this category. At the other end of the spectrum, non-EFA sidewalks are more likely to be between eight and 10 feet (10% vs. 5%) and greater than 10 feet (3% vs. 2%).

Figure 11. Sidewalk Width by EFA Status



Street buffer width is the distance between the pathway and the curb. Street buffers separate moving vehicles from pedestrians, and they may allow the planting of larger street trees to provide robust physical separation from traffic, shade canopy, and a sense of enclosure for pedestrians. Without a buffer, pedestrians may "shy away" from adjacent travel lanes, effectively using part of the pathway as a buffer from the road, reducing the pathway's effective width.

Of the 2,193 miles of county sidewalks, most (58%) have at least a six-foot buffer between the sidewalk and the street. However, nearly half (47%) of sidewalks along major highways like Georgia Avenue are missing buffers. By contrast, 20% of arterial sidewalks, 11% of primary residential sidewalks, and 20% of local street sidewalks are missing buffers (Table 13).

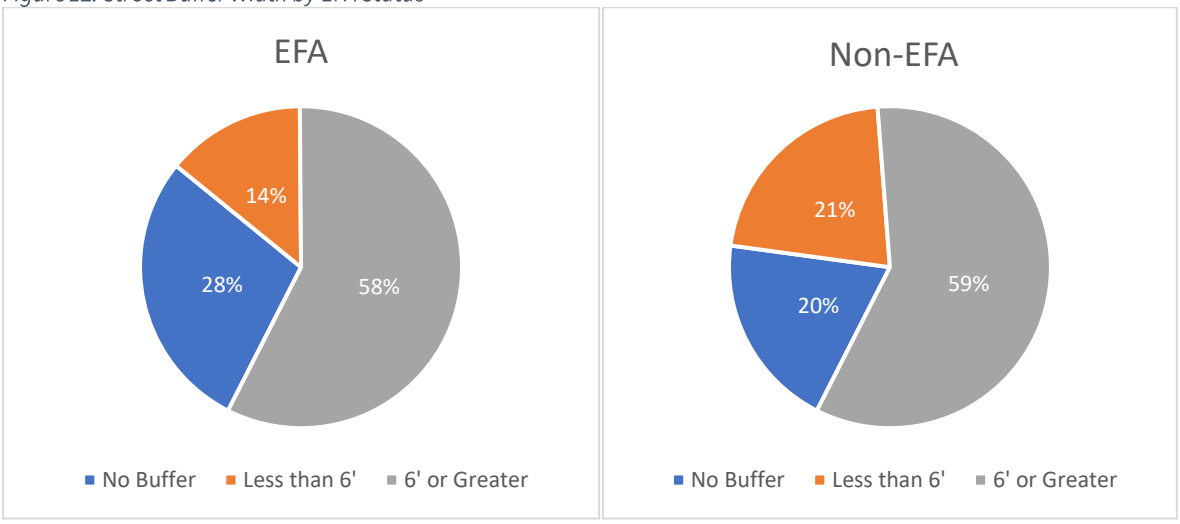
Table 13. Street Buffer Width by Street Classification

Street Classification	Buffer Width		
	No Buffer	Less than Six Feet	Six Feet or Greater
Controlled Major Highway	3%	66%	31%
Major Highway	47%	30%	23%
Parkway	4%	26%	70%
Arterial	20%	29%	70%
Minor Arterial	21%	27%	52%
Business	29%	32%	39%
Primary Residential	11%	17%	72%
Industrial	15%	25%	61%
Country Road	0%	4%	96%
Rustic Road	8%	18%	74%
Exceptional Rustic Road	53%	27%	21%
Local Street	20%	16%	64%

Source: Pedestrian Level of Comfort Analysis

Sidewalks in EFAs are less likely to have buffers than those outside of EFAs. While 28% of sidewalks in EFAs are missing street buffers, only 20% outside are (Figure 12).

Figure 12. Street Buffer Width by EFA Status



Wider street buffers are more important along roads with higher speeds, but the higher the roadway speed limit, the less likely there is to be a wide buffer between the sidewalk and the street (Table 14). The widest buffers are found on the slowest streets. Along streets with speed limits less than 30 mph, 64% of buffers are six feet or greater, while along streets with speed limits above 40 mph, this number drops to 30%. Sidewalks along the fastest streets are the ones least likely to have a buffer from traffic.

Table 14. Sidewalk Buffer by Posted Speed Limit

Posted Speed Limit	No Buffer	Less than Six Feet	Six Feet or Greater
Less than 30 mph	20%	17%	64%
30-40 mph	28%	28%	45%
Greater than 40 mph	31%	39%	30%
Total	**22%**	**20%**	**58%**

Source: Pedestrian Level of Comfort Analysis

Pedestrian Accommodations Crossing the Street

Pedestrian comfort at crossings is largely a function of five factors: traffic control, the posted speed limit, the number of lanes of the street being crossed, median type, and crosswalk type.

There are three different approaches to crosswalks on county roads. Unmarked crossings have no pavement markings to denote the crosswalk.[17] Standard crosswalk markings include stamped concrete, parallel lines, and dashed marking patterns. High-visibility crosswalks have proven pedestrian safety benefits over standard crosswalk markings and include continental, ladder, zebra, and solid designs. Table 15 summarizes the crosswalk types by street classification. Countywide, 67% of legal crossings are unmarked, while 16% have a standard marked crosswalk and 17% have a high-visibility crosswalk. The highest portion of marked crosswalks (standard or high-visibility) are on high-volume, higher-order roadways, such as controlled major highways, major highways, and parkways.

Table 15. Crossing Type by Street Classification

Street Classification	Unmarked	Standard	High-Visibility
Controlled Major Highway	27%	35%	38%
Major Highway	33%	28%	39%
Parkway	29%	16%	55%
Arterial	47%	17%	36%
Minor Arterial	56%	16%	28%
Business	28%	24%	48%
Primary Residential	70%	14%	16%

[17] According to MD Transportation Code Ann. § 21-101 (2020), a crosswalk without lines or other markings is defined as "the part of a roadway that is . . . within the prolongation or connection of the lateral lines of sidewalks at any place where 2 or more roadways of any type meet or join, measured from the curbs or in the absence of curbs, from the edges of the roadway."

Street Classification	Unmarked	Standard	High-Visibility
Industrial	51%	19%	29%
Country Arterial	100%	0%	0%
Country Road	100%	0%	0%
Rustic Road	86%	5%	10%
Exceptional Rustic Road	89%	11%	0%
Local	75%	14%	11%
Total	**67%**	**16%**	**17%**

Source: Pedestrian Level of Comfort Analysis

The PLOC evaluates crossings based on the highest posted speed limit where the crossing is located (typically at an intersection but also at mid-block crossings). Marked crosswalks, and specifically high-visibility crosswalks, are more prevalent on higher speed streets (Table 16). Marked crossings of all types are more common in urban areas than in transit corridors and more common in transit corridors than in exurban/rural areas.

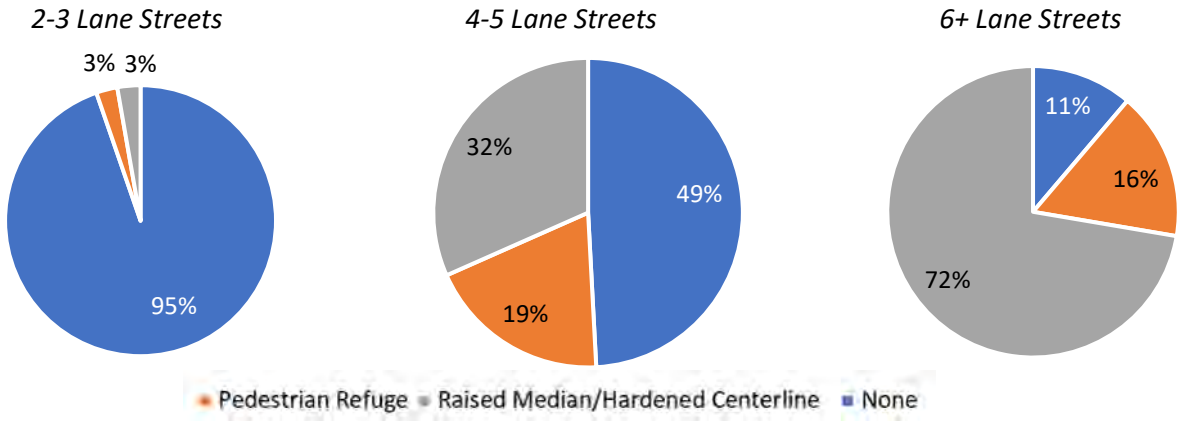
Table 16. Crossing Type by Roadway Speed by Land Use

Posted Speed Limit	Urban			Transit Corridor			Exurban/Rural		
	Unmarked	Standard	High Visibility	Unmarked	Standard	High Visibility	Unmarked	Standard	High Visibility
Less than 30 mph	67%	15%	18%	74%	16%	11%	76%	13%	10%
30-40 mph	33%	25%	43%	48%	16%	36%	63%	14%	22%
Greater than 40 mph	20%	25%	55%	30%	23%	47%	43%	26%	31%

Source: Pedestrian Level of Comfort Analysis

Having a place to stop between directions of motor vehicle traffic improves pedestrian comfort. Medians are categorized as either a pedestrian refuge island (greater than six feet) or as a raised median less than six feet wide/hardened centerline. While raised pedestrian refuge islands have the greatest crossing safety and comfort benefits, medians that do not meet the criteria for a refuge may also be beneficial. Figure 13 highlights how prevalent different median treatments are based on the number of lanes pedestrians have to cross. On streets with two or three travel lanes, the crossing distance is short and there are few medians. As roadways widen beyond three lanes, medians become more prevalent; medians are present at 51% of four- to five-lane street crossings and 88% of crossings on streets with six or more lanes.

Figure 13. Median Treatment by Number of Lanes



Source: Pedestrian Level of Comfort Analysis

Overall Pedestrian Comfort

Montgomery Planning's PLOC analysis finds that 58% of pathway miles and 44% of crossings in the county are comfortable (Table 17). This means they meet either the "very comfortable" or "somewhat comfortable" metrics outlined in the PLOC methodology appendix.

Table 17. Overall Pedestrian Comfort on Streets and at Crossings

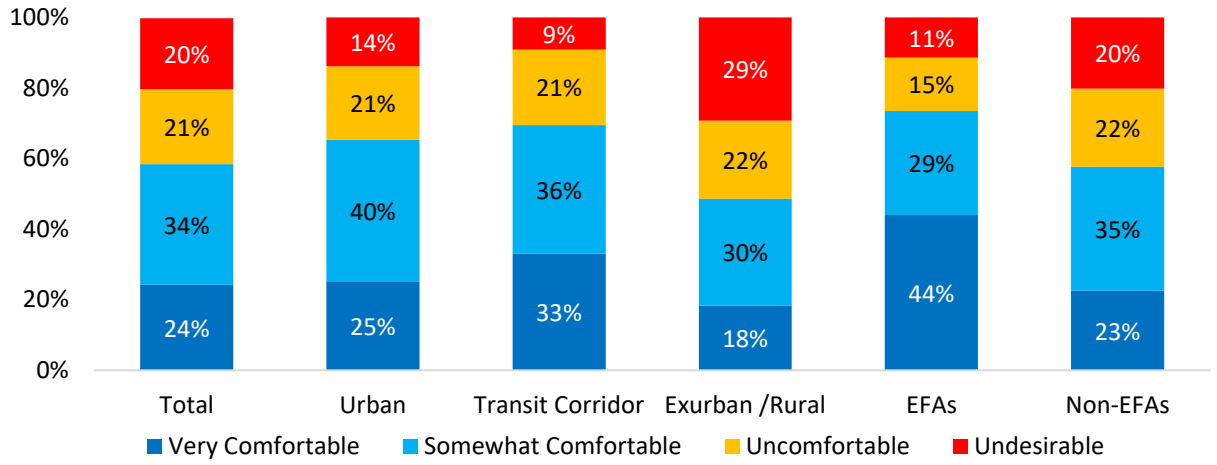
PLOC Score	Pathway ~~Mileage~~Distance	Crossing Locations
Very Comfortable	24%	11%
Somewhat Comfortable	34%	33%
Uncomfortable	21%	38%
Undesirable	20%	17%

Source: Pedestrian Level of Comfort Analysis

An analysis of pedestrian conditions along all streets and crossings in the county indicates that there are large areas of the county where it is uncomfortable to walk and many locations where it is undesirable to do so. Figure 14 summarizes pedestrian comfort along pathways. Comfort levels in urban (65%) and transit corridors (69%) are greater than in exurban/rural (48%) areas of the county.

Pathway comfort levels are substantially higher in EFAs (73%) than non-EFAs (58%), likely due to where these areas are located and when they were developed.

Figure 14. Overall Pedestrian Comfort Along Pathways

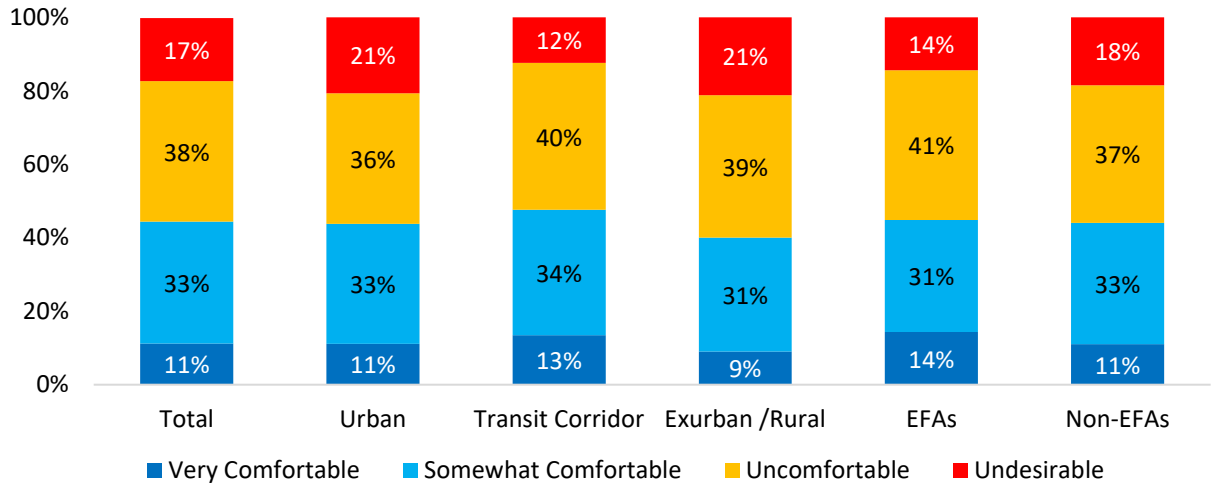


Source: Pedestrian Level of Comfort Analysis

Figure 15 summarizes pedestrian conditions at crossings. Overall, only 44% of crossing locations are a comfortable walking experience for pedestrians. Crossings in transit corridors tend to be slightly more comfortable (47% comfortable) while crossings in exurban/rural areas tend to be somewhat less comfortable (40% comfortable).

The comfort of crossings is similar between EFAs and non-EFAs.

Figure 15. Overall Pedestrian Comfort at Crossings



Source: Pedestrian Level of Comfort Analysis

Access to Destinations

An important aspect of understanding pedestrian comfort is evaluating access to common destinations. While many people walk for recreation, as summarized under Goal 1, many people also walk for practical reasons like getting to community destinations, transit stations, or schools. The

PLOC data were used to better understand how comfortable it is to get to these destinations. Analysis is described in the footnote.[18]

Table 18 provides the comfortable access scores for walking to community destinations (libraries, recreation centers, and parks) and transit stations broken out by pathway and crossing mileage. While all libraries and recreation centers were scored, only two types of parks (regional and recreational) were included in the analysis. Overall, the pathways are the most comfortable part of the walk to these destinations. Crossing streets is generally less comfortable. While there are disparities between pathway comfort and crossing comfort for most destinations, the difference for parks is the greatest at 37%. Only 34% of the crossing distance between residences and parks was comfortable, lower than every other destination in Table 18. A breakdown of comfortable connectivity scores to specific destinations can be found in the Comfortable Connectivity appendix.

Table 18. Comfortable Pedestrian Access to Community Destinations and Transit Stations

	Pathway ~~Mileage~~Distance	Crossing ~~Mileage~~Distance
Community Destinations		
Libraries	77%	62%
Recreation Centers	79%	62%
Parks	71%	34%
Transit Stations		
Red Line	86%	66%
Purple Line	79%	79%
Brunswick Line	84%	72%

Source: Pedestrian Level of Comfort Analysis

Comfortable access to community destinations and transit stations varies based on area types, but the results are not consistent across each type of destination or transit service. Table 19 breaks down comfortable access for these different destinations. Across area types, pathway comfort tends to exceed crossing comfort. Libraries are most comfortable to access in urban areas, while parks are most comfortable to access in exurban/rural areas. Transit corridors and urban areas have similar comfortable connectivity to recreation centers. Comfortable connectivity to Red Line and Purple Line

[18] A one-mile walkshed was created around each public facility (community destination or transit station). Trips between each residence and destination were modeled using the most direct route along the PLOC network. The comfortable access percentage is the sum of all the comfortable portions of the trips divided by the total trip distance.

$$comfortable\ access = \frac{total\ comfortable\ distance\ of\ all\ residential\ trips\ to\ the\ respective\ destination}{total\ distance\ of\ all\ residential\ trips\ to\ the\ respective\ destination}$$

stations is better in urban areas than in transit corridors, while people living in exurban/rural areas within one mile of the stations have the most comfortable Brunswick Line access.

As noted in the table, not all community destinations or transit stations are present in the different area types (e.g., there are no Red Line stations in exurban/rural areas).

Table 19. Comfortable Access to Community Destinations and Transit Stations by Area Types

		Community Destinations			Transit Stations		
		Libraries	**Recreation Centers**	**Parks**	**Red Line**	**Purple Line**	**Brunswick Line**
Urban	Pathways	79%	82%	N/A	87%	79%	83%
	Crossings	63%	65%	N/A	68%	79%	70%
Transit Corridor	Pathways	64%	86%	61%	74%	69%	N/A
	Crossings	65%	58%	27%	48%	82%	N/A
Exurban/ Rural	Pathways	78%	59%	81%	N/A	N/A	92%
	Crossings	34%	53%	42%	N/A	N/A	89%
EFAs	Pathways	77%	82%	83%	88%	73%	88%
	Crossings	55%	49%	34%	59%	73%	79%
Non-EFAs	Pathways	77%	77%	66%	85%	81%	83%
	Crossings	66%	68%	34%	68%	80%	69%

Note: The approach for calculating access to destinations for land use type is based on where the community destination or transit station is located (urban area, transit corridor, etc.).
Source: Pedestrian Level of Comfort Analysis

Comfortable access to community destinations and transit stations also varies by whether the walkshed (the distance around the destination from which people walk) is within an EFA. Table 20 illustrates that crossing comfort tends to be worse in EFAs, while pathway comfort is better. While Red Line station connectivity is more comfortable in EFAs, Purple Line station connectivity is worse.

Table 20. Comfortable Access to Community Destinations by EFA Status

		Community Destinations			Transit Stations		
		Libraries	**Recreation Centers**	**Parks**	**Red Line**	**Purple Line**	**Brunswick Line**
EFAs	Pathways	77%	82%	83%	88%	73%	88%
	Crossings	55%	49%	34%	59%	73%	79%
Non-EFAs	Pathways	77%	77%	66%	85%	81%	83%
	Crossings	66%	68%	34%	68%	80%	69%

Note: The approach for calculating access to destinations for EFAs is based on where residences within the walksheds for each community destination or transit station within or outside of an EFA.
Source: Pedestrian Level of Comfort Analysis

Table 21 shows that walking to elementary schools tends to be more comfortable,[19] with 40% comfortable access walking along streets, and 32% comfortable access at crossings. In contrast, walking tends to be the least comfortable to high schools, with only 7% comfortable access along pathways and 5% comfortable access at crossings.

While the percentage of students walking to school also decreases as school type changes (Table 3), the relationship between comfort and mode share is likely correlated but not causative. The decline in both metrics is more likely a function of the distance between a residence and the school. As that distance gets farther (as it tends to when transitioning from an elementary to a middle or from a middle to a high school), the amount of walking declines, and pedestrian comfort also declines because it is more likely at least one (and likely more) of the pathways and crossings used to get to school score "uncomfortable" or "undesirable."

Table 21. Comfortable Pedestrian Access to School

School Types	Streets	Crossings
Elementary Schools	40%	32%
Middle Schools	21%	13%
High Schools	7%	5%

Source: Pedestrian Level of Comfort Analysis

Comfortable pedestrian access to schools varies by land use type. While elementary and high schools located in transit corridors have the most comfortable pedestrian access, middle schools have the most comfortable access in exurban/rural areas (Table 22).

Title I/Focus designated elementary schools have greater comfortable pedestrian access than non-designated schools, while comfortable access is similar across FARMS and non-FARMS schools for middle schools and high schools.

[19] Like other community destinations, schools were also evaluated for comfortable access, but with two main differences. First, rather than a uniform one-mile distance, the walkshed for each school was defined by the school's attendance boundary and the walking distance established by MCPS for the school type—one mile for elementary schools, one and a half miles for middle schools, and two miles for high schools. Second, it is not reasonable to expect or encourage school-aged children to walk along undesirable pathways or crossings. Therefore, trips requiring travel along such a segment were counted as part of the total distance traveled to that particular school but comfortable portions of a trip that included an undesirable segment were not included in the total comfortable distance traveled to that school.

$$comfortable\ school\ access = \frac{total\ comfortable\ distance\ of\ all\ residential\ trips\ to\ the\ respective\ school\ (without\ travel\ along\ undesirable\ segments)}{total\ distance\ of\ all\ residential\ trips\ to\ the\ respective\ school\ (including\ those\ traveling\ along\ undesirable\ segments)}$$

The implication of this scoring change is that schools will tend to score worse than other community destinations.

Table 22. Comfortable Pedestrian Access to School by Area Types and Designation

Public Facility	Land Use Type						Title I/Focus and High FARMS Rate Schools			
	Urban		Transit Corridor		Exurban/ Rural		Yes		No	
	Pathways	Crossings	Pathways	Crossings	Pathways	Crossings	Pathways	Crossings	Pathways	Crossings
Elementary Schools	30%	24%	46%	38%	36%	39%	43%	34%	36%	30%
Middle Schools	15%	3%	16%	11%	26%	19%	18%	11%	20%	14%
High Schools	5%	5%	14%	6%	6%	5%	6%	3%	7%	7%

Source: Pedestrian Level of Comfort Analysis

A school-by-school breakdown of comfortable connectivity scores can be found in the Comfortable Connectivity appendix.

Tree Canopy

Unshaded sidewalks and pathways can reach high and, at times, dangerous levels of heat in the summer. Analysis for the Silver Spring Central Business District (CBD) revealed a significant temperature difference between shaded and unshaded sidewalks.[20] While the amount of tree-canopy cover needed to counteract higher temperatures associated with impervious surface cover is not known, one study found that in urban areas, daytime air temperatures were substantially reduced when tree-canopy cover and shade were greater than 40%.[21] Tree canopy cover will only become more important as climate change increases temperatures over time. The Countywide Pedestrian Survey found 39% satisfaction countywide with existing shading by trees or buildings.

Currently, about 28% of all sidewalk miles in the county are shaded.[22] Transit corridor sidewalks have a canopy coverage of 33%, followed by urban area sidewalks at 30%, and exurban/rural area sidewalks at 24%.[23]

Breaking down these area statistics further by the pathway PLOC score, no matter the area, pathways that are more comfortable are also likely to have better tree canopy (Figure 16). For instance, in transit corridors, there is twice as much canopy coverage along a very comfortable pathway as along an

[20] *Silver Spring Downtown and Adjacent Communities Plan–Environment Appendix.* Montgomery Planning. (2022) montgomeryplanning.org/wp-content/uploads/2022/01/SSDAC-Appendix-E-Environment.pdf

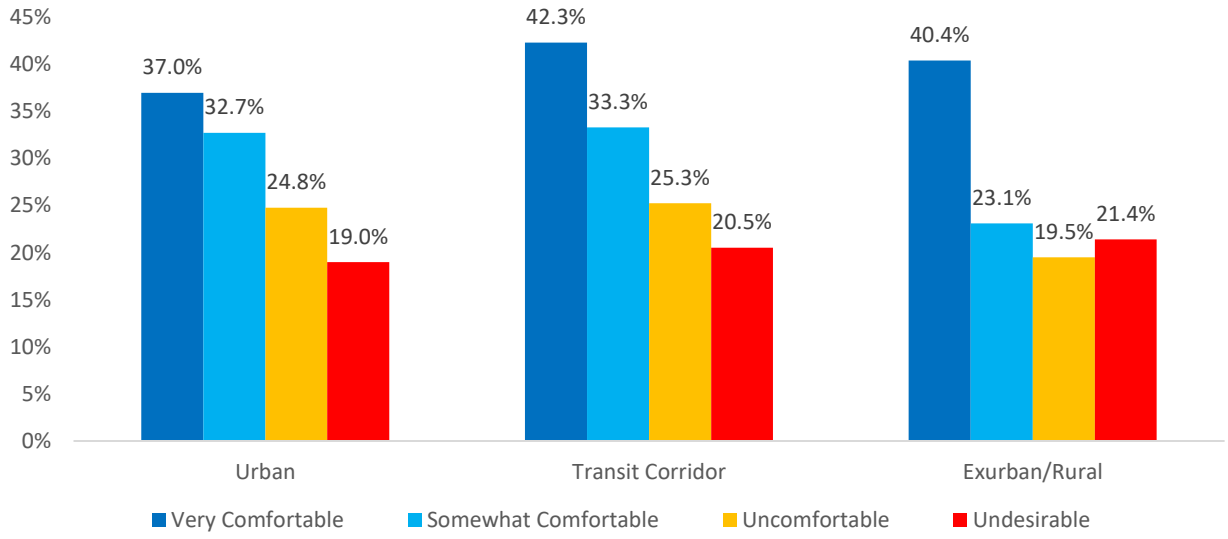
[21] Ren, Z., Zhao, H., Fu, Y. et al. Effects of urban street trees on human thermal comfort and physiological indices: a case study in Changchun city, China. J. For. Res. (2021). doi.org/10.1007/s11676-021-01361-5

[22] To estimate the percentage of county sidewalks shaded with trees, Montgomery Planning overlayed the Pedestrian Level of Comfort pathway linework and tree canopy cover data. While shade from buildings is also important, data were not readily available at the countywide level.

[23] These are general averages and do not represent full shade conditions, tree size or health, density of cover, and street orientation, which significantly affect temperature reductions and cooling effect. Additionally, the tree-canopy cover GIS maps used indicate the amount of shade cast on the sidewalk at noon is significantly greater than other times of the day when the sun's angle casts different tree-canopy shadow shade.

undesirable one. Thus, pedestrians walking on narrow sidewalks along higher-speed roads without buffers (see Table 14) are also more likely to be doing so in unshaded conditions.

Figure 16. Tree Canopy Coverage by Land Use by PLOC Score



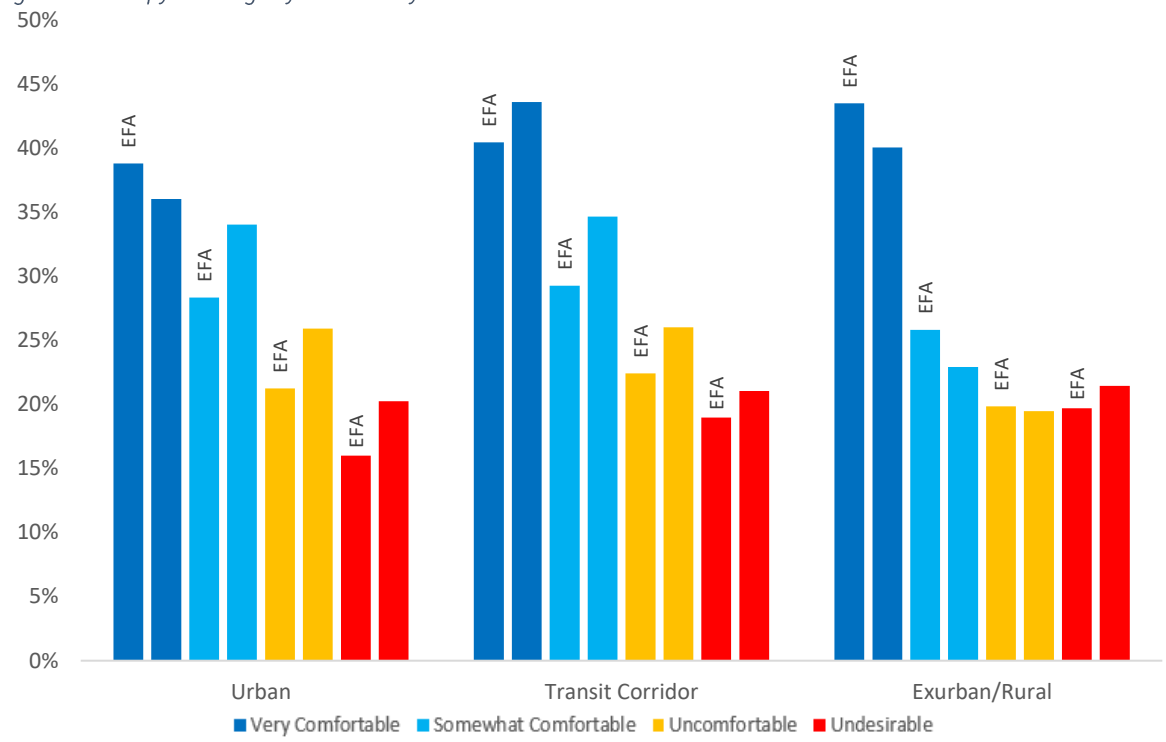
Undesirable pathways are more likely to be along wider, faster roadways like Georgia Avenue or University Boulevard where landscape panels that buffer the sidewalk (if they exist at all) may not be sufficiently wide or have enough soil volume to support the growth of canopy trees. Table 23 shows that canopy coverage tends to be greater along pedestrian pathways with wider buffers. Pathways with at least a six-foot buffer have nearly twice the canopy coverage as those without buffers.

Table 23. Canopy Coverage by Buffer Width

Buffer Width	Canopy Coverage
None	22.2%
Less than Six Feet	30.1%
Six Feet or More	39.5%

Communities within EFAs have less canopy coverage than their non-EFA counterparts along the less-comfortable roads ("somewhat comfortable" through "undesirable") in urban and transit corridor areas, as shown in Figure 17. For example, somewhat comfortable pathways in EFAs in urban areas have 5.7% less canopy coverage than in urban areas in non-EFAs. In transit corridor areas, these same pathways have 5.4% less coverage.

Figure 17. Canopy Coverage by Land Use by EFA



Pedestrian Safety

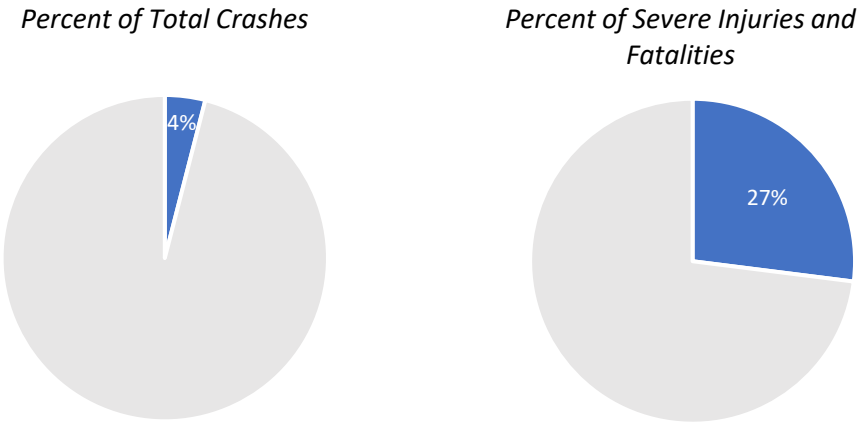
Through its 2016 Vision Zero resolution, Montgomery County committed to eliminating traffic fatalities and severe injuries.[24] This commitment represented the beginning of a fundamental change in how the county plans and designs roads, shifting from a focus on maximizing motor vehicle efficiency to ensuring that the transportation system is safe for all, regardless of travel mode. Vision Zero recognizes that people will sometimes make mistakes and that roads should be designed to ensure those inevitable mistakes do not result in severe injuries or fatalities.

This section describes Montgomery County pedestrian crash trends between 2015 and 2020 by examining different factors, including where and when crashes occurred. Data for this section originally comes from the Montgomery County Open Data Portal unless otherwise noted. The location of specific crashes have been adjusted to better reflect their location based on the information provided. Additionally, manual changes to crash severity and crash type have been implemented to correct errors in the underlying data.

Pedestrian Crashes by Severity

While users of all transportation modes suffer fatalities and severe injuries, pedestrians are particularly vulnerable. Figure 18 shows pedestrians were only involved in 4% of total crashes between 2015 and 2020, but they accounted for 27% of severe injuries and fatalities. Pedestrian crashes disproportionally result in severe injuries and fatalities because while motor vehicles provide drivers and passengers protection from crashes, pedestrians do not have similar protection. A collision between vehicles may result in minor injuries to passengers, but a crash involving a pedestrian is more likely to result in a severe injury or a fatality.

Figure 18. Pedestrian Crashes as a Percent of Total Crashes and Severe Injuries and Fatalities

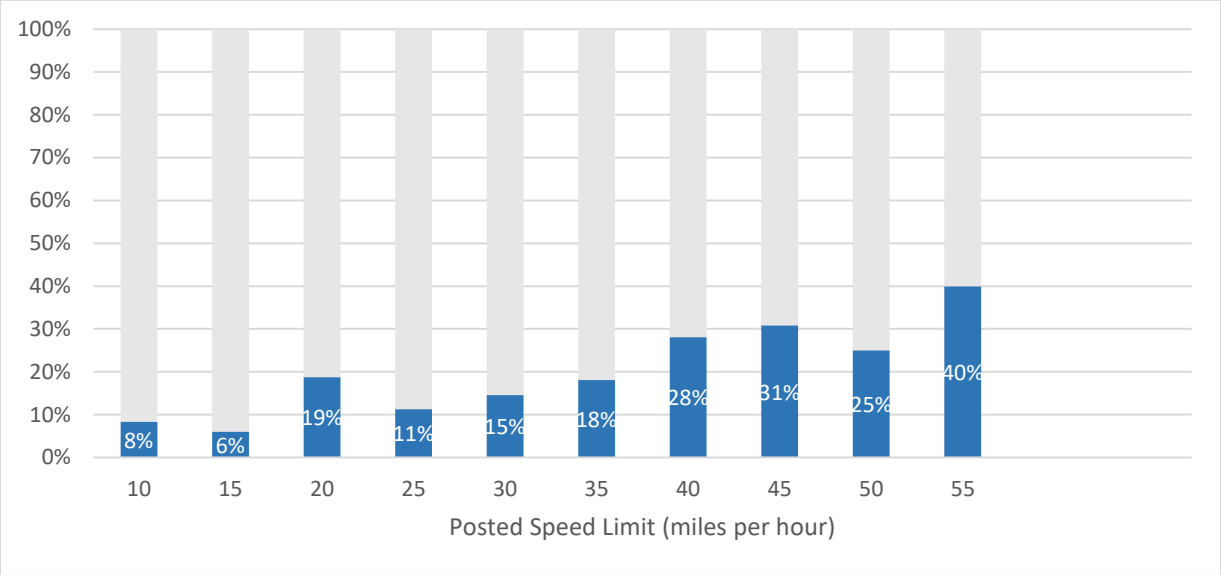


Note: Data includes crashes in Rockville and Gaithersburg.

[24] "Resolution to adopt Vision Zero in Montgomery County and urge the State of Maryland to also adopt Vision Zero." Montgomery County Council. February 2, 2016. montgomerycountymd.gov/COUNCIL/Resources/Files/res/2016/20160202_18-390.pdf

Speed is a factor in pedestrian crash severity. While 30% of crashes involving pedestrians on streets with a posted speed limit of 45-mph or higher result in a severe injury or fatality, only 11% of crashes on streets with a 25-mph posted speed limit result in a severe injury or fatality (Figure 19).

Figure 19: Percent of Pedestrian Crashes Resulting in a Severe Injury or a Fatality by Speed Limit



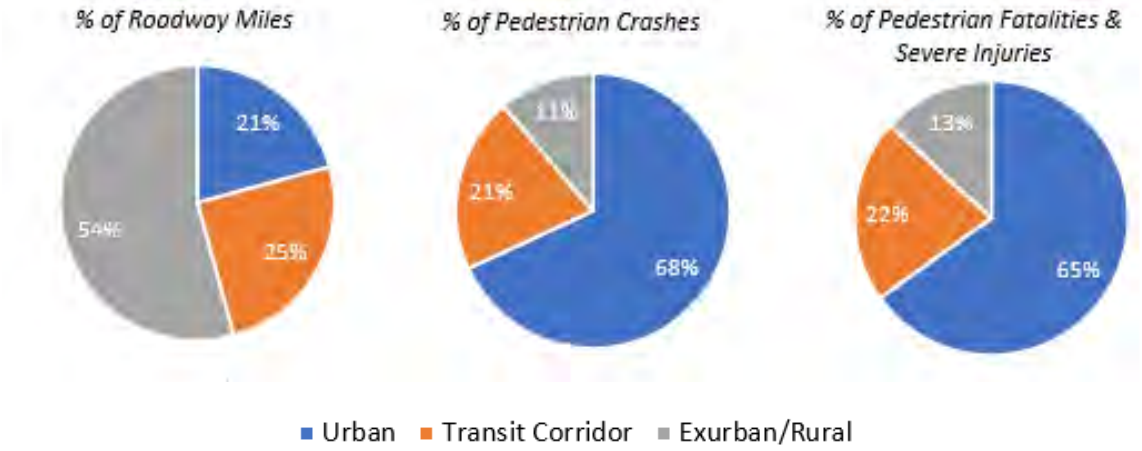
Note: Data include crashes in Rockville and Gaithersburg.

Crash Location

Crashes occur at different rates on different types of streets and in different land use contexts throughout the county. This section explores crash trends to identify where pedestrian crashes occur and where they result in severe injuries and fatalities.

Figure 20 depicts roadway mileage, pedestrian crashes, and pedestrian fatalities and severe injuries by land use type. While over half (54%) of the roadway miles in the county are in exurban/rural areas, these areas only comprise 11% of pedestrian crashes and 13% of pedestrian severe injuries or fatalities. In contrast, urban areas only comprise 21% of roadway miles, while making up about two thirds of pedestrian crashes (68%) and pedestrian severe injuries and fatalities (65%).

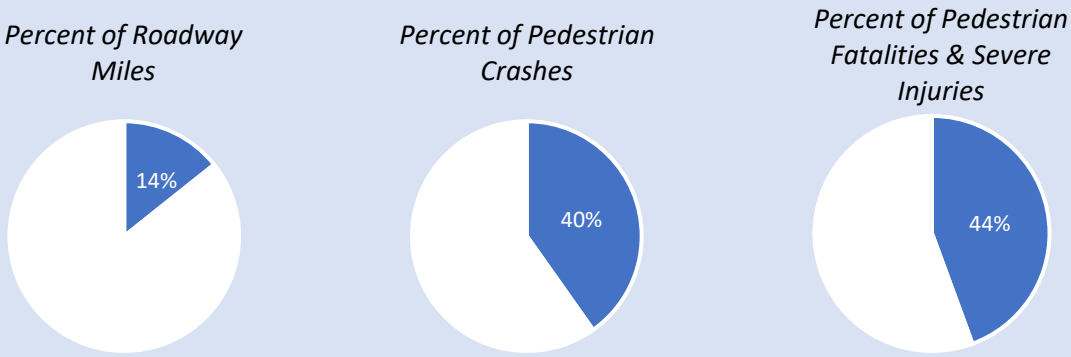
Figure 20. Pedestrian Crashes by Area Type



Note: Data include crashes in Rockville and Gaithersburg.

While data are not available to indicate whether low-income residents of color are disproportionately impacted by pedestrian crashes, Figure 21 shows that streets in EFAs have higher crash rates. While EFAs contain only 14% of roadway miles in the county, they account for 40% of all pedestrian crashes and 44% of pedestrian crashes that result in a fatality or severe injury. Additionally, Black Montgomery County residents had an emergency room admission rate for motor vehicle crashes 136% higher than Asian/Pacific Islander residents and 104% higher than white, non-Hispanic residents.[25]

Figure 21. Pedestrian Crashes in Equity Focus Areas



Note: Data include crashes in Rockville and Gaithersburg.

Beyond land use types, the safety analysis zooms into the specific locations and street types where crashes occur. Table 24 shows that pedestrian crashes along a street (rather than at an intersection) are disproportionately likely to result in a severe injury or fatality. At the same time, while 21% of pedestrian crashes happen in parking lots, they are less likely to be severe or fatal. The difference between these two crash types may be due to motor-vehicle speed, as motor vehicles are likely traveling faster when they collide with pedestrians along street segments than in parking lots.

[25] Montgomery County Vision Zero Action Plan, FY 22-23 Work Plan, 2021.

Table 24. Pedestrian Crashes by Location

Location	Percent of Pedestrian Crashes	Percent of Pedestrian Severe Injuries and Fatalities (KSI)
Signalized Intersection	26%	26%
Stop-Controlled Intersection	6%	5%
Uncontrolled Intersection	13%	16%
Along a Street	27%	37%
Off-road	4%	2%
Parking Lot	21%	10%
Driveway	4%	4%
Total	**100%**	**100%**

Note: Data include crashes in Rockville and Gaithersburg.

There is no meaningful difference between the crash locations in Table 24 based on whether they are in an EFA.

Higher classification roads such as controlled major highways and major highways, as well as business streets, disproportionately account for pedestrian crashes resulting in severe injuries or fatalities. Table 25 shows that while controlled major highways, major highways, and business streets make up 8% of roadway mileage, they account for 58% of pedestrian crashes and 64% of pedestrian severe injuries and fatalities.

Table 25. Pedestrian Crashes by Roadway Type

Street Classification	Percent of Roadway Miles	Percent of Pedestrian Crashes	Percent of Pedestrian Severe Injuries and Fatalities (KSI)
Controlled Major Highway	1%	3%	5%
Major Highway	5%	33%	39%
Parkway	0%	0%	0%
Arterial	8%	11%	9%
Minor Arterial	2%	5%	3%
Business	2%	22%	20%
Primary Residential	7%	16%	15%
Industrial	0%	1%	0%
Country Arterial	2%	0%	0%
Country Road	1%	0%	0%
Rustic & Exceptionally Rustic	6%	0%	1%
Local	67%	10%	7%
Total	**100%**	**100%**	**100%**

Breaking the same data down by area type (Table 26), it is clear the majority of the pedestrian severe injuries and fatalities (KSI) along those roads occur in urban areas. For instance, even though 0.4% of total roadway miles are controlled major highways in urban areas, those roads account for 4% of total

pedestrian KSI countywide. Similarly, urban major highways represent 2% of total roadway mileage but account for 25% of pedestrian KSI countywide. The relationship is similarly disproportionate for business and primary residential streets.

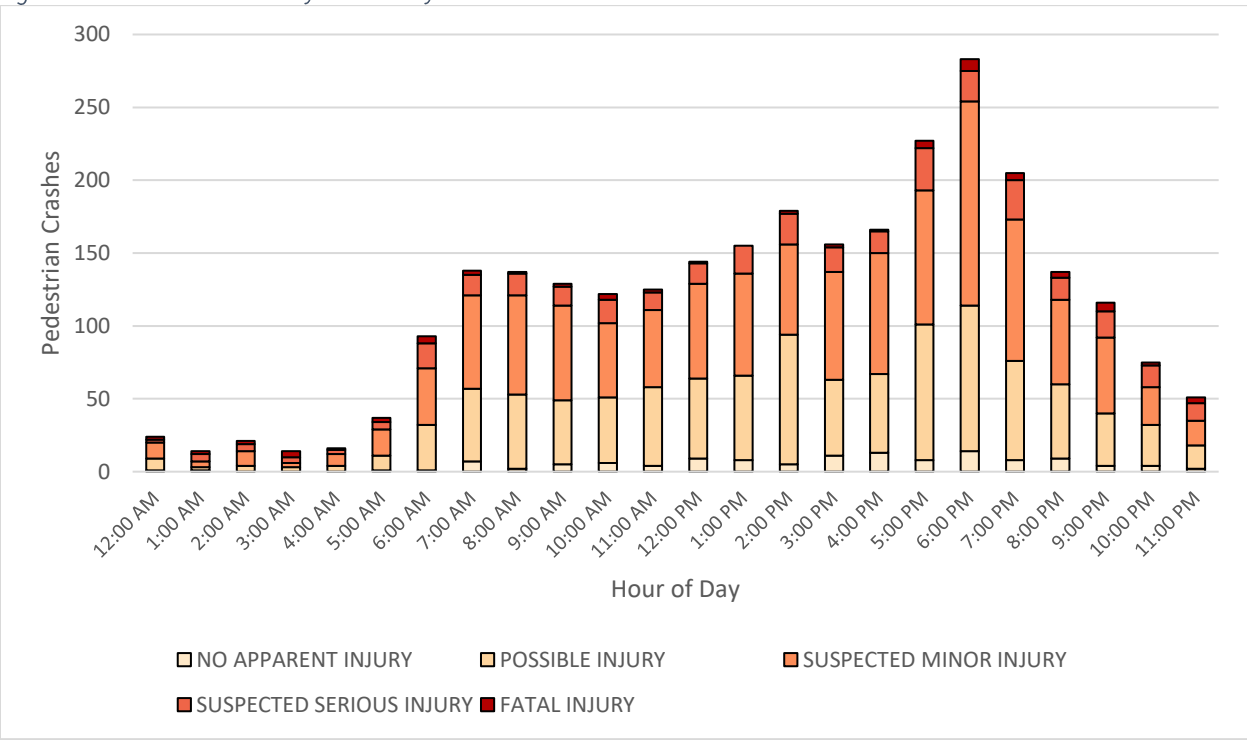
Table 26: Pedestrian KSI by Area Type by Roadway Type

	Urban		Transit Corridor		Rural		Total	
Street Classification	**% Roadway Mileage**	**% KSI**	**% Roadway Mileage**	**% KSI**	**% Roadway Mileage**	**% KSI**	**% Roadway Mileage**	**% KSI**
Controlled Major Highway	0.4%	4%	0.2%	1%	0.1%	0%	0.6%	5%
Major Highway	2.0%	25%	1.3%	10%	1.8%	4%	5.0%	39%
Arterial	1.8%	6%	1.2%	2%	4.7%	1%	7.7%	9%
Country Arterial	0.0%	0%	0.0%	0%	1.8%	0%	1.8%	0%
Minor Arterial	0.5%	1%	0.6%	1%	0.5%	0%	1.5%	3%
Business	1.6%	20%	0.0%	0%	0.0%	0%	1.6%	20%
Country Road	0.0%	0%	0.0%	0%	1.1%	0%	1.1%	0%
Industrial	0.0%	0%	0.1%	0%	0.1%	0%	0.2%	0%
Parkway	0.0%	0%	0.1%	0%	0.2%	0%	0.3%	0%
Local	13.6%	3%	19.4%	2%	34.3%	1%	67.4%	7%
Primary Residential	1.3%	7%	1.9%	5%	3.7%	3%	6.8%	15%
Exceptional Rustic Road	0.0%	0%	0.0%	0%	1.3%	0%	1.3%	0%
Rustic Road	0.1%	0%	0.1%	0%	4.6%	1%	4.7%	1%

Crashes by Time of Day and Lighting Conditions

Time of day is also an important factor when it comes to pedestrian-involved crashes. As shown in Figure 22, most crashes occur during the day, peaking during the evening rush hour.

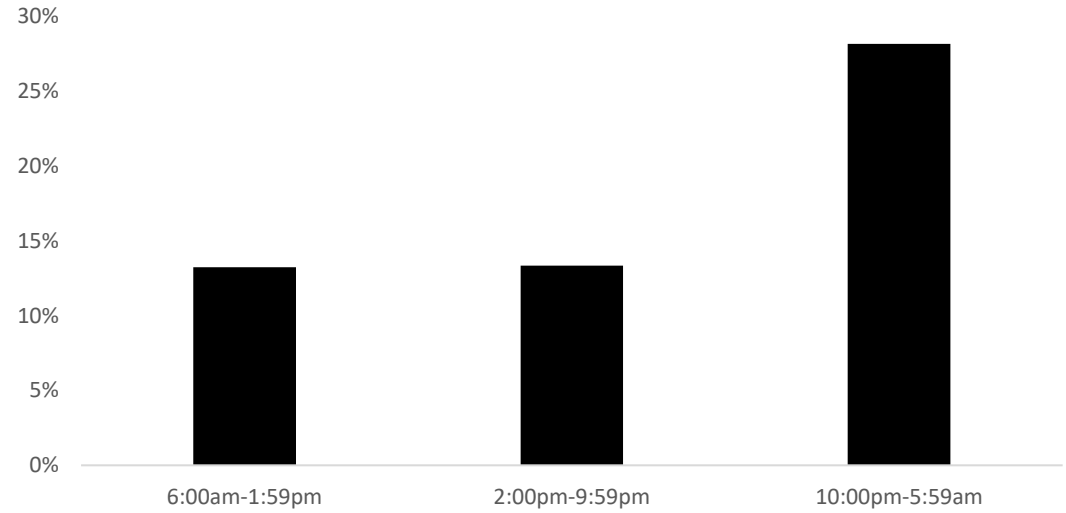
Figure 22. Pedestrian Crashes by Time of Day



Note: Data include crashes in Rockville and Gaithersburg.

While fewer pedestrian crashes occur in the overnight hours, those crashes are more likely to result in severe or fatal injuries (Figure 23). For instance, while 13% of pedestrian crashes between 6:00 a.m. and 9:59 p.m. are severe or fatal, that percentage jumps to 28% between 10:00 p.m. and 5:59 a.m. In addition to increased vehicle speeds common at night due to reduced congestion and lighting-related visibility issues, impairment may also play a role in the increased likelihood of fatal and severe crashes during these time periods.

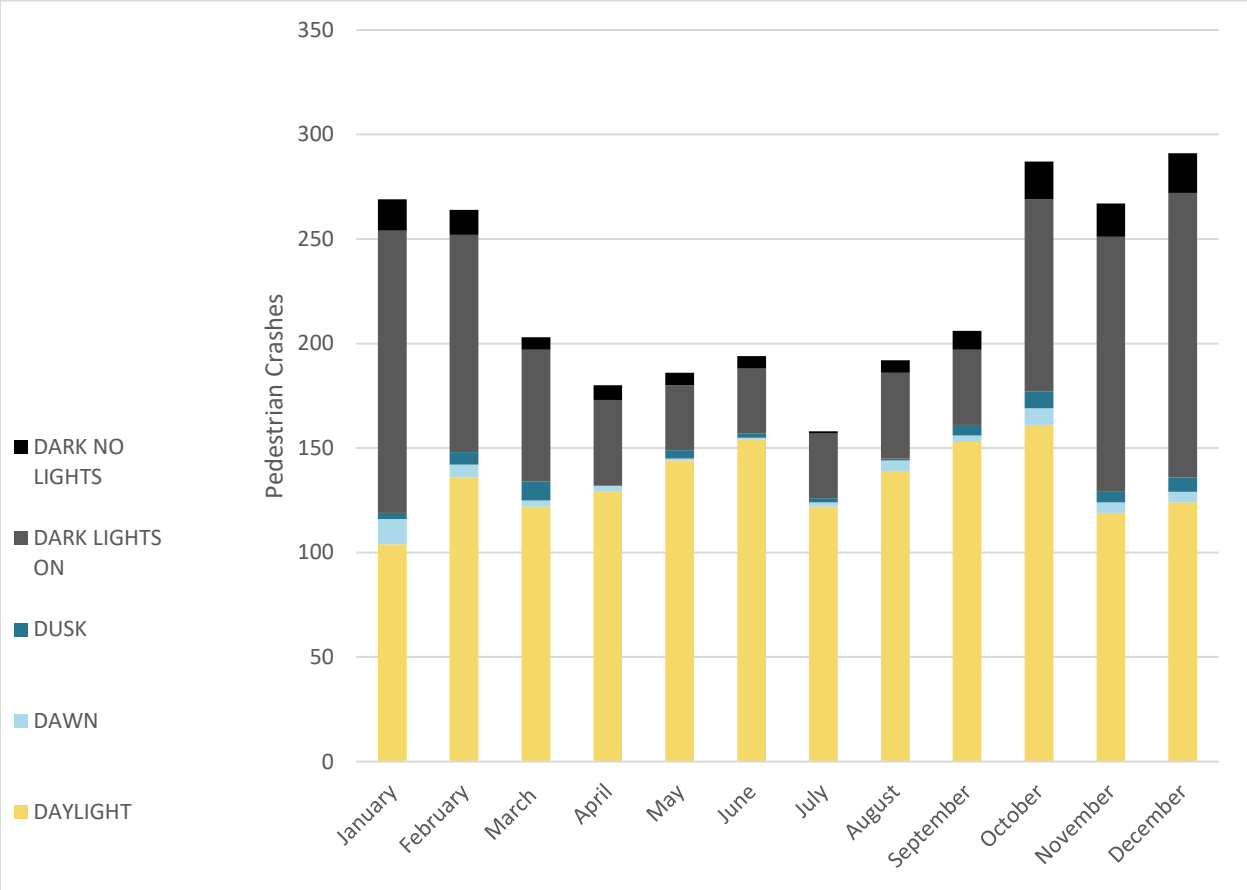
Figure 23. Crashes Resulting in KSI as a Percentage of All Pedestrian Crashes by Time of Day



Note: Data include crashes in Rockville and Gaithersburg.

Lighting conditions are related to pedestrian crashes. During the months with longer nights, the number of pedestrian crashes increases. As shown in Figure 24, while the number of daylight pedestrian crashes tends to be higher during months with more daylight hours, there is a noticeable jump in pedestrian crashes occurring in darkness beginning in October and ending in February when there are fewer hours of daylight. In fact, in November, December, and January, the majority of pedestrian crashes take place when it is dark outside. Most of these nighttime crashes take place in areas with existing streetlights. Perhaps it is because there is more street lighting in places with greater pedestrian volumes or that the existing lighting does not provide sufficient illumination to ensure pedestrians and drivers are visible to each other.

Figure 24. Pedestrian Crashes by Lighting Conditions



Note: Data include crashes in Rockville and Gaithersburg.

Knowledge of Traffic Laws

Knowledge of traffic laws specifically focused on pedestrian behavior is mixed. As part of the Countywide Pedestrian Survey, participants were asked to decide whether statements about traffic laws were true or false.

Table 27~~Table 27~~ includes the survey questions and the portion of respondents who responded correctly to the prompt. While over 90% of respondents answered questions about driver responsibilities correctly, respondents answered questions about pedestrian responsibilities correctly only between 33% and 51% of the time. This is concerning, as creating an environment where motorists know where to expect pedestrians to be crossing the street influences their readiness to stop or yield to pedestrians. The lack of understanding about where pedestrians are permitted to cross the street may be a factor in pedestrian crashes and perpetuates the motor vehicle's perceived dominance over the shared transportation system.

Table 27. Knowledge of Traffic Laws

Survey Questions (True or False)	% Correct
Drivers must stop for pedestrians in crosswalks (TRUE)	98%
It's okay to pass a vehicle that has stopped for a pedestrian at an intersection, as long as there is no marked crosswalk present (FALSE)	90%
It's okay for vehicles to stop in the crosswalk at a traffic light (FALSE)	90%
If a driver is turning right on red, they must yield to pedestrians crossing the perpendicular street (TRUE)	98%
It is a driver's responsibility to ensure they are not looking at their phone or distracted while driving (TRUE)	98%
Unmarked crosswalks exist at every corner where the side street has a sidewalk and where painted lines or other markings do not exist to mark the crossing (TRUE)	51%
Pedestrians must only cross the street in marked crosswalks (FALSE)	33%
If there are two intersections in close proximity, and one has a signal and the other doesn't, pedestrians must cross the street at the intersection with a signal (FALSE)	33%

An Equitable and Just Pedestrian Network

The fourth goal of the Pedestrian Master Plan addresses racial equity and social justice. In 2019, the Montgomery County Council passed Bill 27-19 to establish a racial equity and social justice program. The bill amended County Code Section 33A-14 and requires the Planning Board to "consider the impact of the plan on racial equity and social justice in the county."

Addressing equity and social justice first requires understanding the disparities that exist around pedestrian issues. Throughout the existing conditions chapter, the analysis and results have been supplemented with data about how specific topics pertain to historically disadvantaged people and areas of the county. The equity findings described throughout the previous sections are summarized below.

Walking Rates and Satisfaction

- **Overall and commute walking rates are higher in EFAs:** Residents in EFAs make 9.6% of trips by walking compared with 7.0% of trips by walking in non-EFAs. The share of commute trips by walking is only slightly greater in EFAs (2.4%) than non-EFAs (2.1%).
- **Walk-to-school rates are slightly higher for Title I/Focus and high FARMS rate schools:** Students at designated schools have walk mode shares to and from school of 13% and 17% respectively, compared with 11% and 15% arrival and departure walk shares for non-designated schools. Many of the schools with the highest walking rates are schools designated as Title I/Focus or high FARMS rate schools.
- **Travelers with disabilities are more likely to make utilitarian pedestrian trips:** In fact, respondents with disabilities are twice as likely as others to walk to a medical appointment (35% to 17%) and significantly more likely to walk to the grocery store (67% to 50%) and to dine at restaurants (32% to 24%).
- **Pedestrian satisfaction is lower for people with reported disabilities:** Only 43% of pedestrians with reported disabilities are satisfied with their overall pedestrian experience, compared with 53% of respondents without reported disabilities. Respondents in transit corridors and exurban/rural are less satisfied if they report having a disability (33% and 36%, respectively) than respondents without reported disabilities (52% and 47%, respectively).

A Comfortable, Connected, Convenient Pedestrian Network

- Crossing comfort accessing community destinations tends to be worse in EFAs, while pathway comfort is better. While Red Line station connectivity is more comfortable in EFAs, Purple Line station connectivity is worse.
- Title I/Focus elementary schools have more comfortable access than their more affluent counterparts. Pathway comfort for Title I/Focus Schools is 7% greater than it is for other elementary schools (43% vs. 36%). Crossing comfort is 4% greater (34% vs. 30%).
- Less comfortable pathways in urban and transit corridor EFAs have less tree-canopy coverage than similar pathways outside EFAs. "Somewhat comfortable" pathways in EFAs in urban areas have 5.7% less canopy coverage than non-EFAs. In transit corridor areas, these same pathways have 5.4% less coverage. All things equal, people traveling along less comfortable

sidewalks in EFA communities will experience higher temperatures as a result of climate change than those in other parts of the county.

Pedestrian Safety

- Crashes and injuries are overrepresented in EFAs. While EFAs contain only 14% of roadway miles in the county, they account for 40% of all pedestrian-involved vehicular crashes and 44% of such crashes that result in a fatality or severe injury.

RECOMMENDATIONS

The Existing Conditions chapter of the Pedestrian Master Plan described deficiencies in the pedestrian experience in great detail using data sources developed specifically for this plan. This chapter provides recommendations to address the county's current shortcomings identified in the Existing Conditions chapter. Recommendations are in the following five categories:

- **Design, Policy, and Programming**
  Address systemic issues that negatively affect the pedestrian experience by recommending changes to how pedestrian amenities are designed and constructed, as well as opportunities for expanded traffic safety education.

- **Bicycle Pedestrian Priority Area Prioritization**
  Prioritize where in the county bicycle and pedestrian capital improvement projects should be constructed in a data-driven way based on equity, comfortable access, safety, and other metrics.

- ***Complete Streets Design Guide* Area Type Designations**
  Advance the transition from the Road Code area type classification (Urban, Suburban, Rural) to the *Complete Streets Design Guide* (CSDG) classifications (Downtown, Town Center, Suburban, Industrial, Country) to ensure that pedestrian-friendly streets are provided as roadways are reconstructed in the years ahead.

- **Pedestrian Shortcuts**
  Identify locations where public or private investment will shorten pedestrian trips and make the pedestrian network more accessible.

- **Country Sidepaths**
  Indicate where sidepaths—shared pedestrian and bicycle pathways—should be built along roadways in the more rural parts of the county, in line with guidance in the CSDG.

Design, Policy, and Programming

The Pedestrian Master Plan's design, policy, and programming recommendations are grouped into one of five themes, based on the following objectives:

Themes

- **Build**
  Identify opportunities to build pedestrian amenities better, faster, safer, and more equitably.

- **Maintain**
  Clarify existing regulations and propose changes to how the county and private property owners care for sidewalks, pathways, and other pedestrian spaces so these public investments can provide a high quality of service to everyone for years to come.

- **Protect**
  Improve pedestrian safety in Montgomery County and support eliminating walking-related fatalities and severe injuries in line with the county's commitment to Vision Zero.

- **Expand Access**
  Reduce barriers to pedestrian travel for people with disabilities and other members of the community who have difficulties using the pedestrian environment today.

- **Fund**
  Indicate additional potential revenue sources that could be used to make progress on achieving the Pedestrian Master Plan vision.

Within these five themes, there are 29 recommendations. Each recommendation is supported by more specific key actions. Some recommendations have multiple key actions within them, while others only have one.

While recommendations may use general language, key actions provide more direction about how lead agencies should proceed. Implementing the key actions is essential to making progress on achieving the recommendations. Each key action in the pages that follow has a rationale that explains why the key action is important, as well as the plan goals the key action addresses and the lead agency (or agencies) best positioned to implement that key action. These agencies include:

- Montgomery Planning
- Montgomery Parks
- Montgomery County Department of Transportation (MCDOT)
- Maryland Department of Transportation State Highway Administration (MDOT SHA)
- Montgomery County Public Schools (MCPS)
- Montgomery County Department of Permitting Services (MCDPS)

- Montgomery County Department of General Services (MCDGS)
- Montgomery County Department of Housing and Community Affairs (MCDHCA)
- Montgomery County Fire and Rescue Service (MCFRS)
- Montgomery County Police Department (MCPD)
- Montgomery County Department of Recreation (MCR)
- Montgomery County Public Libraries (MCPL)
- County Executive
- County Council
- State Legislative Delegation
- County Municipalities
- Urban Districts
- Washington Metropolitan Area Transit Authority (WMATA)
- Public Utilities (PEPCO, Washington Suburban Sanitary Commission, Verizon, Washington Gas, etc.)
- Maryland Department of Natural Resources (MD DNR)

A summary table identifying the agency roles in key action implementation is below. Cells marked with an "L" identify the agency in that column as a lead. Cells marked with an "S" identify the agency in that column as a support.

Table 28: Key Actions by Lead/Support Agency

Key Action	Page	Montgomery	Montgomery Parks	MCDOT	MDOT SHA	MCPS	MCDPS	MCDGS	MCDHCA	MCFRS	MCPD	MCR	MCPL	County Executive	County Council	State Delegation	County Municipalities	Urban Districts	WMATA	Utilities	MC DNR
Build																					
B-1a	69			L																	
B-1b	70			L																	
B-1c	70	S				L		L													
B-1d	70	L		L																	
B-1e	71			L																	
B-1f	71													L							
B-1g	72					L															
B-1h	72	L		L		L															
B-1i	73				L																
B-2a	73			L	L												L				
B-2b	74			L	L																
B-2c	74			L																	
B-2d	75			L	L																
B-3a	75			L	L																
B-3b	76			L																	
B-3c	77	S		L	L												L				
B-3d	77			L	L												L				
B-3e	78															L					
B-3f	78			L	L												L				
B-4a	79	L															L				
B-4b	79	S				L		L													
B-4c	80					L															
B-4d	80	L		L																	
B-4e	80	L		L	L																
B-4f	83	S		L													L				
B-4g	83		L																		
B-4h	83	L	L	L													L	L			
B-4i	84	L		L																	
B-5a	85	L		L																	
B-5b	85	L		L																	
B-5c	85			L																	
B-6a	86	L		L	L																
B-6b	86			L										L	L						
B-6c	86	L		L																	

Key Action	Page	Montgomery	Montgomery Parks	MCDOT	MDOT SHA	MCPS	MCDPS	MCDGS	MCDHCA	MCFRS	MCPD	MCR	MCPL	County Executive	County Council	State Delegation	County Municipalities	Urban Districts	WMATA	Utilities	MC DNR
B-7a	87													L	L						
B-7b	87													L	L						
B-7c	88													L	L						
B-7d	88	L		L											L						
B-7e	89	L		L													L				
B-7f	90			L										L	L						
B-7g	90			L	L																
B-8a	91	S	L																		
B-8b	91		L																		
B-8c	92	L																			L
B-8d	93	L		L											L						
B-8e	93	L		L																	
B-9a	94													L	L						
B-9b	95			L																	
B-10a	95													L		L					
B-11a	95	L		L																	
Maintain																					
MA-1a	96			L																	
MA-2a	97			L	S																
MA-2b	97														L						
MA-2c	98								L												
MA-2d	98			L																	
MA-3a	99			L			L													S	
MA-4a	100			L																L	
Protect																					
P-1a	102		L			L								L							
P-1b	102									L											
P-1c	103															L					
P-1d	103															L					
P-1e	104													L	L						
P-2a	104			L	L																
P-2b	105			L	L														L		
P-2c	105			L	L												L				
P-2d	106			L	L																
P-2e	107			L																	
P-2f	107			L																	

Key Action	Page	Montgomery	Montgomery Parks	MCDOT	MDOT SHA	MCPS	MCDPS	MCDGS	MCDHCA	MCFRS	MCPD	MCR	MCPL	County Executive	County Council	State Delegation	County Municipalities	Urban Districts	WMATA	Utilities	MC DNR
P-2g	108			L	L																
P-3a	109	L		S			S														
P-4a	109			L		L						L	L								
P-4b	109		L	L		L						L	L				L				
P-4c	109			S		L															
P-5a	109					S					L										
P-5b	110					L															
P-5c	110			L		L															
P-5d	111					L															
P-5e	112			L		L															
P-6a	112	L		L	L		L														
P-7a	113				L																
P-7b	114			L	L																
P-7c	114			L	L																
P-7d	115			L	L																
P-8a	115										L			L	L	L					
P-8b	116										L			L	L	L					
P-9a	117															L					
P-9b	117			L	L																
Expand Access																					
EA-1a	118	L																L			
EA-1b	118			L	L		L										L				
EA-1c	119			L			L														
EA-1d	119	L		L			L														
EA-2a	120	S		L	L															L	
EA-2b	120	S		L	L															L	
EA-2c	121			L													L				
EA-3a	122			L	L																
EA-3b	123			L	L																
EA-4a	123			L	L																
EA-4b	124			L	L																
EA-5a	125	S		L	S														S		
EA-5b	126													L							
EA-6a	126		L																		
EA-6b	126		L																		
EA-7a	127	S					S								L						

Key Action	Page	Montgomery	Montgomery Parks	MCDOT	MDOT SHA	MCPS	MCDPS	MCDGS	MCDHCA	MCFRS	MCPD	MCR	MCPL	County Executive	County Council	State Delegation	County Municipalities	Urban Districts	WMATA	Utilities	MC DNR
EA-8a	127															L					
EA-8b	128	S		L			L														
EA-9a	129			L			L														
EA-9b	129			L			L														
Fund																					
F-1a	130			L											L						
F-1b	130														L	L					
F-1c	131															L					

Many recommendations reference land use area types used in the county's Complete Streets Design Guide. The definitions of these area types are:

- **Downtowns** are envisioned as Montgomery County's highest intensity areas including central business districts and urban centers. They are envisioned to have dense, transit-oriented development and a walkable street grid (existing or planned), as well as significant areas of Commercial-Residential and Employment zoning.
- **Town Centers** are similar to Downtowns but generally feature less intense development and cover a smaller geographic area. While the Town Center area type includes a mixture of uses, it is commonly envisioned as high-to-moderate intensity residential development, including multifamily buildings and townhouses as well as retail (existing or planned).
- **Suburban** areas are intended to be places with low-to-moderate intensity residential development.
- **Industrial** areas are envisioned as places where employment and industrial uses are the primary activities. These areas often have higher densities of development but maintain lower to moderate levels of bicycle and pedestrian activity.
- **Country** areas are the least dense portions of the county, with land uses of low intensity residential and agriculture.

Build

Achieving Pedestrian Master Plan goals will require building new sidewalks, rehabilitating existing pathways, building more places to cross streets, improving lighting, and creating the type of places where walking is the preferred way to get around. This section lays out recommendations that will help the county build better, faster, safer, and more equitably by setting new standards, identifying barriers that need to be overcome, and reaching toward best practices.

B-1: Build more sidewalks faster.

The CSDG recommends sidewalks on both sides of the street with adequate buffers from traffic. However, the county's busiest roads lack about 220 miles of sidewalk (on one or both sides of the road), about 54% of sidewalks do not meet the minimum widths (five feet), and about 22% lack a buffer from traffic. With the need for new and reconstructed sidewalks far exceeding the county's capacity to build them, the following key actions help build more sidewalks faster.

Only 44% of residents report that they are satisfied with the number of sidewalks along their walking routes: 44% are satisfied with the width of sidewalks, and 31% are satisfied with the buffer between the road and sidewalks.

Key Actions:

B-1a: Pivot the Annual Sidewalk Program from a reactive, request-driven process to an equitable, data-driven process.

An approach to sidewalk construction that relies on community requests does not necessarily address those locations with the greatest need. Using a data-driven approach to allocating the limited resources of the Annual Sidewalk Program will ensure that the highest-priority connections are made and that resources are expended equitably. Requested sidewalk projects that have already begun the public engagement, design, and construction process should proceed to implementation. Requested sidewalks that have not begun this process and existing sidewalk gaps that have not been requested for improvement should be prioritized for construction in a data-driven way with the highest-scoring projects being constructed first.

Related Effort: Vision Zero Action Plan

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety, Equitable and Just Pedestrian Network

Lead: MCDOT

B-1b: Reimagine public engagement for sidewalk construction to ensure that community members can share valuable local perspectives while pedestrian safety and connectivity improvements are not delayed.

Public engagement is essential to understanding the unique local context that may require changes in the design of a sidewalk project. Today, public engagement around sidewalk projects tends to be centered around whether a sidewalk project should be constructed, and some important projects do not advance due to public concerns. The public process around sidewalk construction should be reframed to focus on how the sidewalks in question can best be constructed, not whether they should be constructed at all. This approach will lead to a more efficient engagement process that uses staff time and funding more effectively, ultimately resulting in more sidewalks being built.

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety

Lead: MCDOT

B-1c: Require all new public buildings, as well as major renovations, to design and construct bikeways and walkways along their frontage as recommended in master plans and the CSDG, as well as to dedicate right-of-way where required.

Public projects, such as schools and libraries, should provide frontage improvements identified in master plans or other regulations, just like private development projects do. Public agencies should coordinate with the Planning Department early in the project design to help identify the master-planned frontage improvements so they can be accommodated in the project budget.

Goals: Walking Rates, Comfortable/Connected Pedestrian Network

Leads: MCDGS, MCPS

Support: Montgomery Planning

B-1d: Require that new and reconstructed sidewalks achieve at least a "somewhat comfortable" rating using the Pedestrian Level of Comfort (PLOC) tool.

Currently, 41% of pedestrian pathway mileage in the county is rated as "uncomfortable" or "undesirable," based on Montgomery Planning's PLOC metric. To improve the comfort of walking, this recommendation establishes a minimum comfort standard of "somewhat comfortable" for new and reconstructed sidewalks as part of capital improvement and private development projects. This ensures that future sidewalks and pedestrian pathways are

designed and constructed to be navigable and comfortable. Note that sidewalk reconstruction does not include maintenance projects to eliminate tripping hazards.

Goal: Comfortable/Connected Pedestrian Network

Leads: MCDOT, Montgomery Planning

B-1e: Explore use of temporary materials to create dedicated pedestrian spaces where sidewalks are not feasible.

Where there is limited available right-of-way or environmental or other limitations, use flex posts, jersey barriers, or other materials to create pedestrian space within the roadway.

Precedents: Seattle has created temporary walkways in the roadway to preserve trees and other environmental features. In Washington, D.C.'s Georgetown neighborhood, the sidewalk on M Street is widened seasonally into the street using semi-permanent materials to accommodate more pedestrians.

Related Effort: Vision Zero Action Plan

Goal: Comfortable/Connected Pedestrian Network

Lead~~s~~: MCDOT~~, Montgomery Parks~~



A painted pedestrian pathway in the street is separated from traffic by parked cars, temporary concrete curbs, and white flex posts. Photo Credit: Dongho Chang

B-1f: Amend Montgomery County's Residential Permit Parking Guidelines to allow MCDOT to remove residential permit parking areas in support of another transportation purpose.

Executive Regulation 24-16 allows for the creation of residential permit parking areas within 4,000 feet of light rail or Metrorail stations. Often, right-of-way currently dedicated to on-street parking in these locations is needed to improve safety for pedestrians and bicyclists. As the regulation is written, without support from a majority of residents along the block face, the residential permit parking zone cannot be removed, leading to more expensive capital

projects because right-of-way purchases or utility relocation may be required to get the project done.

Goal: Comfortable/Connected Pedestrian Network

Lead: County Executive



Residential Permit Parking signage

B-1g: Affirm that the county can remove curbside electric vehicle (EV) charging to allow a transportation facility to be constructed.

The county's Department of Permitting Services has a policy for the installation of EV charging infrastructure for residential use in the public right-of-way.[26] The policy currently states that the right-of-way permit can be revoked in specific instances. The policy should be updated to reflect that an EV charging station can be removed to construct a transportation facility like a sidewalk or bikeway. Residents should be provided with information about whether their property abuts a master-planned transportation facility before they pursue an EV charging station construction project.

Goal: Comfortable/Connected Pedestrian Network

Lead: MCDPS

B-1h: Document deviations from Complete Street Design Guide streetscape default widths where applicable.

The Complete Streets Design Guide identifies preferred, default, and minimum widths of different roadway elements from travel lanes to sidewalks and landscape buffers. These widths were agreed upon through a collaborative process between MCDOT, MCDPS, and Montgomery Planning. Where public or private projects are not providing the default widths,

[26] "Residential Electric Vehicles (EV) Charging Permitting Guidelines." Montgomery County Department of Transportation and Department of Permitting Services. 2021. montgomerycountymd.gov/DPS/Resources/Files/RCI/EV%20Charging%20Stations%20in%20the%20ROW.pdf

Planning Department and MCDOT staff must document the reasons that prevent achieving the CSDG dimensions as part of regulatory staff reports.

Goal: Comfortable/Connected Pedestrian Network

Lead: Montgomery Planning, MCDPS, MCDOT

B-1i: Update state curb height standards to 6" in areas with pedestrian activity.

Curb ramps allow people using wheelchair and other wheeled vehicles to transition between the road surface and the sidewalk. By law, the running slope of the curb ramp (from the street to the sidewalk) cannot exceed 8.33 percent for new sidewalks or 10 percent for those built before the ADA went into effect. To achieve these running slopes, a taller curb ramp requires more space because ramps need to be longer. This additional space requirement often requires adjustments to the slope of adjacent sidewalks, which can have a negative effect on accessibility. Lowering the state's 8" standard curb height to the county's 6" standard will allow shorter ramps and more accessible sidewalks.

Goal: Equitable and Just Pedestrian Network

Lead: MDOT SHA

B-2: Eliminate the need to press a button to cross the street.

Pedestrians should not need to press a button to safely cross the street, and yet in much of Montgomery County, this is the case. A pedestrian-friendly place avoids the ~~"beg button"~~pedestrian push button wherever possible. The key actions below help the county achieve this recommendation. In urban areas, the default would be to automatically provide pedestrians time to cross the street during every signal cycle; in suburban and country areas where there are often fewer people walking today, the county would use creative technologies to prioritize pedestrians and reduce delay.

Satisfaction with pedestrian walk signal wait time is 44% countywide.

Key Actions:

B-2a: Make pedestrian recall the default configuration for signalized intersections in Downtowns and Town Centers and adjacent to rail and bus rapid transit stations, schools, parks, major trail crossings, and community centers.

Currently, pedestrian phases at signalized intersections can be configured as push-button actuated or recall. Push-button actuation requires the pedestrian to push a button to receive a walk signal and is not automatically triggered. Recall automatically provides a pedestrian crossing phase every signal cycle and removes the onus from the pedestrian to push a button to request the walk signal. Recall should be the default configuration in urban areas where

pedestrian activity is greater. The accessibility features of the Accessible Pedestrian Signal (APS) will remain effective even if the pedestrian phase is in recall.

Goals(s): Comfortable/Connected Pedestrian Network, Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA, County Municipalities



A pedestrian push button. Photo Credit: Montgomery County Government

B-2b: Continue to evaluate passive detection to eliminate the need for pedestrians to press a button to safely cross the street in areas where pedestrian recall is not desirable.~~Target implementation of passive detection (such as sensors) to eliminate the need for pedestrians to press a button to safely cross the street in areas where pedestrian recall is not desirable. If this is not feasible at every appropriate location, consider having the pedestrian push button immediately provide a pedestrian phase.~~

In Suburban and Country areas of the county where providing a pedestrian crossing phase via pedestrian recall in every signal cycle may have detrimental effects on traffic flow, passive detection provides an option that eliminates the need to push a button while minimizing impacts to traffic. Using sensors, the signal detects an approaching pedestrian and adds a phase to the signal cycle so that pedestrian can safely cross the street.

Precedent: The PUFFIN passive detection approach is used in the United Kingdom.

Goals(s): Comfortable/Connected Pedestrian Network, Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA

B-2c: Develop criteria for "Barnes Dance" pedestrian signalization.

A "Barnes Dance" is a traffic signal phase when no motor vehicle traffic can proceed, but pedestrians and bicyclists can travel in any direction through an intersection. The county

should consider adopting and publishing implementation criteria about this signalization approach.

Goals(s): Comfortable/Connected Pedestrian Network

Lead: MCDOT

B-2d: Reduce the number of intersections with permissive left turns along Major Highways, Downtown Boulevards, Downtown Streets, Town Center Boulevards, Town Center Streets, and Boulevards to improve safety, in line with findings from the Predictive Safety Analysis.

Left turns can be configured in two main ways: permissive or protected. A permissive left turn is when a left-turning driver must wait for a break in oncoming traffic to execute a left turn. A protected left turn is when a left-turning driver waits for a left turn signal—where oncoming traffic is stopped—to execute a left turn. Permissive left turns can be dangerous for pedestrians because drivers looking to turn left are focused on finding a gap in oncoming traffic and may not be paying attention to pedestrians crossing the street. Protected left turns separate turning vehicles from through traffic and crossing pedestrians, eliminating these conflicts.

Goals(s): Comfortable/Connected Pedestrian Network, Pedestrian Safety

Leads: MCDOT, MDOT SHA

B-3: Create direct and accessible street crossings.

High-quality street crossings connect communities and make it easier to access local destinations like schools, parks, and transit stops. The county PLOC analysis found that while the majority of the pathways in the county are comfortable (58%), only 44% of street crossings are comfortable. Coupled with 46% satisfaction with the number of marked crosswalks and 42% satisfaction with the number of places to safely cross the street in the Countywide Pedestrian Survey, it is clear that street crossings countywide need to be improved. The key actions below achieve the recommendation by encouraging more intuitive curb ramp and crosswalk design, enhancing pedestrian right-of-way while crossing, and supporting the installation of more direct pedestrian crossing locations.

Key Actions:

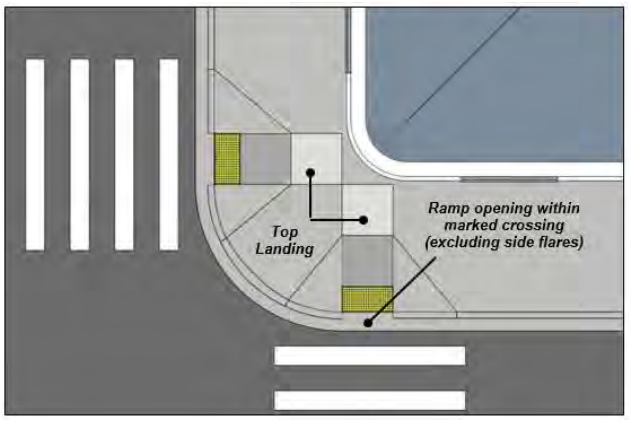
B-3a: Update state and county design standards to reflect a preference for perpendicular curb ramps aligned with the crosswalk.

When curb ramps are significantly out of alignment with the crosswalk, people with vision disabilities have more difficulty orienting to cross the street safely, and people using wheelchairs are directed into the intersection, where they are more vulnerable to conflict with motor vehicles. Misaligned curb ramps also inconvenience people pushing strollers or using

other wheeled devices. Perpendicular curb ramps aligned with the crosswalk can be provided on both straight and curved sections of curb.

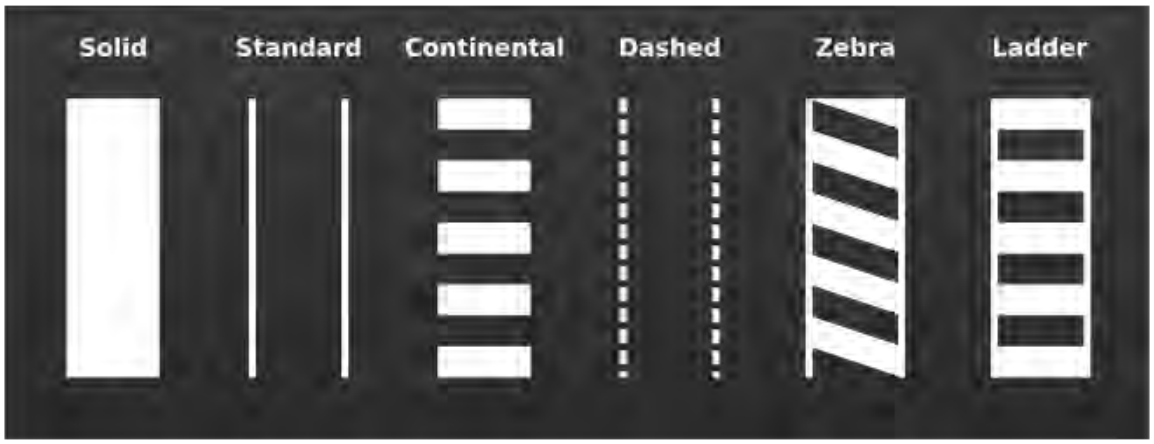
Goals(s): Equitable and Just Pedestrian Network, Pedestrian Safety

Leads: MCDOT, MDOT SHA



Perpendicular curb ramps directly aligned with appropriate crosswalks. Image Credit: U.S. Access Board

B-3b: Update the CSDG to establish ladder-style, high-visibility crosswalks as the default crosswalk design in Montgomery County.



The ladder crosswalk markings on the far right can be compared with the continental and standard markings. Image Credit: SF Better Streets

The ladder-style crosswalk marking is preferred over the continental-style crosswalk marking—the current standard—because it incorporates the parallel lines of the standard-style crosswalk that pedestrians with low vision find helpful for maintaining the correct heading in the crosswalk. This standard is recommended in MCDOT's publication *Planning and Designing Streets to be Safer and More Accessible for People with Vision Disabilities* and is supported by national-level research (NCHRP Project 03-78b).

Difficulty crossing streets could be contributing to the 10% disparity in pedestrian satisfaction with the pedestrian environment among people with disabilities.

Precedent: This is the predominant crosswalk marking treatment in Washington, D.C.

Goals(s): Equitable and Just Pedestrian Network, Pedestrian Safety

Lead: MCDOT

B-3c: Construct raised crossings across all driveways and at intersections between residential street types (Neighborhood Streets and Neighborhood Yield Streets) and higher classification streets through capital projects and as a requirement for private development.

Raised crossings (also known as continuous sidewalks) slow turning vehicles, reinforce the primacy of pedestrian spaces, and create a more accessible pedestrian environment—eliminating the need for people using wheelchairs or other mobility devices to use ramps to go down to street-level and then climb back to sidewalk-level. Implementing raised crossings on existing streets may be challenging when drainage is a concern.

Precedents: Vassar Street and Western Avenue in Cambridge, MA, use raised crosswalks. This is a very common gateway treatment for vehicles continuing onto neighborhood streets in other countries.

Goals: Equitable and Just Pedestrian Network, Pedestrian Safety

Leads: MCDOT, MDOT SHA, County Municipalities

Support: Montgomery Planning



A raised crossing at sidewalk-level across a low-speed, low-volume street. Photo Credit: Vladimir Zlokazov

B-3d: Provide marked crosswalks and Accessible Pedestrian Signals at all legs of an intersection where there are connecting sidewalks or comfortable streets.

Many intersections exclude crosswalks and APS at one or more legs of the intersection to improve traffic flow, but this requires pedestrians who want to cross the street at the missing locations to detour, increasing their travel time
and exposure to traffic.

In certain parts of the county, missing crossing locations may encourage pedestrian non-compliance with traffic signals and markings, leading to unsafe outcomes.

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network, Pedestrian Safety

Leads: MCDOT, MDOT SHA, County Municipalities



With the crossing in the red box missing, pedestrians must use the other three crosswalks to get between the upper and lower corners on the right side. Photo Credit: Google Maps

B-3e: Pursue a modification of Maryland Code §21-502 to indicate that the driver of a vehicle must ~~yield to~~stop for pedestrians waiting to cross the street, not just those already in the crosswalk.

Currently, state law requires pedestrians enter the street at a crosswalk at an uncontrolled intersection to gain the right-of-way and cause drivers to stop. In practice, this creates situations where drivers maintain elevated speeds through marked and unmarked crosswalks, frightening pedestrians into waiting until there is a gap in traffic before taking the opportunity to cross the street. To support improved driver yielding, additional signage in advance of crosswalks should be installed across the county, particularly at locations where there may be sight distance issues.

Precedent: Virginia law requires drivers to yield to pedestrians "at" a crosswalk, not "in" a crosswalk.

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network, Pedestrian Safety

Lead: State Delegation

B-3f: Crosswalk markings and associated curb ramps should be at least as wide as the sidewalks and trails they connect on either side.

Pedestrian facilities like sidewalks and crosswalks should be designed to comfortably accommodate the anticipated number of users. In commercial areas, near schools, and where major trail crossings are present, wider crosswalk markings are necessary to maintain the pedestrian experience across the intersection and inform drivers that the crossing has significant pedestrian activity.

Goals: Walking Rates, Pedestrian Safety, Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA, County Municipalities

B-4: Build more walkable places.

Creating and enhancing places in Montgomery County where people can easily, quickly, and directly access many destinations on foot or using a mobility device is one of the most effective ways to achieve the Pedestrian Master Plan goals. For many people in Montgomery County today, there are few nearby places to walk to, so driving is a logical choice. In fact, pedestrians living in Suburban areas of the county and pedestrians living in Exurban/Rural areas of the county take about 76% and 79% fewer pedestrian trips than those living in urban areas. The key actions below recognize that land-use and transportation planning are highly interrelated. Good land-use planning and site design result in shorter and more rewarding trips, making walking a preferred way to travel.

Key Actions:

B-4a: Use master planning processes to focus growth in Downtowns, Town Centers, and along Growth Corridors to expand walkable places in the county.

To increase walking, plans need to encourage situations where walking is preferable. Creating dense mixed-use clusters and adding density to existing mixed-use clusters is the most effective way to achieve this goal. Thrive Montgomery 2050 strongly emphasizes this approach. Making it easier to walk to more destinations within the same distance will encourage more people to choose walking over other travel modes, which will reduce vehicle miles traveled and transportation emissions in the county.

Goals: Walking Rates, Comfortable/Connected Pedestrian Network

Lead: Montgomery Planning, County Municipalities

B-4b: Locate schools and other public buildings to prioritize providing safe and direct pedestrian access.

The placement and design of pedestrian pathways strongly influences whether walking is the preferred transportation mode for accessing public buildings like schools, community centers, and libraries. To make public buildings as pedestrian friendly as possible, they should be placed adjacent to nearby sidewalks; avoid directing pedestrians through parking lots; provide a welcoming, prominent pedestrian entrance; and incorporate other best practices for safe pedestrian access.

Goal: Walking Rates

Leads: MCDGS, MCPS

Support: ~~,~~ Montgomery Planning

B-4c: Encourage MCPS to r~~R~~evise minimum acreage requirements for school sites and consider colocation opportunities to facilitate smaller school footprints better integrated into adjacent communities.

Minimum acreage requirements can discourage the use of smaller sites and buildings that are embedded within walkable neighborhoods in favor of larger tracts at the edge of the community that are less conducive for walking. Revising minimum acreage requirements would allow more walkable infill parcels to be considered for schools, making it more likely that future students will walk to school. Increasing the likelihood that students will walk to school has numerous benefits, including operational savings from reduced busing and reduced transportation emissions.

Goal: Walking Rates

Lead: MCPS

B-4d: Update the CSDG to include ~~a transit corridor~~a Growth Corridor overlay to provide additional context-based guidance on crossings and target speeds.

Montgomery County's rail and bus rapid transit corridors (Figure 25) pass through both Urban and Suburban areas, but existing guidance for the Boulevard street type in the CSDG does not recommend adequate target speeds and protected crossing spacing along existing and planned transitways—features necessary to enhance pedestrian safety, improve pedestrian comfort, and shorten walking trips. As transit corridors such as Georgia Avenue, Veirs Mill Road, and University Boulevard account for 10% of fatalities and severe injuries but only 1.3%

of roadway miles, more frequent protected crossings and lower target speeds are needed on these roads to achieve Vision Zero.

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety

Leads: MCDOT, Montgomery Planning

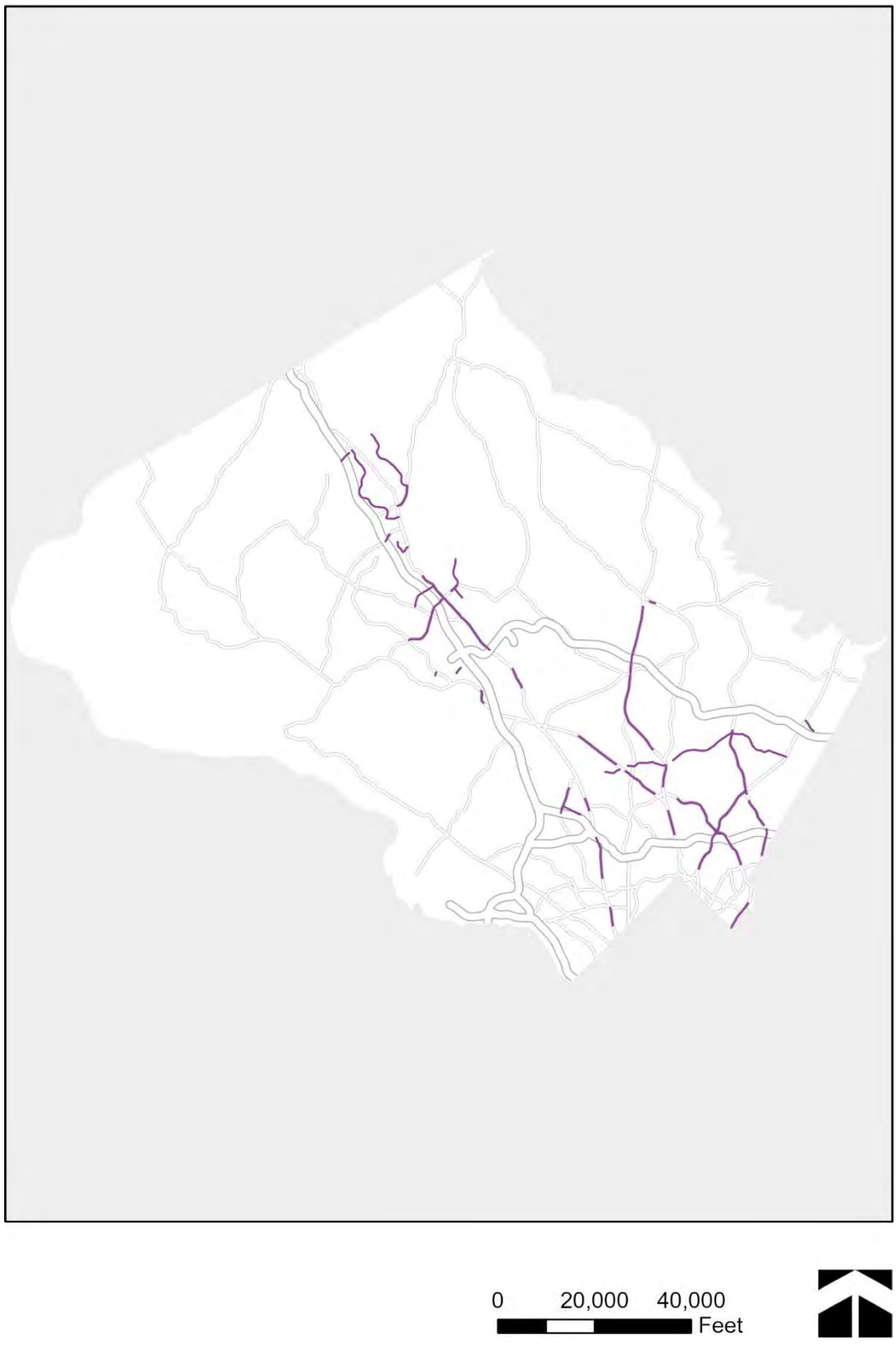
B-4e: Create a grid of streets and alleys along transit corridors with block sizes based on the protected crossing spacing standards in the CSDG.

Many of Montgomery County's rail and bus rapid transit corridors (outside of Downtowns and Town Centers) are characterized by long blocks and are lined with commercial and residential driveways (Figure 25). Longer block lengths limit routing options for pedestrians and encourage crossing streets at unsafe places because protected crossing locations are spaced too far apart. Driveways create conflict points between cars and pedestrians. Tools are needed to reduce the size of these blocks where appropriate by expanding the street grid through future redevelopment and capital projects, as well as to consolidate and relocate driveways to side streets and alleys.

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety

Leads: Montgomery Planning, MCDOT, MDOT SHA

Figure 25: Transit Corridors along Boulevards



B-4f: Develop and implement a comprehensive pedestrian wayfinding system for the county.

A comprehensive pedestrian wayfinding system—a network of signs providing distance and direction to destinations—will increase walking by helping residents, employees, and visitors understand what is accessible nearby on foot. A similar effort to develop bikeway wayfinding is under development by the Planning Department.

Goal: Walking Rates

Leads: MCDOT, ~~Montgomery Planning~~County Municipalities

Support: Montgomery Planning

B-4g: Make the Open Parkways currently operating along Beach Drive and Sligo Creek Parkway permanent.

Montgomery County should build on the success of the Open Streets program by taking steps to make ~~it~~ weekend and holiday Open Parkway days and times (including Fridays along Sligo Creek Parkway) permanent. The Rock Creek and Sligo Creek Parkway trails are some of the most popular in the county. Opening Beach Drive and Sligo Creek Parkway to active transportation permanently will provide more safe, comfortable, and direct spaces for walking and bicycling. Spillover effects to adjacent neighborhood streets should be studied and any negative effects should be mitigated.

Precedent: San Francisco recently made JFK Drive through Golden Gate Park car-free.

Goal: Comfortable/Connected Network

Lead: Montgomery Parks

B-4h: Provide public seating, restrooms and other pedestrian amenities in Downtowns, Town Centers, priority park locations, and along Boulevards.

Enjoyable walking often requires more than just a sidewalk and a place to safely cross the street. For example, not having a place to rest along a walking route may reduce walking for the elderly, people with disabilities, and others. Providing public ~~seating in Downtowns and Town Centers and along Boulevards~~ makes it easier for these individuals to walk in areas of the county with the greatest pedestrian activity. Benches and other seating can be provided along the sidewalk and also set back from the street in pocket parks and other small green spaces. Likewise, access to public restroom facilities is an equity issue that can be a determining factor for some when it comes to the decision about if and how to make a trip. Public restrooms should provide an adult changing table or family bathroom option. Public drinking fountains and trash receptacles make the pedestrian experience better for all by providing hydration (including for four-legged friends) and making it easier for people to keep

public spaces clean. All of these amenities should be built as part of public and private projects that interact with the streetscape. Priority park locations are areas within parkland determined by Montgomery Parks to be good candidates for these amenities.

Goals: Walking Rates, Comfortable/Connected Pedestrian Network, Equitable and Just Pedestrian Network

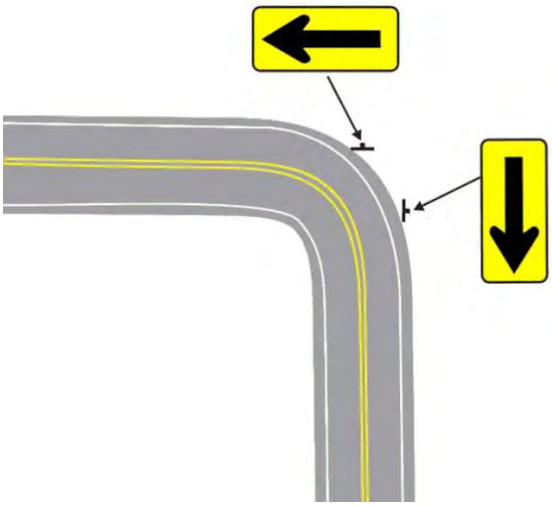
Leads: MCDOT, Montgomery Planning, Urban Districts, Montgomery Parks, County Municipalities

B-4i: Update horizontal alignment standards in Chapter 50 of the County Code.

Horizontal alignment standards define how gradually roadways can change directions. The sweeping curves the standards currently require encourage motor vehicles to travel at high rates of speed and make it more difficult for pedestrians to safely cross the street. Updating these standards to allow tighter horizontal roadway alignment will allow the construction of more urban street grids in subdivisions across the county.

Goals: Walking Rates, Comfortable/Connected Pedestrian Network, Pedestrian Safety

Leads: MCDOT, Montgomery Planning



Horizontal Curve. Image Credit: MoDOT Engineering Policy Guide

B-5: ~~Light pathways and crossings.~~Lighting for Roadways, Intersections, and Pedestrian and Bike Facilities

Pedestrians should be able to see where they're going when walking at night, feel secure walking in the dark, and feel confident that drivers will see them when crossing the street. However, only 32% of surveyed residents say they are satisfied with the quality of overhead lighting along pathways and at crossings. While Montgomery County requires sidewalks or sidepaths within the right-of-way to be lit,

the State Highway Administration does not have a similar requirement along state roadways. The key actions highlight three avenues to achieving improved pedestrian lighting countywide.

Key Actions:

B-5a: Develop lighting standards for each street type and trails.

Improve pedestrian safety at night by developing lighting standards that require specific horizontal and vertical illuminance outputs that are appropriate for the land use context and street classification.

Related Effort: Vision Zero Action Plan

Goals: Enhance Pedestrian Safety, Increase Walking Rates

Leads: MCDOT, Montgomery Planning

B-5b: Update the site lighting section of the Zoning Code to encourage pedestrian-scale lighting in context-appropriate areas of the county.

While pedestrian-scale street lighting in the right-of-way is one component of ensuring the pedestrian realm is well-lit, lighting on private property also plays an important role in pedestrian illumination. Updating lighting requirements, standards, and guidance will provide planners and engineers with more tools to achieve appropriate lighting levels in pedestrian spaces.

Goals: Pedestrian Safety, Walking Rates

Leads: ~~MCDOT,~~ Montgomery Planning

Support: MCDOT

B-5c: Conduct a survey of lighting conditions countywide.

In addition to developing lighting standards that will improve the quality of lighting over time (B-5a), it will be helpful to conduct a study to understand where existing lighting conditions are deficient. This study will help guide implementation of the updated lighting standards in a data-driven way.

Goals: Pedestrian Safety

Leads: MCDOT

B-6: Reduce pedestrian pathway temperatures.

Cooling the pedestrian environment is essential to mitigating the dangerous effects of climate change. However, only about 25% of sidewalks in the county are shaded by street trees, and along the county's busiest roads, sidewalks in Equity Focus Areas have less shade than those in other areas of

the county. The county's Climate Action Plan (CAP) includes a specific recommendation to retain and increase tree canopy. These key actions are supportive of the county's goals by identifying approaches to lower air, surface, and ambient temperatures in pedestrian spaces by planting more trees along sidewalks and trails. The plan also recommends researching the effectiveness of new approaches to sidewalk and other streetscape elements and materials to reduce thermal temperatures.

Only 39% of surveyed residents are satisfied with the amount of shade provided by trees and buildings.

Key Actions:

B-6a: Develop strategies to improve shading along sidewalks with a focus on adding shade in Equity Focus Areas (EFAs).

Prioritize adding shade along higher classification streets in EFAs. The Planning Department's Reforest Montgomery program currently aims to increase tree canopy with a focus on Equity Focus Areas, but only plants on private property, not the public right-of-way.

Goals: Comfortable/Connected Pedestrian Network, Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA, Montgomery Planning

B-6b: Reinvigorate the county's street tree planting program to greatly increase native canopy tree planting within the right-of-way, especially in areas like Equity Focus Areas with poor canopy coverage.

Tree canopy is lacking along many sidewalks in Montgomery County. While programs like Tree Montgomery and Reforest Montgomery exist to plant trees on private property, it can be a challenge to plant, maintain, and replace necessary shade trees within the public right-of-way along sidewalks. Consolidating funding sources and investing more in street tree preservation, maintenance, and planting within the right-of-way—while eliminating barriers to replacing trees that have been removed—will be a significant investment in future pedestrian comfort along the county's sidewalks.

Goal: Comfortable/Connected Pedestrian Network

Leads: MCDOT, County Executive, County Council

B-6c: Study and compare how different surface materials, colors, and other streetscape elements can mitigate urban heat island effects, including information on cost, maintenance, and longevity of materials, as well as identifying standards to encourage effective implementation.

Beyond encouraging the planting of more native canopy street trees to cool pedestrian pathways, changing how streetscape elements like sidewalks, roadways and parking lots are designed can also provide cooling benefits for pedestrians. Additional research is necessary to determine what materials can effectively lower thermal temperatures while also providing a high-quality pedestrian experience. This effort will complement the urban heat island efforts underway by the county's Department of Environmental Protection and the *Silver Spring Downtown and Adjacent Communities Plan Design Guidelines* (2023), which contain streetscape material, vegetation, shading and other recommendations to achieve "cool streets".

Goal: Comfortable/Connected Pedestrian Network

Lead: Montgomery Planning, MCDOT

B-7: Create more pedestrian connections and formalize pedestrian shortcuts.

The county's network of sidewalks, trails, and roadway crossings should make it easy and convenient for people to walk and roll directly between Point A and Point B. Unfortunately, this is often difficult, as cul-de-sacs, missing sidewalks, and poor street connectivity may force people to walk well out of their way to reach destinations. The key actions will help to achieve this recommendation by planning future opportunities for pedestrian connectivity, ensuring appropriate sidewalks and trails are built through private development, and advocating for the dedicated and increased funding needed to close sidewalk gaps and make other important pedestrian connections.

Key Actions:

B-7a: Increase funding for the Annual Sidewalk Program and other related Capital Improvement Program efforts, including the Bus Stop Improvement capital funding program, to address missing, broken, or substandard sidewalks and other infrastructure.

Additional funding is needed to address the large demand for sidewalk projects.

Goal: Comfortable/Connected Pedestrian Network

Leads: County Executive, County Council~~, MCDOT~~

B-7b: Create a new Capital Improvement Program (CIP) project to build, reconstruct, and resurface master-planned pedestrian shortcuts, Neighborhood Connector pedestrian/bike paths, and other pedestrian connections.

While existing capital improvement program projects are authorized to build, reconstruct, and resurface pedestrian shortcuts—informal pedestrian connections not along a street that provide a more direct pedestrian route than the sidewalk and trail network—in practice these projects are used to build more substantial pedestrian connections. Therefore, a distinct

program focused on building, reconstructing, and resurfacing pedestrian shortcuts and master-planned Neighborhood Connector paths is needed.

A separate section of the Pedestrian Master Plan identifies many of these pedestrian shortcuts as master-planned pedestrian connections to be constructed through public projects or private development.

Goal: Comfortable/Connected Pedestrian Network

Leads: ~~MCDOT,~~ County Executive, County Council~~, Montgomery Planning~~



Pedestrian shortcuts (or people's choice paths) are informal and unpaved pathways that people develop to shorten their trips.

B-7c: Create a new Capital Improvement Program (CIP) project to build pedestrian and bicycle connections to park land.

Montgomery Parks will identify additional access points and other opportunities on park property to increase pedestrian and bicycle connections (Key Action B-8a). This CIP project would provide dedicated funding to complete projects that connect from park land to the existing pedestrian and bicycle network.

Goal: Comfortable/Connected Pedestrian Network

Leads: County Executive, County Council~~, MCDOT, Montgomery Parks~~

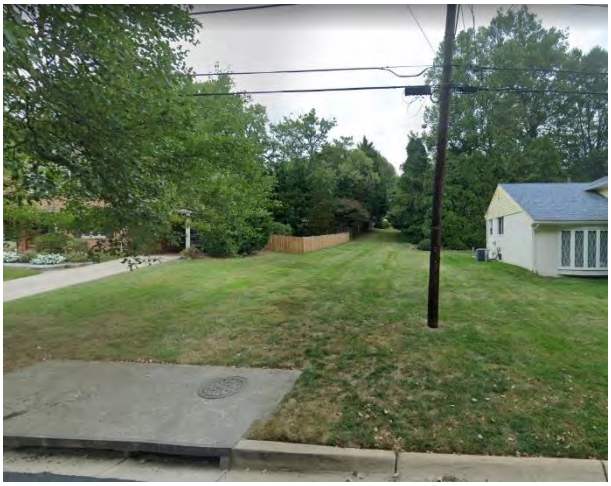
B-7d: Preserve paper streets and other rights-of-way if they could potentially provide future pedestrian connectivity benefits, like pedestrian shortcuts.

A "paper street" is a public right-of-way that is not developed with a street or other transportation facility. Private property owners often seek the abandonment of these rights-of-way adjacent to their property for various reasons. Because an abandonment dissolves the

public right-of-way, making future pedestrian connections difficult, this recommendation ~~would limit the instances where abandonments should be permitted.~~ provides clarity about when abandonments are inappropriate.

Goal: Comfortable/Connected Pedestrian Network

Leads: Montgomery Planning, MCDOT, ~~MCDPS,~~ County Council



A grassy "paper street" connects two streets between houses

B-7e: Update development standards to require or incentivize new developments to connect to nearby sidewalks and trails that exist or may be built in the future.

New development projects must fully connect to existing and future land uses on their periphery by providing a fine-grained pedestrian network. This network, including valuable interparcel connections, makes pedestrian trips easier, safer, and more direct. Without these connections, pedestrian trips are likely to become motor vehicle trips or end up not happening at all.

Goal: Comfortable/Connected Pedestrian Network

Leads: Montgomery Planning, MCDOT, County Municipalities

B-7f: Offer monetary support to Homeowners Associations, Condominium Associations, and commercial properties for providing pedestrian connections through their property and reconfiguring existing parking lots to be more pedestrian friendly.

Many residential communities and commercial areas were constructed at a time when pedestrians were not prioritized. While today, pedestrians are a larger priority and Montgomery Planning and county agencies work with those pursuing private development projects on pedestrian-friendly site and frontage design, there are not many opportunities currently to encourage property owners who are not pursing redevelopment to make pedestrian-friendly changes. This key action would provide a sum of money annually to support two types of important projects:

1) The provision of pedestrian shortcut connections and through-block connections across common areas of Homeowners Association and Condominium Association property—~~providing public pedestrian connections through these communities~~where these connections would improve pedestrian access to local businesses, transit, and community destinations.

2) The reconfiguration of parking lots to be more pedestrian friendly—reducing the number and severity of conflicts between motor vehicles and pedestrians

Goals: Comfortable/Connected Pedestrian Network, Walking Rates, Pedestrian Safety

Leads: MCDOT, County Executive, County Council

B-7g: Fund off-site pedestrian and bicycle access improvements to transit stations as part of the main capital project or through a parallel effort.

Non-motorized access to transit stations should be an essential component of their construction. These investments can provide substantial public benefits, including reduced transportation emissions and increased economic development, but poor pedestrian and bicycle connectivity in the surrounding area makes it difficult for these projects to reach their full potential ridership. Non-motorized access should be a higher priority than motorized access.

Related Effort: Vision Zero Action Plan

Goals: Comfortable/Connected Pedestrian Network, Walking Rates

Leads: MCDOT, MDOT SHA

B-8: Reduce natural barriers to walking and rolling.

Parks and other green spaces should facilitate connections between adjacent communities, but they often serve as a barrier to direct pedestrian movement, leading people to drive instead of walk. The key actions below identify approaches to make it easier to connect neighborhoods with nearby destinations, connect neighborhoods with each other, and encourage more walking and rolling through natural areas.

Key Actions:

B-8a: Develop a park access ~~master plan~~study to identify new pedestrian connections to and through parkland.

Direct and accessible pedestrian connections to and through parks are limited in some locations. This ~~plan~~ study will increase hard surface park access points so neighboring communities can more directly access park resources and travel through park-land to connect to local destinations. Key Action B-7c recommends funding in the capital budget to construct these connections.

Goals: Comfortable/Connected Pedestrian Network, Walking Rates

Lead~~s~~: Montgomery Parks~~, Montgomery Planning~~

Support: Montgomery Planning

B-8b: Use environmentally sensitive trail materials and construction approaches to provide pedestrian connections through park land.

Parks provide immeasurable benefits to their surrounding communities, but they can also act as barriers between adjacent neighborhoods. With a context-sensitive approach to providing trail connections, park land can be an even greater force for connecting communities by making it easier to build new, more direct paths and shorten walking distances.

Goals: Walking Rates, Comfortable/Connected Pedestrian Network

Lead~~s~~: Montgomery Parks~~, Montgomery Planning~~



Metal boardwalk snakes through park-land. Photo Credit: Marco Specialty Steel

B-8c: Write Forest Conservation Plans to allow accessible pedestrian pathways to make important connections and rewrite existing Forest Conservation Plans when opportunities arise to allow pathways where it would be beneficial for pedestrian connectivity.

Forest conservation areas and their restrictions on disturbance can act as barriers to pedestrian connectivity, leading to more circuitous pedestrian trips or pedestrian trips that become car trips — to the detriment of public safety and the environment. Ensuring accessible pedestrian travel through forest conservation areas is one way to improve pedestrian connectivity. Discussions should occur early on when Forest Conservation Plans are being developed to identify pathway locations and codify their inclusion in the ultimate plan. Montgomery Planning staff should also work to revise existing Forest Conservation Plans where appropriate to allow for accessible pedestrian connections.

Goals: Comfortable/Connected Pedestrian Network, Walking Rates

Leads: Montgomery Planning~~, County Council, Montgomery Parks,~~ MD DNR

B-8d: Study lowering impervious surface caps in relevant Special Protection Areas (and other areas with impervious surface restrictions) to account for the perviousness of planned pedestrian pathways and bikeways.

In Special Protection Areas and other areas with impervious regulations, sidewalks and other pedestrian amenities along public streets often cannot be constructed without removing impervious surfaces from other locations in the same general area. Sometimes, this tradeoff cannot feasibly be made, so the pedestrian amenities are not constructed. As a result, pedestrian connectivity in these areas suffers. The Planning Department should conduct a study with MCDOT to understand the total impervious impact of planned pedestrian and bicycle infrastructure and adjust the relevant impervious caps to take these pathways and bikeways into account—allowing them to be built in these areas, while maintaining water quality.

Goal: Comfortable/Connected Pedestrian Network

Leads: Montgomery Planning, MCDOT, County Council

B-8e: Prioritize construction of all required sidewalks and bikeways to standard dimensions for~~Require~~ development projects in areas with impervious surface caps or other similar limitations ~~to prioritize construction of all required sidewalks and bikeways to standard dimensions~~.

Certain parts of the county have limits on the amount of impervious surface that can be built to maintain local and regional water quality. In these parts of the county, development projects have moved forward with internal sidewalk networks on only one side of streets to stay under the area's respective impervious surface cap. This makes it more difficult for pedestrians to travel through these communities and encourages driving for walkable trips, increasing the county's transportation emissions and the climate impact of development. Pedestrian pathways and bikeways required by applicable master plans, the CSDG, the Zoning Code, and county regulations need to be prioritized in all communities.

Goal: Comfortable/Connected Pedestrian Network

Leads: Montgomery Planning, MCDOT

B-9: Make traffic calming easier to implement.

Managing vehicle speed is an essential element in creating a high-quality pedestrian environment. Traffic calming measures should be installed wherever target speeds as defined in the CSDG or relevant master plans are not being met. The key actions for this recommendation encourage the continued evaluation of the county's traffic calming approach and an increased reliance on

engineering judgement when it comes to making decisions about the installation of traffic calming, crosswalk markings, and other treatments.

Key Actions:

B-9a: ~~**Assess existing traffic calming implementation and the impact of CSDG standards and related procedures on new traffic calming implementation.**~~**Increase funding for traffic calming countywide to encourage a more proactive traffic calming installation approach.**

The CSDG increases the type and location of potential traffic calming infrastructure in Montgomery County, but ensuring additional traffic calming is installed, especially in a proactive way in the locations most needed, requires additional funding. ~~Conduct a study to understand where traffic calming has been installed, how long it took to install, how these improvements reduce crash risk, changes to motor vehicle speeds, etc. and determine if changes could be implemented to improve the program.~~

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety

Lead: ~~MCDOT~~County Council, County Executive

B-9b: ~~**Deemphasize pedestrian volumes as a determining factor in deciding where to install pedestrian or connectively improvements.**~~**Use potential pedestrian demand instead of observed pedestrian volumes in deciding if or where to install pedestrian connectivity improvements.**

Through the Traffic Engineering Study process, community members can identify safety and connectivity issues and request MCDOT address them with the appropriate treatments. Frequently, the rationale for not installing a safety/connectivity treatment is that the volume of pedestrians who would utilize the improvement is too low. A location with low pedestrian volumes could be a result of many factors including inadequate pedestrian facilities or high vehicle speeds. The observed demand is not indicative of potential demand when current conditions are not safe.

Goal: Comfortable/Connected Pedestrian Network

Lead~~s~~: ~~Montgomery Planning,~~ MCDOT

B-10: Assume county control of state highways.

Thrive Montgomery 2050, the county's General Plan, envisions transforming activity centers and growth corridors into safe, comfortable, and irresistible multimodal environments. However, Montgomery Planning's Predictive Safety Analysis study found that Downtown Boulevards and Town Center Boulevards are the most dangerous street types in the county for pedestrians and must be prioritized for improvements. State highways account for about 45 miles of road in Downtowns and Town Centers, as well as about 55 miles along master-planned BRT corridors (review Table 33~~Table 32~~

and associated maps of Downtown and Town Center areas)). Transferring control of these roads would give the county the flexibility to retrofit these state roads to prioritize walking, bicycling, and transit, and allow it to do so much faster than can happen today.

Key Actions:

B-10a: ~~**Evaluate different approaches to assuming control of state roadways in Downtowns, Town Centers, and along master-planned Bus Rapid Transit (BRT) corridors in Montgomery County.**~~**Develop an approach to achieving increased county control over state highways, beginning in Downtowns, Town Centers, and along Thrive Montgomery 2050 Growth Corridors.**

Roadway transfer is not a simple issue and identifying the most appropriate path forward will require study and significant local-state coordination. In particular, developing a strategy to fund ongoing operations and maintenance for the transferred roadway mileage is of utmost importance. This key action is the start of the conversation that needs to happen to make this recommendation a reality.

Goals: Comfortable/Connected Pedestrian Network, Walking Rates, Pedestrian Safety, Equitable and Just Pedestrian Network

Leads: County Executive, State Delegation

B-11: Address curbside management to prioritize pedestrian safety and rethink how curb space is used.

There is a need to think strategically about how curbside space is used. Demand for this space has risen sharply with increased use of delivery services and transportation network companies like Lyft and Uber as well as conventional taxi service and on-street parking. These demands affect pedestrians in a variety of ways, including at crosswalks, which are sometimes blocked by delivery trucks and transportation-network company drivers loading and unloading. The key action encourages the development of a plan to manage this space more effectively.

Key Actions:

B-11a: Develop a curbside management plan and pilot innovative approaches to curbside management.

Related Effort: Vision Zero Action Plan

Goal: Enhance Pedestrian Safety

Leads: Montgomery Planning, MCDOT

Maintain

The pedestrian experience in Montgomery County can vary greatly based on how diligently vegetation is trimmed, snow is shoveled, and sidewalks are kept smooth and level. It is not enough to invest in building more pedestrian spaces. This section lays out recommendations that clarify existing regulations and propose changes to how the county and private property owners care for sidewalks, pathways, and other pedestrian spaces so that these investments can provide a high quality of service for everyone for years to come.

MA-1: Fix sidewalks proactively.

Sidewalks throughout the county should be maintained equitably. Currently, MCDOT largely relies on requests through the county's 311 system to identify sidewalks in need of repair. However, relying on 311 reporting likely results in inequities, as communities with limited access to technology, available time, and trust in government are less likely to report issues. The key action encourages being more proactive about sidewalk maintenance.

Key Actions:

MA-1a: Create a plan for proactively inspecting and repairing Montgomery County sidewalks and pathways equitably across the county and track implementation.

Developing a proactive approach that includes a clear set of criteria for when and how to repair a sidewalk or pathway will lead to better, more equitable outcomes while likely saving money in the long run by addressing issues before they become more costly. Tree protection should be considered in the sidewalk inspection process.

Related Effort: Vision Zero Action Plan

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network

Lead: MCDOT

MA-2: Keep sidewalks and curb ramps clear.

Pedestrian spaces should be clear of vegetation, snow, and other elements that narrow the sidewalk and limit accessibility. While roadway maintenance is largely centralized within local and state governments, maintenance of pedestrian spaces is fragmented, relying on property owners to keep their adjacent sidewalks accessible and in good condition. Recent high-profile and tragic events along Old Georgetown Road and similar roadways serve to highlight that this fragmented approach is not just inequitable—emphasizing the primacy of motor vehicle travel over people walking and biking—it can be deadly as well. These key actions identify opportunities to address these inequities and help property owners understand their responsibilities.

Key Actions:

MA-2a: Audit major county and state roadways seasonally for vegetation overgrowth and erosion that reduces the effective width of sidewalks, restricts sidewalk accessibility, and limits visibility. Any identified issues should be immediately addressed and monitored so they do not reoccur.

Like snow in the winter, vegetation can intrude into the sidewalk, narrowing its effective width or making it impassable, degrading accessibility and safety. MCDOT should develop a plan for how often streets and pathways will be audited.

Goals: Pedestrian Safety, Comfortable/Connected Pedestrian Network

Lead~~s~~: MCDOT

Support:~~,~~ MDOT SHA~~, County Council~~

MA-2b: Amend Montgomery County's snow clearance requirement to specify that property owners are required to clear a path at least five feet wide on pathways in the public right-of-way adjacent to their property.

Chapter 49, Section 17 of the County Code requires property owners to clear a path that is wide enough for safe pedestrian and wheelchair use. However, the lack of a specified snow clearance width makes this requirement difficult to enforce as well as difficult to interpret for those unfamiliar with wheelchair operational requirements. This is an equity issue because poorly shoveled sidewalks may keep some members of the community home-bound while others can more easily continue traveling unbothered by snow obstacles. If a sidewalk is narrower than five feet (the Americans with Disabilities Act (ADA) preferred sidewalk width), the entire sidewalk width should be cleared. Adjacent property owners are responsible for clearing curb ramps and crosswalks under existing county regulations.

Goal: Equitable and Just Pedestrian Network

Lead: County Council

MA-2c: Conduct outreach to property owners regarding their responsibility to keep sidewalks clear of parked cars, trash receptacles, overhanging vegetation, snow, and other obstructions.

Property owners are generally more aware of snow clearance requirements than of other sidewalk maintenance responsibilities. The Department of Housing and Community Affairs (DHCA) currently conducts public outreach on snow clearance, so this outreach should be extended to other sidewalk maintenance issues like vegetation removal and trash receptacle placement. For those members of the community unable to maintain their sidewalks, consider the creation of a volunteer sidewalk maintenance team to do so. For documented ongoing non-compliance, consider enforcement action.

Precedent: Washington, D.C., has a Volunteer Snow Team.

Goals: Equitable and Just Pedestrian Network, Walking Rates

Lead: DHCA

MA-2d: ~~Assume county responsibility for snow clearance on sidewalks along all Downtown Boulevards, Town Center Boulevards, Downtown Streets, Town Center Streets, and Bus Rapid Transit Corridors~~ Study the benefits and costs of assuming county responsibility for snow clearance along all Downtown Boulevards, Town Center Boulevards, Downtown Streets, Town Center Streets, and Bus Rapid Transit Corridors.

Sidewalks that are not cleared of snow are inaccessible to people with disabilities and can present a safety hazard, particularly on arterial roadways (e.g., to access a bus stop, a person might choose to walk in the roadway rather than on the sidewalk). The county already clears 60 miles of sidewalks along arterial roadways, and the Shovel Our Sidewalks Act has added sidewalks along 19 similar roads in Equity Emphasis Areas (a similar geography to EFAs) to this list.

The recommendation builds on the county's commitment in the Shovel Our Sidewalks Act and recognizes that even with rigorous enforcement of the county requirement that property owners clear snow from sidewalks within 24 hours, uncleared sidewalks within the 24-hour window would present a significant safety hazard. These sidewalks along major roads are too important for pedestrian connectivity to rely on individual property owners to ensure they are shoveled.

Related Effort: Vision Zero Action Plan

Goals: Equitable and Just Pedestrian Network, Walking Rates, Pedestrian Safety

Lead: MCDOT

MA-3: Incorporate roadway maintenance into utility projects.

Utility work often involves cutting into the roadway surface and repaving when utility work is complete. As part of this process, there is an opportunity for utility workers to repaint crosswalk markings and update crosswalk markings to high-visibility markings. This would be beneficial because it does not require mobilizing MCDOT staff or contractors to conduct this crosswalk maintenance.

Key Actions:

MA-3a: Use repaving after utility work as a mechanism for upgrading crosswalks to a high-visibility design and the maintenance of other pavement markings as needed.

Related Effort: Vision Zero Action Plan

Goal: Comfortable/Connected Pedestrian Network

Leads: MCDOT, MCDPS

Support: Utilities

~~B-5c~~MA-4: ~~Ensure malfunctioning streetlights are returned to service within 24 hours~~Minimize streetlight repair time.

Lighting is an essential element of public safety. Currently, the average repair time for a broken MCDOT streetlight is seven days. Minimizing the amount of time a street light is broken will ensure that Montgomery County pedestrians continue to comfortably travel in their communities at night.

Key Actions:

MA-4a: Streetlighting owners should publicize response improvement plans and track their progress.

MCDOT and the utility companies responsible for maintaining the county's street lighting should publicize the length of time it takes to bring streetlights back to service after different types of outages. These entities should endeavor to continue reducing lighting outages.

Goals: Pedestrian Safety, Walking Rates

Leads: MCDOT, Utilities

Protect

Montgomery County has adopted Vision Zero, a commitment to eliminate severe injuries and fatalities in the transportation system by 2030. While the recommendations related to construction and maintenance of pedestrian spaces highlighted above will also improve safety, the recommendations that follow are systemic policy changes and programming that will speed proactive Vision Zero implementation and ensure pedestrians are safe while traveling through Montgomery County.

P-1: Reduce impacts of vehicle design and operation on pedestrian safety.

The design, weight, and speed of motor vehicles are all critical factors in the likelihood of a pedestrian crash and its resulting severity. Vehicles today are significantly larger than those from prior decades and are designed with inherent visibility issues like elevated hoods, creating massive front blind spots that hide children and many other pedestrians from view. As the increased mass combines with higher speeds, more energy is created, and collisions with pedestrians are much more likely to result in severe or fatal injury. In addition, the size of emergency vehicles like fire trucks is often a limiting factor in achieving safe designs for streets. These key actions identify approaches to mitigate these pedestrian safety issues and reduce barriers to redesigning streets to help achieve Vision Zero.

Key Actions:

~~P-1a: Ensure county and public agency vehicles are safe for pedestrians.~~

~~M-NCPPC, MCDOT, MCPS, and other public agencies have control over procurement of their own vehicles. The county's Climate Action Plan recommends the complete electrification of the county and public agency fleets. To the extent possible and where appropriate, these same fleets should be comprised of smaller vehicles with enhanced pedestrian visibility, when larger vehicles are not required to execute job duties.~~

~~Goal: Pedestrian Safety~~

~~Leads: County Executive, Montgomery Parks, MCPS, MCDGS~~

P-~~1b~~1a: Install speed governors or intelligent speed control devices in county and public agency vehicles to ensure their drivers adhere to the speed limit.

The county and public agencies should set an example when it comes to driving safely by setting an upper limit for how fast vehicles can go using speed governor technologies. Emergency vehicles should be exempt from this policy.

Related Effort: Vision Zero Action Plan

Goal: Pedestrian Safety

Leads: County Executive, Montgomery Parks, MCPS~~, MCDGS~~

P-~~1c~~1b: Develop a strategy to purchase emergency vehicles that can navigate narrower streets and tighter curb radii while maintaining appropriate performance standards.

The size and design of fire and emergency vehicles often dictates street design to the detriment of pedestrian safety and comfort; these vehicles require wider streets and larger curb radii dimensions than other vehicles. Wider streets increase pedestrians' exposure to traffic when crossing the street, and larger curb radii enable vehicles to make faster turns which results in less-convenient and less-direct curb ramp placement and reduces motorists' ability to see pedestrians crossing the street. Other communities across the country and around the world have created fleets of emergency vehicles that can operate on narrower streets and make tighter turns than Montgomery County's fleet.

Precedents: The Los Angeles Fire Department purchased their first electric fire truck—the Rosenbauer RTX—in 2022. It is quieter, narrower, and has a tighter turning radius than other fire trucks. San Francisco has been purchasing smaller fire trucks to support pedestrian safety efforts since 2017.

Goal: Pedestrian Safety

Lead: Fire & Rescue Service

P-~~1d~~1c: Develop legislation to create a new class of commercial driver's license required to operate vehicles with identified pedestrian safety and visibility issues.



A truck and its front blind spot. Image Credit: Consumer Reports

A vehicle's height, length, and width, as well as the length of its hood, all contribute to how well drivers can see pedestrians, how quickly the vehicles can slow down, and how much damage they can do to a pedestrian (or another road user) in the event of a crash. Drivers of taller, larger vehicles would benefit from increased education and training, but today, a commercial driver's license typically is not required in Maryland for vehicles lighter than 26,000 pounds (a tractor trailer). Requiring a specialized license and associated education to operate these more dangerous vehicles will improve pedestrian safety statewide because drivers will have targeted training on how to safely operate large vehicles.

Goal: Pedestrian Safety

Lead: State Delegation

P-~~1e~~1d: Develop legislation to improve pedestrian and bicycle safety by implementing a knowledge test requirement as part of the driver's license renewal process.

Over time, rules and regulations governing the transportation system change, and new roadway striping, signage, facilities, and signalization approaches are implemented. However, unless a Maryland driver's license has expired for a year or more, there is no requirement to retake either the driving skills or knowledge tests upon license renewal. A knowledge testing requirement, with the option to retake as many times as necessary to pass, would provide an opportunity to bring drivers up to date on changes to the transportation system and relevant laws and regulations since their last license renewal between five and eight years earlier. This would result in better driving and increased safety for all road users. Efforts should be taken to ensure this new requirement does not place an undue burden on the Motor Vehicle Administration. Additionally, each year the county should notify all county households identifying changes to traffic rules and regulations that have taken effect over the past year.

Goal: Pedestrian Safety

Lead: State Delegation

P-1e: Study requiring or incentivizing the use of pedestrian detection systems in vehicles registered in Montgomery County.

Pedestrian detection systems are becoming increasingly common in new motor vehicles. These systems inform drivers about pedestrians in their vicinity and may perform automatic braking to avert a pedestrian crash. The county should study whether requiring or incentivizing the use of these technologies would be a cost-effective approach to reducing pedestrian injuries and fatalities.

Goal: Pedestrian Safety

Lead: County Executive, County Council

P-2: Improve and expand protected crossings.

The county's CSDG recommends maximum protected crossing spacing for each street type in the county. However, many streets do not meet these recommendations, resulting in frequent unsafe crossings. Providing protected crossing spacing that is consistent with the CSDG and upgrading existing protected crossings will improve safety and pedestrian satisfaction by reducing mid-block crossing outside crosswalks, better separating pedestrians and drivers, reducing pedestrian delay, creating more direct pedestrian routes, and providing more spaces to stop mid-crossing between directions of traffic. Key actions address the lack of protected crossings and identify signalization changes that would improve pedestrian comfort.

Key Actions:

P-2a: Develop a methodology for identifying and prioritizing implementation of new protected crossings at mid-block or uncontrolled locations based on roadway characteristics, motor vehicle speeds and volumes, proximity to bus stops, proximity to pedestrian attractors including parks and schools, pedestrian crash history, and other relevant criteria.

In many parts of the county, the distance between protected crossing locations exceeds the recommended spacing identified in the CSDG. Indeed, Table 24 in the Existing Conditions chapter highlights that 16% of severe and fatal pedestrian crashes take place at uncontrolled intersections and 37% of severe and fatal pedestrian crashes take place midblock. Integrating protected intersection design features consistent with the CSDG can greatly improve pedestrian safety across the county, but with crossings needed in so many places, there is a need to prioritize which locations should be addressed first.

Related Effort: Vision Zero Action Plan

Goals: Pedestrian Safety, Comfortable/Connected Pedestrian Network

Leads: MCDOT, MDOT SHA

P-2b: Establish standards for the distance between bus stops and the nearest protected crossing to encourage pedestrians to cross the street at safe locations.

When either boarding a bus or alighting from one, typically passengers must cross a street. Locating bus stops within a short distance of protected crossings will encourage pedestrians to cross the street at safer locations. Generally, these standards should lead to more protected crossings being constructed (with some exceptions where bus stop consolidation may make sense for operational purposes).

Related Effort: Vision Zero Action Plan

Goals: Pedestrian Safety, Comfortable/Connected Pedestrian Network

Leads: MCDOT, MDOT SHA, WMATA

P-2c: Make No Turn on Red (NTOR) the default in Downtowns and Town Centers and evaluated elsewhere on a case-by-case basis. Enforce NTOR using automated enforcement approaches and additional traffic control devices as needed.

Right Turn on Red policies are intended to reduce motor vehicle queues and congestion, and increase driver satisfaction. However, they create safety and discomfort for pedestrians crossing the street, especially the most vulnerable. Safety issues exist because drivers may look left to avoid oncoming vehicles and might not see pedestrians in the crosswalk.

Additionally, while sighted pedestrians may be able to navigate around drivers entering into pedestrian space as pedestrians legally cross, pedestrians with low or no vision will have more difficulty. As a result, 80% of Countywide Pedestrian Survey respondents are dissatisfied with drivers cutting through the crosswalk. Therefore, in areas of the county with higher pedestrian activity such as Downtowns and Town Centers, NTOR should be the default. In other parts of the county, NTOR should be evaluated on a case-by-case basis.

Precedent: Washington, D.C., ended Right Turn on Red at 100 locations in 2019.

Goal: Pedestrian Safety

Leads: MCDOT, MDOT SHA, County Municipalities



A sign next to a traffic signal indicates that no vehicles may turn right on a red signal between 7 a.m. and 7 p.m.

P-2d: Prioritize pedestrian crossings using Leading Pedestrian Intervals (LPIs) (or Leading Through Intervals) at signalized intersections along Downtown Boulevards, Downtown Streets, Town Center Boulevards, and Town Center Streets. Everywhere else, implement LPIs within a certain distance of schools, parks, and community centers along those roadways. Ensure that Accessible Pedestrian Signals at locations with LPIs provide an audible signal to indicate when the pedestrian phase has commenced.

An LPI is an approach to traffic signalization that provides pedestrians a head start to enter the intersection before all parallel motor vehicle traffic. Similarly, Leading Through Intervals allow pedestrians and parallel motor vehicles traveling straight to proceed, while delaying turning vehicles to reduce conflicts with pedestrians. LPIs are a proven Federal Highway Administration safety countermeasure because they provide pedestrians an opportunity to establish themselves in the crosswalk in advance of turning vehicles, making them more visible and limiting potential for conflict. Providing LPIs near locations with more vulnerable populations and in areas with more pedestrian activity will improve safety.

Precedents: More than 30% of Seattle traffic signals have an LPI. They recently identified a 50% reduction in pedestrian turning collisions and 35% reduction in serious and fatal injury collisions at locations with LPIs. LPIs are also a common treatment in Washington, D.C.

Goal: Pedestrian Safety

Leads: MCDOT, MDOT SHA



Pedestrians begin crossing the street while adjacent cars have a red signal.

P-2e: Reduce pedestrian wait times by developing a policy on target and maximum traffic signal cycle lengths by street type.

Longer signal cycle lengths result in increased pedestrian delay and non-compliance with signals and make pedestrian travel less convenient. As a result, satisfaction with pedestrian signal wait time is 44% countywide. Establishing target signal cycle lengths by street function and land-use context will more safely and efficiently accommodate pedestrians.

Note: Key Action P-2e and Key Action EA-3a may somewhat work at cross purposes, as providing more time for pedestrians to cross the street may require a longer signal cycle length. There may not be an opportunity to implement both key actions at the same intersection.

Precedents: Seattle established maximum and target signal cycle lengths for different types of streets. London is actively working to shorten signal cycles to reduce pedestrian delay with a goal of "pedestrian time saved."

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety

Lead: MCDOT

P-2f: Update the CSDG and Executive Regulations to make pedestrian median refuges a high priority for intersections with six or more lanes, including through lanes, turning lanes, and auxiliary lanes.

Only 16% of pedestrian crossings across six or more lanes in the county have a median refuge—a place to safely stand between directions of traffic—and as a result, satisfaction with places to stop partway while crossing a street is 33% countywide. Installing more refuges would improve safety by allowing pedestrians to negotiate crossing only one direction of traffic at a time.

Goals: Pedestrian Safety, Comfortable/Connected Pedestrian Network

Lead~~s~~: MCDOT~~, MDOT SHA~~

P-2g: Remove free-flow channelized right turn lanes where roadway geometry allows and improve their design where it does not.

Free-flowing channelized right turn lanes allow motor vehicles to travel at high speed through an intersection. Drivers using these lanes tend to be focused more on yielding to motor vehicle traffic on the road into which they are merging, than to pedestrians who may be crossing the channelized right-turn lane to travel through the intersection. High rates of motor vehicle speed reduce visibility and reaction time for drivers and pedestrians alike, increasing the risk of a severe or fatal collision. Channelized right turn lanes are also difficult for people with visual disabilities to navigate. Altering these lanes by changing roadway geometry, eliminating the “porkchop” island, or adding traffic control will improve pedestrian safety and intersection accessibility.

Goals: Pedestrian Safety, Comfortable/Connected Pedestrian Network, Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA



A channelized right turn lane with porkchop island at Bel Pre Road and Georgia Avenue

P-3: Design pedestrian-safe parking lots.

Parking lot design should separate pedestrians from motor vehicles as much as possible and reduce conflict points between pedestrians and motor vehicles. However, parking lots in Montgomery County typically do not prioritize a safe pedestrian experience and discourage pedestrian access. The key action will help ensure parking lots in new development are designed in accordance with best practices for pedestrians.

Ten percent of serious and fatal crashes involving pedestrians occur in parking lots.

Key Actions:

P-3a: Develop parking lot design standards that improve safety and reduce conflicts between pedestrians and motor vehicles.

Updates to the county's parking lot design guidance are also recommended in the Vision Zero 2030 Plan for fiscal years 2022 and 2023. Design standards would guide new and retrofit public and private parking lot development, providing additional support to county efforts to ensure parking lot safety.

Goal: Pedestrian Safety

Lead~~s~~: Montgomery Planning

Support: ~~,~~ MCDOT, MCDPS

P-4: Educate and encourage pedestrians of all ages to walk safely.

To create a pedestrian-friendly Montgomery County, it is essential that community members of all ages understand how to safely travel around on foot or using wheels and are supported in doing so. The key actions aim to identify new venues and agencies to carry out education and encouragement programming.

Key Actions:

P-4a: Conduct pedestrian and bicycle safety educational programs in partnership with agencies such as MCPL, MCPS, and MCR.

Collaborating with other agencies on pedestrian safety education would allow Montgomery County to educate new audiences on pedestrian safety. This pedestrian safety education should be offered in the many languages prevalent across the county.

Goal: Pedestrian Safety

Leads: MCDOT, MCPL, MCR, MCPS

P-4b: Develop "traffic gardens" in several convenient locations across the county.

"Traffic gardens" are simulated street grids where children can learn the rules of the road for pedestrians, bicyclists, and drivers in an environment away from motor vehicles. Developing "traffic gardens" at several locations across the county, potentially collocated with schools or parks, would provide opportunities for school groups, parents, and others to engage in hands-on traffic safety education

Goal: Pedestrian Safety

Leads: MCDOT, MCPL, MCR, MCPS, Montgomery Parks, County Municipalities

P-4c: ~~**Shift the programming and education elements of the county's Safe Routes to School (SRTS) Program to MCPS and create SRTS initiatives, including pedestrian/bicycle education, in individual schools.**~~**Integrate Safe Routes to School into the MCPS curriculum and day-to-day activities.**

Encouraging and supporting students walking to school can be most effectively undertaken by MCPS. The MCPS system is so large that a successful SRTS program requires higher staffing levels and closer attention. Creating SRTS initiatives at MCPS schools using teacher-coordinators and parent volunteers, in concert with complementary recommendations to encourage walking, will put MCPS in the best position to increase the number of students walking.

Related Effort: Vision Zero Action Plan

Goals: Walking Rates, Pedestrian Safety

Lead~~s~~: MCPS~~, MCDOT~~

Support: MCDOT

P-5: Make the walk to school safer and more direct.

Students in Montgomery County should be able to walk to school safely and directly. However, in many parts of the county, MCPS provides busing for students within a walkable distance because the school district has identified the walk route as too hazardous. The key actions that follow are targeted to safety enhancements within a short distance of school.

Key Actions:

P-5a: Prioritize locations for additional school crossing guards and advocate for additional funding.

Increasing the number of crossing locations staffed with crossing guards would allow more students to walk to school and reduce hazard busing, improving student health and safety while reducing the school district's vehicle miles traveled and operating costs.

Goals: Pedestrian Safety, Walking Rates

Lead: ~~MCPS~~MCPD

Support: MCPS



Crossing guards guide students across Veirs Mill Road

P-5b: Fund Walking School Buses to reduce the ~~need for motorized school buses~~number of students being driven to school.

A walking school bus is a group of students walking to/from school with the guidance of adults. They help students get to school in the same way that school buses do, but in a more active, independent, and healthful way. Funding could be used to incentivize participation, provide promotional materials, and other general support. Reducing vehicular trips to schools lowers the likelihood of student-involved pedestrian crashes at arrival and dismissal and minimizes the transportation emissions associated with the public school system. The success of this effort would be measured by the number of students walking to school as part of Walking School Buses ~~and the reduction in conventional school buses needed to transport kids to school~~.

Goal: Walking Rates

Lead: MCPS

P-5c: Develop and implement School Streets—partial roadway closures immediately adjacent to schools during arrival and dismissal—at several schools as a pilot.

A School Streets program would reduce the likelihood of students being injured by cars on their walk to or from school by eliminating the space with the most pedestrian conflict

points—the area immediately around a school during pick-up/drop-off. While not necessarily appropriate at all schools, MCPS should work with MCDOT to explore several pilot sites at schools across the county before ultimately expanding the program countywide. School Streets can vary based on context, but the main element is the closure of school arrival and dismissal streets to all but pedestrians, bicyclists, emergency vehicles, and vehicles of local residents.

Precedent: School Streets are common in London and other parts of the United Kingdom.

Goals: Pedestrian Safety, Walking Rates

Leads: MCDOT, MCPS



A sign announces restrictions on through driving along a street by a school. Photo Credit: Wikimedia/Secretlondon

P-5d: Develop and implement a countywide transportation demand management plan for schools addressing all school-related travel, including travel by students, parents, and staff members.

Concerns about school-related traffic can limit the county's ability to expand existing schools or build new schools on sites in existing neighborhoods. One way to address these concerns is through the development and implementation of a transportation demand management plan that discourages travel in a private car and encourages the use of safer and more sustainable modes, including walking by all users of MCPS facilities, including teachers, administrators, staff, students, and local residents. Similar plans already exist for private schools. Reducing

vehicular trips to schools lowers the likelihood of student-involved pedestrian crashes at arrival and dismissal and minimizes the transportation emissions associated with the public school system.

Goal: Walking Rates

Lead~~s~~: MCPS

P-5e: Identify walking and bicycling routes to school within each MCPS school catchment area and ensure all students within the area can safely walk and bicycle to school.

Walking and bicycling should be the preferred travel mode for students within one mile of elementary schools, one and a half miles of middle schools, and two miles of high schools. MCPS should coordinate with MCDOT to identify specific walking and bicycling routes for each school that allow all students living within these walk and bicycle boundaries to safely walk and bicycle to school using sidewalks, pathways, and crossings that are not worse than a PLOC score of Somewhat Comfortable. If a Somewhat Comfortable or Very Comfortable score cannot be achieved using the identified routes, MCPS should coordinate with MCDOT to provide new or improved connections that are more comfortable. Observed pedestrian demand, as discussed in Key Action B-9b, should not be a determining factor in where improvements are made.

Related Effort: Vision Zero Action Plan

Goals: Walking Rates, Pedestrian Safety

Leads: MCPS, MCDOT

P-6: Address access management to reduce pedestrian/vehicle conflicts.

On non-residential streets, sidewalk interruptions should be limited as driveways and other curb cuts create conflict points between motor vehicles and pedestrians.

Pedestrian satisfaction with how frequently driveways cross the sidewalk is 31%.

Key Actions:

P-6a: Implement the recommendations in the Access Management Study.

Montgomery Planning's Access Management Study, completed in 2022, examined existing access management practices in Montgomery County and developed recommendations to improve access management practices and incorporate new access management strategies that are consistent with Vision Zero, a Complete Streets framework, and a desire to enable decision-making with a multimodal perspective. The study identified over about 30 recommendations for Montgomery Planning, MCDOT, MCDPS and MDOT SHA. This key action

reiterates the importance of implementing the recommendations in the Access Management Study.

Related Effort: Vision Zero Action Plan

Goal: Pedestrian Safety

Leads: Montgomery Planning, MCDOT, MCDPS, MDOT SHA

P-7: Ensure pavement markings and street furniture are installed in pedestrian-safe locations.

The presence and location of pavement markings, light poles, and guardrails can have a positive or negative effect on the pedestrian experience. These key actions are opportunities to ensure they are beneficial.

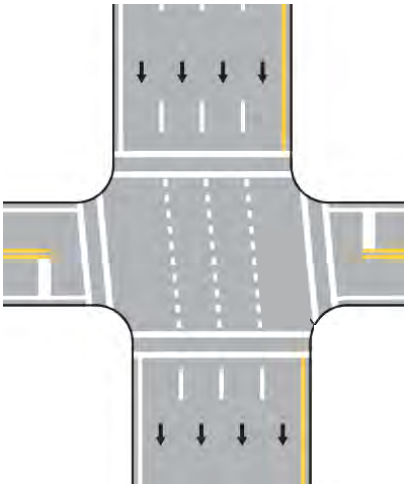
Key Actions:

P-7a: Paint lane markings to indicate the presence of minor streets along state highways in line with Maryland Manual on Uniform Traffic Control Devices (MdMUTCD) guidance.

At intersections along state highways like Georgia Avenue and Colesville Road where no traffic signal is required, it is a common practice to continue the main roadway's lane lines through minor street intersections. Drivers along the main roads have no indication that these minor intersections are present. This is challenging for drivers trying to cross or turn onto the main road, but it is an even bigger safety issue for pedestrians attempting to cross the street. Without pavement markings delineating the intersection, pedestrians with the legal right-of-way to cross the street appear to be crossing midblock in an unsafe manner. These intersections should be delineated with dotted line extension markings in line with optional guidance provided in MdMUTCD Section 3B.08 and shown in the illustration below~~to the right~~.

Goal: Pedestrian Safety

Lead: MDOT SHA



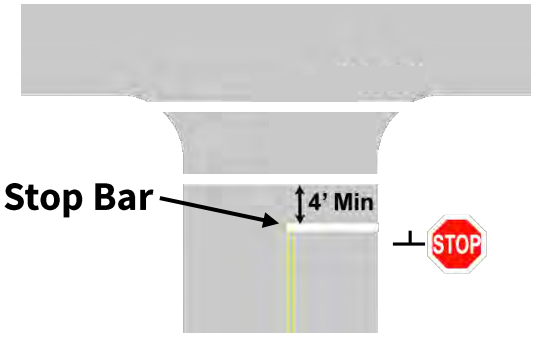
Dotted lane extension markings. Image Credit: MdMUTCD

P-7b: Ensure vehicular stop bars are located at least four feet behind the crosswalk.

Stop bars indicate where motor vehicles are supposed to stop when approaching a stop or signal-controlled intersection. They should be installed at least four feet behind the crosswalk—greater than four feet if required by roadway conditions. There are many locations across the county where stop bars are missing completely, either because they have worn away or were never installed in the first place. If this marking is missing, installed too close to a marked crosswalk, or installed within an unmarked crosswalk, there will be conflict between pedestrians and motor vehicles. Properly installed stop bars effectively delineate pedestrian crossing space.

Goal: Pedestrian Safety

Leads: MCDOT, MDOT SHA



Stop bar 4' behind the crosswalk. Image Credit: U.S. Army Transportation Engineering Agency

P-7c: Where guardrails are installed next to sidewalks or trails, ensure they are located between the pedestrian space and the roadway.

Guardrails are installed to deflect motor vehicles away from roadside hazards back into the roadway. However, in many locations across the county, these guardrails are located behind the sidewalk. In the event of a crash, the guardrail encourages the motor vehicle to travel along the sidewalk before it reenters the roadway, potentially colliding with pedestrians. For this reason, the American Association of State Highway and Transportation Officials Roadway Design Guide indicates that guardrails should be installed between the roadway and pedestrian space if a guardrail is needed. When installed in this manner, the guardrail deflects the motor vehicle back into the roadway without entering pedestrian space.

Goal: Pedestrian Safety

Leads: MCDOT, MDOT SHA



Guardrail behind sidewalk along Connecticut Avenue in Aspen Hill. Photo Credit: Google Maps

P-7d: Eliminate breakaway traffic signal and other poles in ~~locations with pedestrian activity~~the immediate vicinity of transit stops and other areas of significant pedestrian activity.

Breakaway poles are installed along roadways to reduce the severity of motor vehicle crashes. When a car hits a breakaway pole, the pole snaps off and moves away from the car, absorbing its energy and lowering crash severity for its occupants. However, when hit, breakaway poles become projectiles, enhancing the risk of injury and fatality for pedestrians in the area, even those not struck by a motor vehicle. Additionally, when used for a pedestrian signal, the base of a breakaway pole can make it difficult for a wheelchair user to maneuver close enough to use the push button. In areas with pedestrian activity, breakaway poles should not be used.

Goal: Pedestrian Safety

Leads: MCDOT, MDOT SHA

P-8: ~~Increase the number of Automated Traffic Enforcement (ATE) locations.~~Increase traffic enforcement activities.

Enforcement is an important strategy to help achieve Vision Zero and make the county a better place to walk. Engineering and education both provide substantial benefits, but ensuring traffic laws are followed is essential. The following key actions identify approaches to increasing the depth and breadth of traffic enforcement countywide.~~The goal of the county's ATE program of speeding cameras and other similar devices should be to eliminate dangerous driving behaviors and make the transportation system safer. An Insurance Institute of Highway Safety study from 2016 found that Montgomery County ATE reduced likelihood of speeding by 62% and severe/fatal crash likelihood by 39% along roads where ATE was present.[27] To bring these benefits countywide, the network of ATE devices needs to be much more extensive. If a driver breaks traffic laws in the county, they should be confident that they will receive a ticket. With the likelihood of a pedestrian being killed in a traffic crash dramatically increasing as a function of vehicle speed, improving compliance with speed limits will save pedestrian lives.~~

Key Actions:

P-8a: ~~Develop a plan to increase the number of ATE devices countywide.~~ Increase the number of Automated Traffic Enforcement (ATE) locations.

The goal of the county's ATE program of speeding cameras and other similar devices should be to eliminate dangerous driving behaviors and make the transportation system safer. An Insurance Institute of Highway Safety study from 2016 found that Montgomery County ATE reduced likelihood of speeding by 62% and severe/fatal crash likelihood by 39% along roads where ATE was present. To bring these benefits countywide, the network of ATE devices needs to be much more extensive. A plan should be developed to increase the number of these devices to address as many different kinds of traffic violations as are permitted by state law. If a driver breaks traffic laws in the county, they should be confident that they will receive a ticket. With the likelihood of a pedestrian being killed in a traffic crash dramatically increasing as a function of vehicle speed, improving compliance with speed limits will save pedestrian lives.

Equity should be a significant consideration in ATE implementation.

Related Effort: Vision Zero Action Plan

Goal: Pedestrian Safety

Leads: County Executive, MCPD, County Council, State Delegation

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~~[27] Hu, Wen, and Anne T. McCartt. "Effects of automated speed enforcement in Montgomery County, Maryland, on vehicle speeds, public opinion, and crashes." Traffic injury prevention vol. 17 Suppl 1 (2016): 53-8. iihs.org/topics/bibliography/ref/2097~~

P-8b: Increase in-person traffic enforcement activities.

While there are many benefits to automated enforcement, there are opportunities to provide enhanced in-person traffic enforcement, especially of violations that automated enforcement does not detect or in locations where automated enforcement is not present. Of particular relevance for this master plan include violations of pedestrian right-of-way, stop sign compliance, and other pedestrian-vehicle conflicts. Strategies should be developed to identify the best approach to increasing this necessary enforcement activity.

Goal: Pedestrian Safety

Leads: County Executive, MCPD, County Council, Montgomery Parks

P-9: Comprehensively lower speed limits countywide.

Higher traffic speeds are directly linked to increased crash severity. In pursuit of Vision Zero, the county should continue efforts to lower speed limits in neighborhoods and along major roadways, with a goal of having the roadway's posted speed limit match the target speed outlined in the Complete Streets Design Guide.

P-9a: Support state legislation to allow jurisdiction-wide speed limit reduction.

Montgomery County's ability to lower the posted and statutory speed limit along residential streets is limited by state law. Recent legislative efforts to allow jurisdictions to lower speed limits to no less than 15 miles per hour have failed (HB 404 in 2022). The county should support all legislation that offers local agencies more flexibility in setting speed limits in-line with county goals.

Precedent: Washington, D.C. lowered speed limits on residential streets across the city to 20 mph.

Goal: Pedestrian Safety

Lead: State Delegation

P-9b: Ensure speed limits and observed speeds along county roads are in line with target speeds identified in the Complete Streets Design Guide.

This key action seeks to reduce the discrepancy between the roadway's intended speed (target speed) and the actual speed of travel by motor vehicles (observed speed). In addition to changing posted speed limits, achieving this key action will require changes to roadway geometry and other factors to make the roadway design speed compatible with the target speed.

Goal: Pedestrian Safety

Leads: MCDOT, MDOT SHA

Expand Access

The pedestrian environment has been constructed in a way that can make it difficult or impossible for some members of the community to walk or roll. Pedestrians with disabilities in Montgomery County are 10% less satisfied with the pedestrian experience than pedestrians overall. Pedestrians with disabilities outside of urban areas expressed an even greater dissatisfaction with the pedestrian experience. These recommendations aim to make the pedestrian system more accessible to all pedestrians, whether they walk or roll.

EA-1: Reduce tripping hazards.

Sidewalks and trails should be smooth and comfortable for all users. An uneven sidewalk or trail can make walking or rolling uncomfortable and unsafe. The key actions that follow identify ways to create and maintain smoother walking and rolling surfaces.

Key Actions:

EA-1a: Prioritize the repair of brick sidewalks that have identified accessibility challenges. Require new or rehabilitated brick sidewalks to be constructed using non-slip materials and with patterns, spacing, and installation methods designed to minimize disturbance for wheeled vehicles.

Bricks and pavers are challenging surfaces to walk or roll on if they are poorly maintained. Addressing these accessibility issues by repairing these sidewalks with like material in line with best practices and then ensuring continued accessibility is essential to the ongoing use of brick and other non-concrete paving treatments.

Goals: Equitable and Just Pedestrian Network, Walking Rates

Leads: ~~MCDOT~~Urban Districts, ~~MDOT SHA,~~ Montgomery Planning

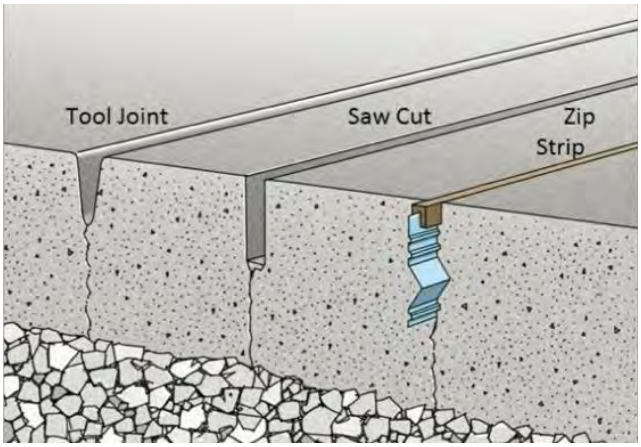
EA-1b: Saw cut sidewalk joints to minimize vibrations for pedestrians using mobility devices or pushing strollers.

Sidewalk joints are necessary to allow sidewalks to expand and contract over time in a controlled way. However, traditional tooled joints can be jarring for pedestrians using mobility devices and pushing strollers. A saw cut joint provides the least disturbance for wheeled sidewalk users.

Precedent: Saw-cut contraction joints are required when a sidewalk is a designated or shared bicycle path in Portland, Oregon.

Goals: Equitable and Just Pedestrian Network, Walking Rates

Leads: MCDOT, MDOT SHA, ~~Montgomery Planning,~~ MCDPS, County Municipalities



Tooled joints are less clean and a bit wider than saw cut joints. Image Credit: StrongholdFloors

EA-1c: Strengthen existing regulations and the permitting process to ensure that utility cuts in sidewalks and legal crossings are quickly and appropriately repaired.

Temporary patches and poor repair work create tripping hazards and other accessibility challenges. To improve accessibility, these utility cuts should be successfully repaired more quickly.

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network

Leads: MCDOT, MCDPS



A poorly filled utility cut in the sidewalk. Shoe for scale.

EA-1d: Construct the pedestrian clear zone using Portland cement concrete in line with MCDOT's Design Standards and Specifications.

Portland cement concrete is a superior sidewalk material as it is more durable and results in fewer tripping hazards and slippage than bricks, pavers and other materials. All future

sidewalks should use this material in the pedestrian clear zone, which is a portion of the area within the streetscape's active zone between the street buffer and the frontage zone. The pedestrian clear zone should be free of obstructions of any kind. Other paving materials may be used outside the pedestrian clear zone and in historic districts, as appropriate.

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network

Leads: MCDOT, MCDPS, Montgomery Planning

EA-2: Remove sidewalk obstructions.

There should not be poles or other objects obstructing the sidewalk. These key actions identify ways to remove existing obstructions and minimize the number of obstructions moving forward.

Key Actions:

EA-2a: Identify and relocate permanent vertical obstructions (like utility poles) that result in pedestrian clear zone widths that are not ADA compliant.

Vertical obstructions present accessibility issues by narrowing sidewalks, limiting equal access to the transportation system. At the same time, these obstructions can be very expensive to move. To address this challenge, it is important to prioritize relocating vertical obstructions that present the greatest barrier to pedestrian travel, and then systematically move them over time. This can be accomplished in two ways: 1) create a capital improvement program project to address the highest priority locations, and 2) incentivize or require undergrounding or utility relocation as part of development applications by updating zoning regulations or using other tools.

Goals: Equitable and Just Pedestrian Network, Pedestrian Safety

Leads: MCDOT, ~~Montgomery Planning,~~ MDOT SHA, ~~PEPCO, Telecommunications Companies~~Utilities

Support: Montgomery Planning

EA-2b: Move existing utility boxes and traffic signal control cabinets out of the sidewalk into the street buffer or underground. Ensure that new utility boxes and traffic signal control cabinets are not installed in the sidewalk.

Across Montgomery County, utility boxes and traffic signal control cabinets are frequently installed in the sidewalk, narrowing the space available for pedestrian travel, particularly at intersections. These obstructions can be particularly challenging for pedestrians with visual or mobility disabilities to navigate. Moving utility boxes and traffic signal control cabinets into the street buffer will improve the quality of the pedestrian experience.

Note: While Recommendation EA-2a focuses on ensuring minimum ADA requirements, this recommendation aims to create a higher-quality experience.

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network

Leads: MCDOT, MDOT SHA, Utilities

Support: Montgomery Planning

~~Leads: MCDOT, Montgomery Planning, MDOT SHA, PEPCO, Telecommunications Companies~~



Traffic signal control cabinet in the sidewalk in downtown Silver Spring.

EA-2c: Provide additional on-street parking corrals for dockless vehicles in high-use areas and coordinate with operators to provide incentives to encourage their use.

Dockless vehicles are often left in the middle of the sidewalk where they can pose tripping hazards to pedestrians, especially older pedestrians and pedestrians with vision disabilities. A corral is an on-street location where bicycles, scooters, and other similar devices can be securely parked. Providing more places to park these vehicles outside of the pedestrian clear zone is key to taking advantage of the mobility benefits these devices provide while mitigating some of the accessibility challenges they present.

Related Effort: Vision Zero Action Plan

Goals: Pedestrian Safety, Equitable and Just Pedestrian Network

Lead: MCDOT, County Municipalities



Scooters blocking the sidewalk

EA-3: Provide pedestrians more time to cross the street.

Pedestrians should be confident they can cross the street in the allotted walk time. However, older pedestrians, younger pedestrians, and pedestrians with mobility disabilities often walk or roll slower than the population as a whole. In some places, these pedestrians may not have enough time to safely cross the street, leading to a stressful experience that puts them in conflict with motor vehicles and may result in potentially dangerous interactions or fewer pedestrian trips. These key actions identify policy changes that would provide more time for pedestrians to cross the street.

Key Actions:

EA-3a: Lower the pedestrian walking speed standard at signalized intersections frequented by older pedestrians, younger pedestrians, and those with disabilities.

An assumed pedestrian walking speed is used to calculate how much time is necessary to allot for pedestrians to cross the street. The current maximum pedestrian walking speed is 3.5 feet per second in the MdMUTCD, but the county uses a slower walking speed in certain situations. The county should use a pedestrian walking speed of 2.5 feet per second to calculate pedestrian crossing time in locations frequented by older pedestrians, younger pedestrians, and those with disabilities.

Note: Key Action P-2e and Key Action EA-3a may somewhat work at cross purposes, as providing more time for pedestrians to cross the street may require a longer signal cycle length. There may not be an opportunity to implement both key actions at the same intersection.

Precedent: Seattle lowers assumed walking speed to 2.5 feet per second in certain circumstances.

Goals: Pedestrian Safety, Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA

EA-3b: Exclude the pedestrian crossing signal buffer interval when calculating pedestrian clearance times so pedestrians have more time to safely cross the street.

The MdMUTCD requires that "a buffer interval consisting of a steady UPRAISED HAND (symbolizing DON'T WALK) signal indication shall be displayed for at least three seconds prior to the release of any conflicting vehicular movement." The MdMUTCD also provides an option for using the buffer interval when calculating pedestrian clearance times, which can lead to insufficient crossing time for slower pedestrians.

To illustrate the benefits of this policy change to exclude the buffer interval, consider a 42-foot crossing. Such a crossing would require a minimum pedestrian clearance time of 12 seconds based on the 3.5-feet-per-second maximum walking speed standard established in the MdMUTCD (42 ÷ 3.5 = 12). If the minimum three-second buffer is incorporated into the pedestrian clearance time calculation, it means that a person who walks at a pace of 3.5 feet per second and leaves the curb or shoulder at the end of the WALKING PERSON indication would get the steady UPRAISED HAND (symbolizing DONT WALK) signal indication after 9 seconds when they are still 10.5 feet away from the opposite curb and they would reach it just as opposing traffic is released. If the buffer interval is not included in the calculation, it means that the same person can travel the entire length of the crosswalk before they get the steady UPRAISED HAND (symbolizing DONT WALK) signal indication.

Goals: Pedestrian Safety, Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA

EA-4: Make pedestrian signals more accessible.

Accessible Pedestrian Signals serve several purposes in Montgomery County, including activating a walk signal and providing information to blind/low vision pedestrians to assist them in safely crossing streets. The key actions highlight opportunities to improve how these valuable tools function.

Key Actions:

EA-4a: Identify and modify APS/Pedestrian Push Buttons in the county that are incorrectly installed or are inaccessible to wheelchair users.

APS provide many benefits to pedestrians traveling through Montgomery County, but in many instances they are not installed correctly.

Goal: Equitable and Just Pedestrian Network

Leads: MCDOT, MDOT SHA



This pedestrian is unable to reach an APS in Downtown Silver Spring because the push button is located on a raised surface that her mobility device cannot navigate.

EA-4b: Ensure every pedestrian push button has a light that informs pedestrians when the pedestrian phase has been triggered.

Currently, many traffic signals in Montgomery County do not provide feedback to pedestrians that the push button has been actuated. Providing a confirmation light reduces confusion about whether pedestrians will have a crossing phase by confirming that a request for a pedestrian phase has been made, reducing the likelihood that pedestrians will cross the street without the pedestrian signal. Likewise, intersections with passive detection (Key Action B2-b) should also provide some form of notification that a walk signal has been triggered.

Goal: Comfortable/Connected Pedestrian Network

Leads: MCDOT, MDOT SHA

~~**EA-4c: For APS locations where every signal cycle has a pedestrian phase, provide signage that pressing the button is not required to cross the street.**~~

~~Pedestrians often arrive at an intersection unsure if they need to press the button to trigger a pedestrian crossing phase. For locations where a pedestrian phase is provided every cycle, informing pedestrians that there is no need to press the button makes the pedestrian experience easier and increases confidence in pedestrian signals overall. Appropriate signage to communicate this information has not yet been included in the federal Manual on Uniform Traffic Control devices, but once this has taken place, the key action can be implemented.~~

~~Precedent: In San Francisco, APS at locations where there is always a pedestrian signal read "Accessible Message Only" so people know they do not need to press to safely cross.~~

~~Goal: Comfortable/Connected Pedestrian Network~~

~~Leads: MCDOT, MDOT SHA~~



~~*An accessible pedestrian signal reads "Accessible Message Only" and has a confirmation light. Photo Credit: SFMTA*~~

EA-5: Improve guidance for pedestrians with low or no vision.

It should be easy to travel through Montgomery County with low or no vision. However, today, routine errands can require pedestrians with visual disabilities to memorize how many steps are required between two places or to construct mental maps connecting destinations. They may experience stress due to construction detours and other obstructions. The key actions below can make travel simpler by providing directional guidance in line with international best practices and supportive education for those with low or no vision learning to travel independently.

Key Actions:

EA-5a: Develop standards on the use of tactile walking surface indicators (TWSIs) in the pedestrian and transit networks.

Many countries have adopted TWSIs to help pedestrians with vision disabilities navigate the built environment. TWSIs (including the truncated domes found on curb ramps) can have a variety of different tactile patterns, which are applied to the walking surface of a pedestrian access route to help pedestrians with vision disabilities identify hazards, avoid obstacles, follow an accessible pathway, find crosswalks and amenities, and distinguish between parallel pedestrian and bicycle facilities.

A comprehensive TWSI network would allow pedestrians with visual disabilities to navigate more safely and directly, become more confident in orientation, and successfully complete a wider range of trips.

Precedents: Tactile treatments are standard in many parts of the world, including Australia, New Zealand, and Japan, among others. Montgomery County has used these treatments along and across separate bike lanes, but there are more opportunities for their use in other places in the pedestrian network.

Goal: Equitable and Just Pedestrian Network

Lead~~s~~: MCDOT

Support: ~~,~~MDOT SHA, Montgomery Planning, WMATA



Example of a TWSI used in Montgomery County to direct people with vision disabilities to a floating bus stop.

EA-5b: Provide subsidized orientation and mobility specialist and/or travel training sessions for those who may not be able to afford them.

Orientation and mobility and travel training assistance help people with disabilities learn how to navigate their environment so they can run daily errands and maintain their independence. Subsidized training is needed so that financial obstacles do not limit a person's ability to learn how to move around their community.

Goal: Equitable and Just Pedestrian Network

Lead: County Executive

EA-6: Provide more opportunities for accessible park experiences.

Park trails across the county should be accessible to as many people as possible. In the past 10 years, Montgomery Parks has made significant progress in making parks more accessible to people with disabilities, including installing accessible walkways, exercise equipment, and site furniture such as benches, drinking fountains, and other amenities. The key actions identify additional ways Montgomery Parks can build on these accessibility successes.

Key Actions:

EA-6a: Create a framework for natural surface trail accessibility to ensure that as many natural surface trails as possible are accessible to people with disabilities.

The framework will clarify details about trail surface characteristics, width, grade, and cross slope and will categorize existing natural surface trails based on their attributes. Over time, Montgomery Parks will work to upgrade less accessible trails to become more accessible.

Goals: Equitable and Just Pedestrian Network, Walking Rates

Lead: Montgomery Parks

EA-6b: Develop Accessible Sensory Trails in parks across Montgomery County.

Accessible Sensory Trails are trails designed to provide access to nature for everyone, including people with low or no vision, emotional and intellectual disabilities, and wheelchair users. They generally include different activities designed to encourage interaction with nature, as well as interpretive signage in large print and Braille.

Goal: Equitable and Just Pedestrian Network

Lead: Montgomery Parks

EA-7: Exceed existing accessibility requirements.

While existing accessibility requirements, like the Maryland Accessibility Code, are focused on addressing barriers to people with mobility disabilities, there is little or no guidance for building and space design to accommodate people with vision, hearing, cognitive, or other types of disabilities.

Key Actions:

EA-7a: Modify the County Code and associated regulations to include additional accessibility requirements that address barriers to traveling to and through all commercial, residential, and institutional buildings for people with vision, hearing, cognitive, and other types of disabilities.

Goal: Equitable and Just Pedestrian Network

Lead~~s~~: ~~Montgomery Planning, MCDPS,~~ County Council

Supports: Montgomery Planning, MCDPS

EA-8: Regulate shared spaces.

Shared spaces where people using different travel modes intermingle can add to the vitality of communities by encouraging pedestrian activity and allowing the reimagination of important civic spaces.

At the same time, it is necessary for these spaces to be better regulated to ensure pedestrians, and especially pedestrians with disabilities, can safely and directly travel between Points A and B. These key actions identify two ways to improve these spaces through changes to law and the development of regulations.

Key Actions:

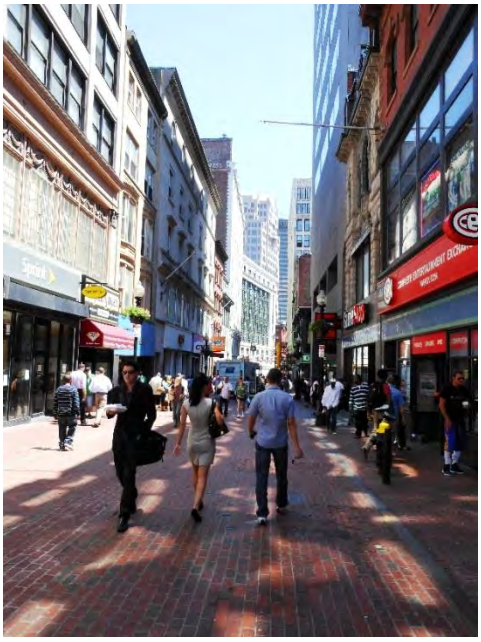
EA-8a: Pursue a modification to the Maryland Code clarifying that drivers, bicyclists, and scooter riders are required to yield the right of way to pedestrians on shared streets and that drivers are also required to yield to bicyclists and scooter riders.

Montgomery County is pursuing shared streets in multiple locations, but a pedestrian hit by a driver or bicyclist at a non-intersection location on a shared street would be at fault under current law. As the most vulnerable user in a shared street environment, pedestrians should have the right of way on these streets, followed by bicyclists and scooter users.

Related Effort: Vision Zero Action Plan

Goal: Pedestrian Safety

Lead: State Delegation



People walking in the middle of a shared street with cars in the background. Photo Credit: Toole Design Group

EA-8b: Develop streetery guidance that identifies appropriate locations, seating requirements, accessibility requirements, and other issues. Conduct periodic inspections to verify compliance with this guidance.

Streeteries—seating for restaurants that spills into the street—add to the vibrancy of Montgomery County public space and benefit local businesses, but their design can create

challenges for pedestrians with disabilities. Guidance should help formalize streeteries that exist today and create a path for more streeteries to be created in the future, ensuring accessibility is prioritized for access to the streetery seating itself and for pedestrians traveling through the streetery area to another destination. The 2030 Vision Zero Action Plan includes a similar recommendation.

Goal: Equitable and Just Pedestrian Network

Leads: MCDOT, MCDPS~~, Montgomery Planning~~

Support: Montgomery Planning



Pedestrian space is made inaccessible by a table and a tree.

EA-9: Make work zones more accessible.

Construction work should minimize obstructions to accessible pedestrian routes, and where obstructions are unavoidable, accessible alternatives—like temporary sidewalks and covered walkways—should be provided. In some instances, contractors are placing signage and other equipment in the accessible pedestrian route. Contractors need to be better trained on accessible construction detour requirements.

Key Actions:

EA-9a: Require anyone who works in the public right-of-way to take ADA training and maintain ADA certification. Implement penalties for observed ADA non-compliance during construction or maintenance that deviates from what was approved on right-of-way permits. Approved right-of-way permits should be easily accessible so members of the public can understand what has been approved.

Precedent: Minnesota DOT has an ADA Certification Course.

Goal: Equitable and Just Pedestrian Network

Leads: MCDOT, MCDPS

EA-9b: Publish approved Maintenance of Traffic plans in an easily accessible format.

Maintenance of Traffic plans explain how different travel modes will be handled through construction zones. These plans are developed so travel can continue safely and with minimal detour through these areas. However, the approved plans are not readily available for public review, and it is not straightforward for community members to know who at what agency to coordinate with about a potential violation. Making the plans accessible and providing points of contact will make it easier for pedestrian access to be maintained appropriately.

Goal: Equitable and Just Pedestrian Network

Leads: MCDOT, MCDPS

Fund

Achieving the Pedestrian Master Plan vision is going to require resources that exceed current spending on pedestrian and safety efforts. For decades, the county has invested heavily into expanding roads, but investments in pedestrian pathways and crossings have not kept pace. The following recommendations identify additional revenue sources to support the county's commitment to improving pedestrian conditions.

F-1: Identify new revenue sources to fund pedestrian improvements.

More revenue is needed so faster progress can be made on addressing the county's pedestrian infrastructure deficit. The key actions for this recommendation include shifting funding from other priorities to pedestrian efforts and developing creative revenue streams.

Key Actions:

F-1a: Price parking spaces in county-operated facilities at market rates and use net proceeds to fund pedestrian, bicycle, and safety projects in the surrounding community.

Charging market rates for parking reduces driving/car ownership, lowers vehicle miles traveled, and helps achieve climate goals. Revenue from parking fees can help fund pedestrian infrastructure near where the parking facilities are located, providing direct community benefits that make it easier and safer to walk.

Goal: Comfortable/Connected Pedestrian Network

Leads: MCDOT, County Council

F-1b: Implement a non-regressive tax to fund pedestrian and safety improvements.

There is insufficient funding to address the deficiencies in the pedestrian network countywide. An additional funding source would allow more projects to be completed quickly without diverting funding from other priorities. While there are many, potential taxation options include a property tax only for properties assessed higher than a certain amount; a property tax that only applies to properties that change hands after the tax is created; a recordation tax; a vehicle property tax on vehicles above a certain value or weight; and an income tax on earners making more than a certain amount.

Precedent: Seattle has a voter-approved transportation levy that is property tax-based.

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety

Lead: County Council, State Delegation

F-1c: Consider potential legislation to tie vehicle registration fees to safe vehicle design.

As described in Recommendation P-1, vehicle design is closely connected to pedestrian safety. Acknowledging that vehicle design regulation is a federal issue, the state should develop legislation to modify its existing two-tiered vehicle registration fee structure, which is based on weight, to lower registration fees for vehicles that are safer for pedestrians and higher fees for vehicles that are more dangerous for pedestrians, incentivizing the purchase of smaller vehicles. The net increase in registration fee proceeds could fund additional pedestrian and bicycle projects statewide.

Precedent: In 2022, Washington, D.C. updated its vehicle registration fee structure so heavier vehicles pay higher fees.

Goals: Comfortable/Connected Pedestrian Network, Pedestrian Safety

Lead: State Delegation

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Bicycle and Pedestrian Priority Area Prioritization

It is important to prioritize locations for improved pedestrian facilities because demand for these investments far exceeds the county's current resources dedicated to these projects. Identifying priority areas and ensuring projects are built in those places is a data-driven approach that makes sure limited resources are put to use where the need is highest.

The Bicycle and Pedestrian Areas (BiPPA) funding program is one of the primary ways that the county funds pedestrian and bicycle improvements. It was established by the County Council in 2014 to make comprehensive pedestrian and bicycle improvements around existing or future transit stations. Typical pedestrian improvements undertaken by this program include new sidewalks and sidepaths (10-foot-wide paths that are shared by pedestrians and bicyclists), Americans with Disabilities Act (ADA) improvements to sidewalks and curb ramps, crosswalks, and roadway changes to reduce motor vehicle travel speeds.

When the BiPPA program was initially developed, BiPPA areas tended to be nodes of pedestrian and bicycle activity around transit stations. Over time, new BiPPA areas have been created to address the pedestrian and bicycle challenges along some of the county's major roadways, such as Veirs Mill Road and New Hampshire Avenue, and in some neighborhoods. However, prioritizing roadways and neighborhoods was undertaken based on the master plan schedule, not a comprehensive evaluation. The plan's BiPPA prioritization approach takes this evolution to the next step by comprehensively evaluating and prioritizing three different BiPPA types in a data-driven way:

1. Downtowns and Town Centers
   These are the traditional BiPPA areas with land use and intensity of use supportive of significant pedestrian and bicycle activity. They match the proposed Complete Streets Design Guide area types identified in the following section.

2. Major Roads
   These are corridors throughout the county that tend to be the most problematic for pedestrians and bicyclists to navigate.

3. Neighborhoods
   These are the areas of the county outside of the Downtowns, Town Centers, or major roadways. They tend to be more residential in nature and typically have roadways that are more locally-oriented, slower speed, and carry less motor vehicle traffic.

The approach detailed in the Prioritization Methodology appendix ensures that the areas with the greatest need for pedestrian and bicycle improvements receive that investment by prioritizing areas of the county:

- with low levels of pedestrian and bicycle comfort[28]
- near schools and transit stations
- with high pedestrian and bicycle demand
- with more pedestrian and bicycle crashes

Additional emphasis is given to those parts of the county that are EFAs to reflect the county's commitment to investing in communities that have been historically disadvantaged. This emphasis is especially appropriate given that these areas are disproportionately where pedestrians are severely injured or killed, and people living in these areas are more likely to walk and bike, in addition to being less likely to own a motor vehicle.

The Pedestrian Master Plan recommends using this prioritization approach for all new capital improvement program projects that address pedestrian and bicycle safety and connectivity challenges, as well as a potential tool to guide annual funding programs that provide new pedestrian and bicycle infrastructure, including new:

- sidewalks
- sidepaths
- bikeways
- median refuges
- curb ramps
- signalized intersections
- traffic calming

This approach is not intended to influence the construction of maintenance projects, especially those addressing imminent safety and accessibility issues.

The prioritization in this plan is a guideline based on the best available information at the time the plan was approved by the Montgomery County Council. This prioritization should be reassessed as part of the Pedestrian Master Plan Biennial Monitoring Report based on available resources, lessons learned and to ensure consistency with the goals of the plan. In addition, the implementation of pedestrian and bicycle improvements in areas identified as lower priority in this plan should still be pursued as opportunities to implement them arise, such as through redevelopment projects and state and local capital projects.

Table 29~~Table 28~~, Table 30~~Table 29~~, Table 31~~Table 30~~, Table 32**Error! Reference source not found.**~~Table 31~~ and the associated maps identify the BiPPA areas within the top four BiPPA tiers. BiPPA areas that are currently funded (more than 50% funded through construction in the six-year Capital Improvement Program (CIP) are identified as Funded in Capital Budget—the highest tier. The

[28] Comfort is quantified using Montgomery Planning's Pedestrian Level of Comfort (PLOC) analysis. The analysis uses sidewalk and roadway characteristics to provide a comfort score for every sidewalk, trail, street, and pedestrian crossing location in Montgomery County. The methodology was adjusted to incorporate community feedback after the Pedestrian Master Plan's initial public meetings. The PLOC has been approved by the County Council and is a regulatory tool for the county's Growth and Infrastructure Policy. The analysis methodology is available in the Pedestrian Level of Comfort Methodology appendix.

relevant CIP project numbers are provided in Table 29.- All other BiPPA areas are broken into tiers based on their Prioritization Methodology score. All other BiPPAs are sorted into lower tiers by their Prioritization Methodology score in tables and maps in the Prioritization Methodology appendix.

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Table ~~29~~28: Funded in Capital Budget BiPPAs as of January 2023 (listed alphabetically)

BiPPA Name	CIP Project Number	Map Reference #
Bowie Mill Rd: Cashell Rd to Olney-Laytonsville Rd	P502108	1
Bowie Mill Rd: Muncaster Mill Rd to Cashell Rd	P502108	2
Bradley Blvd: Huntington Pkwy to Downtown Bethesda	P501733	3
Burnt Mills Town Center	P502304	~~4~~3
Chevy Chase Lake Town Center	P501316 P502004	5~~4~~
Colesville Rd: Downtown Silver Spring to Four Corners Town Center	P502304	6~~5~~
Colesville Rd: Four Corners Town Center to Burnt Mills Town Center	P502304	7~~6~~
Columbia Blvd/Dale Dr: Montgomery Hills Town Center to Colesville Rd	P502304	8~~7~~
Columbia Pk: Burnt Mills Town Center to New Hampshire Ave	P502304	9~~8~~
Columbia Pk: I-200 to Cherry Hill Rd	P502304	10~~9~~
Columbia Pk: New Hampshire Ave to Cherry Hill Rd	P502304	11~~10~~
Columbia Pk: Sandy Spring Rd to I-200	P502304	12~~11~~
Downtown Bethesda	P500929 P501316 P502004 P500119	13~~12~~
Downtown Silver Spring	P509975 P502004 P502001 P501110	14~~13~~
Downtown Wheaton	P502002	15~~14~~
Four Corners Town Center	P502304	16~~15~~
Frederick Rd: Clarksburg Town Center to Little Seneca Pkwy	P502309 P501118 P501744	17~~16~~
Glenmont Town Center	P501532	18~~17~~
Grosvenor Town Center	P501532	19~~18~~
Long Branch Town Center	P502004	20~~19~~
Lyttonsville Town Center	P502004	21~~20~~
Seven Locks Rd: City of Rockville to Tuckerman Ln	P501303	22~~21~~
Takoma Langley Crossroads Town Center	P502004	23~~22~~
Tuckerman Ln: Falls Rd to Seven Locks Rd	P502302	24~~23~~
Veirs Mill - Randolph Town Center	P502003	25~~24~~

BiPPA Name	CIP Project Number	Map Reference #
	P501913	
Veirs Mill Rd: Twinbrook Town Center to Veirs Mill-Randolph Town Center	P502003 P501913	2625
Wayne Ave: Downtown Silver Spring to Flower Ave	P502004	276

Funded in Capital Budget BiPPAs

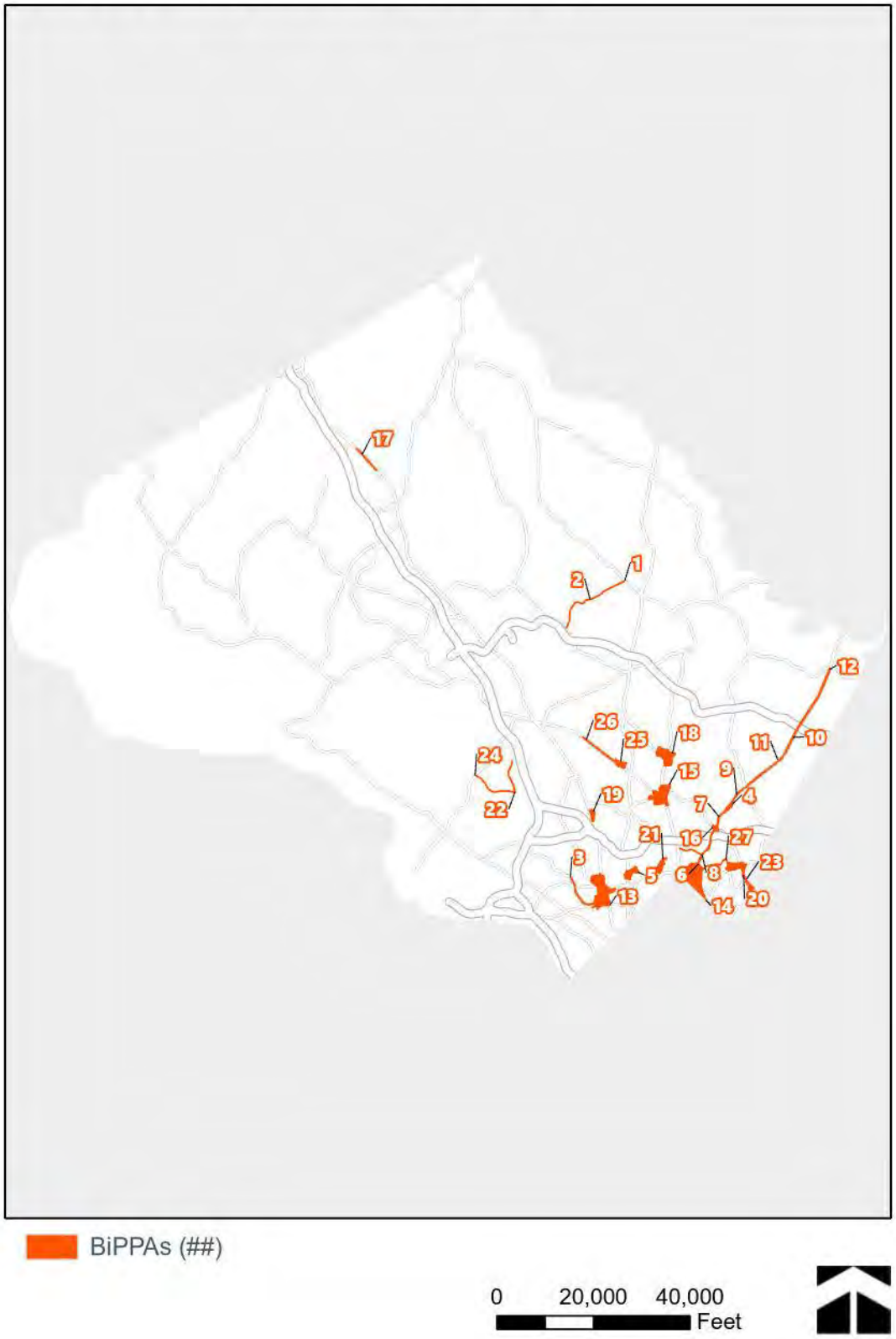


Table ~~30~~29: Tier 1 BiPPAs (listed alphabetically)

BiPPA Name	Map Reference #
Bel Pre Rd: Georgia Ave to Layhill Town Center	1
Clopper Rd: Germantown Rd to Great Seneca Hwy	2
Clopper Rd: Great Seneca Hwy to Mateny Rd	3
Columbia Blvd/Dale Dr: Colesville Rd to Wayne Ave	4
Connecticut Ave: Aspen Hill Town Center to Bel Pre Rd	5
Connecticut Ave: Aspen Hill Town Center to Veirs Mill Rd	6
Connecticut Ave: Chevy Chase Lake Town Center to District of Columbia	7
Crystal Rock Dr: Germantown Town Center to Germantown Town Center	8
Georgia Ave: Aspen Hill Town Center to Glenmont Town Center	9
Georgia Ave: Downtown Wheaton to Forest Glen Town Center	10
Georgia Ave: Glenmont Town Center to Downtown Wheaton	11
Georgia Ave: Montgomery Hills Town Center to Downtown Silver Spring	12
Grubb Rd: Lyttonsville Town Center to District of Columbia	13
Jones Bridge Rd: Connecticut Ave to Jones Mill Rd	14
Jones Bridge Rd: Rockville Pike to Connecticut Ave	15
New Hampshire Ave: Prince George's County to Hillandale Town Center, Adelphi Rd	16
Old Columbia Pk/Tech Rd: Fairland Rd to Briggs Chaney Rd	17
Old Columbia Pk: Columbia Pk to East Randolph Rd	18
Philadelphia Ave: Piney Branch Rd to Takoma Junction Town Center	19
Piney Branch Rd: Sligo Ave to Long Branch Town Center	20
Piney Branch Rd: Sligo Rd to Philadelphia Ave	21
Randolph Rd: Randolph Hills Town Center to Veirs Mill-Randolph Town Center	22
Randolph Rd: Veirs Mill-Randolph Town Center to Glenmont Town Center	23
Rockville Pike: Cedar Ln to Downtown Bethesda, Woodmont Ave	24
Sligo Ave: Downtown Silver Spring to Piney Branch Rd	25
Takoma Junction Town Center	26
University Blvd: Downtown Wheaton to Four Corners Town Center	27
University Blvd: Four Corners Town Center to Long Branch Town Center	28
Veirs Mill Rd: Veirs Mill-Randolph Town Center to Downtown Wheaton	29
Wisconsin Ave: Downtown Bethesda to Downtown Friendship Heights	30

Tier 1 BiPPAs

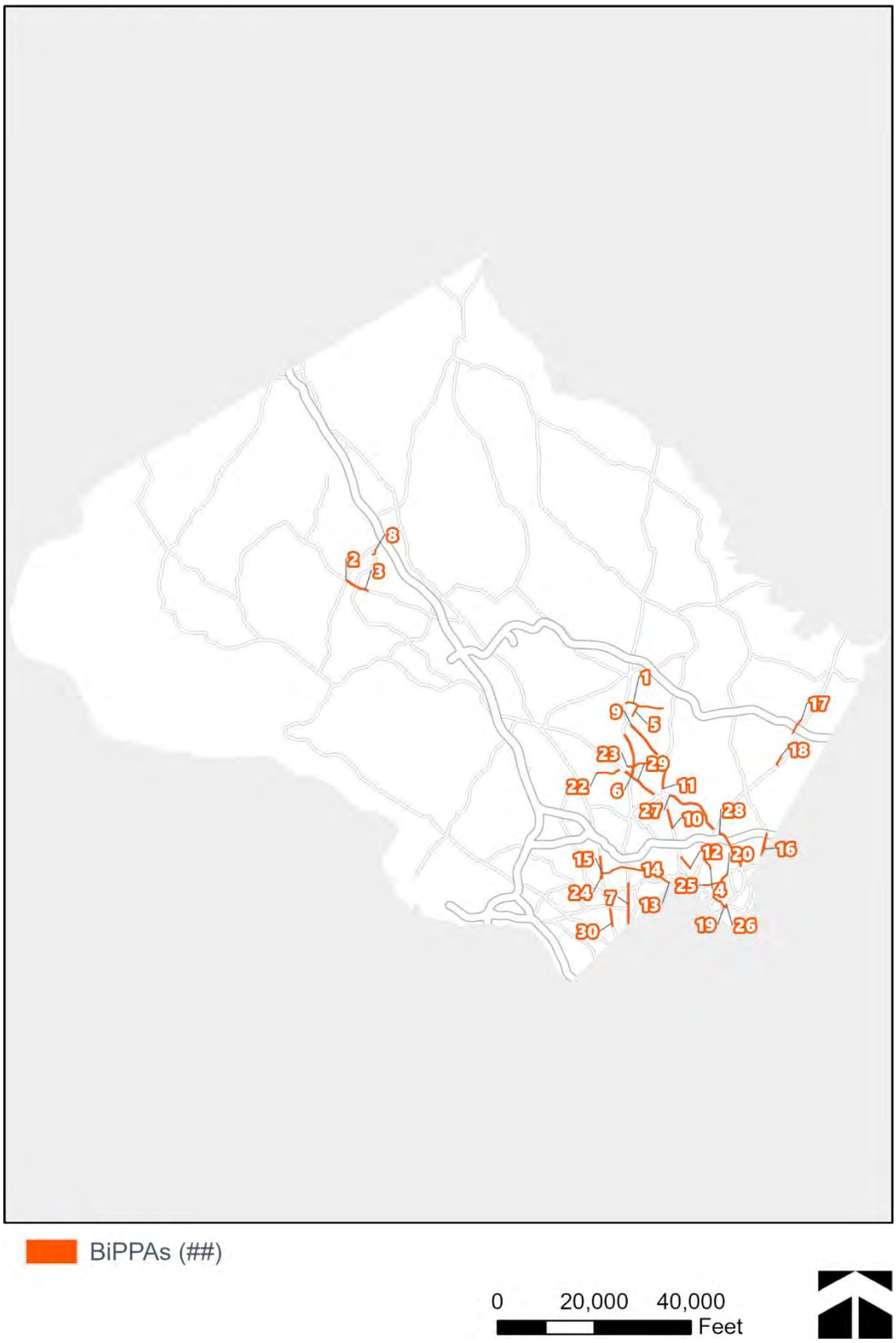
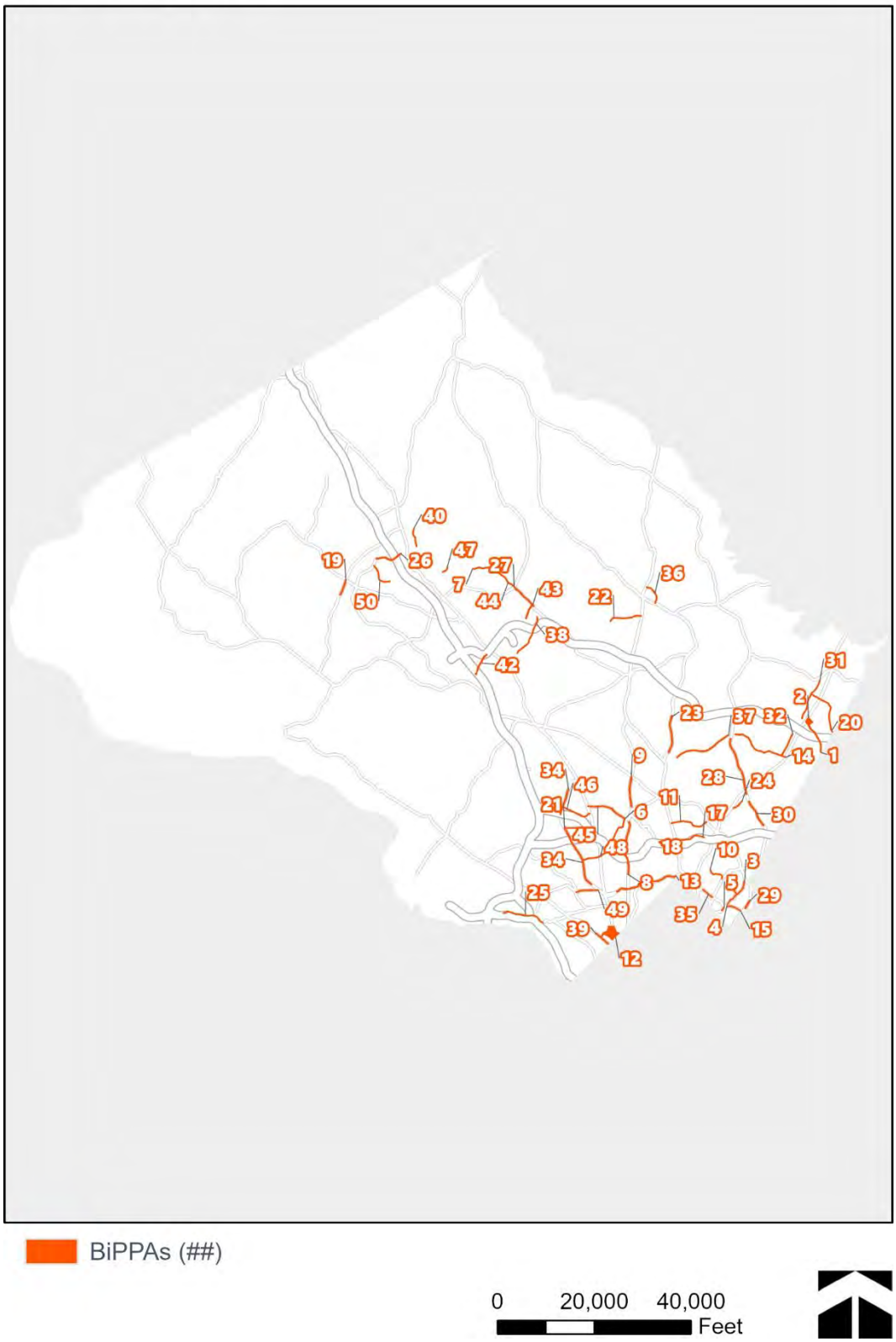


Table 31~~30~~: Tier 2 BiPPAs (listed alphabetically)

BiPPA Name	Map Reference #
Briggs Chaney Rd: Briggs Chaney Town Center to Prince George's County	1
Briggs Chaney Town Center	2
Carroll Ave: Flower Ave to Takoma Langley Crossroads Town Center	3
Carroll Ave: Takoma Junction Town Center to Flower Ave	4
Carroll Ave: Takoma Old Town Town Center to Takoma Junction Town Center	5
Cedar Ln/Summit Ave: Rockville Pk to Kensington Town Center	6
Centerway Rd: Goshen Rd to Snouffer School Rd	7
Connecticut Ave: Kensington Town Center to Chevy Chase Lake Town Center	8
Connecticut Ave: Veirs Mill Rd to Kensington Town Center	9
Dale Dr: Wayne Ave to Piney Branch Rd	10
Dennis Ave: Georgia Ave to University Blvd	11
Downtown Friendship Heights	12
East-West Hwy: Downtown Bethesda to 16th Street Station Town Center	13
East Randolph Rd: Colesville Town Center to Downtown Life Sciences/FDA Village	14
Ethan Allen Ave: Takoma Junction Town Center to Ethan Allen Ave Gateway Town Center	15
Flower Ave: Long Branch Town Center to Carroll Ave	16
Forest Glen Rd: Forest Glen Town Center to Brunett Ave	17
Forest Glen Rd: Forest Glen Town Center to Seminary Rd	18
Germantown Rd: Clopper Rd to Richter Farm Rd	19
Greencastle Rd: Old Columbia Pk to Prince George's County	20
Grosvenor Ln,Cheshire Dr: Old Georgetown Rd to Rockville Pk	21
Hines Rd: Cashell Rd to Georgia Ave	22
Layhill Rd: Layhill Town Center to Glenmont Town Center	23
Lockwood Dr: Burnt Mills Town Center to White Oak Town Center	24
Macarthur Blvd: Persimmon Tree Rd to Goldsboro Rd	25
Middlebrook Rd: Germantown Town Center to Foxchapel Town Center	26
Muncaster Mill Rd: Woodfield Rd to Redland Town Center	27
New Hampshire Ave: Colesville Town Center to White Oak Town Center	28
New Hampshire Ave: Ethan Allen Avenue Gateway Town Center to Takoma Langley Crossroads Town Center	29
New Hampshire Ave: White Oak Town Center to Hillandale Town Center	30
Old Columbia Pk: Briggs Chaney Rd to Burtonsville Town Center	31

BiPPA Name	Map Reference #
Old Columbia Pk: East Randolph Rd to Fairland Rd	32
Old Georgetown Rd: Downtown Rock Spring to Downtown Bethesda	33
Old Georgetown Rd: Downtown White Flint to Downtown Rock Spring	34
Philadelphia Ave: Downtown Silver Spring to Piney Branch Rd	35
Prince Phillip Dr: Georgia Ave to Olney-Sandy Spring Rd	36
Randolph Rd: Glenmont Town Center to Colesville Town Center	37
Redland Rd: Shady Grove Town Center to Redland Town Center	38
River Rd: Westbard Town Center to District of Columbia	39
Scenery Dr: Germantown Rd to Middlebrook Rd	40
Seminary Rd/Seminary Ln/Second Ave/Linden Ln	41
Shady Grove Rd: Downtown Live Sciences Center to Shady Grove Town Center	42
Shady Grove Rd: Mid County Hwy to Muncaster Mill Rd	43
Snouffer School Rd: Centerway Rd to Woodfield Rd	44
Strathmore Ave/Knowles Ave: Rockville Pk to Kensington Town Center	45
Tuckerman Ln: Old Georgetown Rd to Rockville Pk	46
Watkins Mill Rd: City of Gaithersburg to Montgomery Village Town Center	47
West Cedar Ln: Old Georgetown Rd to Rockville Pk	48
Wilson Ln: Bradley Blvd to Downtown Bethesda	49
Wisteria Dr: Germantown Town Center to Waring Station Rd	50

Tier 2 BiPPAs



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Table 3231: Tier 3 BiPPAs (listed alphabetically)

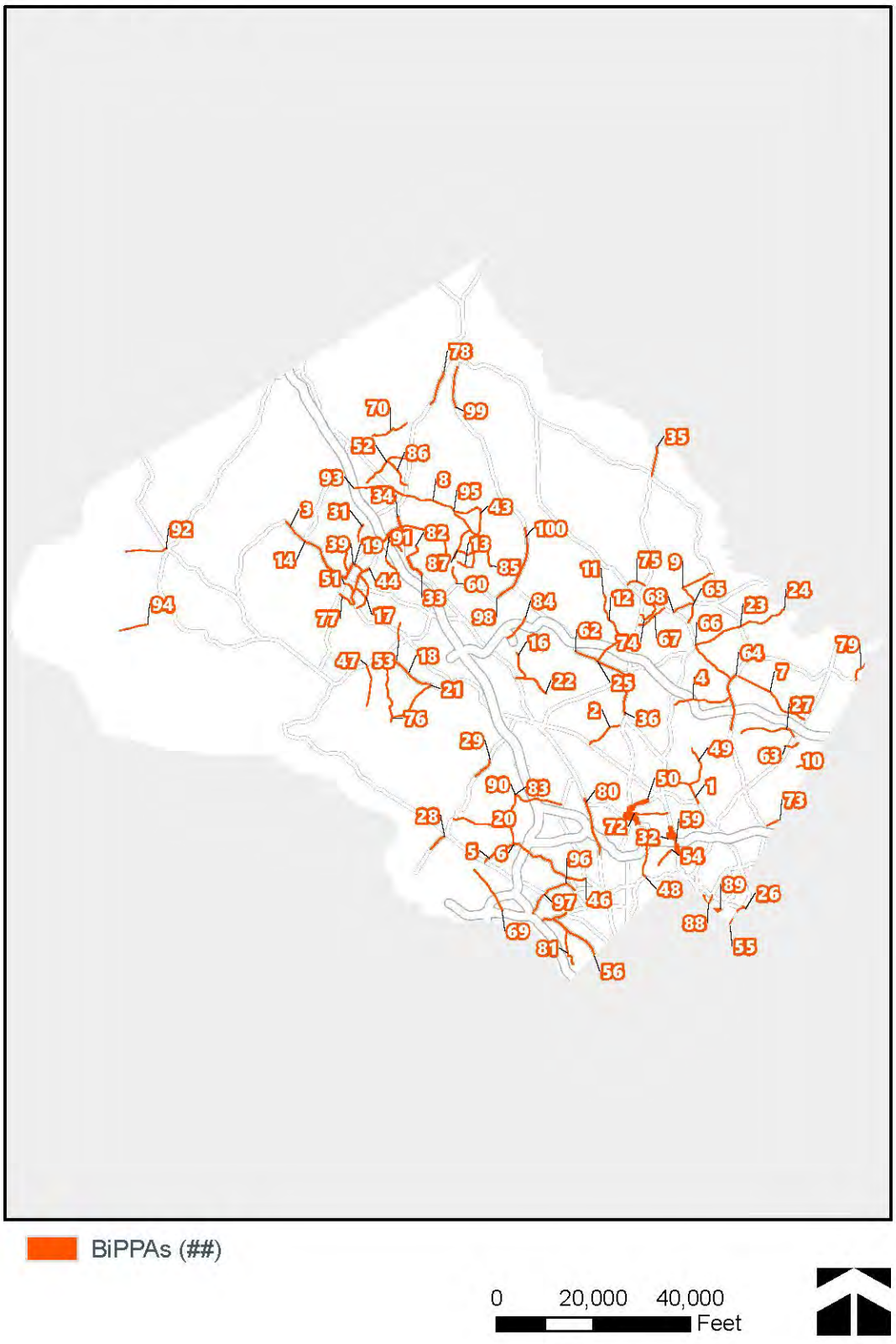
BiPPA Name	Map Reference #
Arcola Ave: Georgia Ave to University Blvd	1
Aspen Hill Rd: Aspen Hill Town Center to Veirs Mill Rd	2
Barnesville Rd: Bucklodge Rd to Clarksburg Rd	3
Bonifant Rd: Layhill Town Center to New Hampshire Ave	4
~~Bradley Blvd: Huntington Pkwy to Downtown Bethesda~~	~~5~~
Bradley Blvd: River Rd to Seven Locks Rd	56
Bradley Blvd: Seven Locks Rd to Huntington Pkwy	76
Briggs Chaney Rd: Columbia Pk to Cloverly Town Center	78
Brink Rd: Frederick Rd to Goshen Rd	89
Brooke Rd: Sandy Spring Town Center to New Hampshire Ave	910
Calverton Blvd: Downtown Life Sciences/FDA Village to Prince George's County	1011
Cashell Rd: Bowie Mill Rd to Hines Rd	1112
Cashell Rd: Hines Rd to Emory Ln	1213
Centerway Rd: Montgomery Village Town Center to Goshen Rd	1314
Clopper Rd: Clarksburg Rd to Richter Farm Rd	14
Clopper Rd: Richter Farm Rd to Germantown Rd	15
Crabbs Branch Way: Shady Grove Town Center to E Gude Dr	16
Dairymaid Dr: Great Seneca Hwy to Mateny Rd	17
Darnestown Rd: Downtown Life Sciences Center to City of Gaithersburg	18
Dawson Farm Rd: Germantown Rd to Great Seneca Hwy	19
Democracy Blvd: Falls Rd to Seven Locks Rd	20
Dufief Mill Rd: Downtown Life Sciences Center to Travilah Rd	21
E Gude Dr: Frederick Rd to City of Rockville	22
Ednor Rd: Layhill Rd to New Hampshire Ave	23
Ednor Rd: New Hampshire Ave to Howard County	24
Emory Ln: Muncaster Mill Rd to Georgia Ave	25
Ethan Allen Avenue Gateway Town Center	26
Fairland Rd: East Randolph Rd to Columbia Pk	27
Falls Rd: Oaklyn Dr to Potomac Town Center	28
Falls Rd: Tuckerman Ln to City of Rockville	29
Father Hurley Blvd: Germantown Town Center to Germantown Rd	30
Father Hurley Blvd: Middlebrook Rd to Crystal Rock Dr	31
Forest Glen Town Center	32

BiPPA Name	Map Reference #
Frederick Rd: Foxchapel Town Center to City of Gaithersburg	33
Frederick Rd: Milestone Town Center to Foxchapel Town Center	34
Georgia Ave: Howard County to New Hampshire Ave	35
Georgia Ave: Norbeck Rd to Aspen Hill Town Center	36
Germantown Rd/Watkins Mill Rd: Frederick Rd to Montgomery Village Town Center	37
Germantown Rd/Watkins Mill Rd: Germantown Town Center to Frederick Rd	38
Germantown Rd: Clopper Rd to Germantown Town Center	39
Goldenrod Ln/Observation Dr: Germantown Rd to Foxchapel Town Center	40
Goldsboro Rd: Macarthur Blvd to River Rd	41
Goshen Rd: Centerway Rd to Wightman Rd	42
Goshen Rd: Snouffer School Rd to Brink Rd	43
Great Seneca Hwy: Clopper Rd to Germantown Town Center	44
Great Seneca Hwy: Clopper Rd to Richter Farm Rd	45
Huntington Pkwy: Bradley Blvd to Old Georgetown Rd	46
Jones Ln: Turkey Foot Rd to Darnestown Rd	47
Jones Mill Rd: I-495 to East-West Hwy	48
Kemp Mill Rd: Randolph Rd to Arcola Ave	49
Kensington Town Center	50
Leaman Farm Rd: Germantown Rd to Great Seneca Hwy	51
Little Seneca Pkwy: Ridge Rd to Fair Garden Ln	52
Longdraft Rd: Longdraft Ct to City of Gaithersburg	53
Lyttonsville Pl/Brookville Rd: Lyttonsville Town Center to Linden Ln	54
Maryland Gateway Town Center	55
Massachusetts Ave: Goldsboro Rd to District of Columbia	56
Mateny Rd: Clopper Rd to Great Seneca Hwy	57
Mateny Rd: Great Seneca Hwy to Clopper Rd	58
Montgomery Hills Town Center	59
Montgomery Village Ave: Montgomery Village Town Center to Lower Village Town Center	60
Montgomery Village Ave: Montgomery Village Town Center to Wightman Rd	61
Muncaster Mill Rd: Avery Rd to Norbeck Rd	62
Musgrove Rd: Old Columbia Pk to Fairland Rd	63
New Hampshire Ave: Colesville Town Center to Cloverly Town Center	64
Norwood Rd: Doctor Bird Rd to Sandy Spring Town Center	65

BiPPA Name	Map Reference #
Norwood Rd: Layhill Rd to New Hampshire Ave	66
Old Baltimore Rd: Georgia Ave to Olney-Sandy Spring Rd	67
Olney-Sandy Spring Rd: Doctor Bird Rd to Sandy Spring Town Center	68
Persimmon Tree Rd: Oaklyn Dr to Macarthur Blvd	69
Piedmont Rd: Snowden Farm Pkwy to Hawkes Rd	70
Piney Branch Rd: District of Columbia to Philadelphia Ave	71
Plyers Mill Rd: Kensington Town Center to Georgia Ave	72
Powder Mill Rd: Hillandale Town Center to Prince George's County	73
Prince Phillip Dr: Georgia Ave to Olney-Sandy Spring Rd	74
Queen Elizabeth Dr: Olney-Laytonsville Rd to Georgia Ave	75
Quince Orchard Rd: City of Gaithersburg to Dufief Mill Rd	76
Richter Farm Rd: Germantown Rd to Great Seneca Hwy	77
Ridge Rd: Damascus Town Center to Sweepstakes Rd	78
Riding Stable Rd: Sandy Spring Rd to Prince George's County	79
Rockville Pk: Downtown White Flint to Cedar Ln	80
Sangamore Rd: Massachusetts Ave to Macarthur Blvd	81
Scenery Dr: Foxchapel Town Center to Middlebrook Rd	82
Seven Locks Rd: Tuckerman Ln to Bradley Blvd	83
Shady Grove Rd: Shady Grove Town Center to Midcounty Hwy	84
Snouffer School Rd: Goshen Rd to Centerway Rd	85
Snowden Farm Pkwy: Little Seneca Pkwy to Ridge Rd	86
Stewartown Rd: Montgomery Village Ave to Goshen Rd	87
Takoma Ave/Fenton St: Downtown Silver Spring to Piney Branch Rd	88
Takoma Old Town Town Center	89
Tuckerman Ln: Seven Locks Rd to Old Georgetown Rd	90
Waring Station Rd: Wisteria Dr to Middlebrook Rd	91
West Hunter Rd: Wasche Rd to Darnestown Rd	92
West Old Baltimore Rd: Cabin Branch Town Center to Frederick Rd	93
Westerly Rd: Edwards Ferry Rd to Town of Poolesville	94
Wightman Rd: Brink Rd to Goshen Rd	95
Wilson Ln: Bradley Blvd to River Rd	96
Wilson Ln: Macarthur Rd to River Rd	97
Woodfield Rd: City of Gaithersburg to Snouffer School Rd	98
Woodfield Rd: Damascus Town Center to Sweepstakes Rd	99

BiPPA Name	Map Reference #
Woodfield Rd: Snouffer School Rd to East Village Ave	100

Tier 3 BiPPAs



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Complete Streets Design Guide Area Type Designations

Montgomery County's CSDG introduced a new "Complete Streets" street classification system, replacing the old "Road Code" classification system that was largely based for the county that reflects both the transportation function of a street for all travel modes and the envisioned land use character. In doing so, the guide more holistically reflects the many functions of a street, such as property access; stormwater management; pedestrian, bicycle and transit access; goods movement; vehicle throughput; and others. Roadway function is organized by the amount of travel, including major highways (highest amount of travel), boulevards (high amount of travel), connectors (moderate amount of travel) and streets (least amount of travel). Land use context is organized by five area types, including:

- **Downtowns** are envisioned as Montgomery County's highest intensity areas including central business districts and urban centers. They are envisioned to have dense, transit-oriented development and a walkable street grid (existing or planned), as well as significant areas of Commercial-Residential and Employment zoning.
- **Town Centers** are similar to Downtowns but generally feature less intense development and cover a smaller geographic area. While the Town Center area type includes a mixture of uses, it is commonly envisioned as high-to-moderate intensity residential development, including multifamily buildings and townhouses as well as retail (existing or planned).
- **Suburban** areas are intended to be places with low-to-moderate intensity residential development.
- **Industrial** areas are envisioned as places where employment and industrial uses are the primary activities. These areas often have higher densities of development but maintain lower to moderate levels of bicycle and pedestrian activity.
- **Country** areas are the least dense portions of the county, with land uses of low intensity residential and agriculture.

Transitioning from the previous street classification system to the CSDG street classification system is a three-step process:

- **Phase 1: Enactment of Bill 24-22 and Bill 34-22.** With the enactment of Bill 24-22 on November 7, 2022 and Bill 34-22 on December 27, 2022, the County Council established interim translations for CSDG street types (Downtown Boulevard, Downtown Street, Town Center Boulevard, etc.) that are based on both the CSDG area types (Downtown, Town Center, Suburban, Industrial, and Country) and the previous street classification system. These interim street designations are estimated to be 90% accurate, reflecting that not all roads fit neatly into the 12 street types and that additional master planning review may be needed to refine some street classifications.
- **Phase 2: Master Plan Area Types in the Pedestrian Master Plan.** To address some of the main deficiencies in the Phase 1 translation, and because the Pedestrian Master Plan includes recommendations that rely on CSDG area types, this plan replaces the interim area type

designations in the county code with permanent area type designations throughout the county.

- **Phase 3: Master Plan Street Types in a Technical Update to the Master Plan of Highways and Transitways.** This plan update would reevaluate the classifications of all roads to fully ensure that each road is accurately and contextually classified.

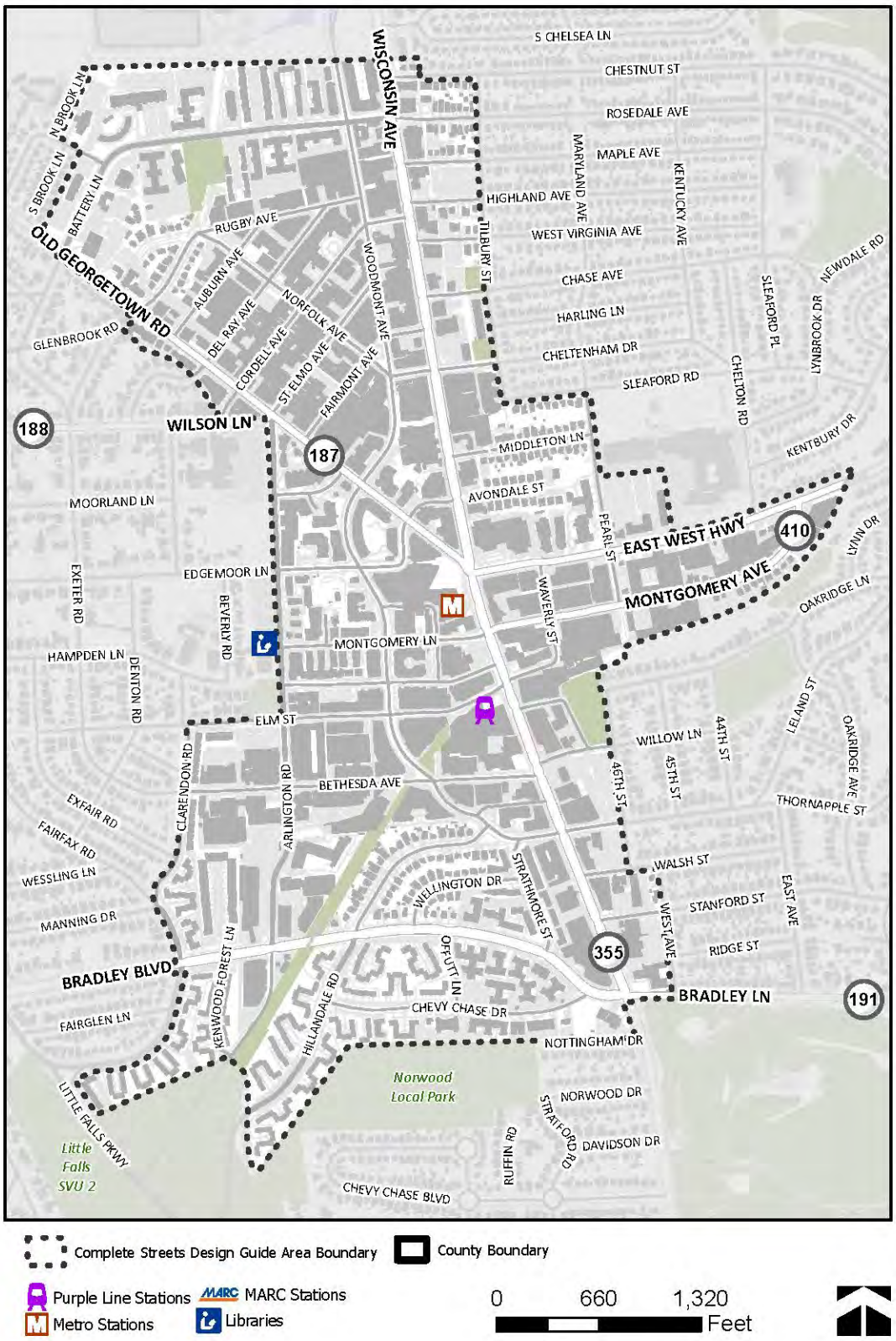
As part of the Phase 2 transition, the following table and maps identify the county's Downtowns, Town Center, Suburban, Industrial and Country areas. Future master plans, sector plans and functional plans are encouraged to modify these boundaries based on the definitions in the CSDG.

Table 33~~32~~: Complete Street Design Guide Area Type Designations

Downtowns	Bethesda
	Friendship Heights
	Life Sciences Center
	Life Sciences / FDA Village
	Rock Spring
	Silver Spring
	Wheaton
	White Flint
Town Centers	16th Street Station
	Ashton
	Aspen Hill
	Briggs Chaney
	Burnt Mills
	Burtonsville
	Cabin Branch
	Chevy Chase Lake
	Clarksburg
	Cloverly
	Colesville
	Damascus
	Ethan Allen Avenue Gateway
	Forest Glen
	Four Corners
	Foxchapel
	Germantown
	Glenmont
	Grosvenor
	Hillandale
	Hyattstown

	Kensington
	Layhill
	Long Branch
	Lower Village
	Lyttonsville
	Maryland Gateway
	Milestone
	Montgomery Hills
	Montgomery Village
	Olney
	Park Potomac
	Potomac
	Randolph Hills
	Redland
	Rock Creek Village
	Sandy Spring
	Shady Grove
	Takoma Junction
	Takoma Langley Crossroads
	Takoma Old Town
	Traville / USG
	Twinbrook
	Veirs Mill – Randolph
	Washingtonian
	Westbard
	White Oak
Suburban	Suburban
Industrial	Airpark
	Briggs Chaney
	Burtonsville
	Germantown
	Gude Drive
	Kensington
	Lyttonsville
	Shady Grove 1
	Shady Grove 2
Country	Country

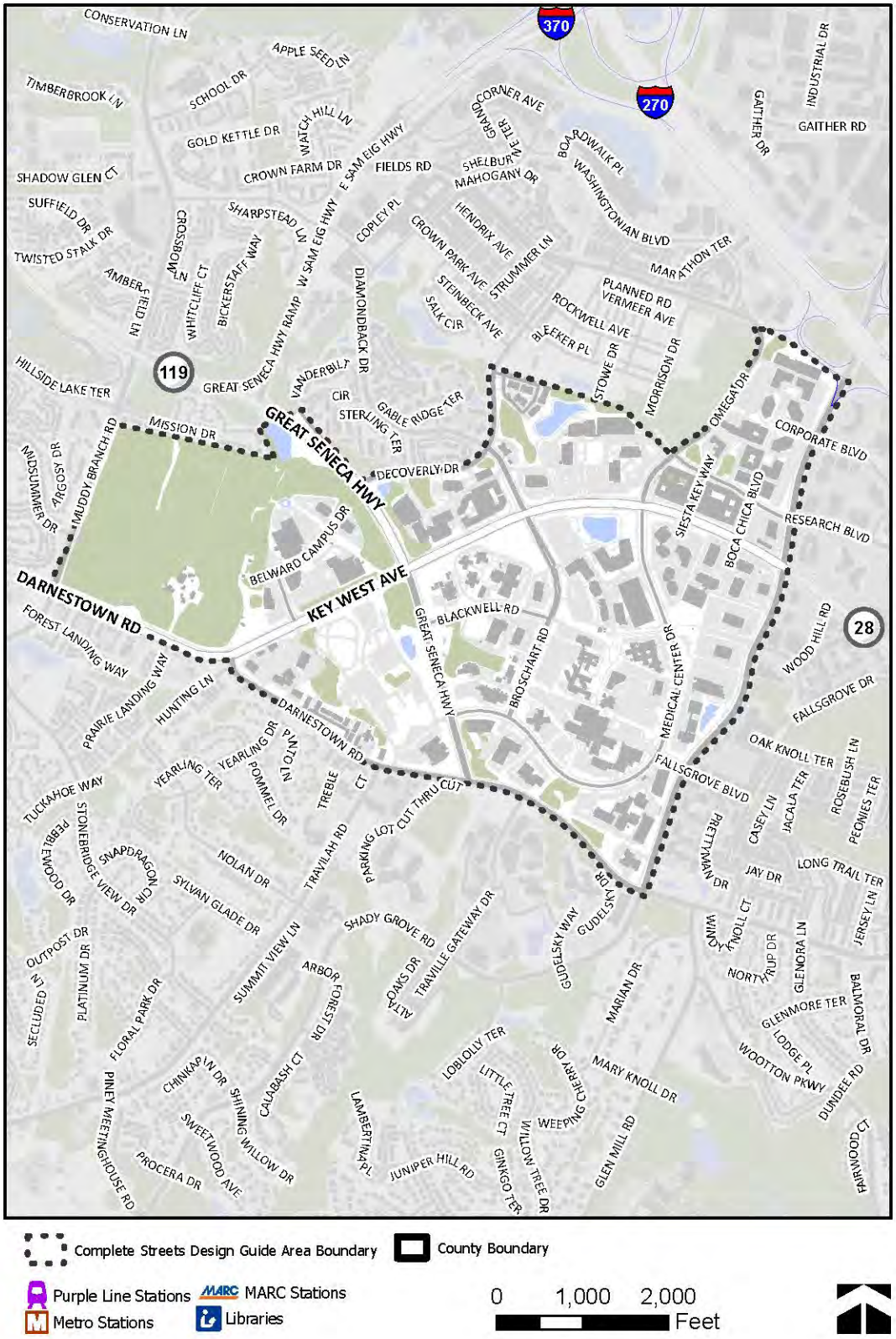
Downtown Bethesda



Downtown Friendship Heights



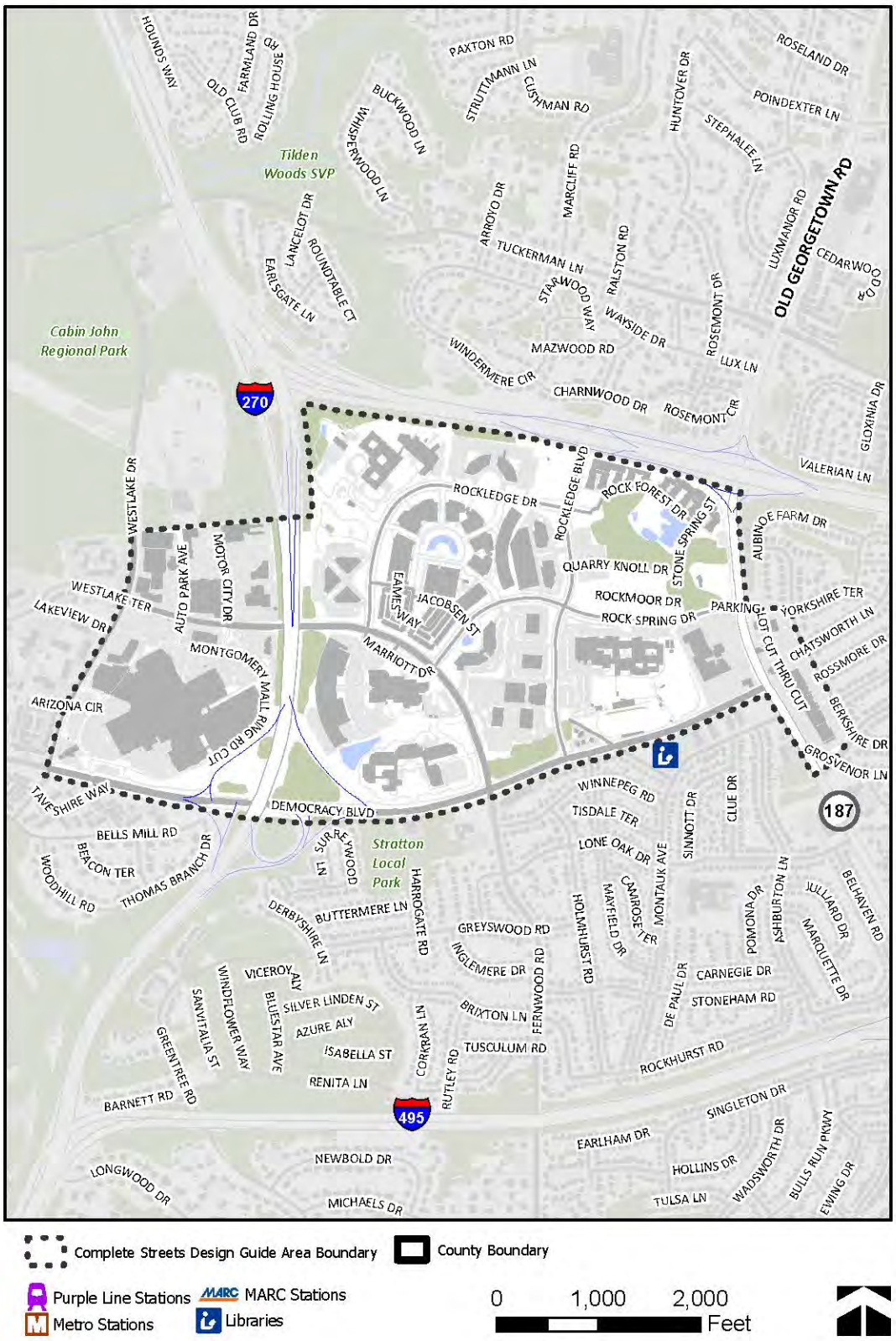
Downtown Life Sciences Center



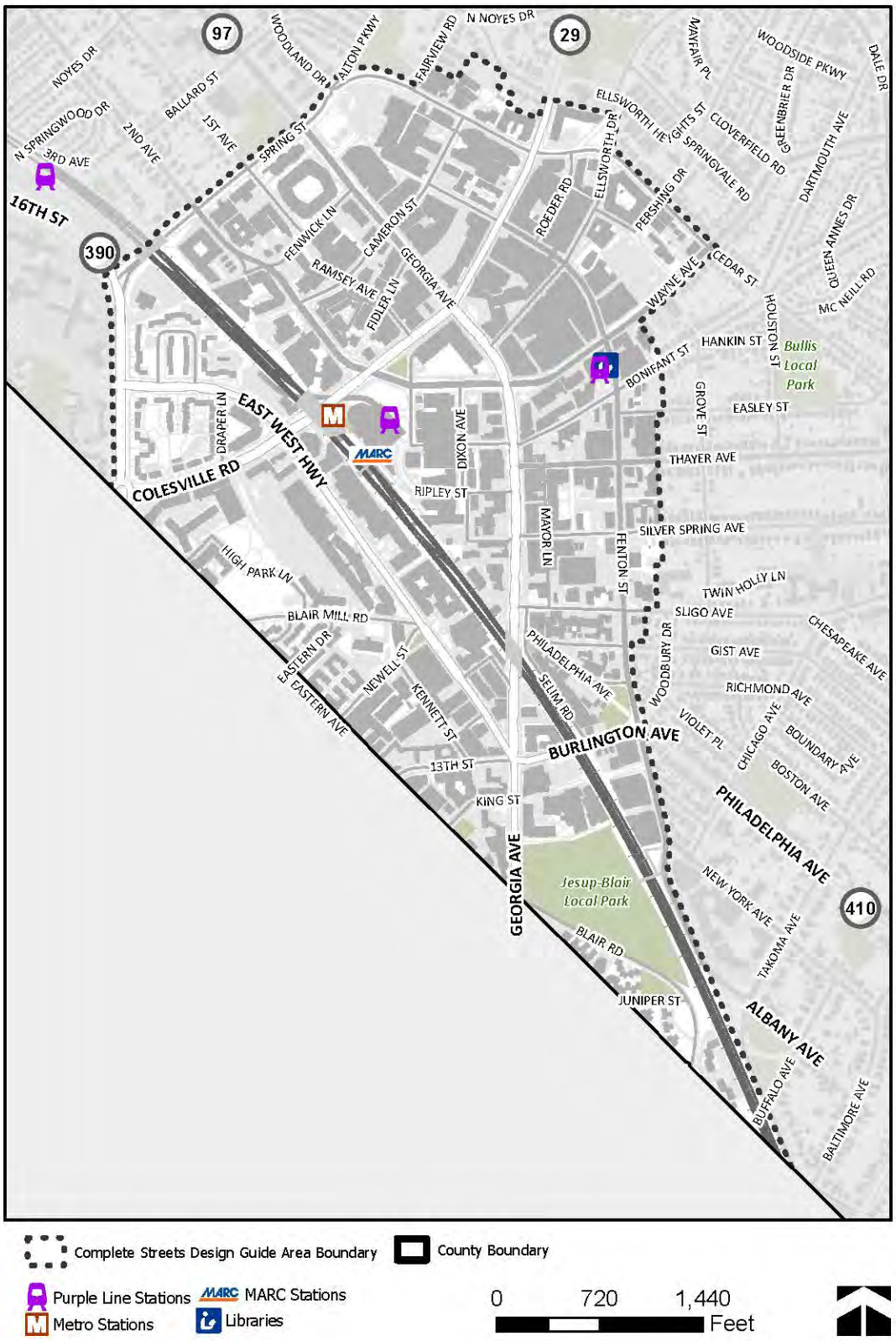
Downtown Life Sciences / FDA Village



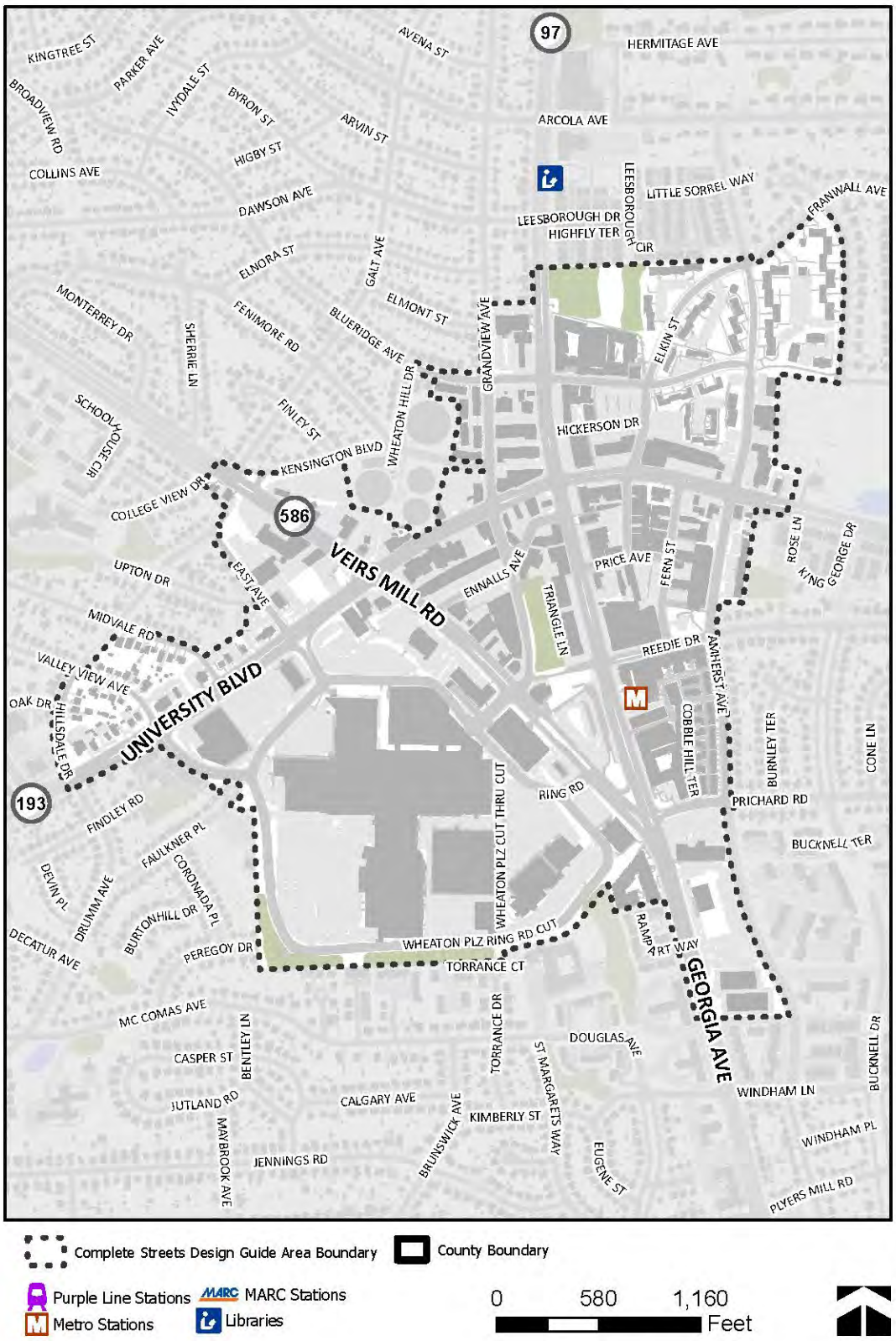
Downtown Rock Spring



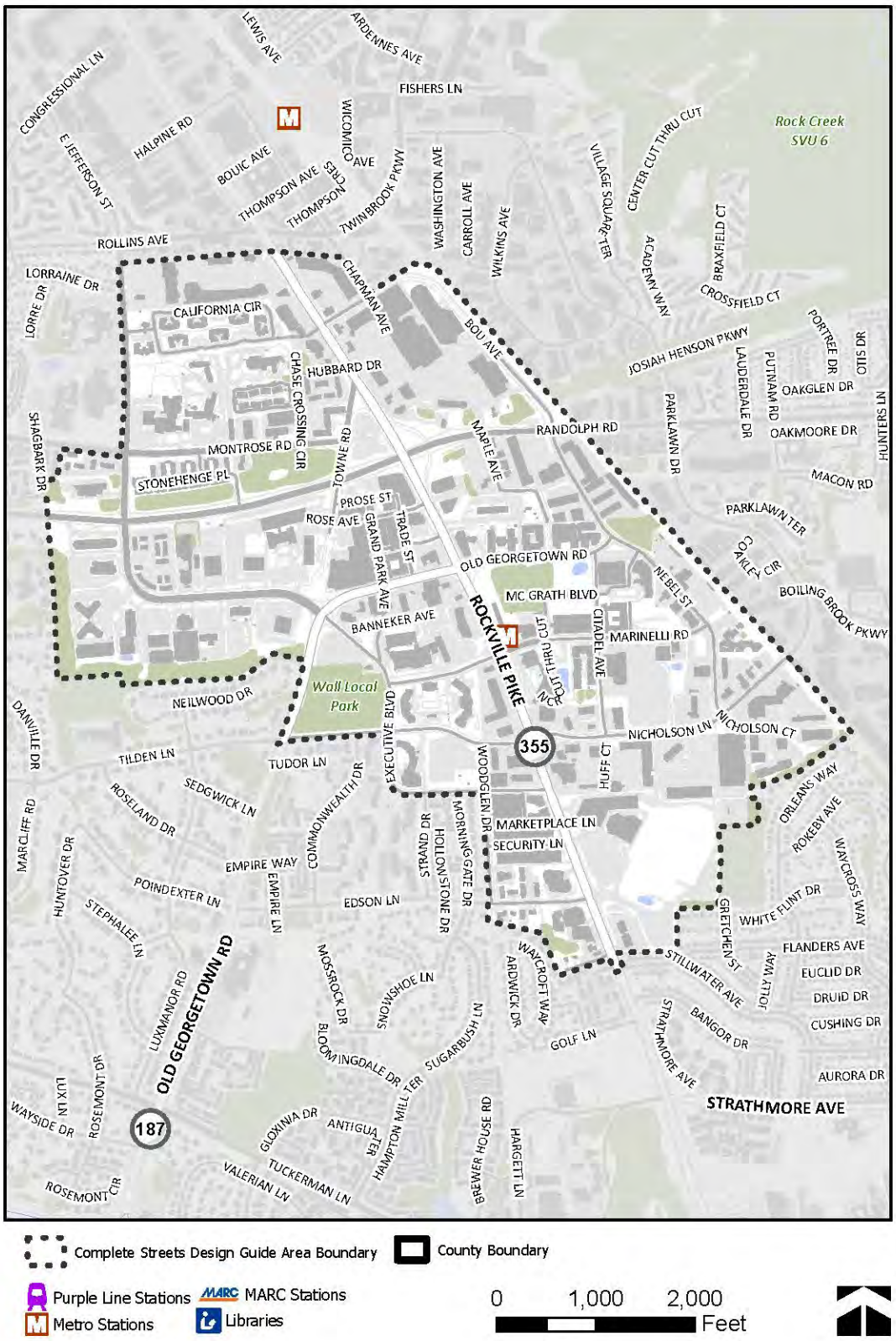
Downtown Silver Spring



Downtown Wheaton



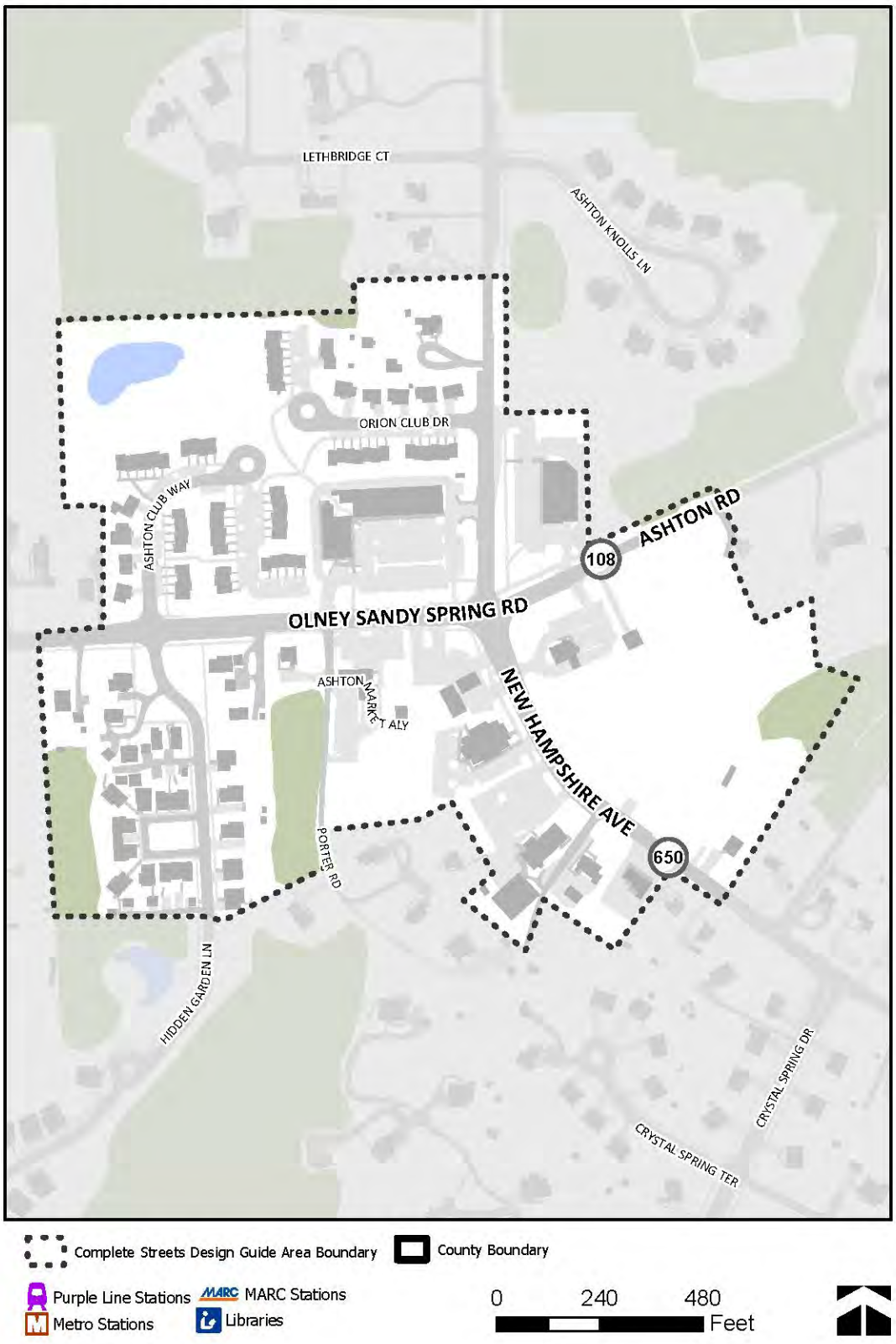
Downtown White Flint



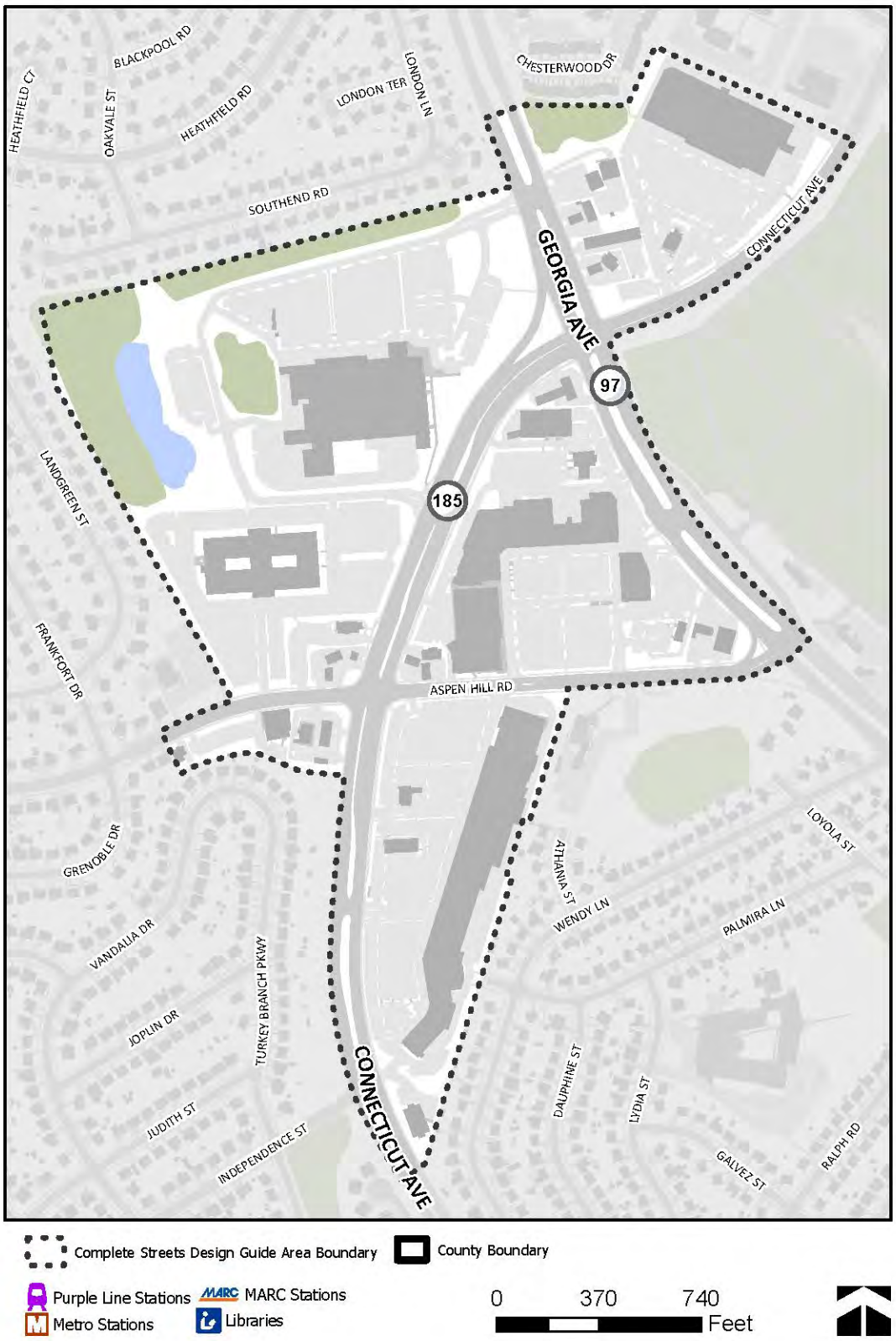
16th Street Station Town Center



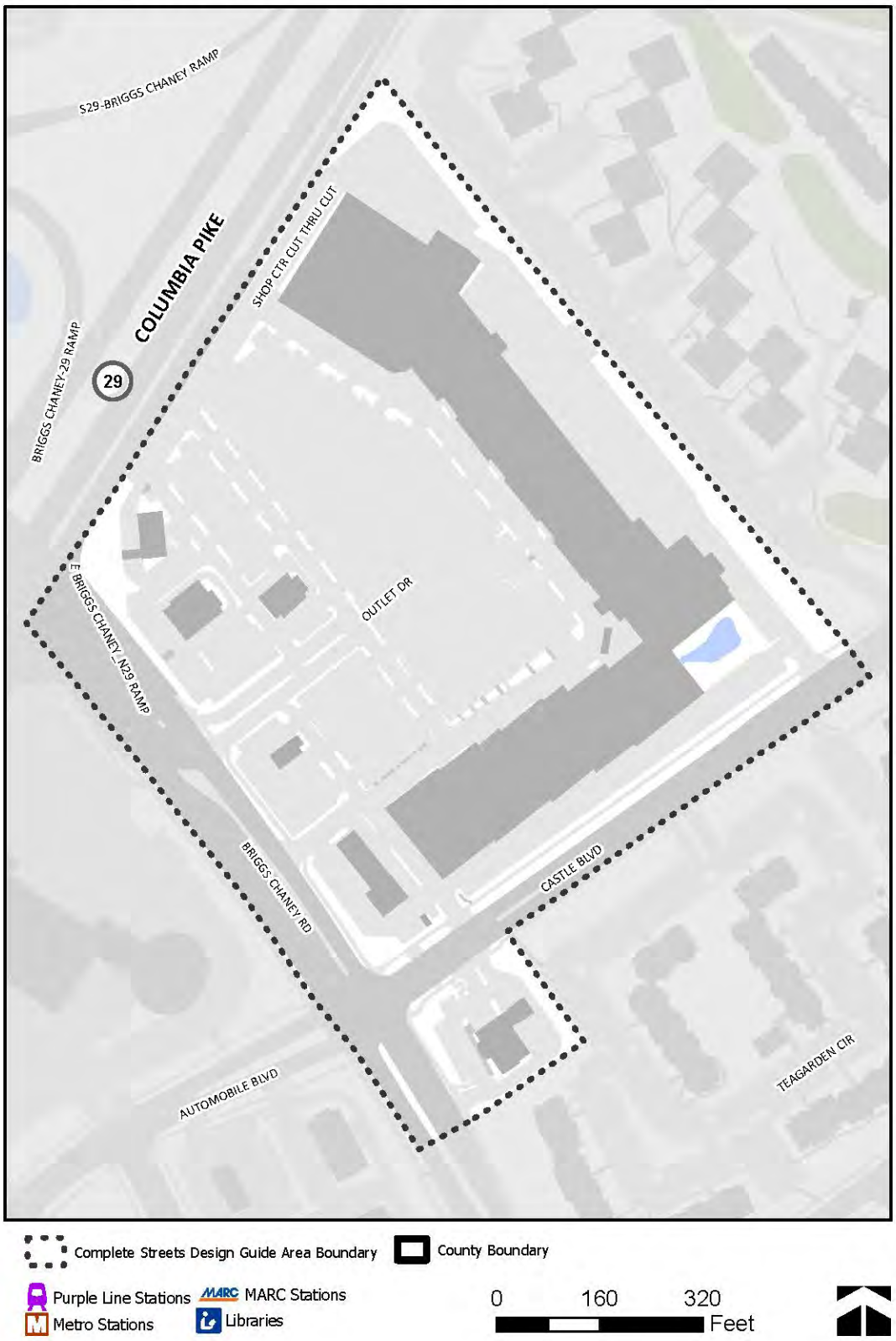
Ashton Town Center



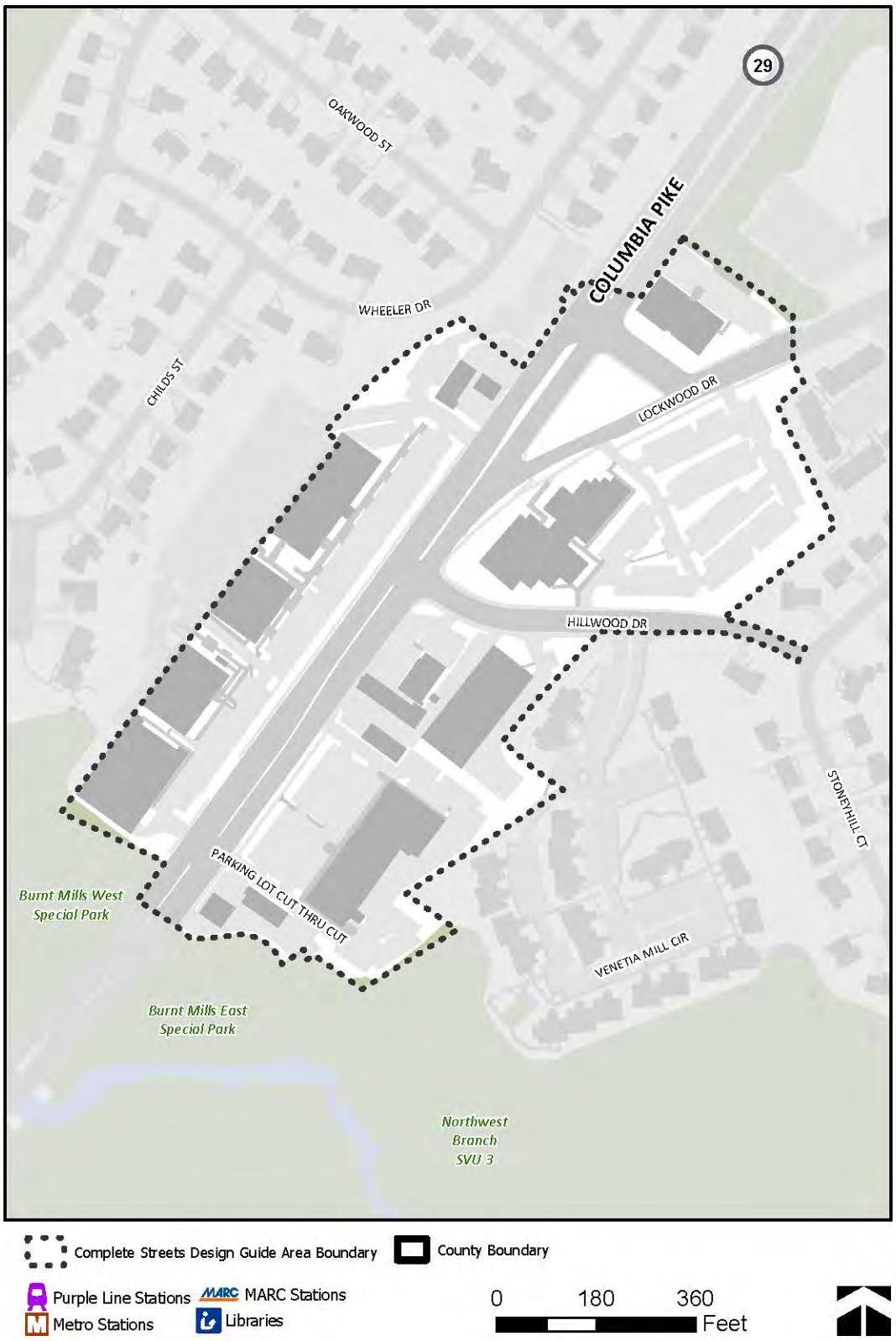
Aspen Hill Town Center



Briggs Chaney Town Center



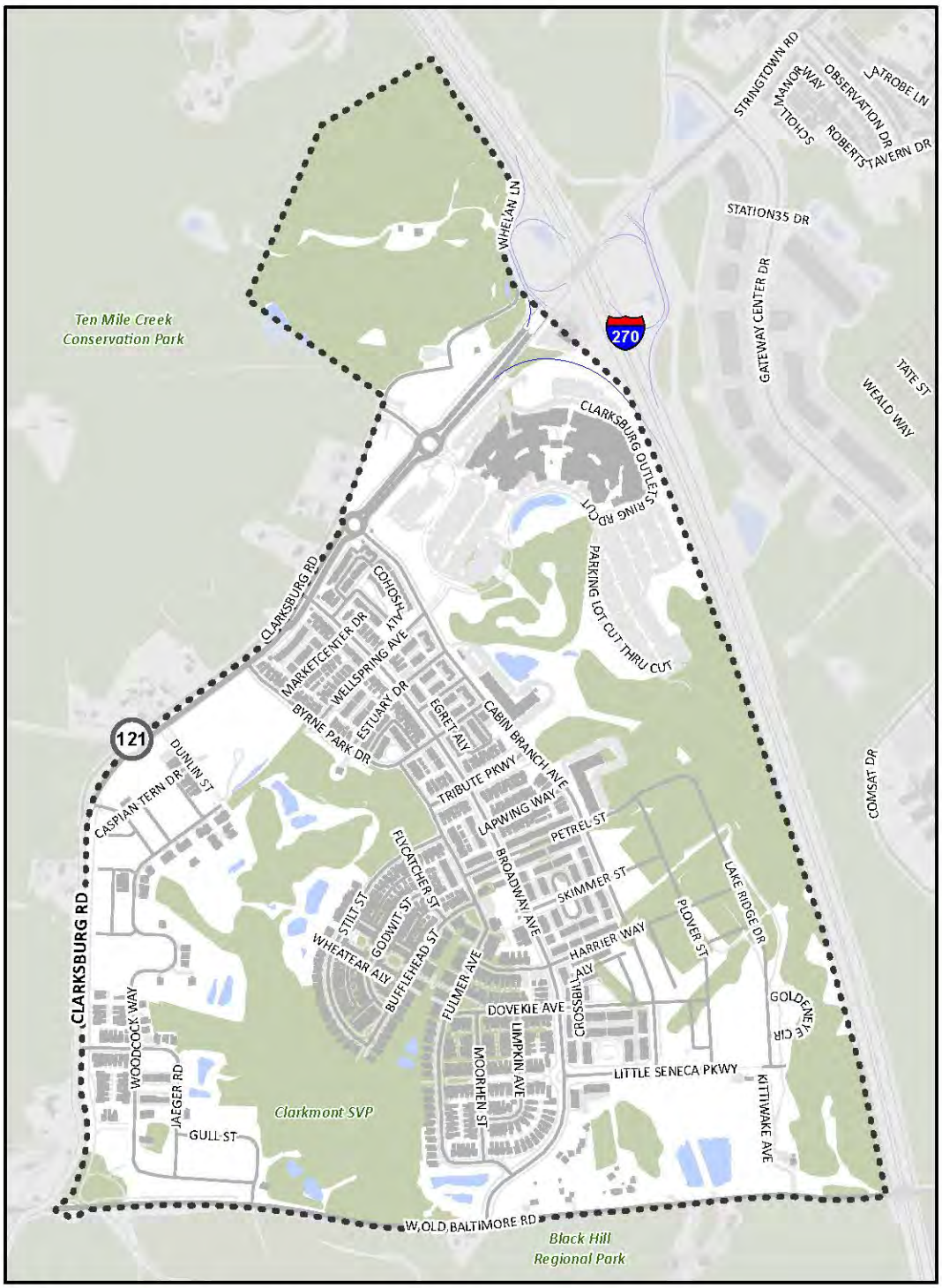
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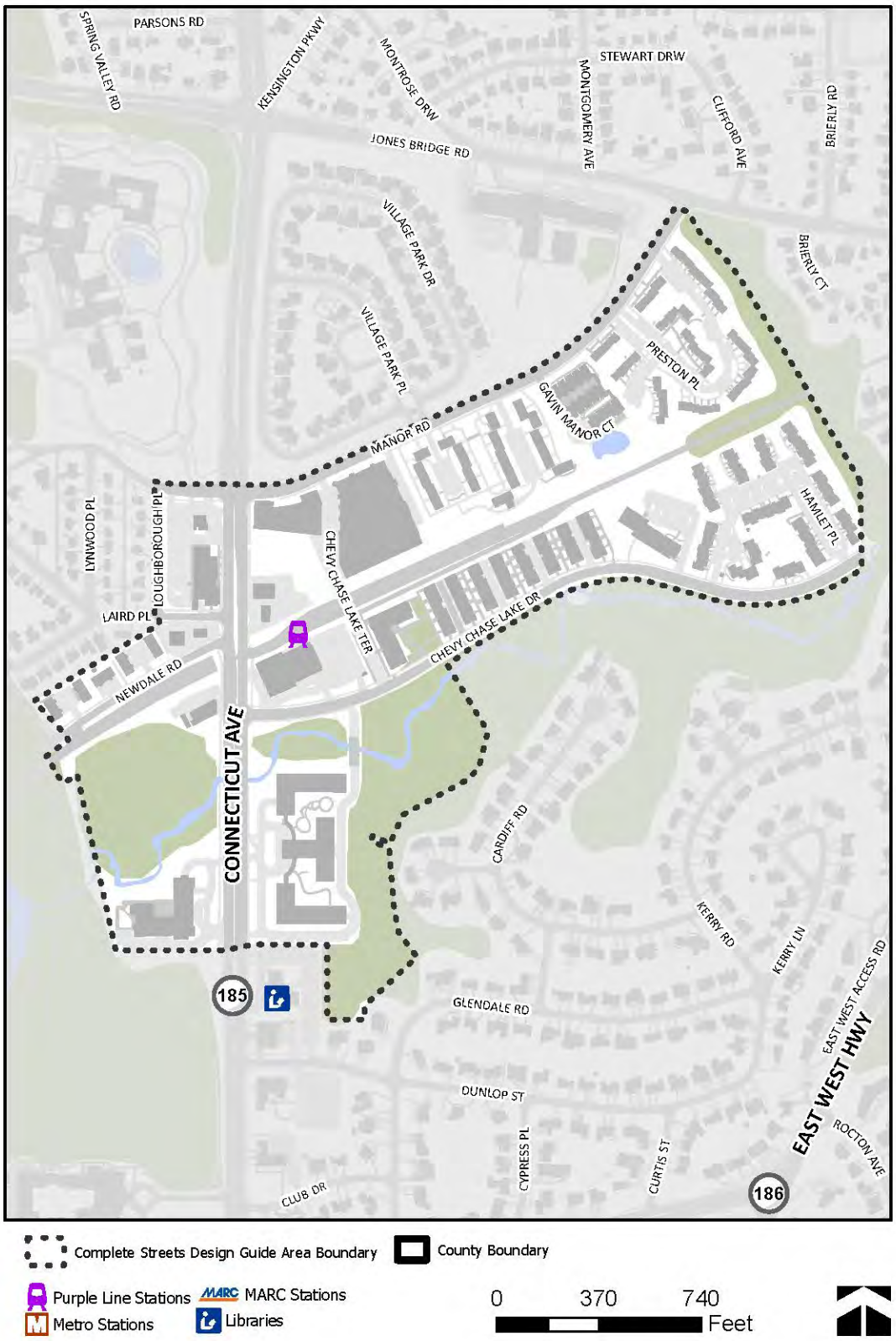
Burtonsville Town Center



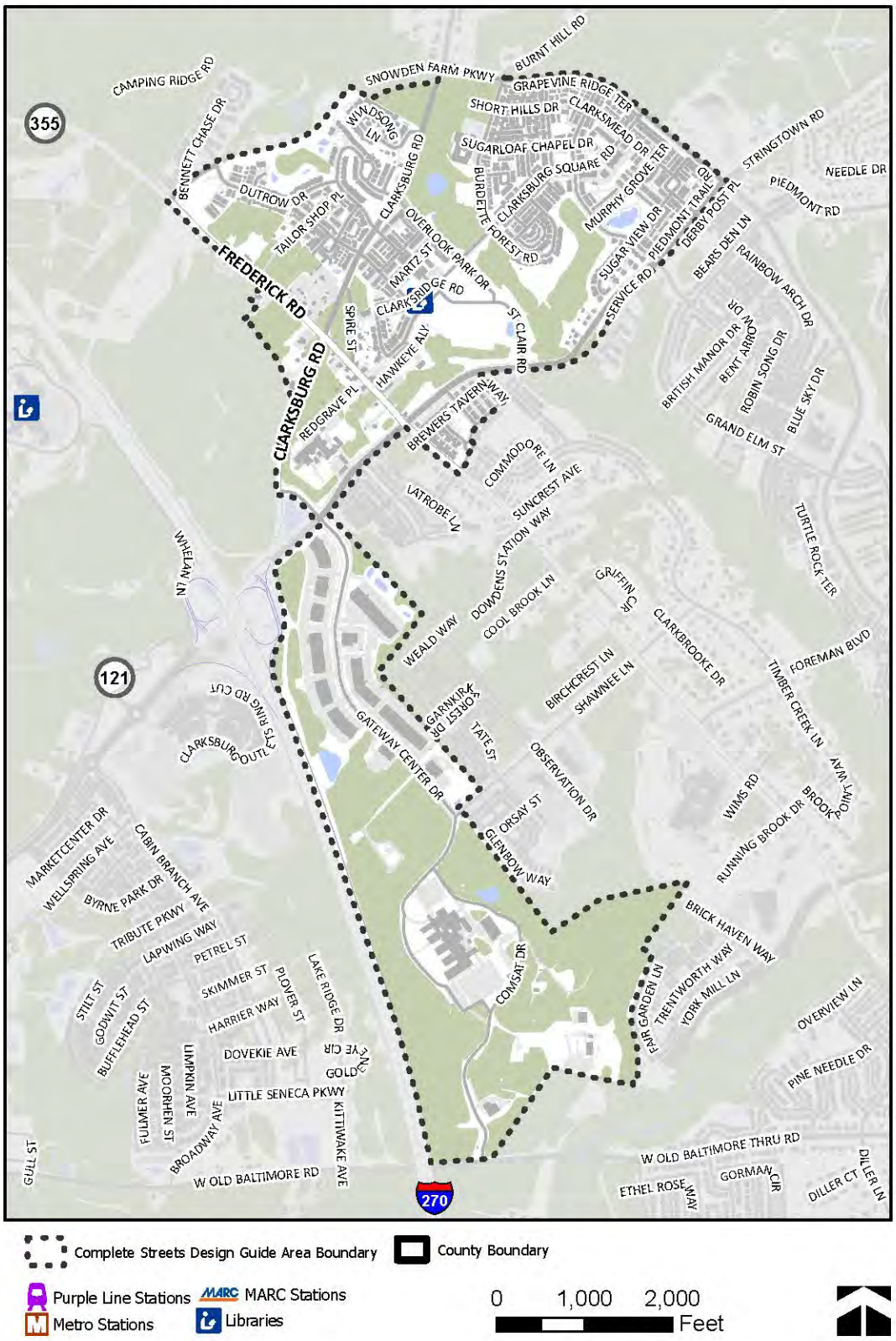
Cabin Branch Town Center



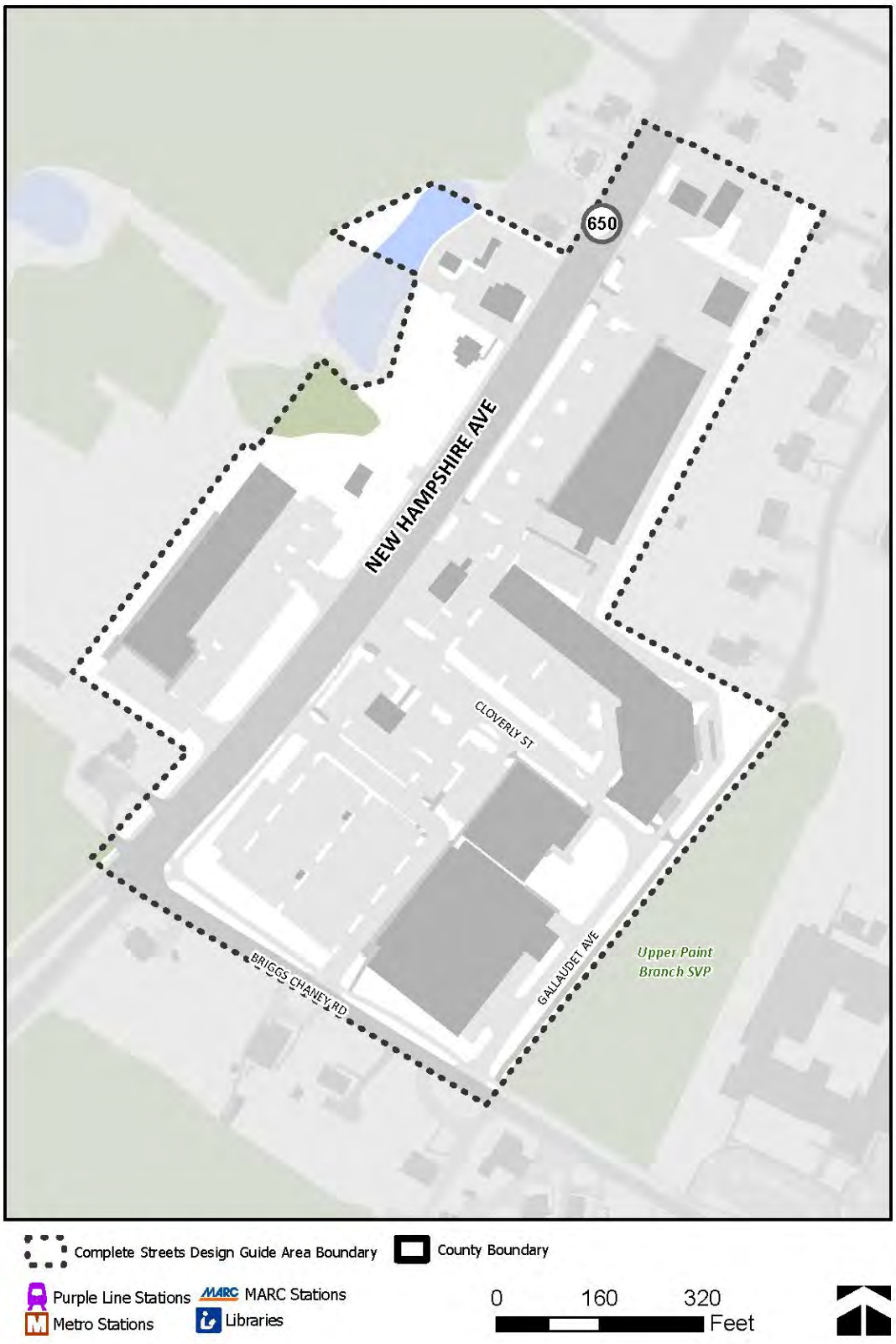
Chevy Chase Lake Town Center



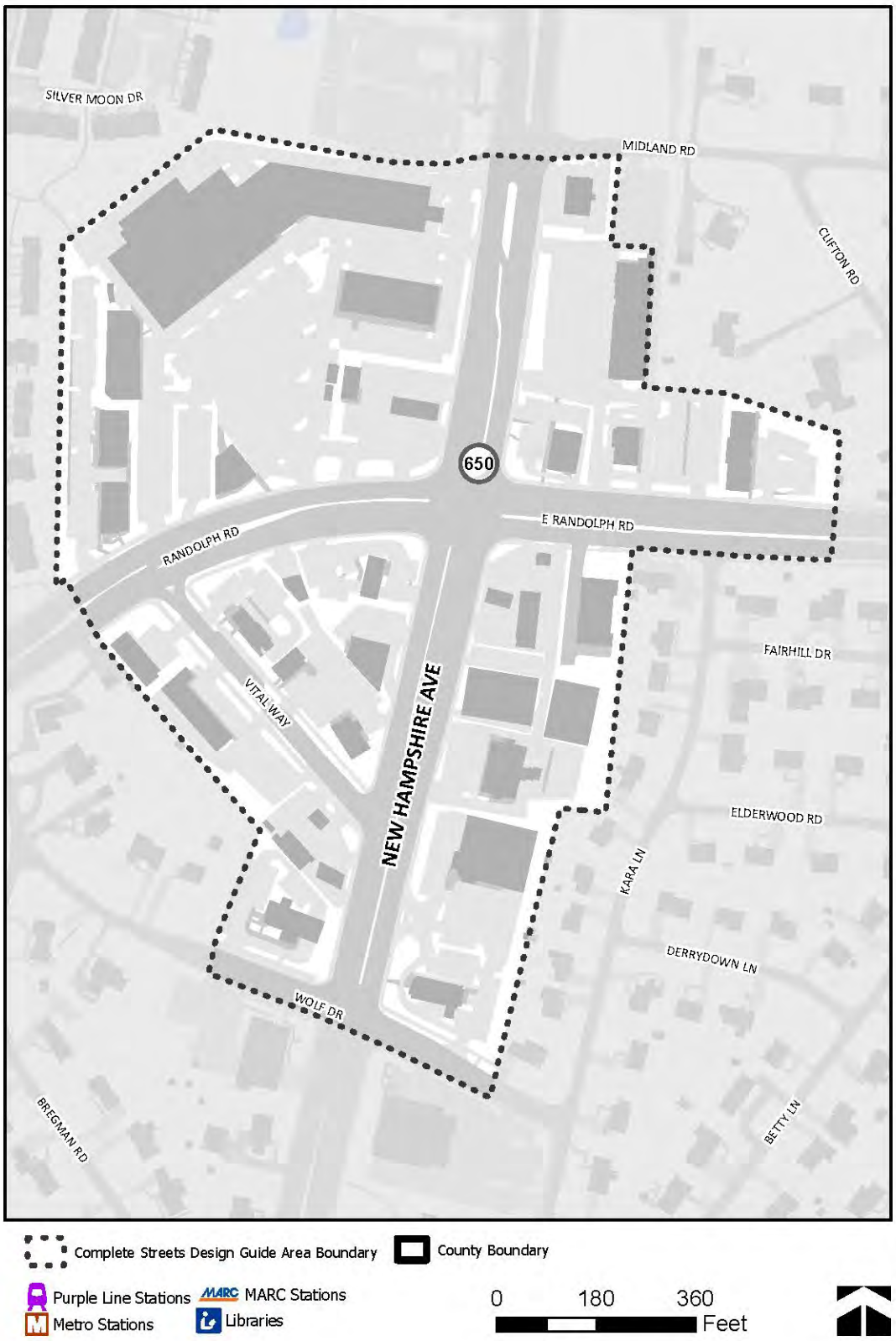
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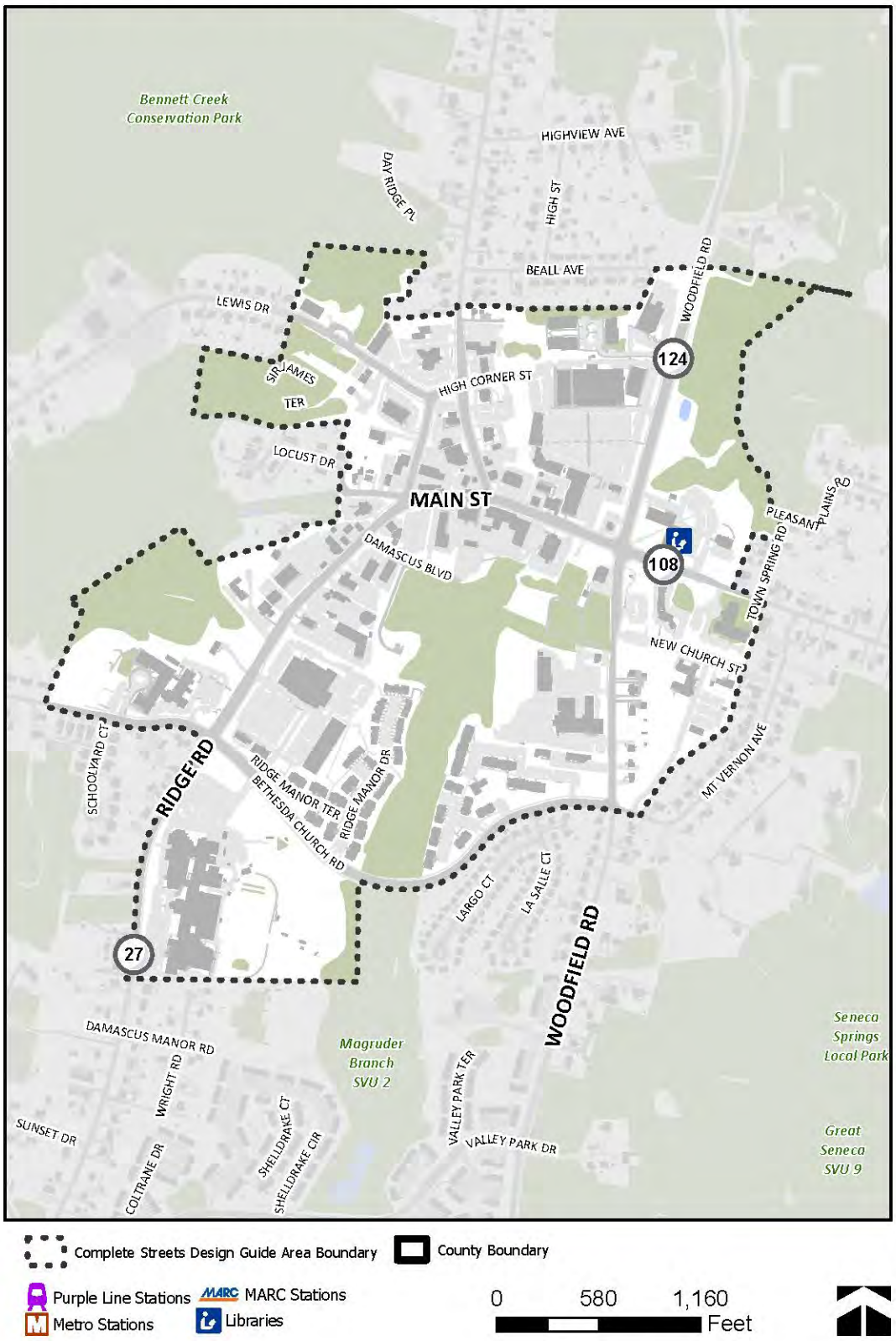
Cloverly Town Center



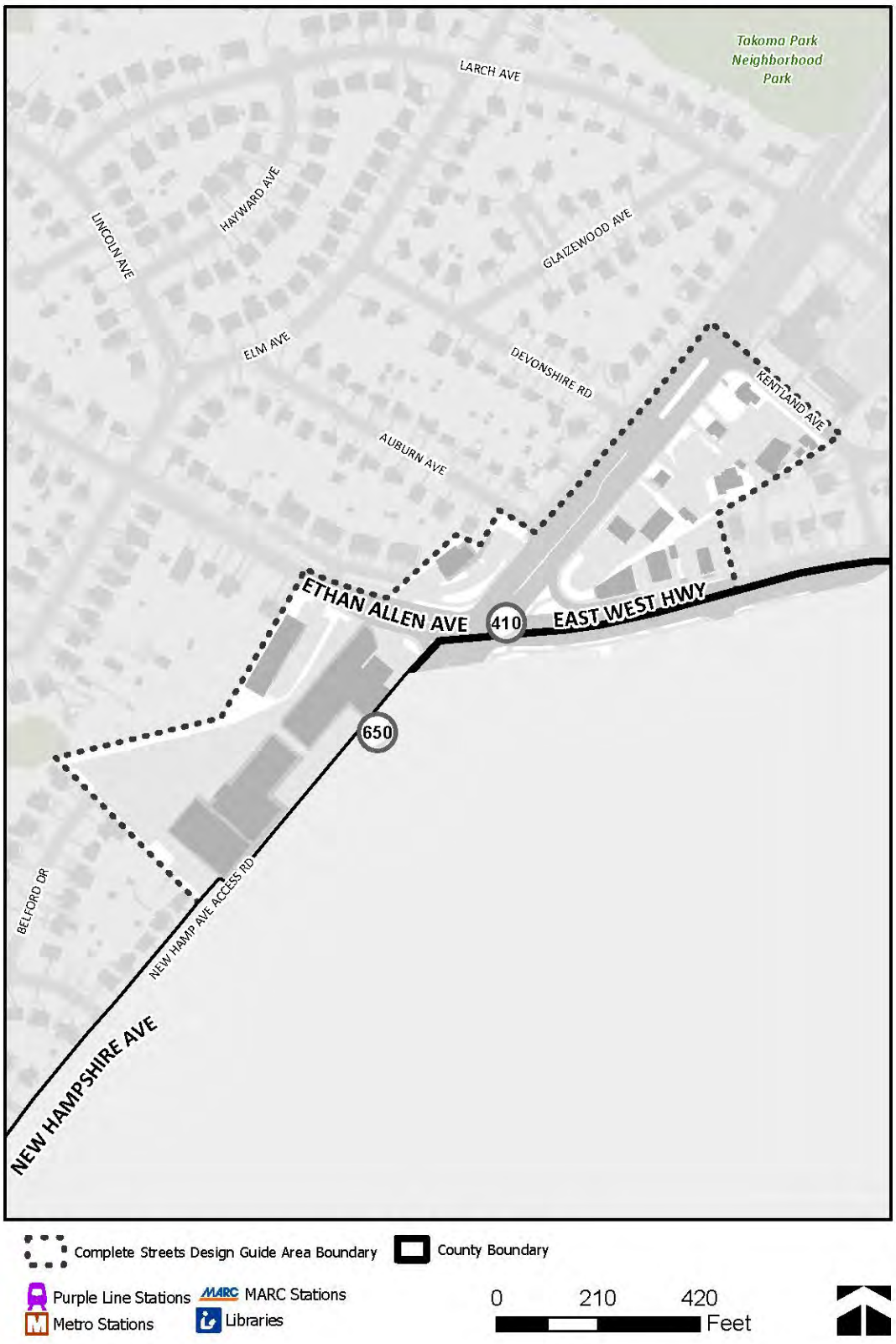
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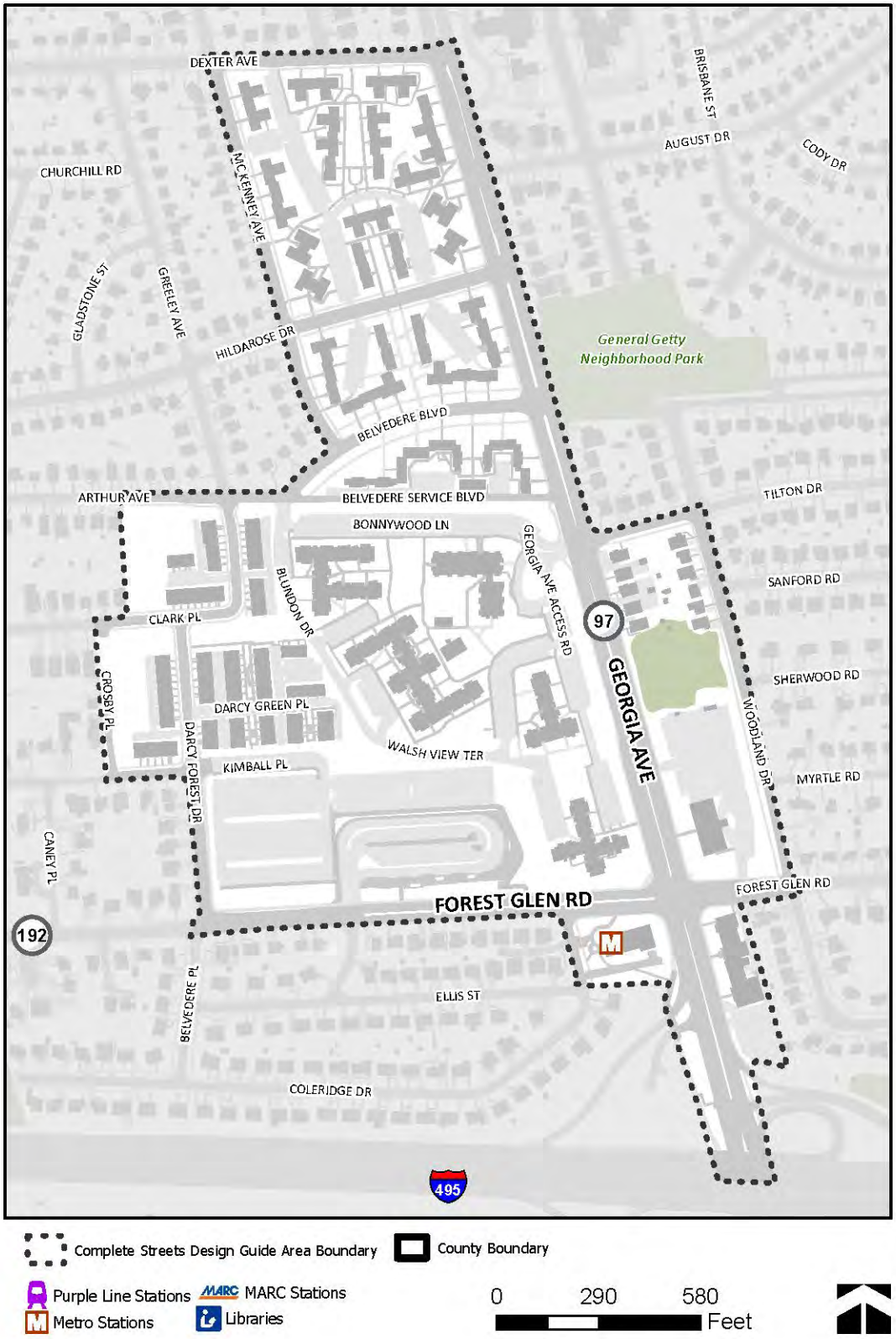
Damascus Town Center



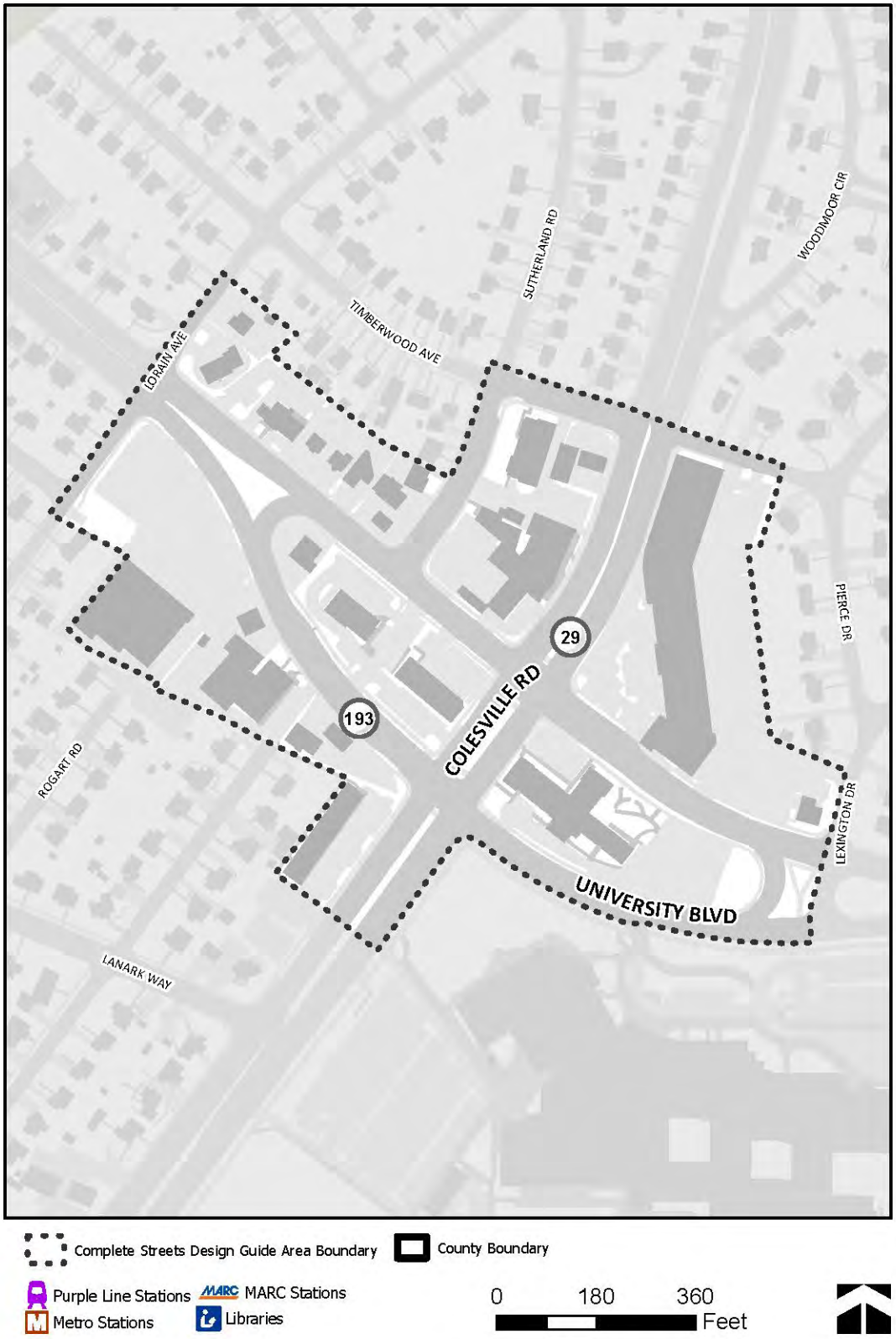
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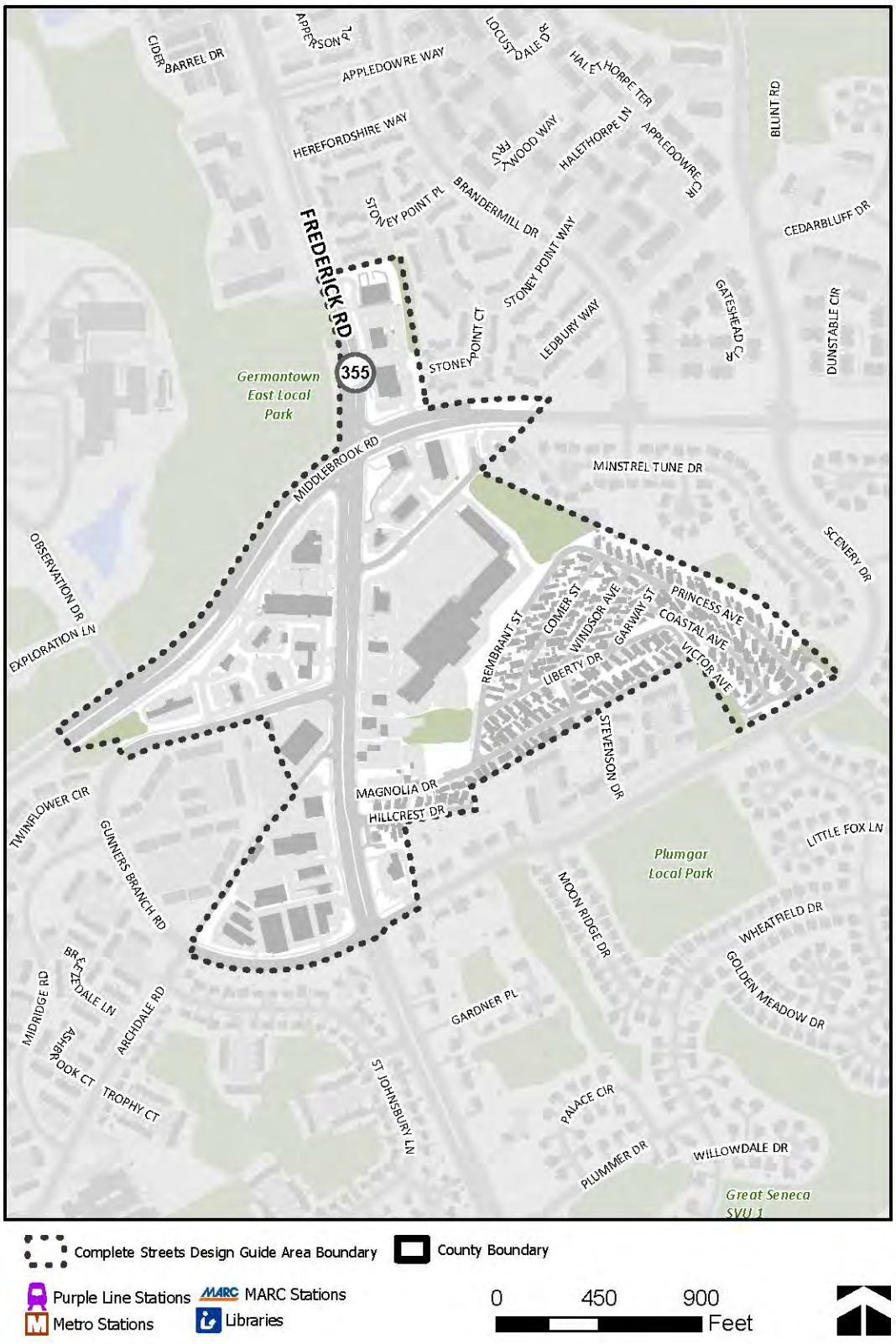
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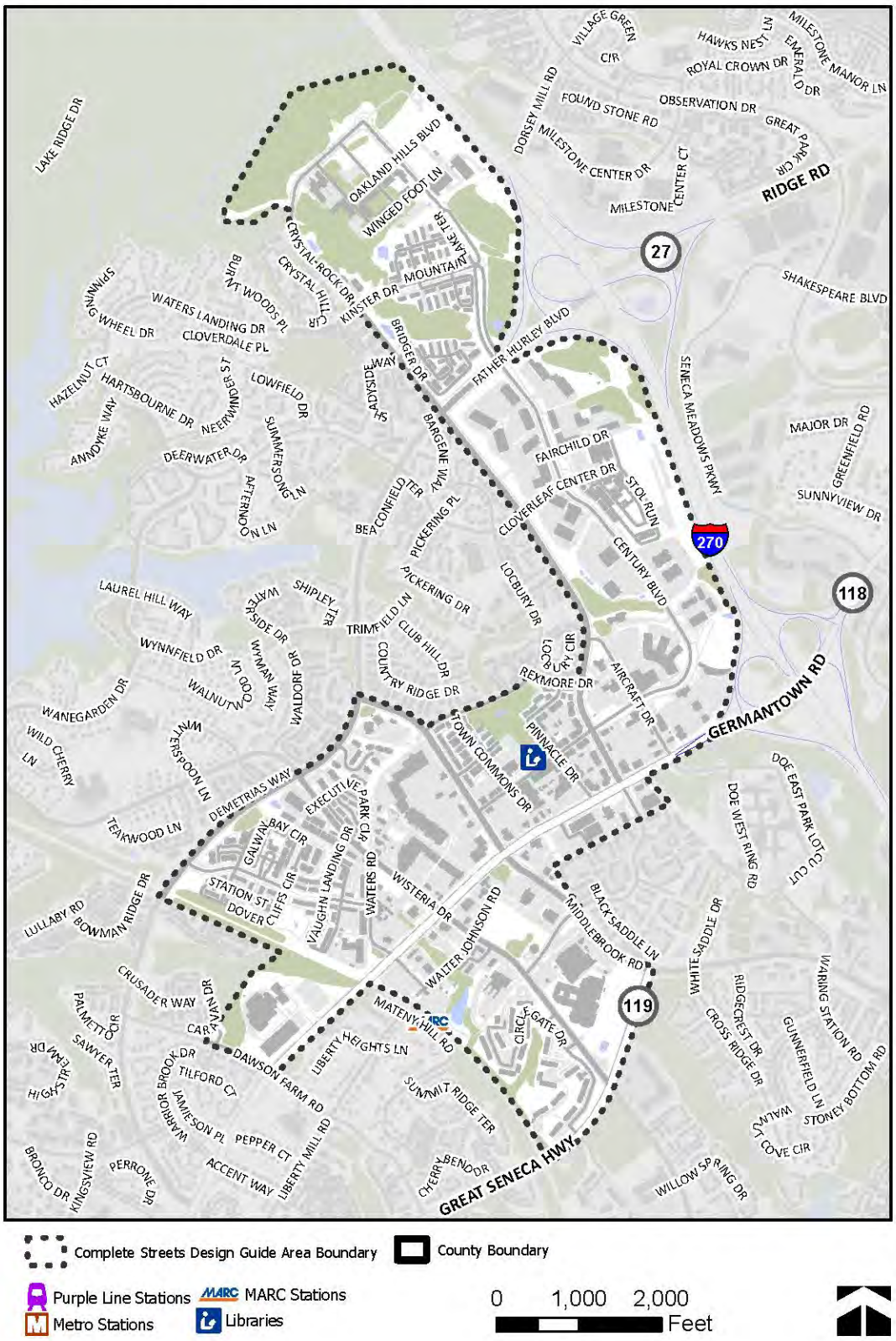
Four Corners Town Center



Foxchapel Town Center



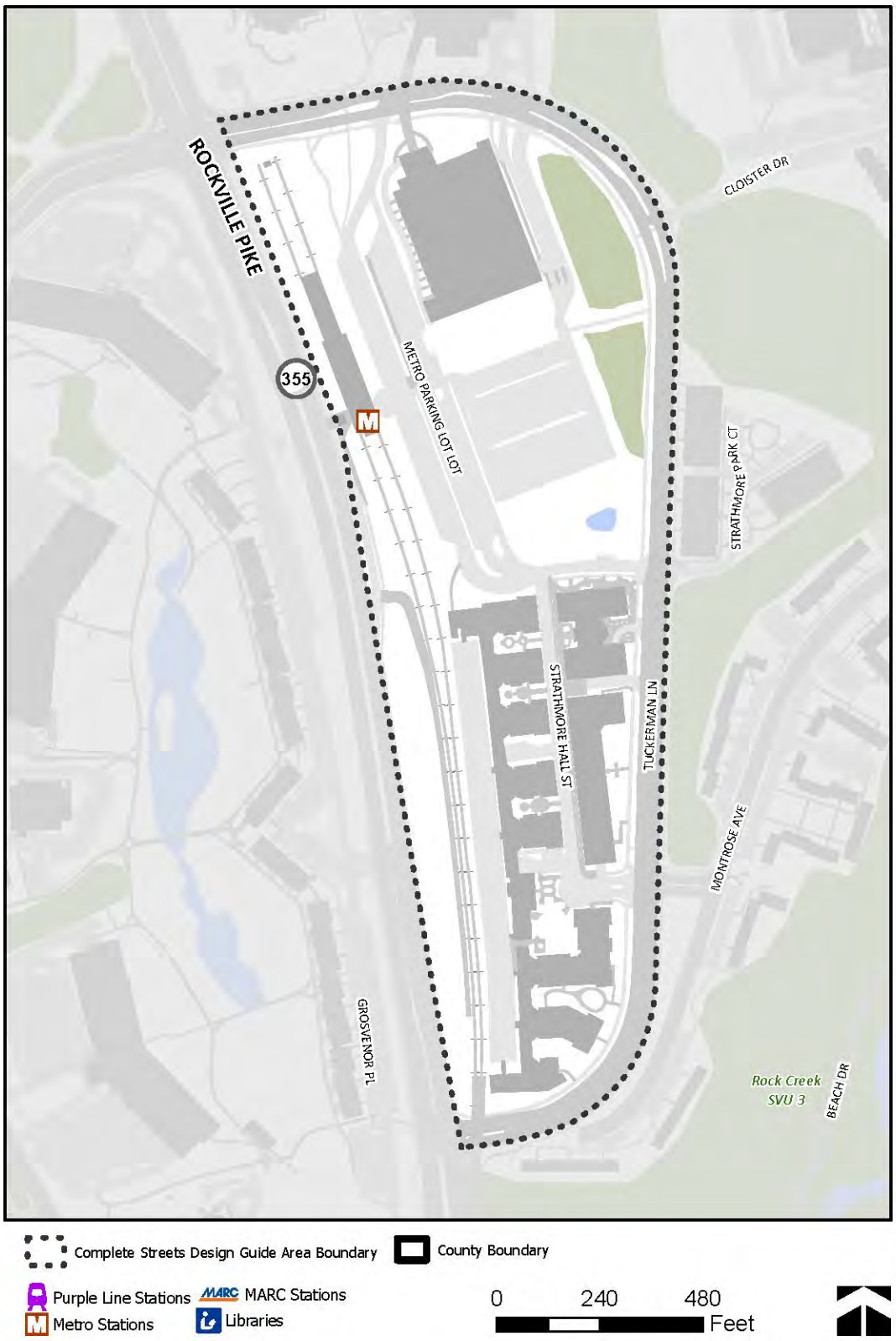
Germantown Town Center



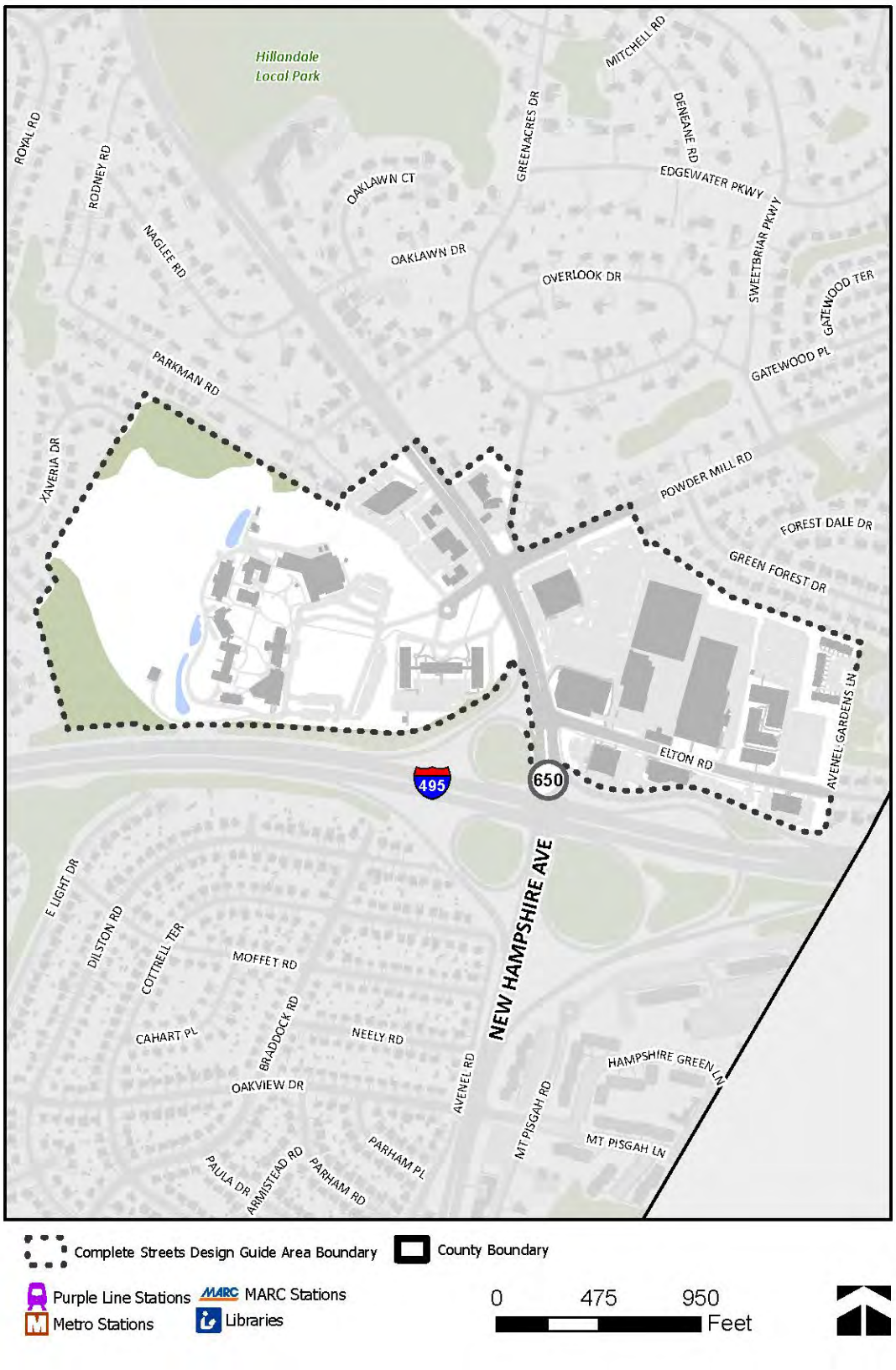
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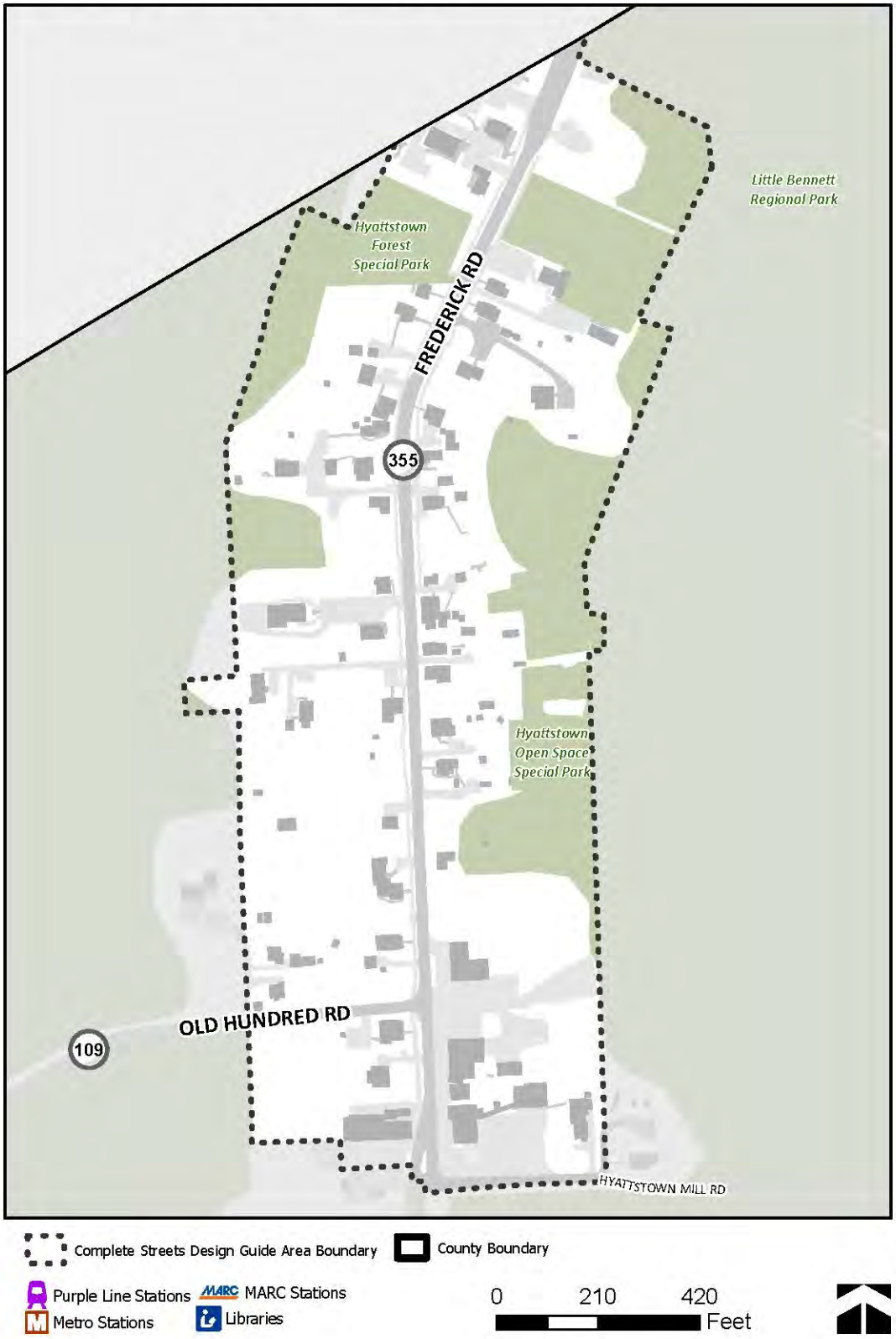
Grosvenor Town Center



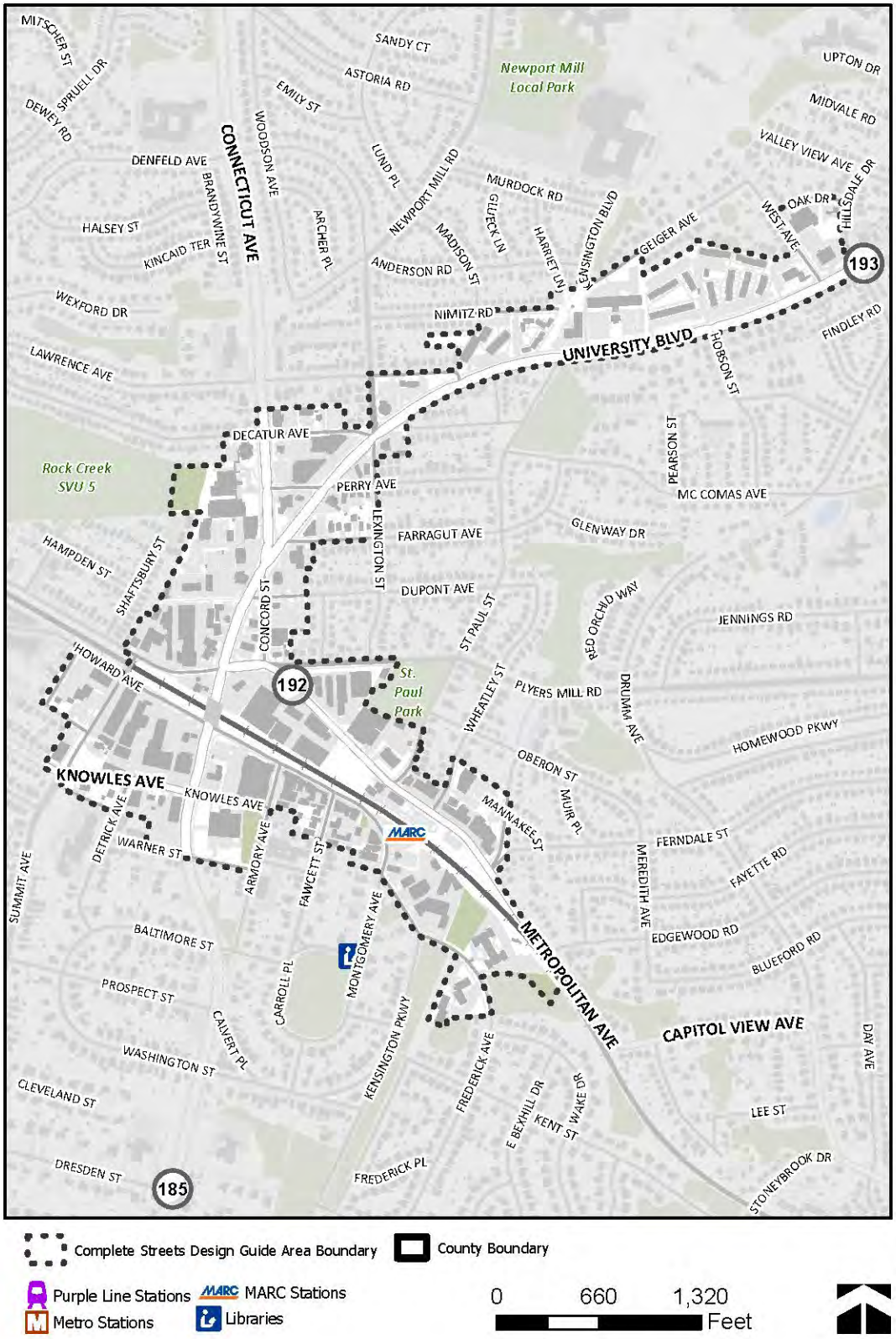
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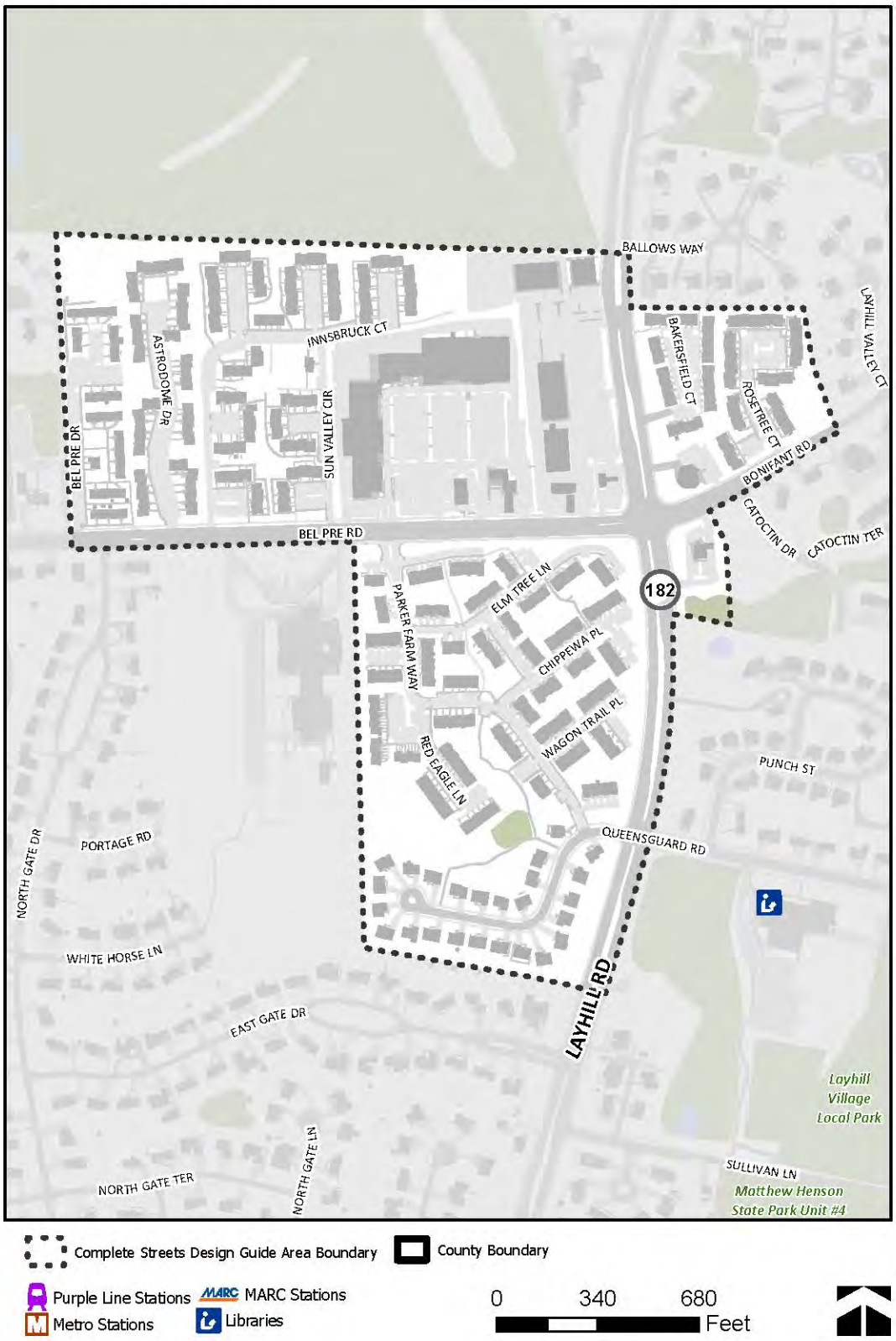
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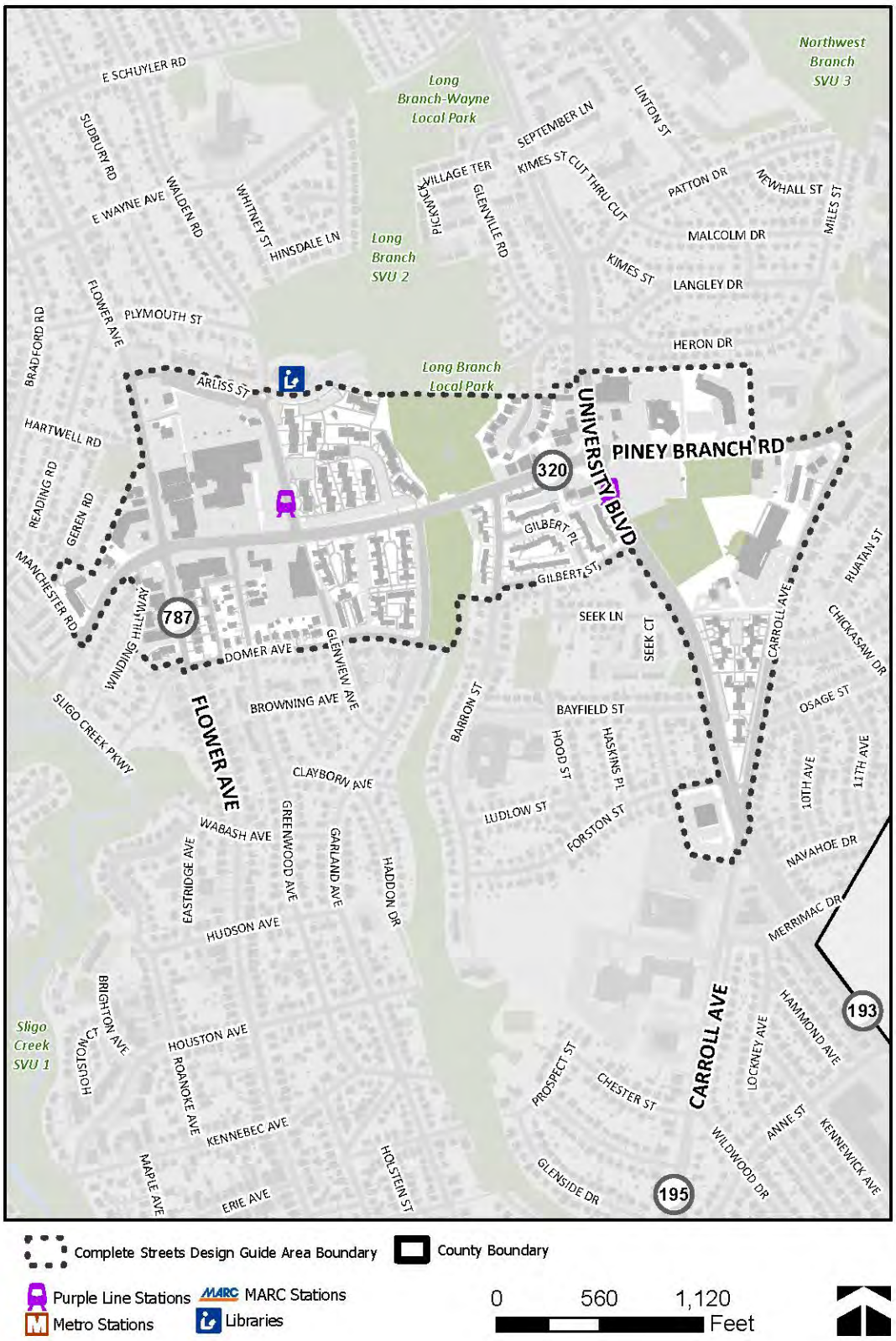
Kensington Town Center



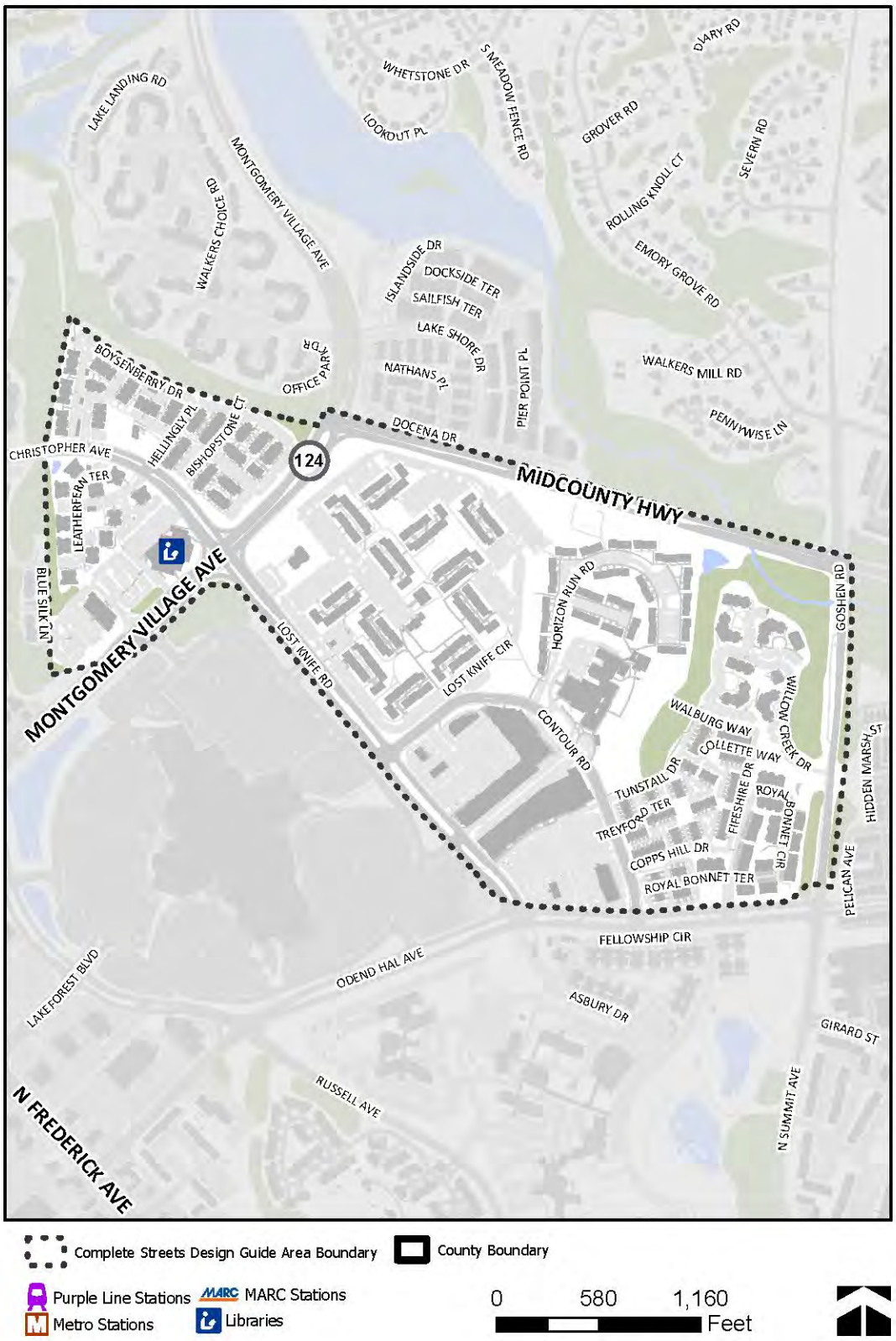
Layhill Town Center



Long Branch Town Center



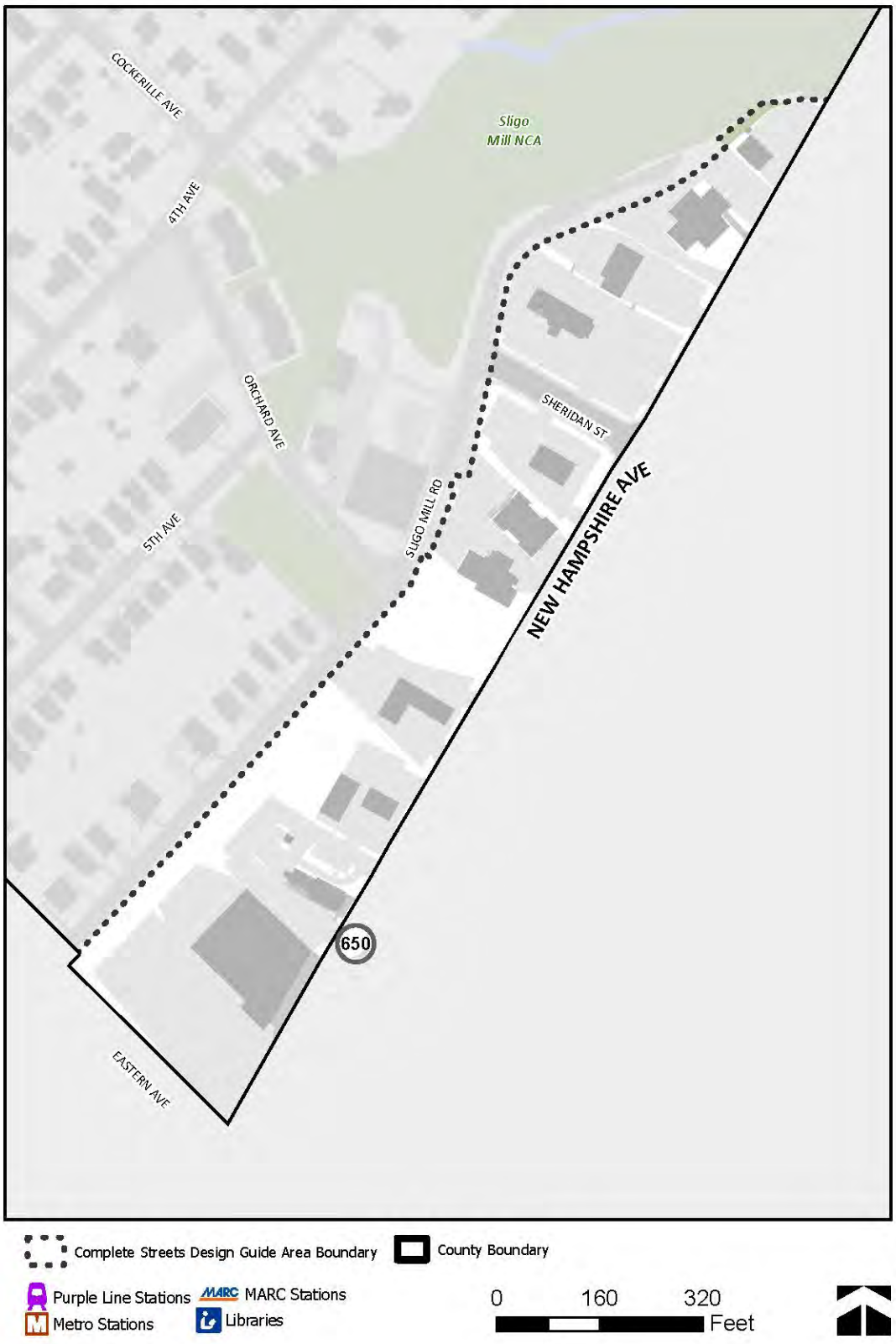
Lower Village Town Center



Lyttonsville Town Center



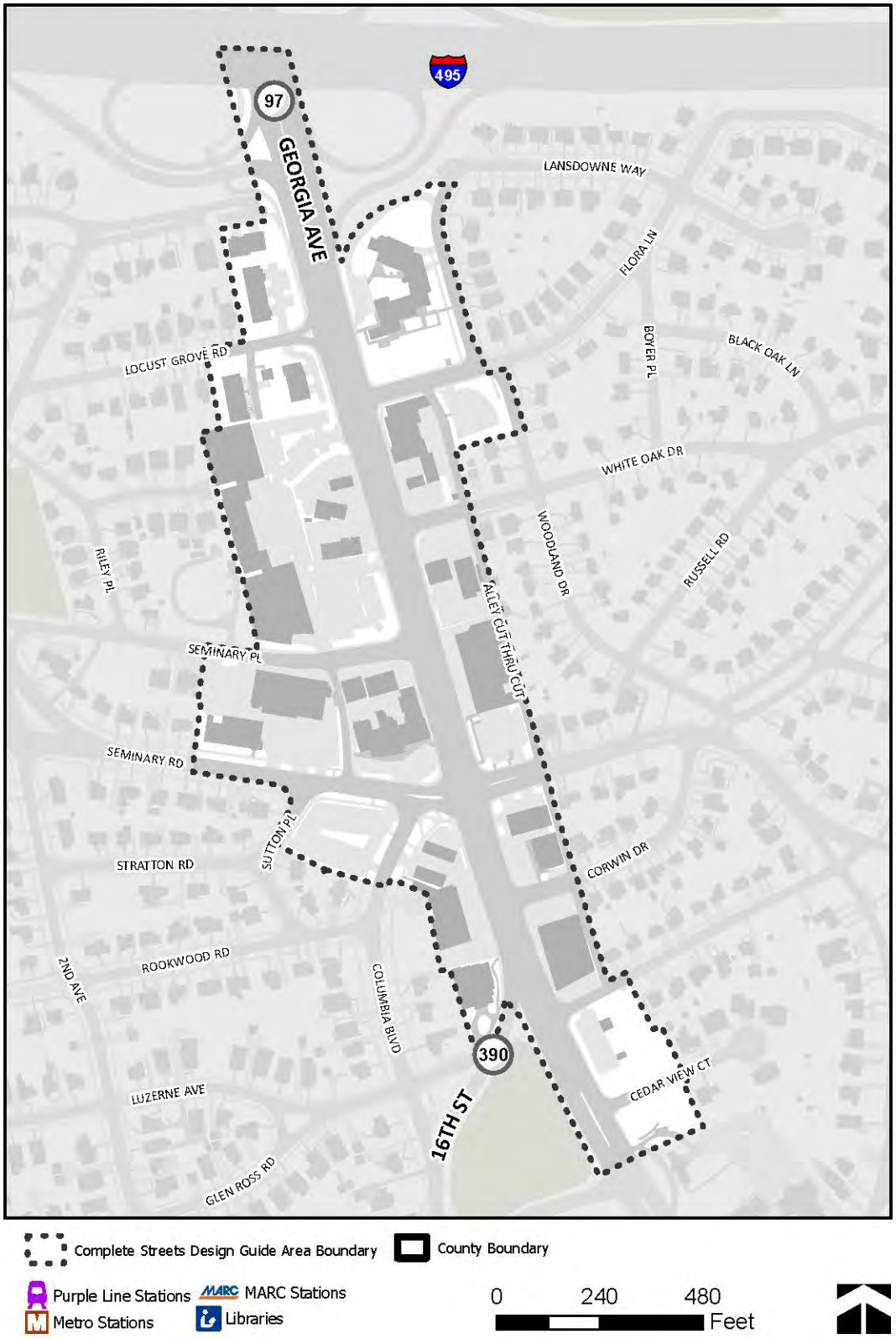
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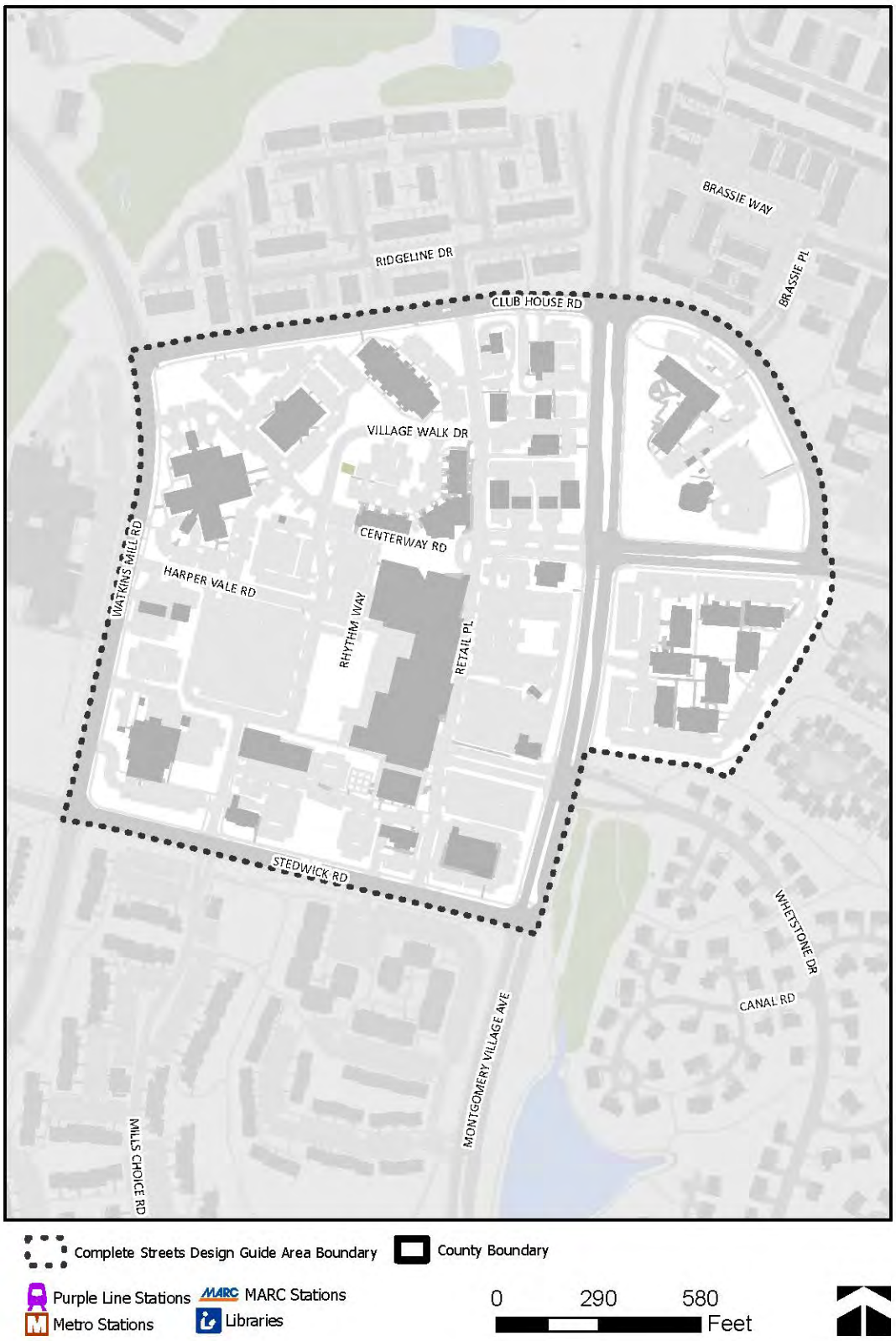
Milestone Town Center



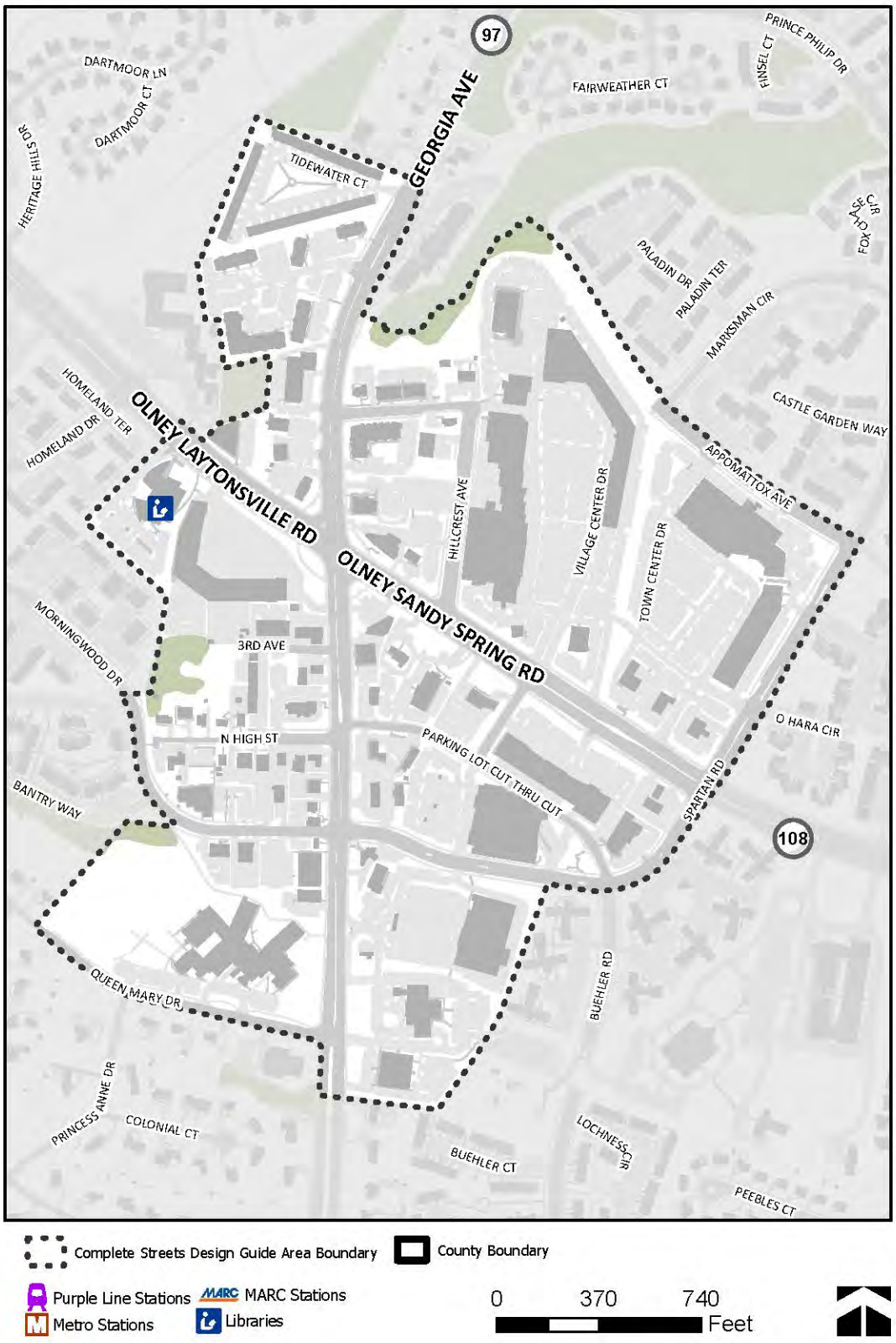
Montgomery Hills Town Center



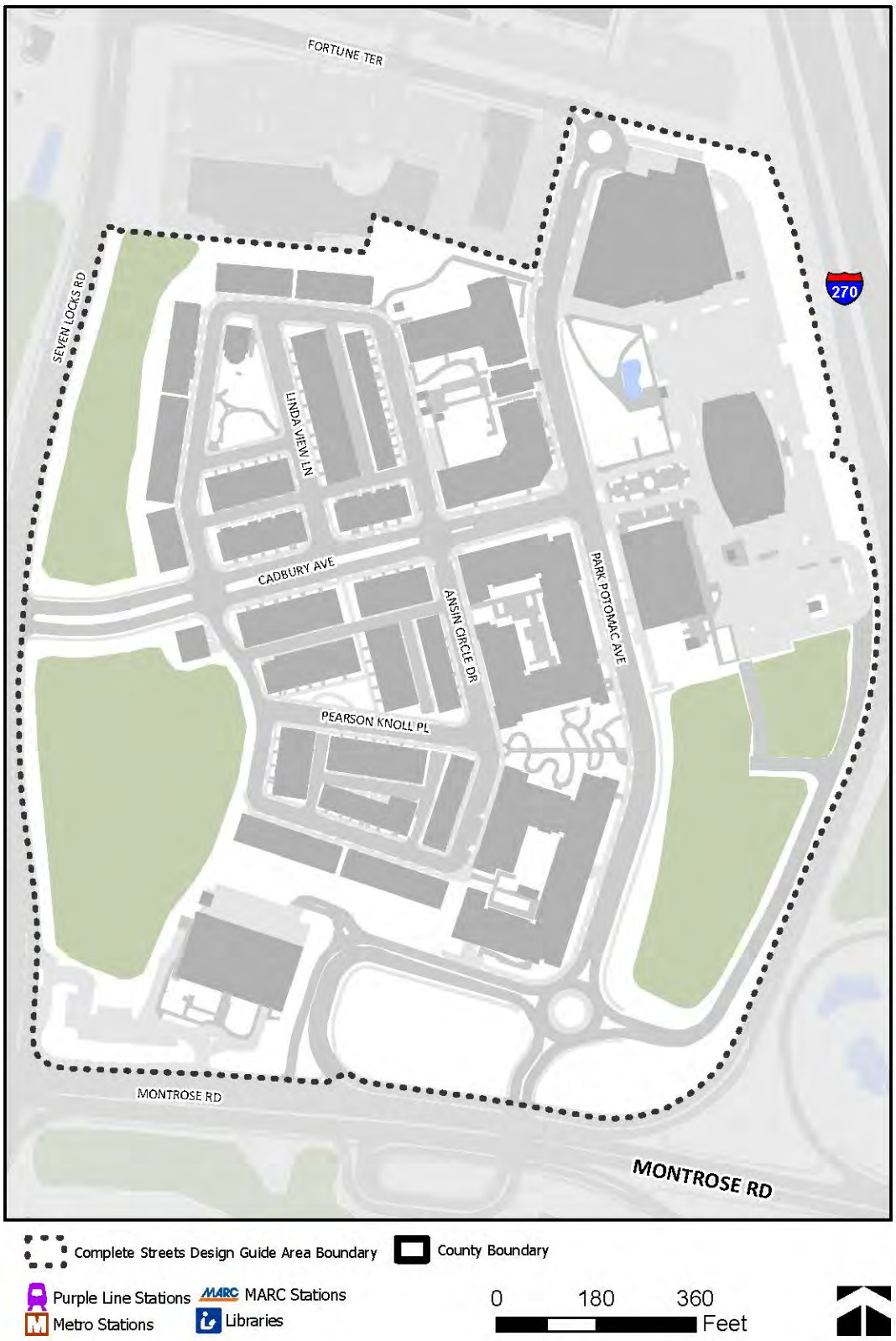
Montgomery Village Town Center



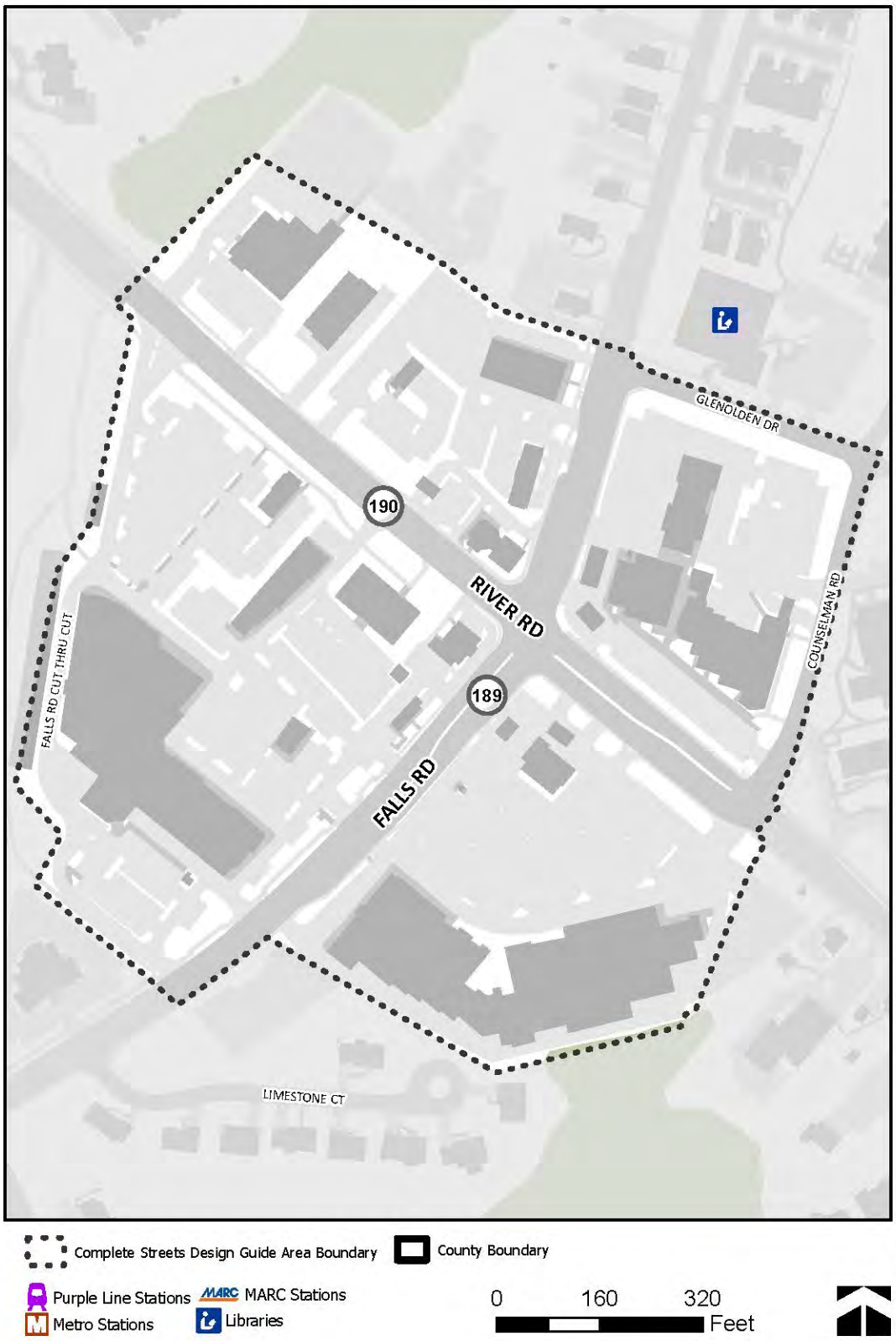
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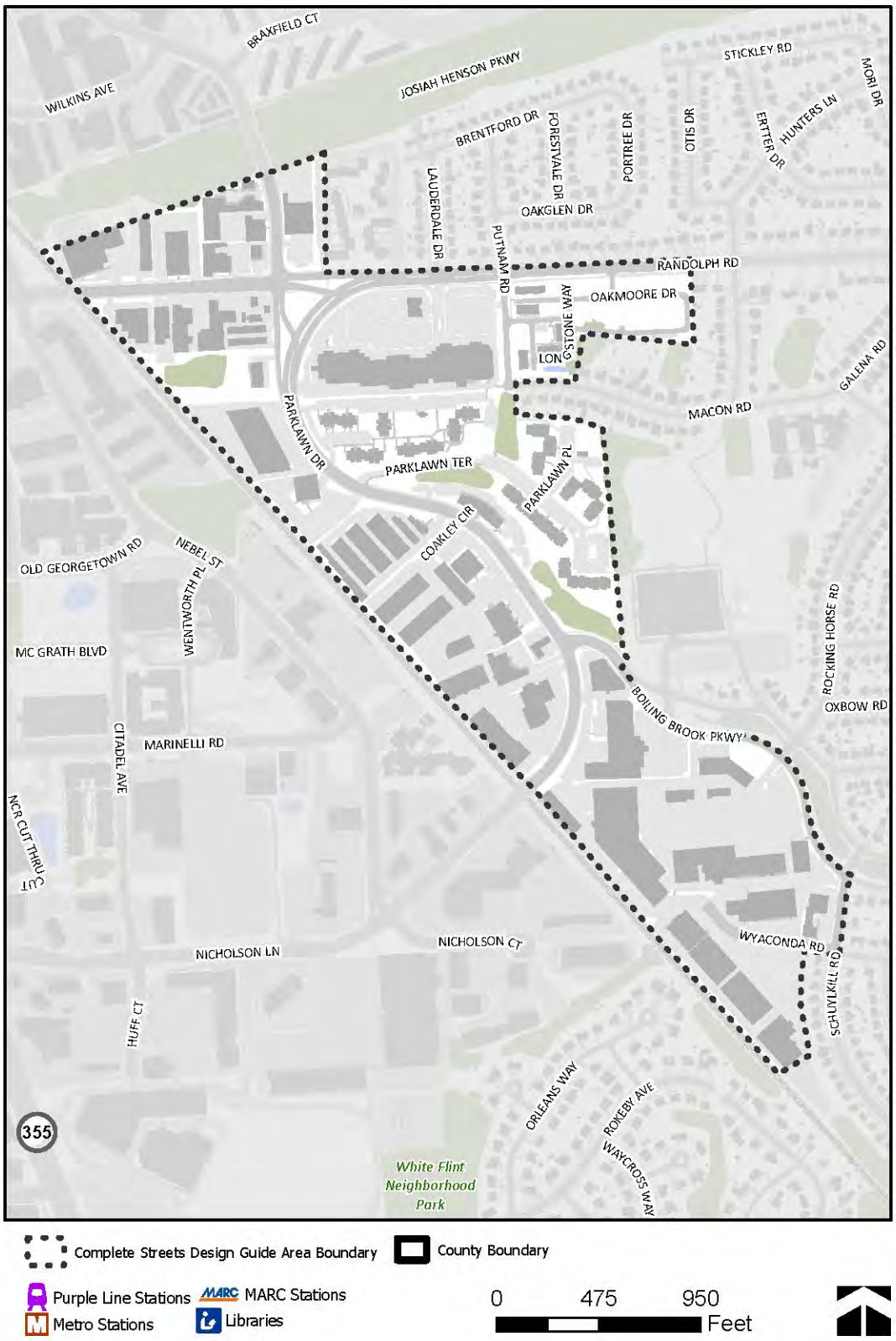
Park Potomac Town Center



Potomac Town Center



Randolph Hills Town Center



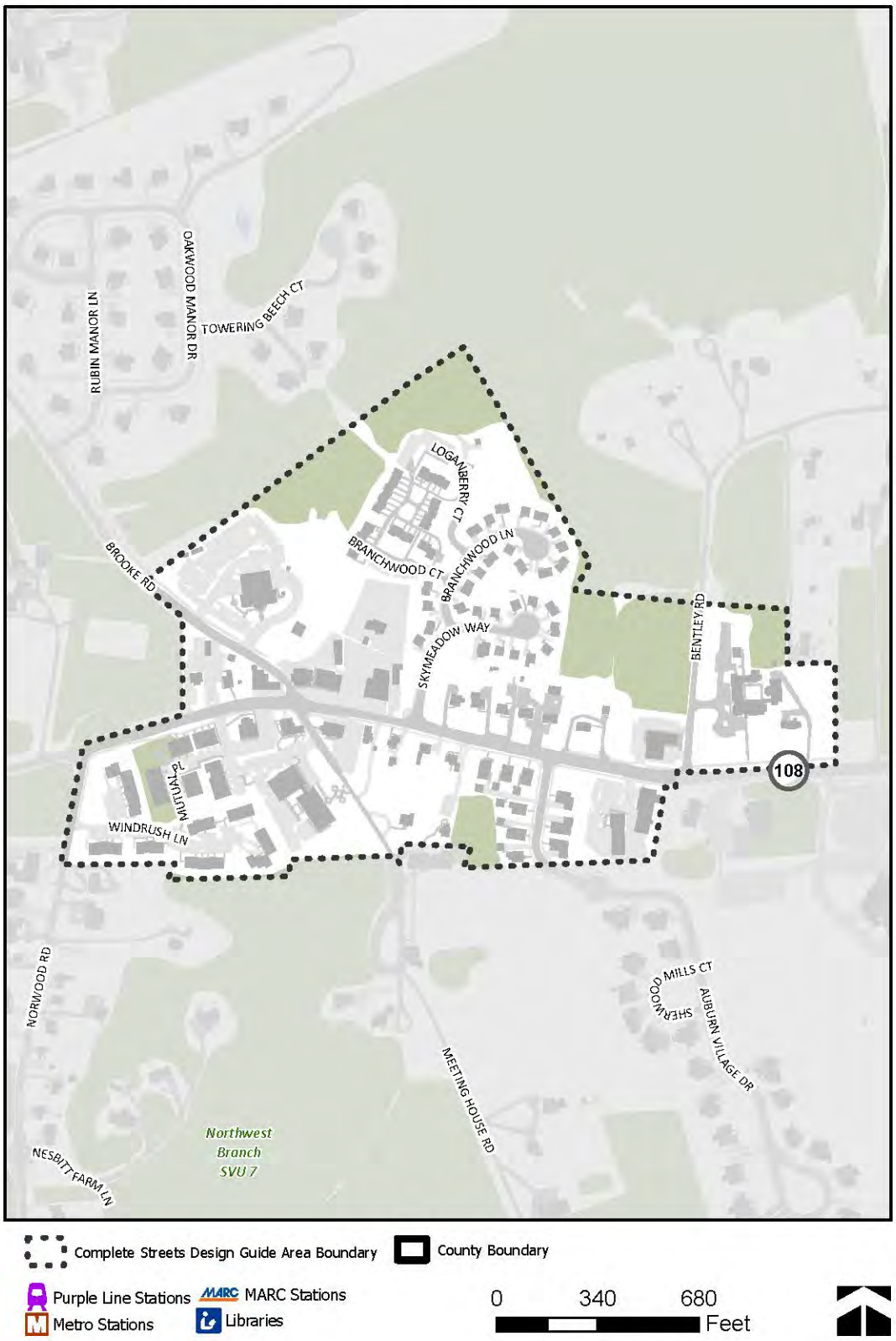
Redland Town Center



Rock Creek Village Town Center



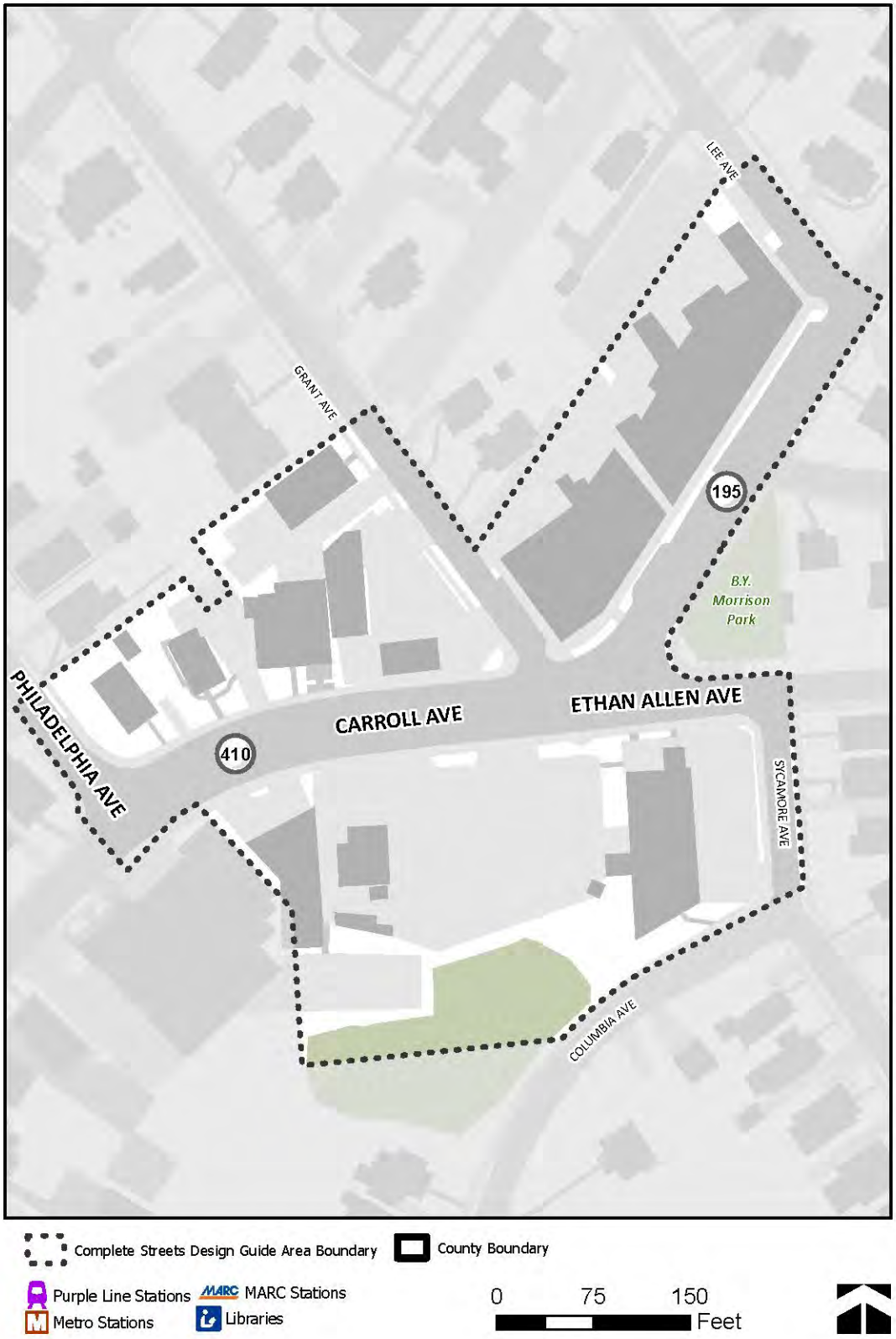
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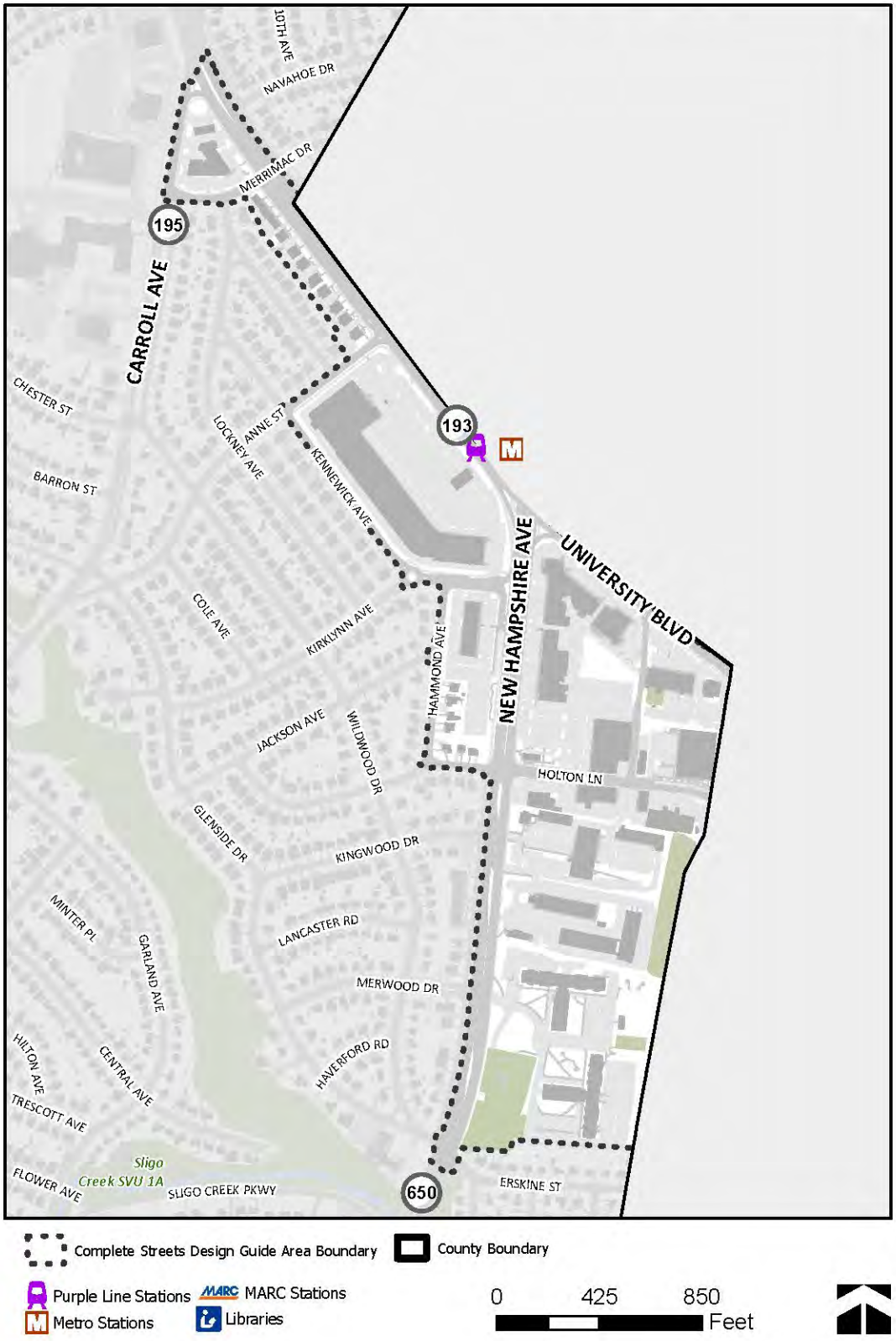
Shady Grove Town Center



Takoma Junction Town Center



Takoma Langley Crossroads Town Center



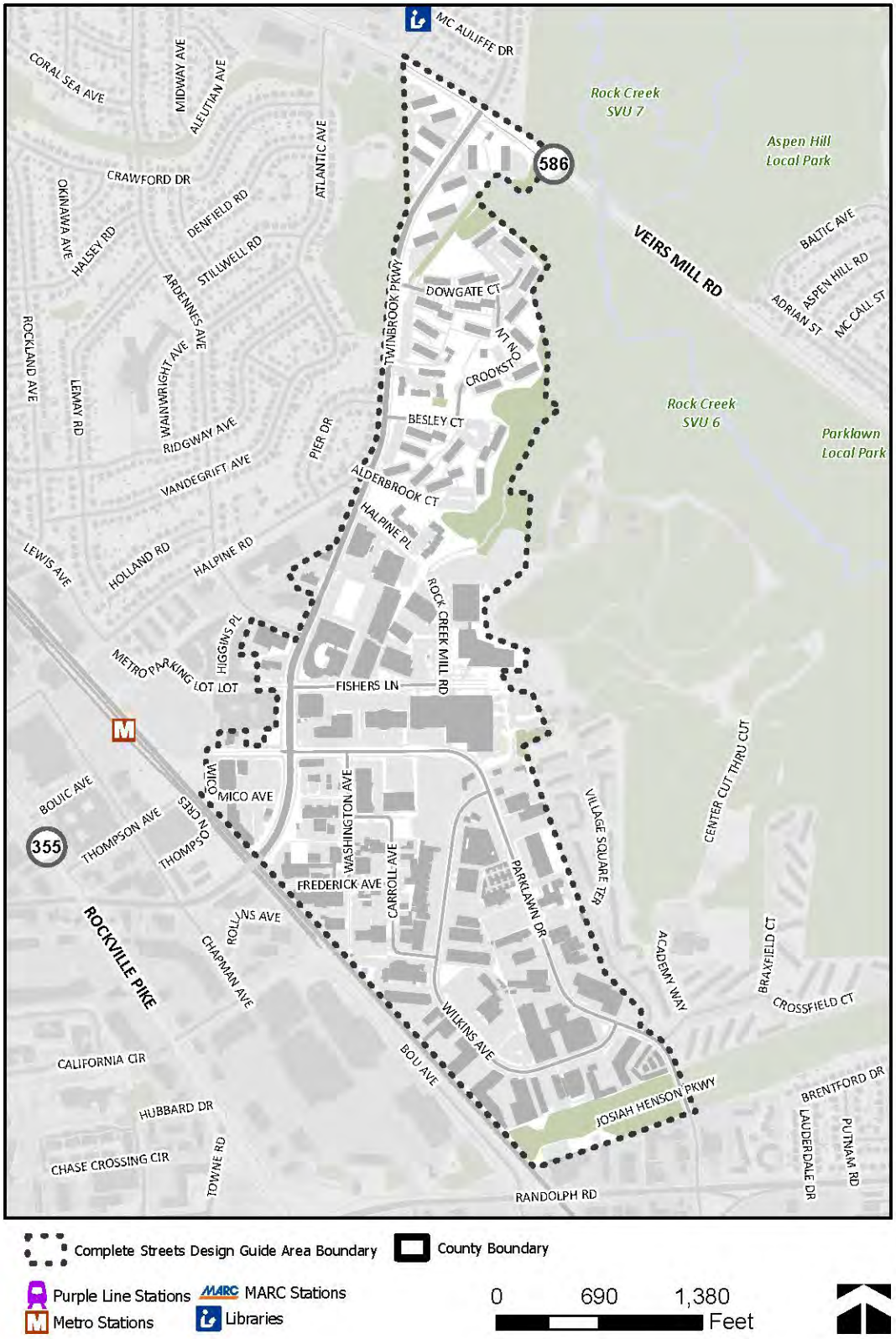
Takoma Old Town Town Center



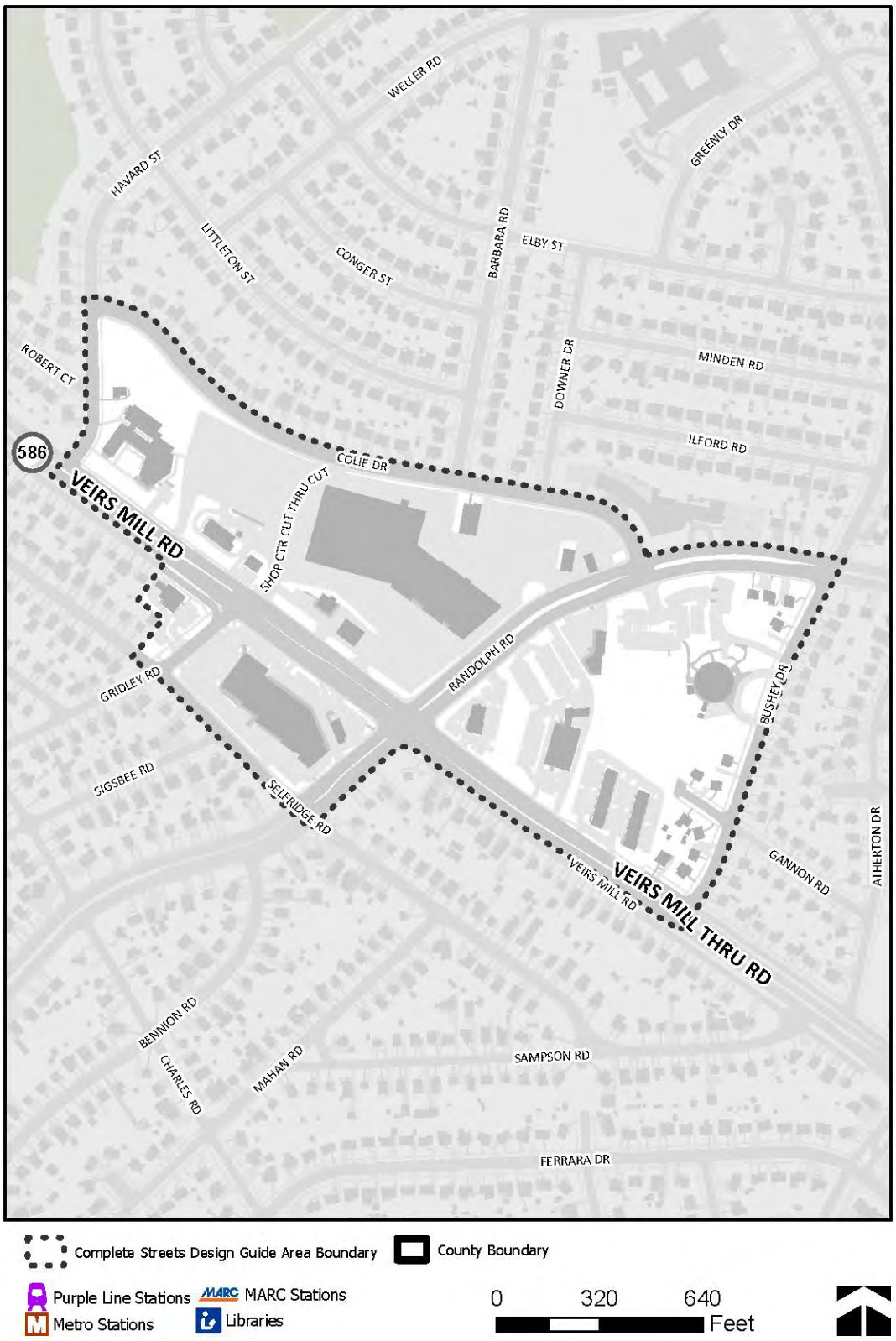
Traville / USG Town Center



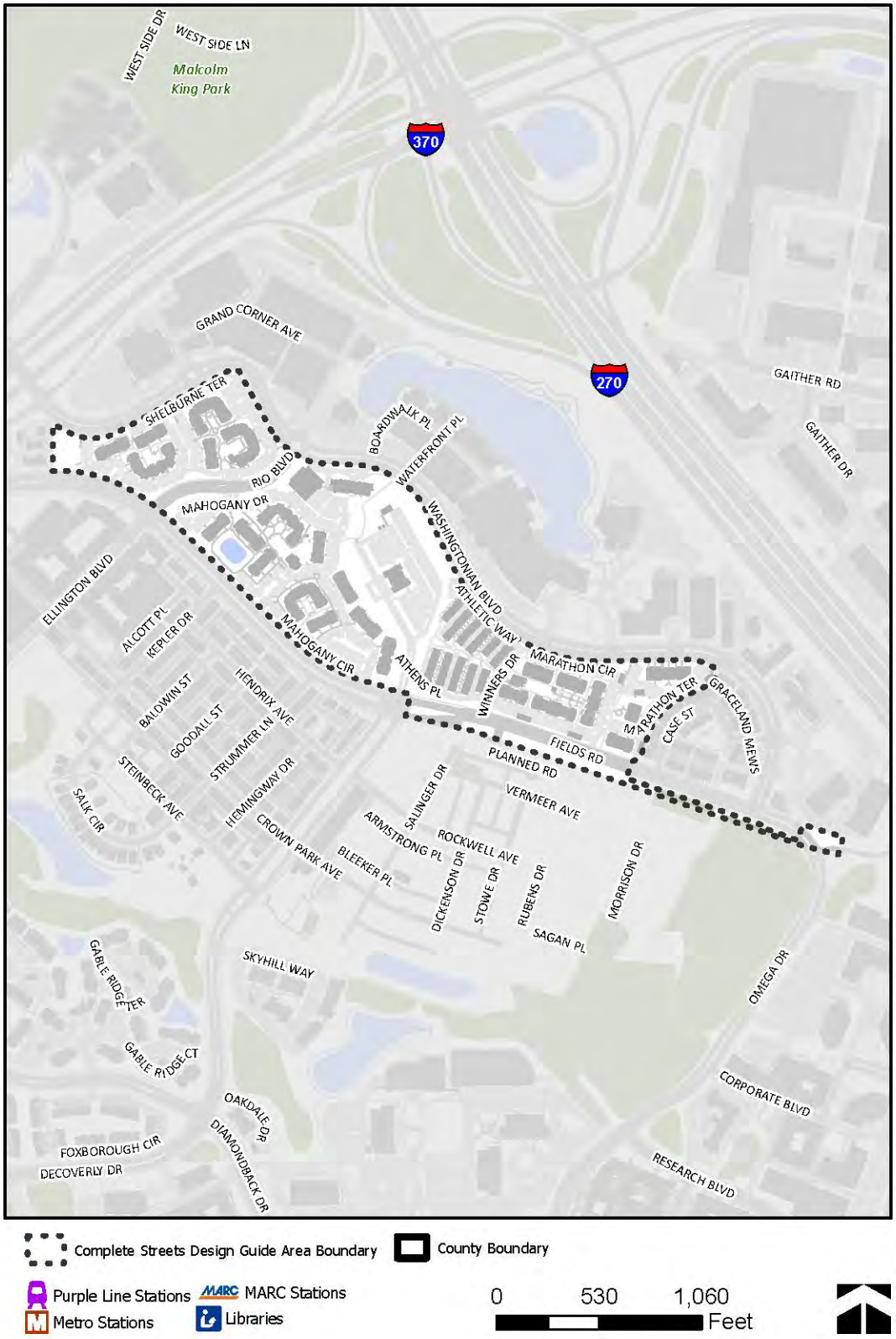
Twinbrook Town Center



Veirs Mill - Randolph Town Center



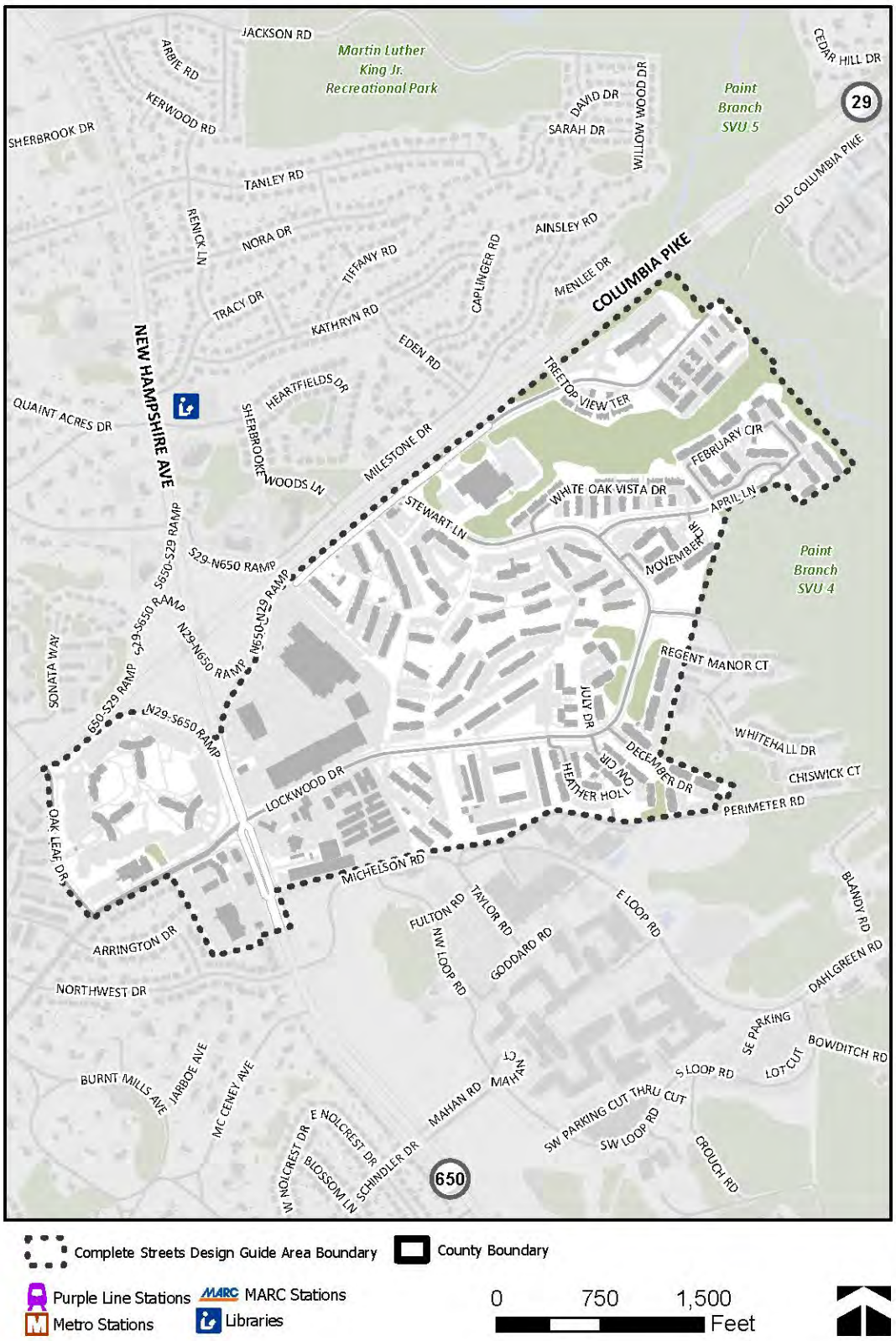
Washingtonian Town Center



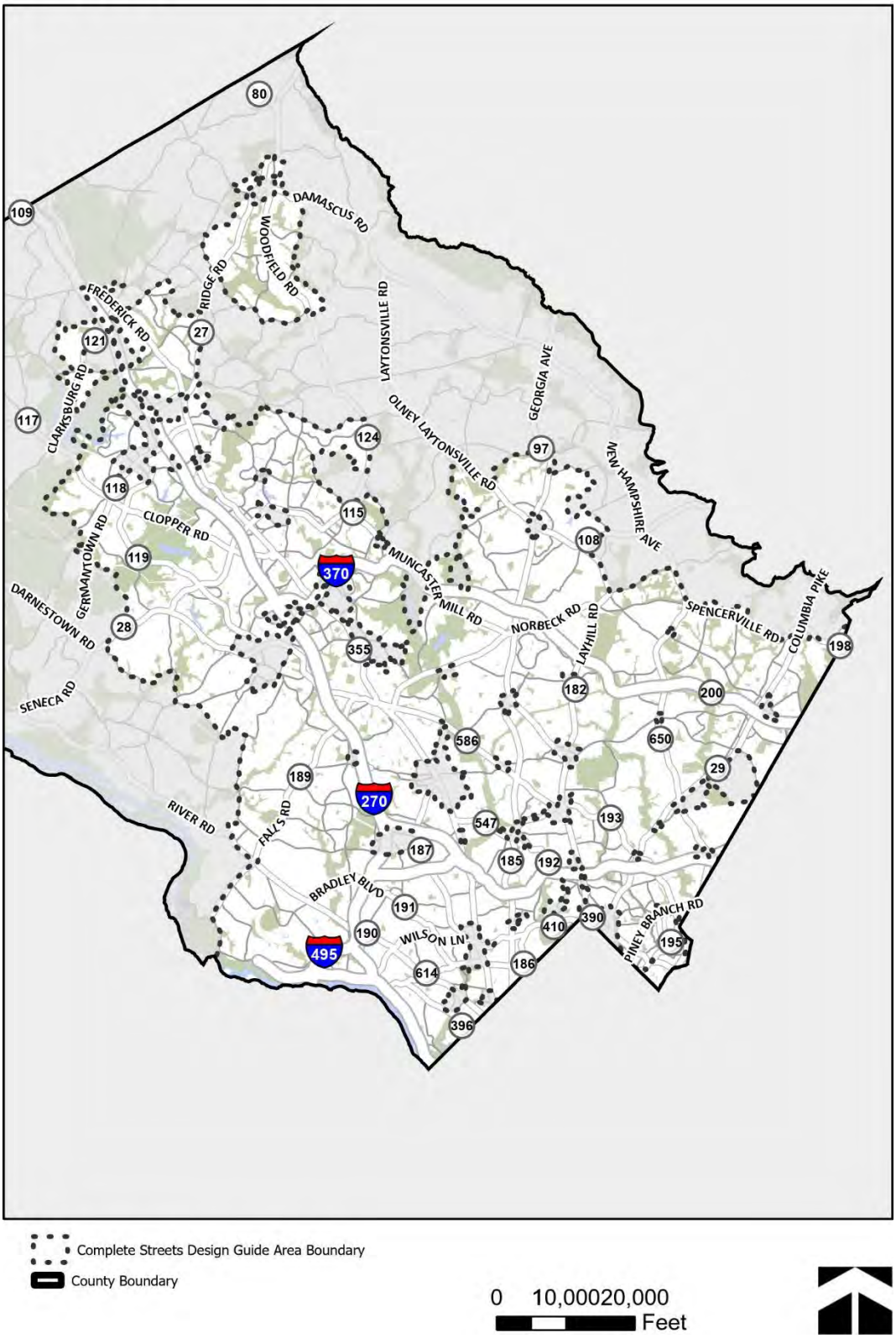
Westbard Town Center



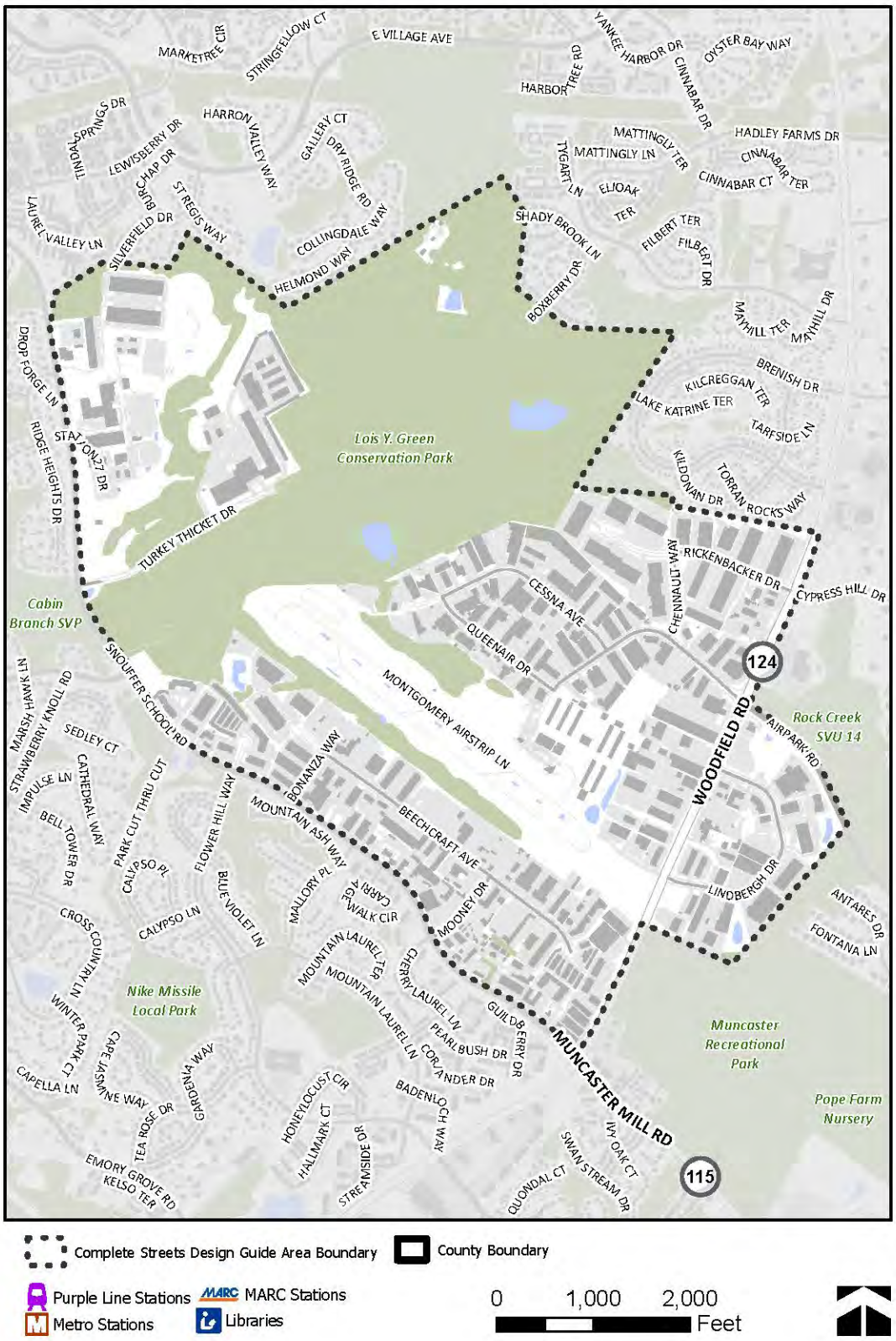
White Oak Town Center



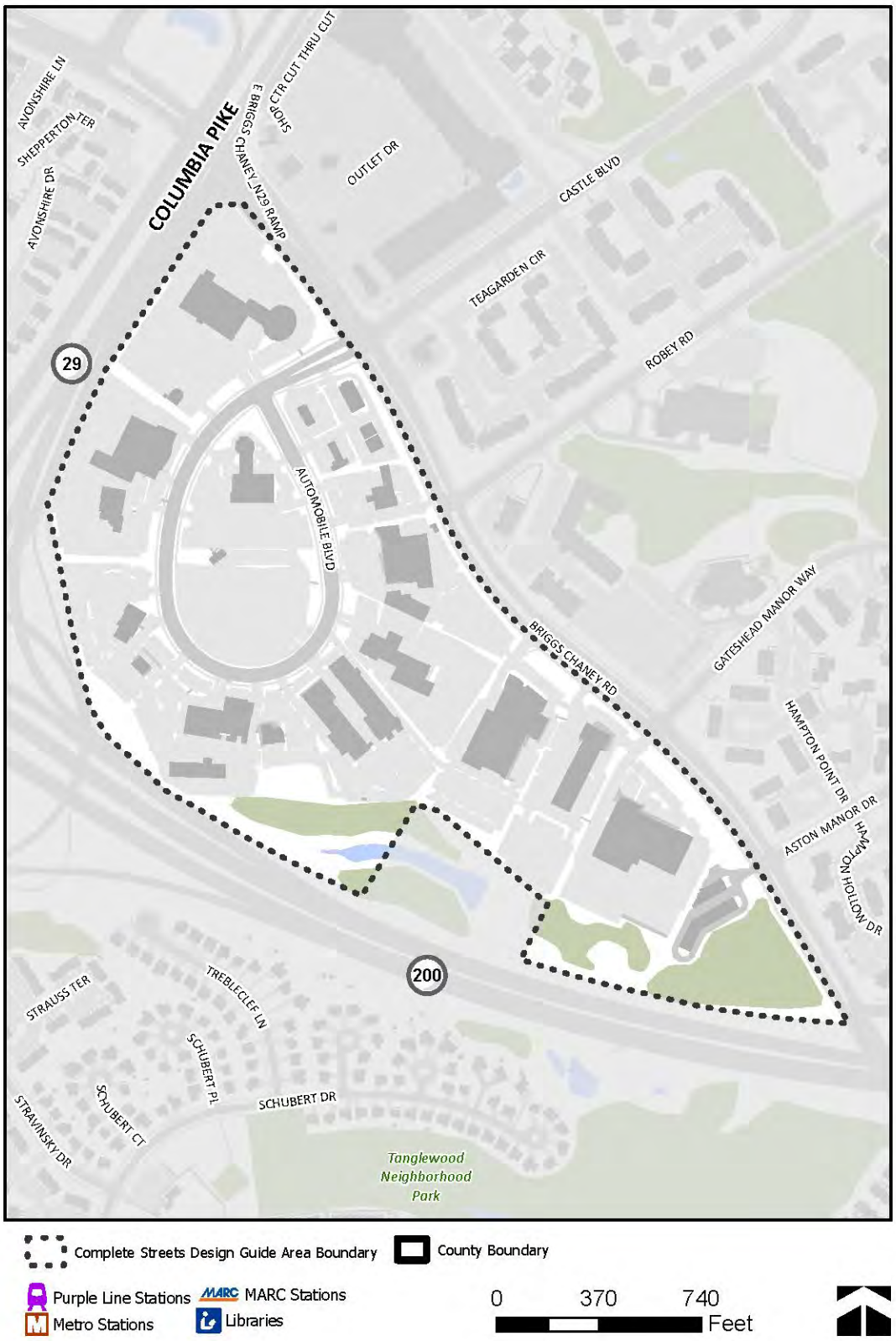
Suburban


80
109
DAMASCUS RD
WOODFIELD RD
RIDGE RD
FREDERICK RD
121
27
LAYTONSVILLE RD
GEORGIA AVE
CLARKSBURG RD
117
OLNEY LAYTONSVILLE RD
124
97
NEW HAMPSHIRE AVE
118
CLOPPER RD
115
108
GERMANTOWN RD
119
MUNCASTER MILL RD
370
DARNESTOWN RD
NORBECK RD
LAYHILL RD
SPENCERVILLE RD
COLUMBIA PIKE
28
355
198
SENECA RD
182
200
586
650
189
29
270
RIVER RD
FALLS RD
547
193
187
185
192
BRADLEY BLVD
191
WILSON LN
410
390
PINEY BRANCH RD
190
195
495
614
186
396
Complete Streets Design Guide Area Boundary
County Boundary
0 10,00020,000
Feet

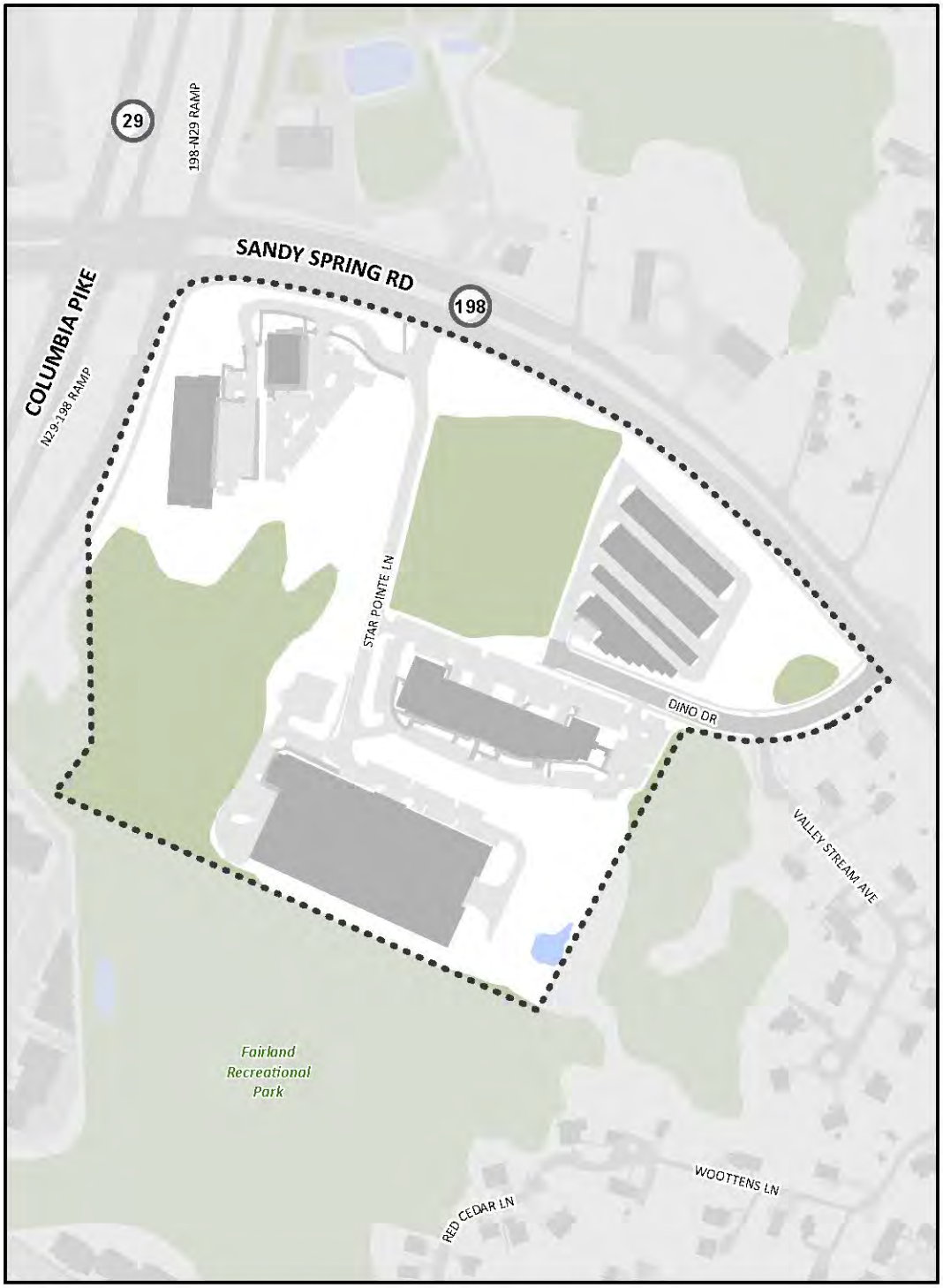
Airpark Industrial Area



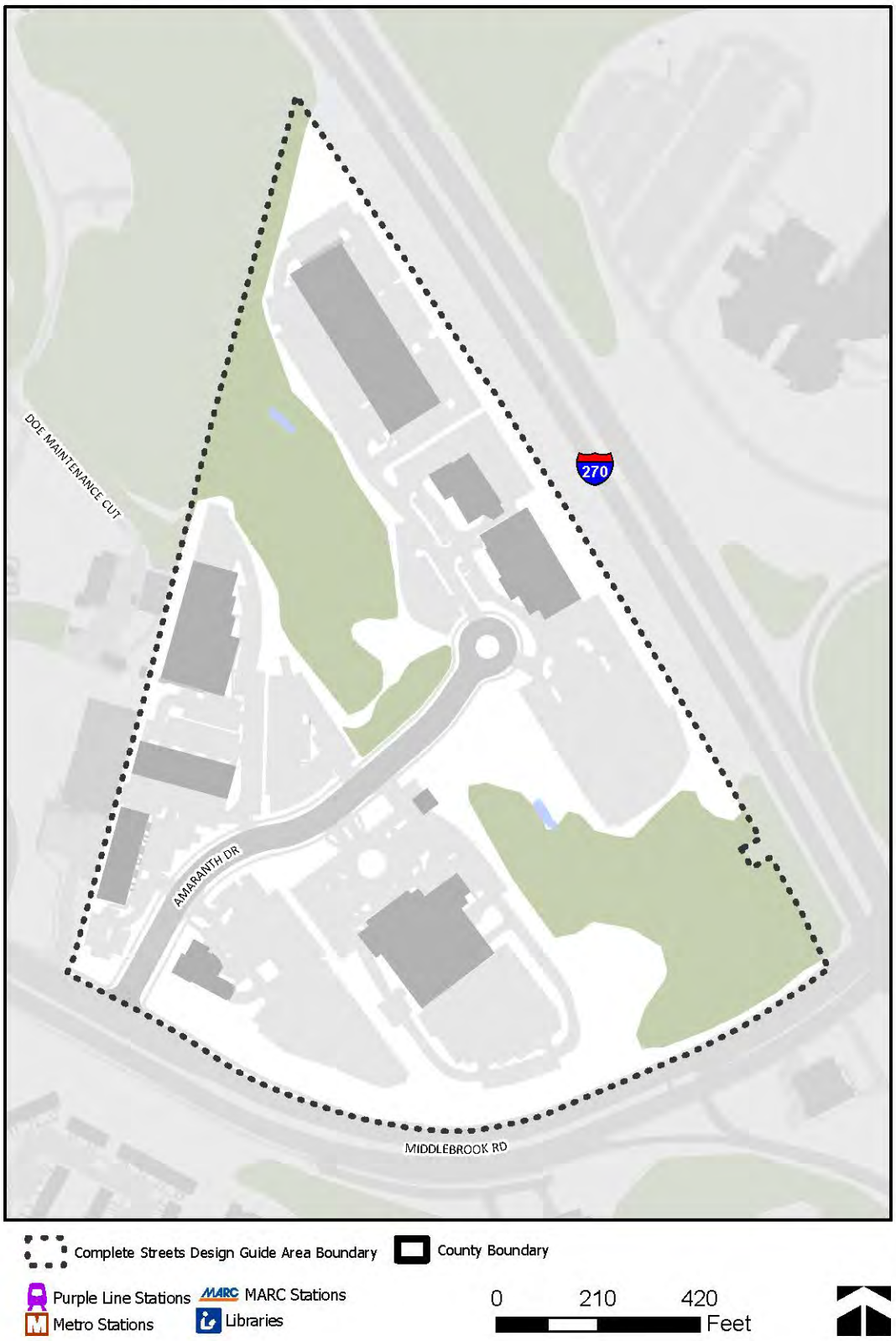
Briggs Chaney Industrial Area



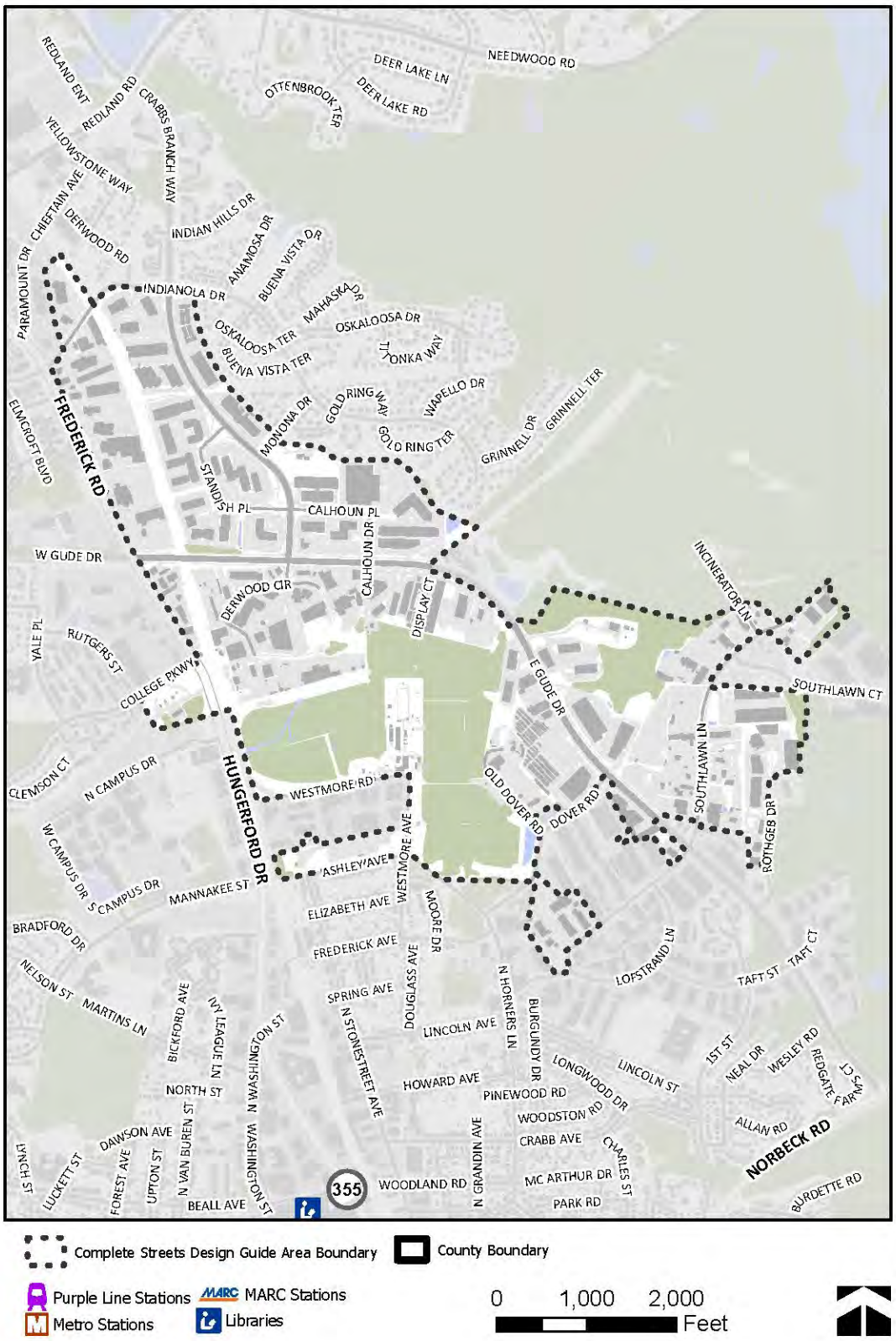
Burtonsville Industrial Area



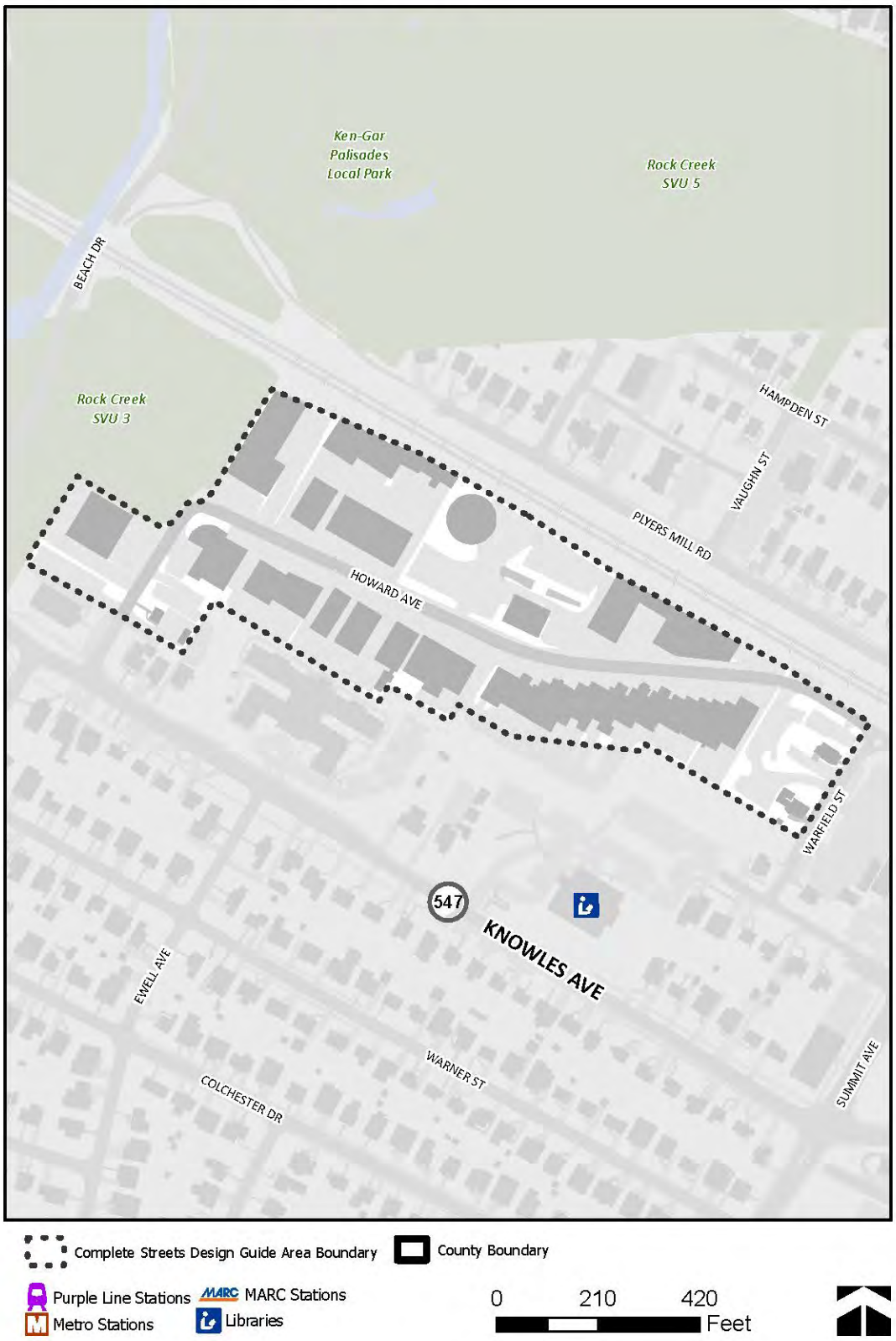
Germantown Industrial Area



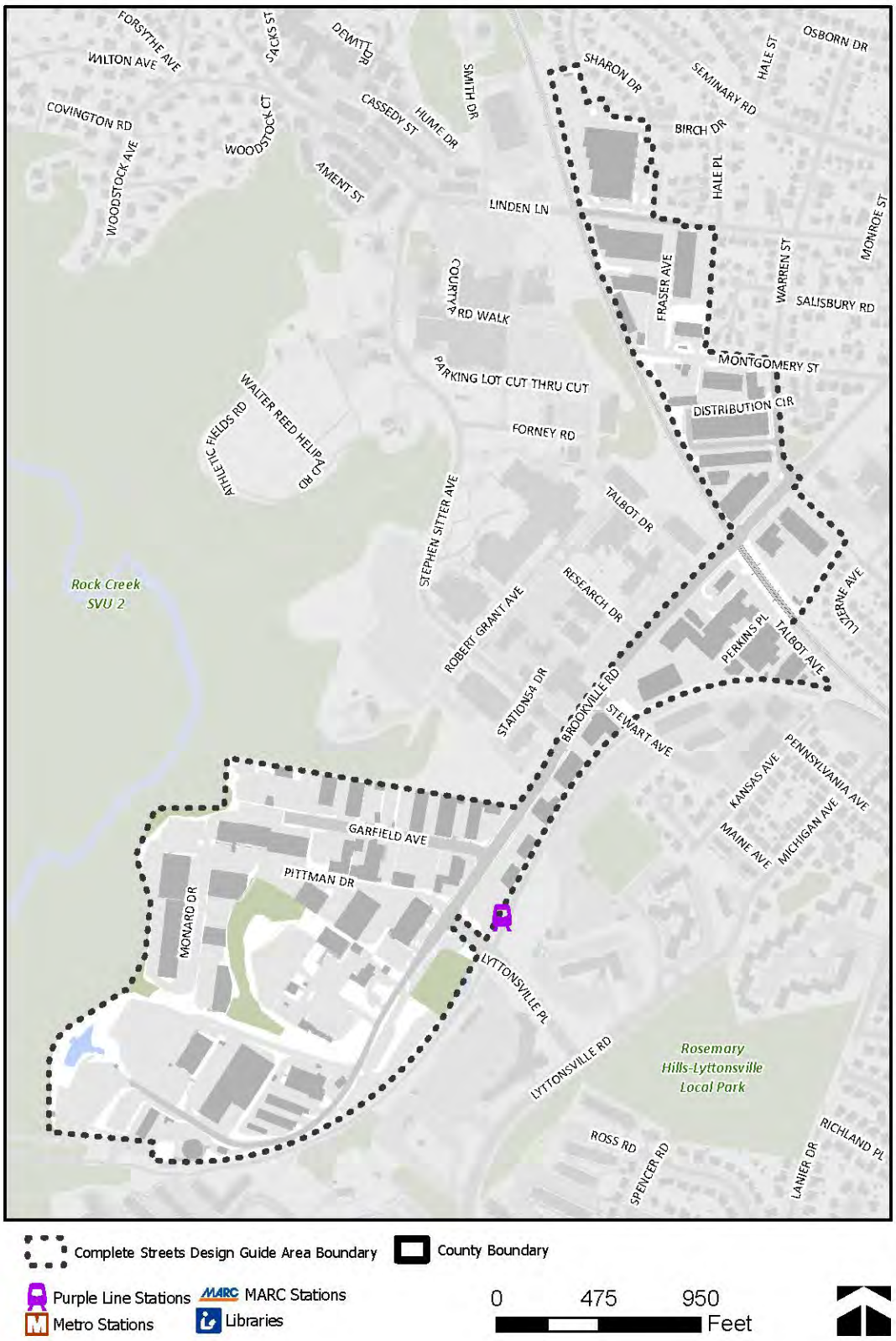
Gude Drive Industrial Area



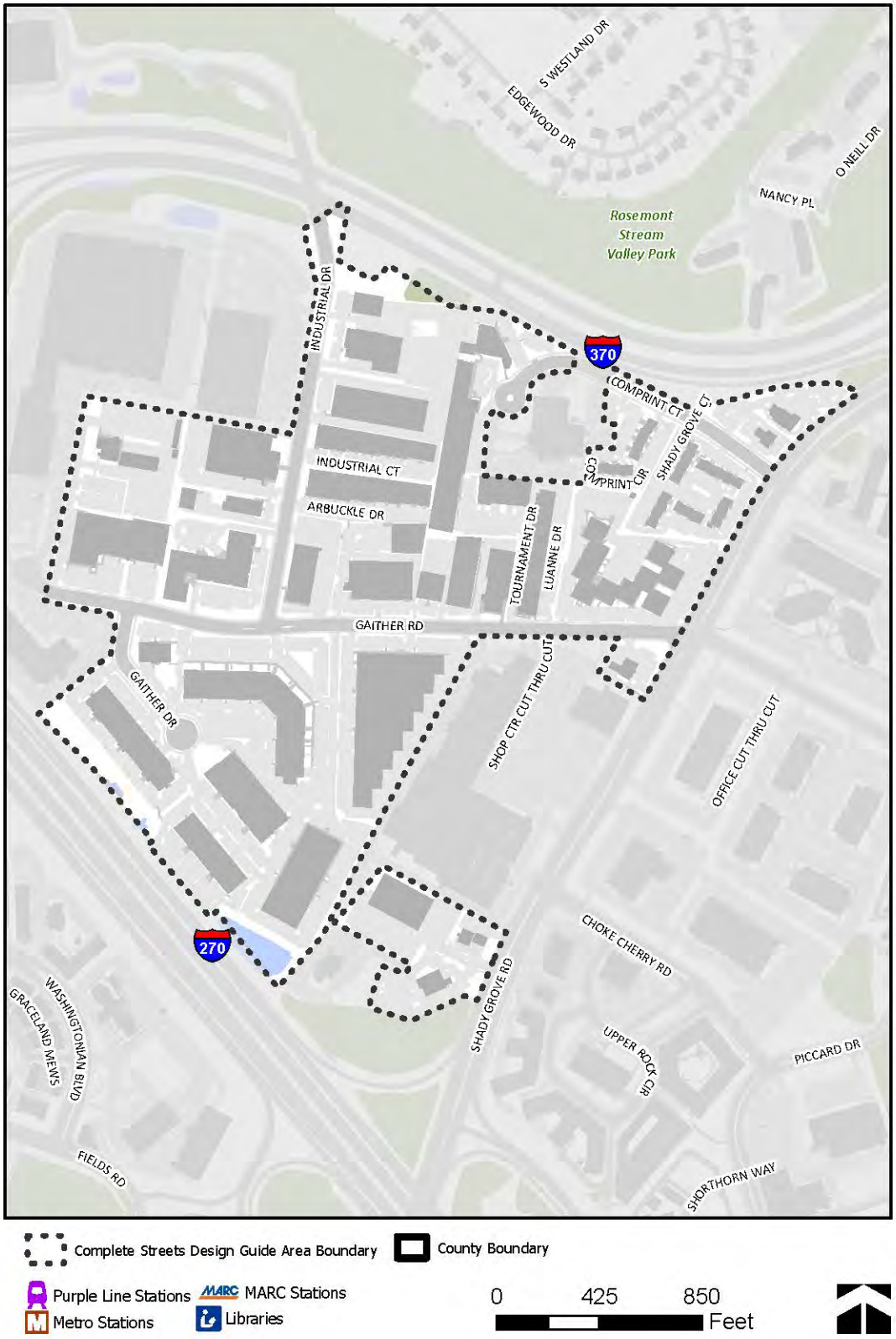
Kensington Industrial Area



Lyttonsville Industrial Area



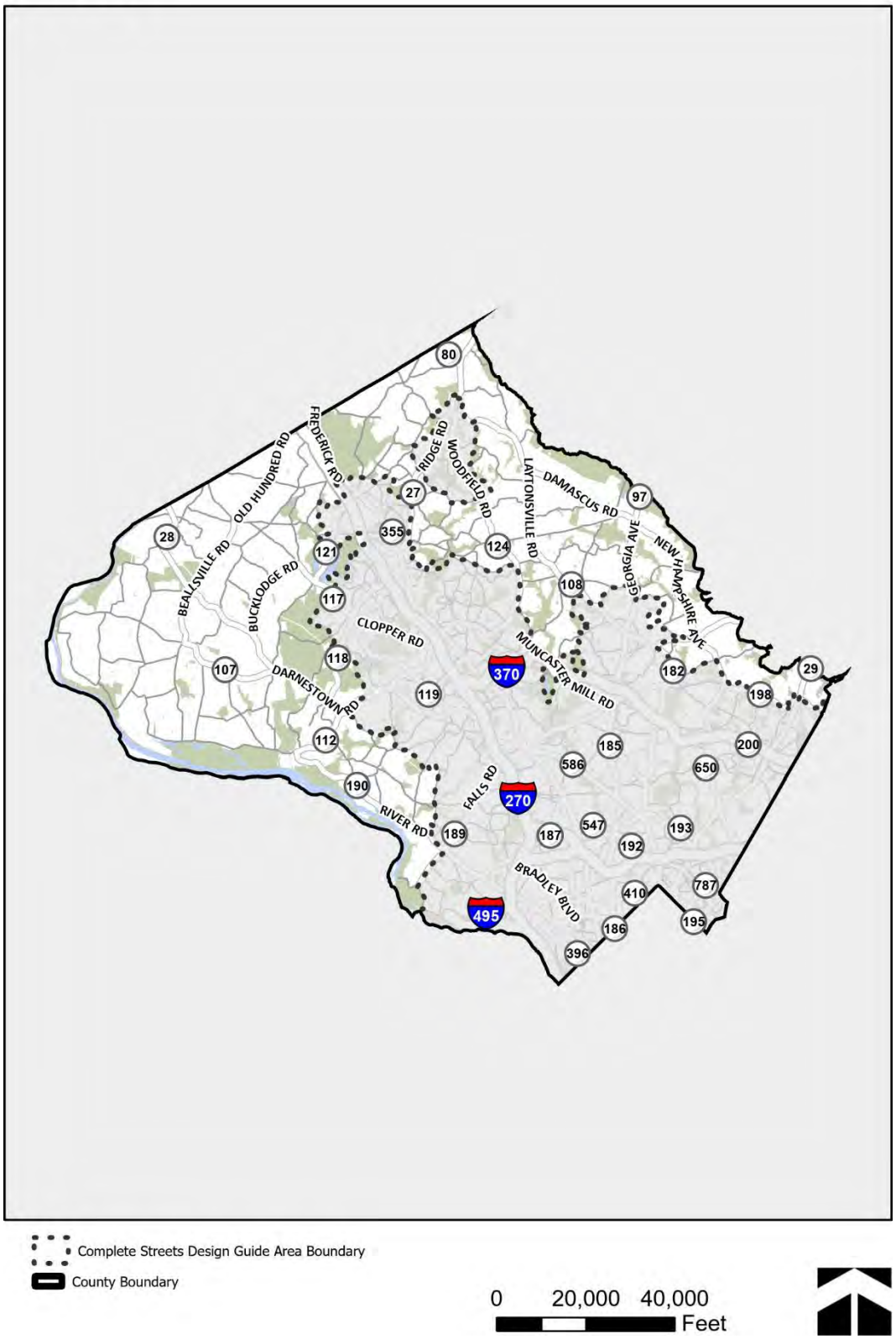
Shady Grove 1 Industrial Area



Shady Grove 2 Industrial Area



Country


80
FREDERICK RD
OLD HUNDRED RD
RIDGE RD
WOODFIELD RD
LAYTONSVILLE RD
DAMASCUS RD
97
27
28
355
124
BEALLSVILLE RD
BUCKLODGE RD
121
117
CLOPPER RD
108
GEORGIA AVE
NEW HAMPSHIRE AVE
MUNCASTER MILL RD
370
107
118
DARNESTOWN RD
119
182
29
198
112
185
200
586
650
190
FALLS RD
270
RIVER RD
189
187
547
193
192
BRADLEY BLVD
410
787
495
186
195
396
Complete Streets Design Guide Area Boundary
County Boundary
0
20,000
40,000
Feet

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Pedestrian Infrastructure Recommendations

In addition to identifying broadly where pedestrian safety and connectivity investments should go, the Pedestrian Master Plan makes limited recommendations for specific connections: pedestrian shortcuts and country sidepaths. This plan's specific pedestrian network recommendations are minimal because the county's CSDG requires the provision of pedestrian pathways along the majority of street types in Montgomery County so individual pathways along streets do not need to be specifically recommended. Additionally, the CSDG identifies the need for sidepaths (wider shared pedestrian and bicycle pathways) along Country Connectors and Country Roads. The Pedestrian Master Plan identifies a network of these important connections.

Pedestrian Shortcuts

A Pedestrian Shortcut is an informal pedestrian connection not along a street that provides a more direct pedestrian route than the sidewalk and trail network. Also known as a "people's choice path," a "desire line" or a "goat path," an existing pedestrian shortcut may look like trodden grass, dirt, gravel, or pavement that has fallen into disrepair. These connections are not currently sidewalks or trails, but provide important, time-saving benefits for pedestrians interested in making direct trips to local destinations. Many people use these connections daily to run errands, get to work or school, connect to public transportation, and exercise. This section recommends master-planning a network of pedestrian shortcuts so they can be improved through public capital projects and private development. As sidewalks, trails, and other appropriate facilities are built along these connections, more people will be able to safely walk using the most direct route. To the extent practicable, a 20-foot right-of-way dedication should be provided for those pedestrian shortcuts not already located in a public right-of-way. These connections should be built through capital projects and private development as applicable, in line with Key Action B-7b. Shortcuts should be prioritized for construction using the data-driven approach identified in the Implementation chapter.

Table 34~~Table 33~~ and associated maps identify 310 locations where informal pedestrian shortcuts currently exist across the county. These connections were identified through a public engagement process and subsequent review of property boundaries and subdivision plats. A description of the approach is in the Pedestrian Shortcut Methodology appendix. The Map Reference # column corresponds to the shortcut location on the respective policy area maps starting on page 236.

Table 34~~33~~: Pedestrian Shortcut Recommendations

Policy Area	Origin	Destination	Map Reference #
Aspen Hill	Flint Hill Road	Allanwood Court	1
Aspen Hill	Grenoble Drive	Judith Street	2
Aspen Hill	Bel Pre Road	Chesterfield Road	3
Aspen Hill	Bitterroot Way	Emory Lane	4
Aspen Hill	Bel Pre Road	Crossway Road	5

Policy Area	Origin	Destination	Map Reference #
Aspen Hill	Catoctin Terrace	Shilling Lane	6
Aspen Hill	Arctic Avenue	Loree Lane	7
Aspen Hill	Iris Street	Oriental Street	8
Aspen Hill	Palmira Lane	Connecticut Avenue	9
Aspen Hill	Weeping Willow Court	Peppertree Lane	10
Bethesda CBD	Wisconsin Avenue	West Avenue	11
Bethesda CBD	Bradley Boulevard	Wisconsin Avenue	12
Bethesda CBD	Wellington Drive	Bradley Boulevard	13
Bethesda CBD	Strathmore Street	Wisconsin Avenue	14
Bethesda CBD	Wisconsin Avenue	County Parking Lot	15
Bethesda CBD	Arlington Road	Capital Crescent Trail	16
Bethesda CBD	Montgomery Avenue	Capital Crescent Trail	17
Bethesda CBD	East West Highway	Capital Crescent Trail	18
Bethesda CBD	Montgomery Avenue	Capital Crescent Trail	19
Bethesda CBD	Old Georgetown Road	Midblock Fairmont Avenue	20
Bethesda CBD	St Elmo Avenue	Cordell Avenue	21
Bethesda CBD	Cordell Avenue	Del Ray Avenue	22
Bethesda CBD	Cordell Avenue	St Elmo Avenue	23
Bethesda CBD	Woodmont Avenue	Wisconsin Avenue	24
Bethesda CBD	Wisconsin Avenue	Woodmont Avenue	25
Bethesda CBD	Rugby Avenue	Trail	26
Bethesda CBD	Rugby Avenue	Trail	27
Bethesda CBD	Bethesda Trolley Trail	Woodmont Avenue	28
Bethesda CBD	Glenbrook Road	Battery Lane	29
Bethesda CBD	Chevy Chase Drive	Norwood Local Park	30
Bethesda CBD	Bradley Boulevard	Norwood Drive	31
Bethesda/Chevy Chase	Bent Branch Road	Bay Tree Lane	32
Bethesda/Chevy Chase	Bent Branch Road	Tulip Hill Terrace	33

Policy Area	Origin	Destination	Map Reference #
Bethesda/Chevy Chase	Bay Tree Lane	Goldsboro Road	34
Bethesda/Chevy Chase	Buttonwood Lane	Goldsboro Road	35
Bethesda/Chevy Chase	Tulip Hill Terrace	Goldsboro Road	36
Bethesda/Chevy Chase	Chevy Chase Lake Drive	Springdell Place	37
Bethesda/Chevy Chase	Sangamore Road	Capital Crescent Trail	38
Bethesda/Chevy Chase	Fernwood Road	Kirkdale Road	39
Bethesda/Chevy Chase	Little Falls Parkway	Wakefield Road	40
Bethesda/Chevy Chase	Dorset Avenue	Greystone Street	41
Bethesda/Chevy Chase	Henning Street	Ayrlawn Local Park	42
Bethesda/Chevy Chase	Westbard Avenue	River Road	43
Bethesda/Chevy Chase	Jordan Road	Westbard Avenue	44
Bethesda/Chevy Chase	Leeke Forest Court	Beech Avenue	45
Bethesda/Chevy Chase	Radnor Road	Oldchester Road	46
Bethesda/Chevy Chase	Spruce Tree Avenue	Linden Avenue	47
Bethesda/Chevy Chase	Bannockburn Drive	East Halbert Road	48
Bethesda/Chevy Chase	Whitman Drive	Whittier Boulevard	49
Bethesda/Chevy Chase	Hutch Place	Inverness Drive	50
Bethesda/Chevy Chase	Stewart Driveway	Dundee Driveway	51
Bethesda/Chevy Chase	Shelton Street	North Bethesda Middle School	52
Bethesda/Chevy Chase	Greentree Road	Fallen Oak Court	53
Bethesda/Chevy Chase	Lambeth Road	York Lane	54
Bethesda/Chevy Chase	Linden Avenue	Balfour Drive	55
Bethesda/Chevy Chase	Raymond Street	Brennon Lane	56
Bethesda/Chevy Chase	Kenilworth Driveway	Dundee Driveway	57
Bethesda/Chevy Chase	Hillmead Road	Greentree Road	58
Bethesda/Chevy Chase	Ridge Road	Fallen Oak Drive	59
Bethesda/Chevy Chase	Wilson Lane	West Halbert Road	60

Policy Area	Origin	Destination	Map Reference #
Bethesda/Chevy Chase	Laverock Lane	East Halbert Road	61
Bethesda/Chevy Chase	East Halbert Road	Bannockburn Elementary School	62
Bethesda/Chevy Chase	Laverock Court	Ayr Lane	63
Bethesda/Chevy Chase	Selkirk Drive	Braeburn Parkway	64
Bethesda/Chevy Chase	Cayuga Avenue	Maryknoll Avenue	65
Bethesda/Chevy Chase	Thoreau Drive	Kenfield Court	66
Bethesda/Chevy Chase	Ridgewood Avenue	Beechwood Drive	67
Bethesda/Chevy Chase	Allandale Road	River Road	68
Bethesda/Chevy Chase	Keokuk Street	Crescent Street	69
Bethesda/Chevy Chase	Keokuk Street	Newport Avenue	70
Bethesda/Chevy Chase	Boxwood Court	Abingdon Road	71
Bethesda/Chevy Chase	Hollins Drive	Wadsworth Drive	72
Bethesda/Chevy Chase	Swords Way	Kirkdale Road	73
Bethesda/Chevy Chase	River Road	Winterberry Place	74
Bethesda/Chevy Chase	Radnor Road	Bradley Boulevard	75
Bethesda/Chevy Chase	Pauline Drive	Brooklawn Terrace	76
Bethesda/Chevy Chase	Radnor Road	Pembroke Road	77
Bethesda/Chevy Chase	Lawton Drive	Nahant Street	78
Bethesda/Chevy Chase	Lamar Road	Kirkwood Drive	79
Bethesda/Chevy Chase	Falmouth Road	Portsmouth Road	80
Bethesda/Chevy Chase	Park Avenue	Brookdale Road	81
Bethesda/Chevy Chase	Jones Mill Road	Brierly Road	82
Bethesda/Chevy Chase	Baltan Road	Sentinel Drive	83
Bethesda/Chevy Chase	Overbrook Road	Cooper Lane	84
Bethesda/Chevy Chase	Sherrill Avenue	Willard Avenue Trail	85
Bethesda/Chevy Chase	Baltimore Avenue	Willard Avenue Trail	86
Bethesda/Chevy Chase	Saratoga Avenue	Willard Avenue Trail	87

Policy Area	Origin	Destination	Map Reference #
Bethesda/Chevy Chase	Westbard Avenue	Capital Crescent Trail	88
Cloverly	Perrywood Drive	Timberlake Drive	89
Cloverly	Peachwood Drive	Cloverly Loop Trail	90
Cloverly	Evesham Place	Pamela Drive	91
Cloverly	Harding Lane	Good Hope Road	92
Cloverly	Watergate Road	New Hampshire Avenue	93
Cloverly	Awkard Lane	Farmgate Lane	94
Cloverly	Old Orchard Road	Norbeck Road	95
Cloverly	Bryants Nursery Road	Norbeck Road	96
Damascus	Damascus Pool	Damascus High School	97
Damascus	Ridge Road	Damascus Community Center	98
Damascus	Coltrane Drive	Wright Road	99
Damascus	Bethesda Church Road	Magruder Branch Trail	100
Derwood	Moccasin Lane	Derwood Station Playground	101
Derwood	Polara Place	Epsilon Drive	102
Derwood	Briardale Road	Briardale Court	103
Derwood	Beauvoir Boulevard	Redland Local Park	104
Derwood	Needwood Road	Metro Stormwater Pond Trail	105
Derwood	Metro Access Path	Mystic View Court	106
Derwood	Chestnut Street	Oakmont Street	107
East Purple Line	Three Oaks Drive	Melbourne Avenue	108
East Purple Line	Dale Drive	Nolte Local Park	109
East Purple Line	Easley Street	Thayer Avenue	110
East Purple Line	Geren Road	Sligo Creek Trail	111
East Purple Line	Schuyler Road	East Wayne Avenue	112
East Purple Line	Bradford Road	Sligo Creek Trail	113
East Purple Line	Colesville Road	Ellsworth Drive	114

Policy Area	Origin	Destination	Map Reference #
East Purple Line	Whitney Street	Walden Road	115
East Purple Line	Piney Branch Road	Carroll Avenue	116
East Purple Line	Manchester Road	Saffron Lane	117
East Purple Line	Dale Drive	Fleetwood Terrace	118
Fairland/Colesville	Beaumont Road	Bregman Road	119
Fairland/Colesville	Olivine Way	Serpentine Way	120
Fairland/Colesville	Schubert Drive	Alpenhorn Way	121
Fairland/Colesville	Tapestry Circle	Castle Ridge Circle	122
Fairland/Colesville	Aldora Circle	Castle Boulevard	123
Fairland/Colesville	Northwest Drive	Prelude Drive	124
Fairland/Colesville	Legato Way	Sonata Way	125
Fairland/Colesville	Ballinger Drive	Castle Terrace	126
Fairland/Colesville	Robey Road	Sir Thomas Drive	127
Fairland/Colesville	Venice Drive	Martin Luther King, Jr. Recreational Park	128
Fairland/Colesville	Gaffney Road	Randolph Road	129
Fairland/Colesville	Fairland Road	Notley Road	130
Fairland/Colesville	Bluff Terrace	Finale Terrace	131
Fairland/Colesville	West Fairland Local Park	Falling Creek Road	132
Fairland/Colesville	Deer Park Drive	Musgrove Road	133
Fairland/Colesville	Briggs Chaney Marketplace	Windsor Court and Tower	134
Fairland/Colesville	Robey Road	Castle Boulevard parking lot	135
Forest Glen	Everest Street	Medical Park Drive	136
Forest Glen	Brisbane Court	Belvedere Boulevard	137
Gaithersburg City	Downing Street	Wilson Street	138
Germantown East	Germantown Road	Boland Farm Road	139
Germantown East	Observation Court	Germantown Road	140
Germantown East	Drumcastle Terrace	Neelsville Middle School	141

Policy Area	Origin	Destination	Map Reference #
Germantown East	Greenfield Road	Observation Drive	142
Germantown East	Observation Drive	Great Park Circle	143
Germantown East	Major Drive	Seneca Meadows Parkway	144
Germantown East	Great Park Circle	Ridge Road	145
Germantown East	Middlebrook Road	Scenery Drive	146
Germantown East	Middlebrook Road	Gunners Branch Road	147
Germantown East	Emerald Way	Ridge Road	148
Germantown Town Center	Century Boulevard	Wisteria Drive	149
Germantown Town Center	Germantown Road	MARC Station Parking Lot	150
Germantown Town Center	Walter Johnson Road	Crystal Rock Drive	151
Germantown Town Center	Ridge Road	The Shops at Seneca Meadows	152
Germantown Town Center	Father Hurley Boulevard	Century Boulevard	153
Germantown West	Great Seneca Highway	Daventry Way	154
Germantown West	Teakwood Circle	Father Hurley Boulevard	155
Germantown West	Grey Eagle Court	Wisteria Drive	156
Germantown West	Poplar Glen Court	Clopper Road	157
Germantown West	Gunners Lake Trails	Caledonia Court	158
Germantown West	Great Seneca Highway	Gunner's Lake Local Park	159
Germantown West	Great Seneca Highway	Northwest High School	160
Germantown West	Red Rocks Drive	Northwest High School	161
Germantown West	Conlon Ridge Court	Great Seneca Highway	162
Germantown West	Hickory Tree Way	Middlebrook Road	163
Germantown West	Waters Landing Drive	Deerwater Drive	164
Germantown West	Leatherbark Way	Roberto Clemente Middle School	165
Germantown West	Tidewinds Way	Black Hill Regional Park Trails	166
Germantown West	Duhart Road	Germantown Road	167
Germantown West	Bridger Way	Century Boulevard	168

Policy Area	Origin	Destination	Map Reference #
Germantown West	Poppyseed Lane	Red Robin Terrace	169
Kensington/Wheaton	Woodman Avenue	Sligo Creek Trail	170
Kensington/Wheaton	Valleywood Court	May Street	171
Kensington/Wheaton	Pennydog Lane	Carroll Knolls Local Park	172
Kensington/Wheaton	Greenlock Road	University Boulevard	173
Kensington/Wheaton	Capitol View-Homewood Local Park	Oakland Terrace Elementary School	174
Kensington/Wheaton	Edgewood Road	Leslie Street	175
Kensington/Wheaton	Wheaton Lane	Sligo Creek Natural Surface Trails	176
Kensington/Wheaton	Whitehall Street	Orange Drive	177
Kensington/Wheaton	Breewood Road	MacDonald Knolls Early Childhood Center	178
Kensington/Wheaton	Whitehall Street	MacDonald Knolls Early Childhood Center	179
Kensington/Wheaton	Parkwood Drive	Edgefield Road	180
Kensington/Wheaton	Saint Laurence Drive	Williamsburg Drive	181
Kensington/Wheaton	Green Holly Terrace	Everest Street	182
Kensington/Wheaton	Hannes Street	Northwest Branch Trail	183
Kensington/Wheaton	Lamberton Drive	Kemp Mill Swim Club	184
Kensington/Wheaton	Newport Mill Road	Highview Avenue	185
Kensington/Wheaton	Kersey Road	Auth Lane	186
Kensington/Wheaton	Capitol View-Homewood Local Park	Plyers Mill Road	187
Kensington/Wheaton	Rosensteel Avenue	Flora Singer Elementary School	188
Kensington/Wheaton	Menlo Avenue	Loma Street	189
Kensington/Wheaton	Arcola Avenue	Henderson Avenue	190
Kensington/Wheaton	Rocky Mount Way	Sligo Creek Natural Surface Trails	191
Kensington/Wheaton	Homewood Parkway	Plyers Mill Road	192
Kensington/Wheaton	Windham Lane	Glen Haven Elementary School	193

Policy Area	Origin	Destination	Map Reference #
Kensington/Wheaton	Georgia Avenue	Elkin Street	194
Kensington/Wheaton	Sampson Road	Ferrara Drive	195
Kensington/Wheaton	Eastmoor Drive	Colesville Road	196
Kensington/Wheaton	Auth Lane	Ridgewell Way	197
Kensington/Wheaton	Ferndale Street	Oakland Terrace Elementary School	198
Kensington/Wheaton	Drumm Avenue	Capitol View Avenue	199
Kensington/Wheaton	Hollow Glen Place	Rosensteel Avenue	200
Kensington/Wheaton	Brunswick Avenue	Hayden Drive	201
Kensington/Wheaton	Breewood Road	University Boulevard	202
Kensington/Wheaton	Haywood Drive	Carroll Knolls Local Park	203
Kensington/Wheaton	Nimitz Road	Kensington Boulevard	204
Kensington/Wheaton	Kenton Drive	Upton Drive	205
Kensington/Wheaton	Belvedere Boulevard	Sligo Creek Trail	206
Kensington/Wheaton	Lamberton Drive	Horton Drive	207
Kensington/Wheaton	Newport Mill Road	Wheaton-Claridge Local Park Playground	208
Kensington/Wheaton	Odessa Shannon Middle School	Wheaton Regional Park	209
Kensington/Wheaton	Saddlebrook Local Park	Landmark at Glenmont Station	210
Kensington/Wheaton	Orebaugh Avenue	Colt Terrace	211
Kensington/Wheaton	Dallas Avenue	University Boulevard	212
Kensington/Wheaton	Connecticut Avenue	Woodson Avenue	213
Kensington/Wheaton	Le Baron Terrace	Gilsan Street	214
Kensington/Wheaton	University Boulevard	Edgewood Avenue	215
Kensington/Wheaton	University Boulevard	Montgomery Blair High School	216
Kensington/Wheaton	Hannes Street	Lombardy Road	217
Kensington/Wheaton	Breewood Road	Sligo Creek Parkway	218
Kensington/Wheaton	Windham Lane	Glenhaven Drive	219

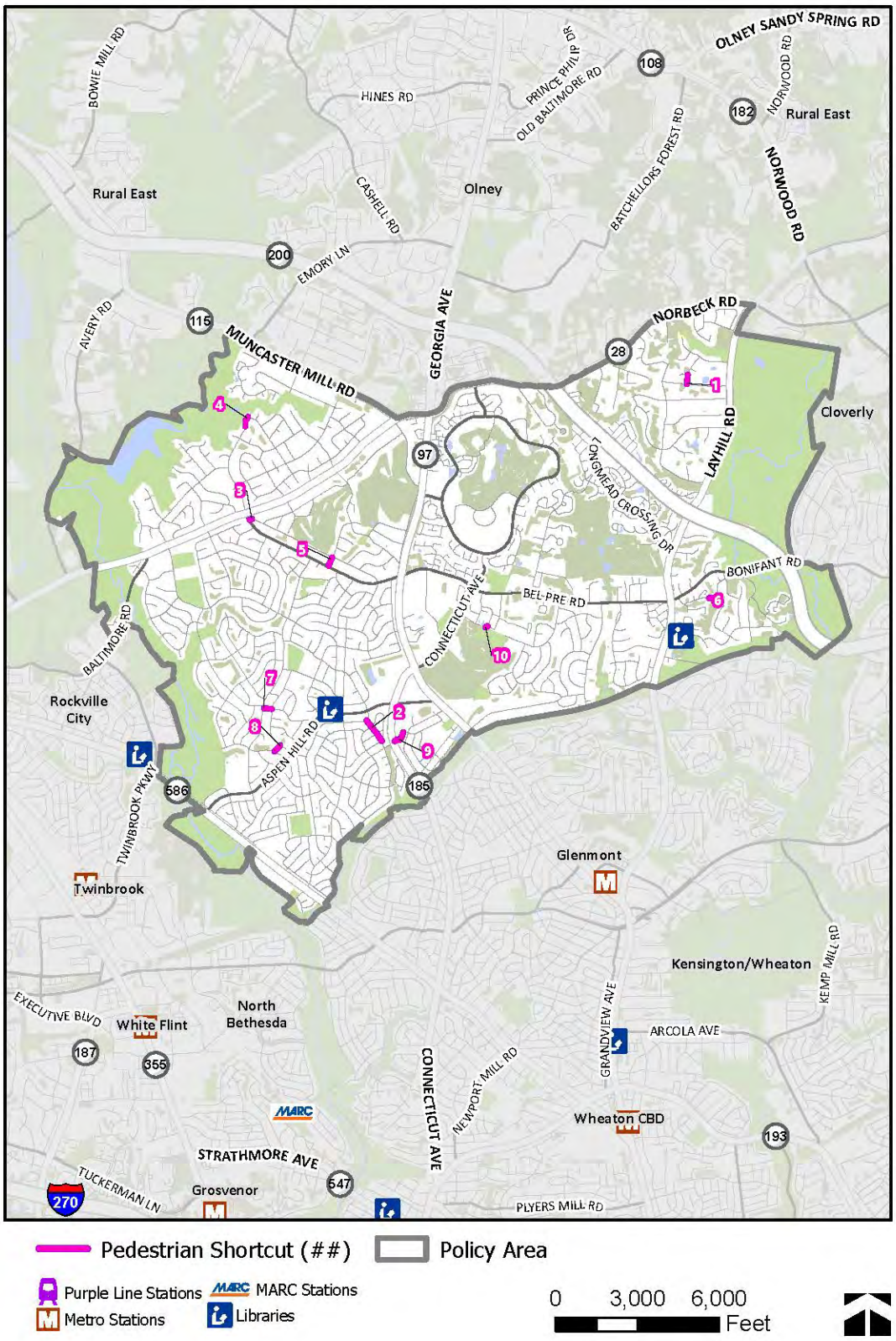
Policy Area	Origin	Destination	Map Reference #
Kensington/Wheaton	Windham Lane	Glenhaven Drive	220
Kensington/Wheaton	Windham Lane	Jamaica Drive	221
Kensington/Wheaton	Windham Lane	Francis Drive	222
Kensington/Wheaton	Windham Lane	Huntley Avenue	223
Kensington/Wheaton	Colt Terrace Neighborhood Park	Wheaton Regional Park	224
Kensington/Wheaton	Sligo Creek Trail	Dewey Court	225
Kensington/Wheaton	Gilmoure Drive	Greenock Road	226
Kensington/Wheaton	Dennis Avenue	Dallas Avenue	227
Kensington/Wheaton	Whitehall Street	Breewood Road	228
Kensington/Wheaton	Fiesta Road	University Boulevard	229
Kensington/Wheaton	Adams Drive	Rickover Road	230
Kensington/Wheaton	Lamberton Drive	Hyde Road	231
Kensington/Wheaton	Fairoak Drive	Bluff Terrace	232
Kensington/Wheaton	Charlton Drive	Kemp Mill Elementary School	233
Kensington/Wheaton	Culver Court	Saul Road	234
Kensington/Wheaton	Byrd Road	Ingersol Drive	235
Kensington/Wheaton	Hildarose Drive	McMillan Avenue	236
Lyttonsville	Spencer Road	Rosemary Hills-Lyttonsville Local Park	237
Lyttonsville	Lyttonsville Road	Rosemary Hills-Lyttonsville Local Park Internal Trails	238
Montgomery Village/Airpark	Montgomery Village Avenue	Lost Knife Circle	239
Montgomery Village/Airpark	Boysenberry Drive	Walker House Road	240
Montgomery Village/Airpark	Dunbridge Way	Montgomery Village Middle School	241
Montgomery Village/Airpark	Cloverwood Court	Snouffer School Road	242
Montgomery Village/Airpark	Brassie Place	Transhire Road	243
Montgomery Village/Airpark	Centerway Road	Broadwater Drive	244
Montgomery Village/Airpark	Snouffer School Road	Beechcraft Avenue	245

Policy Area	Origin	Destination	Map Reference #
North Bethesda	Weymouth Street	Kenilworth Avenue	246
North Bethesda	Tuckerman Lane	Old Club Road	247
North Bethesda	Bou Avenue	Washington Avenue	248
North Bethesda	Fleming Avenue	Bethesda Trolley Trail	249
North Bethesda	Ralston Road	Huntover Lane	250
North Bethesda	Wyconda Road	Boiling Brook Parkway	251
North Bethesda	Patapsco Drive	Boiling Brook Parkway	252
North Bethesda	Montauk Avenue	Depaul Drive	253
North Bethesda	Holmhurst Road	Mayfield Drive	254
North Bethesda	Rosemont Drive	Marcliff Road	255
North Bethesda	Old Georgetown Road	Berkshire Drive	256
North Potomac	Travilah Road	Yearling Drive	257
North Potomac	Great Seneca Highway	Seneca Creek State Park	258
Olney	Georgia Avenue	Gold Mine Road	259
Olney	Natural Gas Trail	Georgia Avenue	260
Olney	Appomattox Avenue	Brooke Farm Drive	261
Olney	North Branch SVU 2 West Side Rock Creek	North Branch SVU 2 East Side Rock Creek	262
Olney	Cutlass Drive	Norbeck Meadows Neighborhood Park	263
Olney	Dubarry Lane	Longwood Recreation Center	264
Potomac	Willowbrook Drive	Willowbrook Drive	265
Potomac	Cherbourg Drive	Willowbrook Drive	266
Potomac	Burbank Drive	The Corral Drive	267
Potomac	Bit and Spur Lane	Falls Road	268
Potomac	Logan Drive	Oaklyn Drive	269
R&D Village	Gudelsky Drive	Traville Gateway Shopping Center	270
R&D Village	Stanwood Terrace	Bald Cypress Drive	271

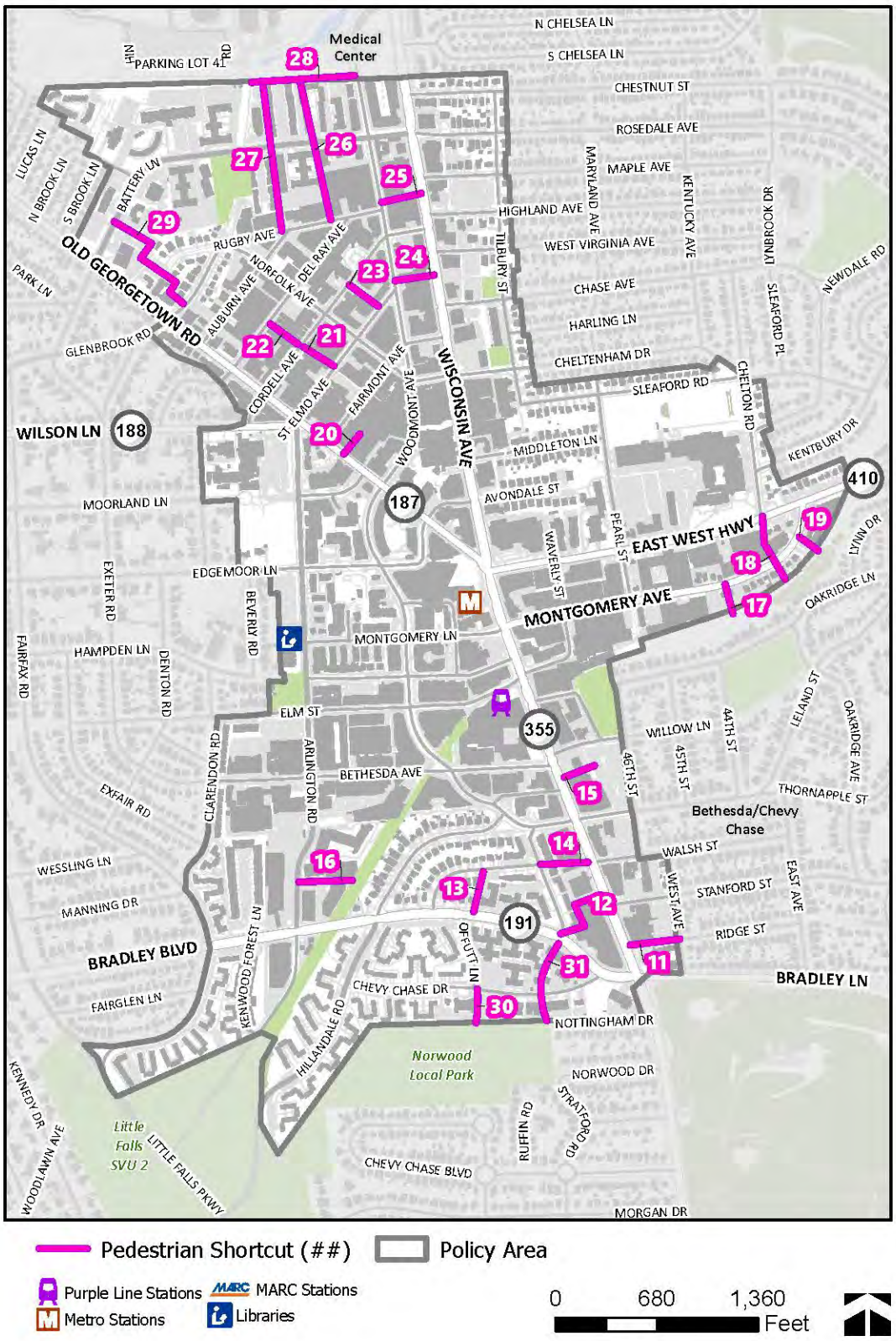
Policy Area	Origin	Destination	Map Reference #
Rural East	Country Hills Road	Hidden Garden Lane	272
Rural East	Heartwood Drive	Magruder High School	273
Rural West	Celtic Court	Lloyd Road	274
Shady Grove Metro Station	Yellowstone Way	Crabbs Branch Way	275
Shady Grove Metro Station	Needwood Road	Metro Stormwater Pond Trail	276
Silver Spring CBD	Thayer Avenue	Bonifant Street	277
Silver Spring CBD	East West Highway	Dixon Avenue	278
Silver Spring CBD	Georgia Avenue	Fenton Street	279
Silver Spring CBD	Wayne Avenue	Bonifant Street	280
Silver Spring CBD	Blair Road	Jesup-Blair Local Park Internal Trail	281
Silver Spring CBD	Jesup-Blair Pedestrian Bridge	Jesup-Blair Local Park Internal Trail	282
Silver Spring/Takoma Park	New Hampshire Avenue	Mount Pisgah Road	283
Silver Spring/Takoma Park	Alton Parkway	Fairview Road	284
Silver Spring/Takoma Park	Columbia Boulevard	Flora Lane	285
Silver Spring/Takoma Park	Lanier Drive	Warren Street	286
Silver Spring/Takoma Park	Gude Avenue	Poplar Avenue	287
Silver Spring/Takoma Park	Cockerille Avenue	Allegheny Avenue	288
Silver Spring/Takoma Park	Hamilton Avenue	Saybrook Avenue	289
Silver Spring/Takoma Park	Kansas Lane	Westmoreland Avenue	290
Silver Spring/Takoma Park	Mintwood Street	East Franklin Avenue	291
Silver Spring/Takoma Park	4th Avenue	Sheridan Street	292
Silver Spring/Takoma Park	Harvey Road	Sligo Creek Parkway	293
Silver Spring/Takoma Park	Sligo Creek Parkway	Hamilton Avenue	294
Silver Spring/Takoma Park	Maple Avenue	Takoma Woods trails	295
Silver Spring/Takoma Park	Watson Road	Harvey Road	296
Silver Spring/Takoma Park	Mark Court	East West Highway	297
Silver Spring/Takoma Park	Long Branch Parkway	East Melbourne Avenue	298

Policy Area	Origin	Destination	Map Reference #
Wheaton CBD	University Boulevard	Blueridge Avenue	299
Wheaton CBD	Peregoy Drive	Torrance Drive	300
Wheaton CBD	Douglas Avenue	Mall Ring Road	301
White Flint	Rockville Pike	Maple Avenue	302
White Oak	Powder Mill Road	Forest Dale Drive	303
White Oak	Lockwood Drive	Columbia Pike	304
White Oak	Naglee Road	Parkman Road	305
White Oak	Royal Road	Naglee Road	306
White Oak	Harper Avenue	Francis Scott Key Middle School	307
White Oak	Oaklawn Court	Oaklawn Drive	308
Woodside	Grace Church Road	Lyttonsville Road	309
Woodside	East West Highway	Sixteenth Street	310

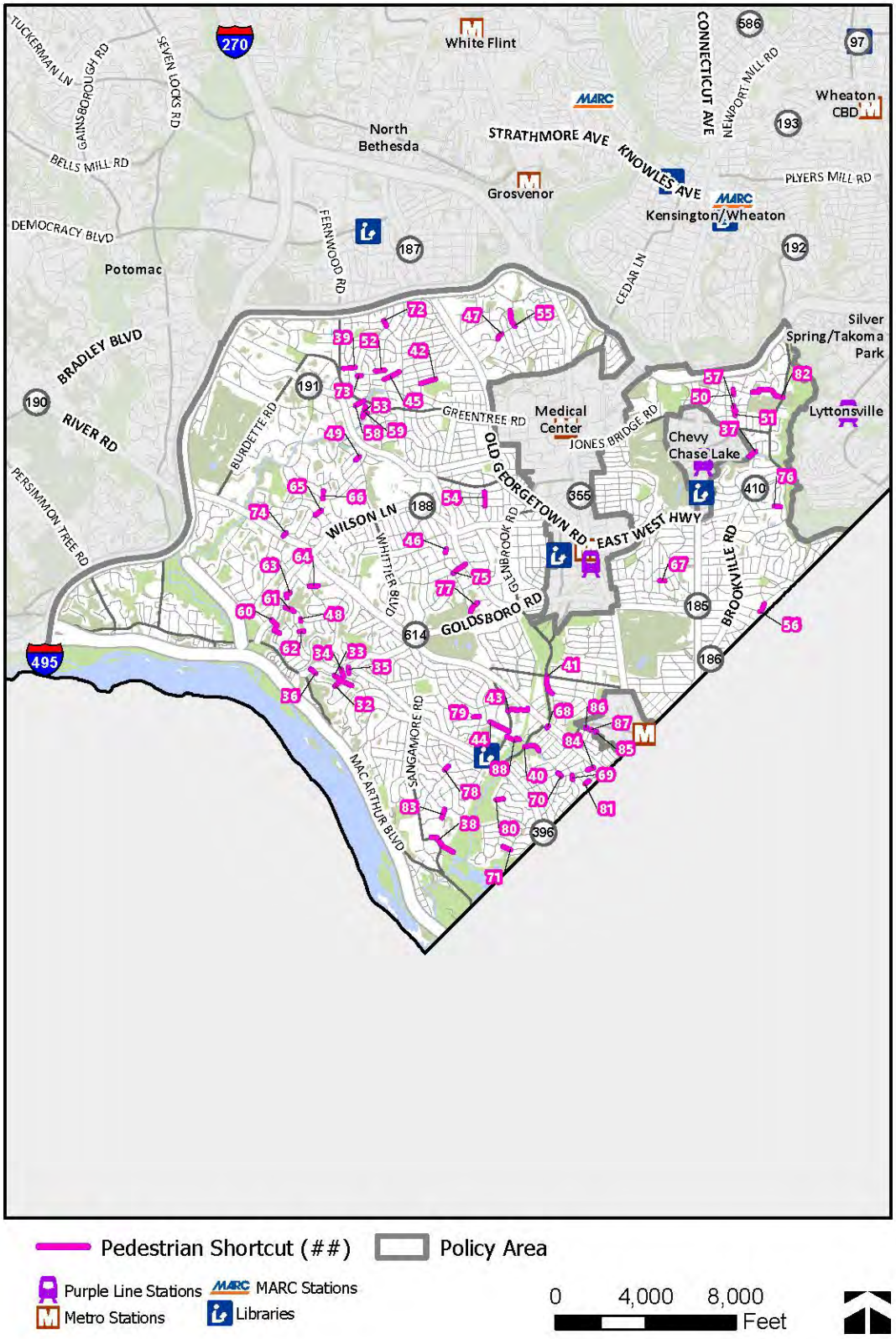
Aspen Hill Policy Area



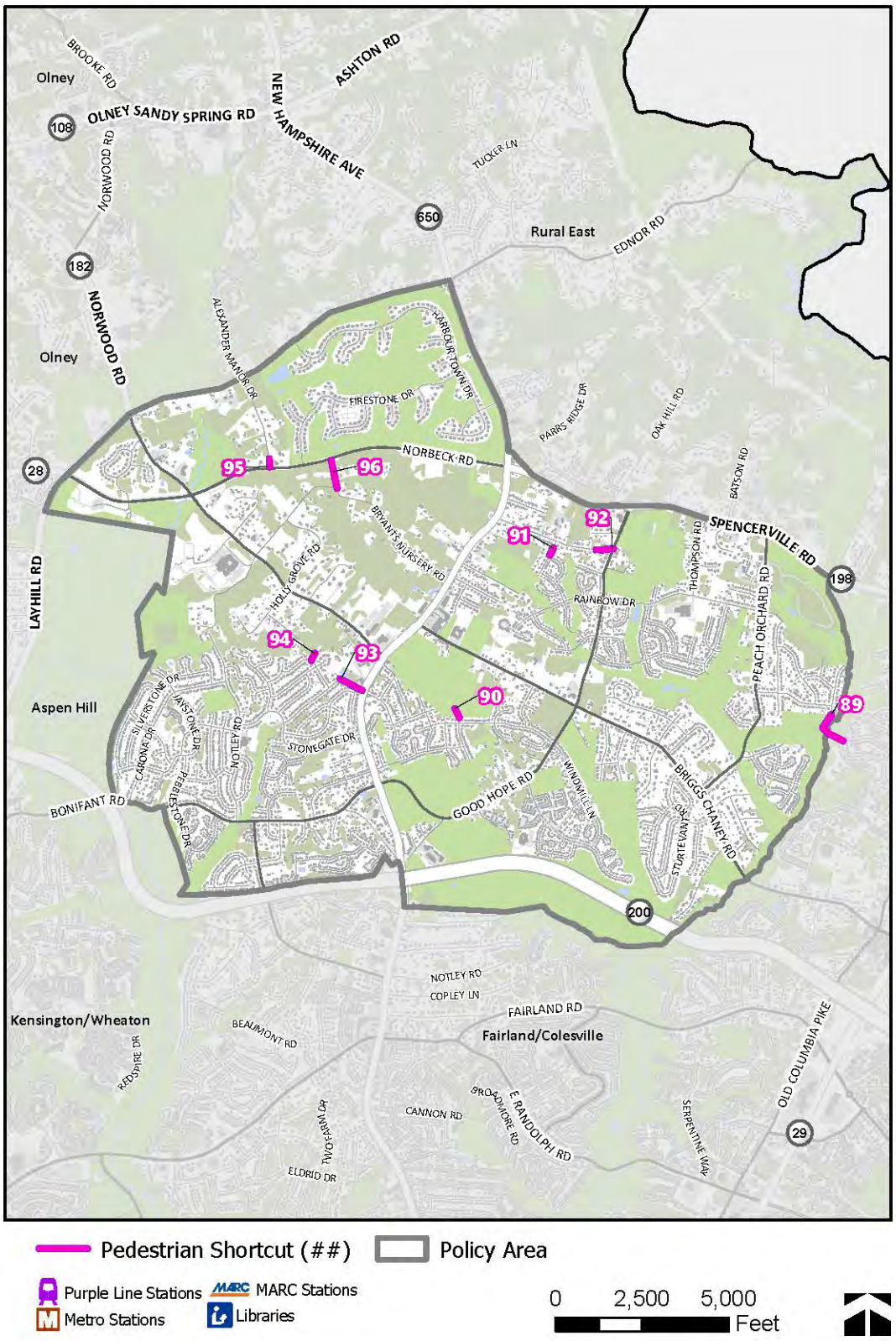
Bethesda CBD Policy Area



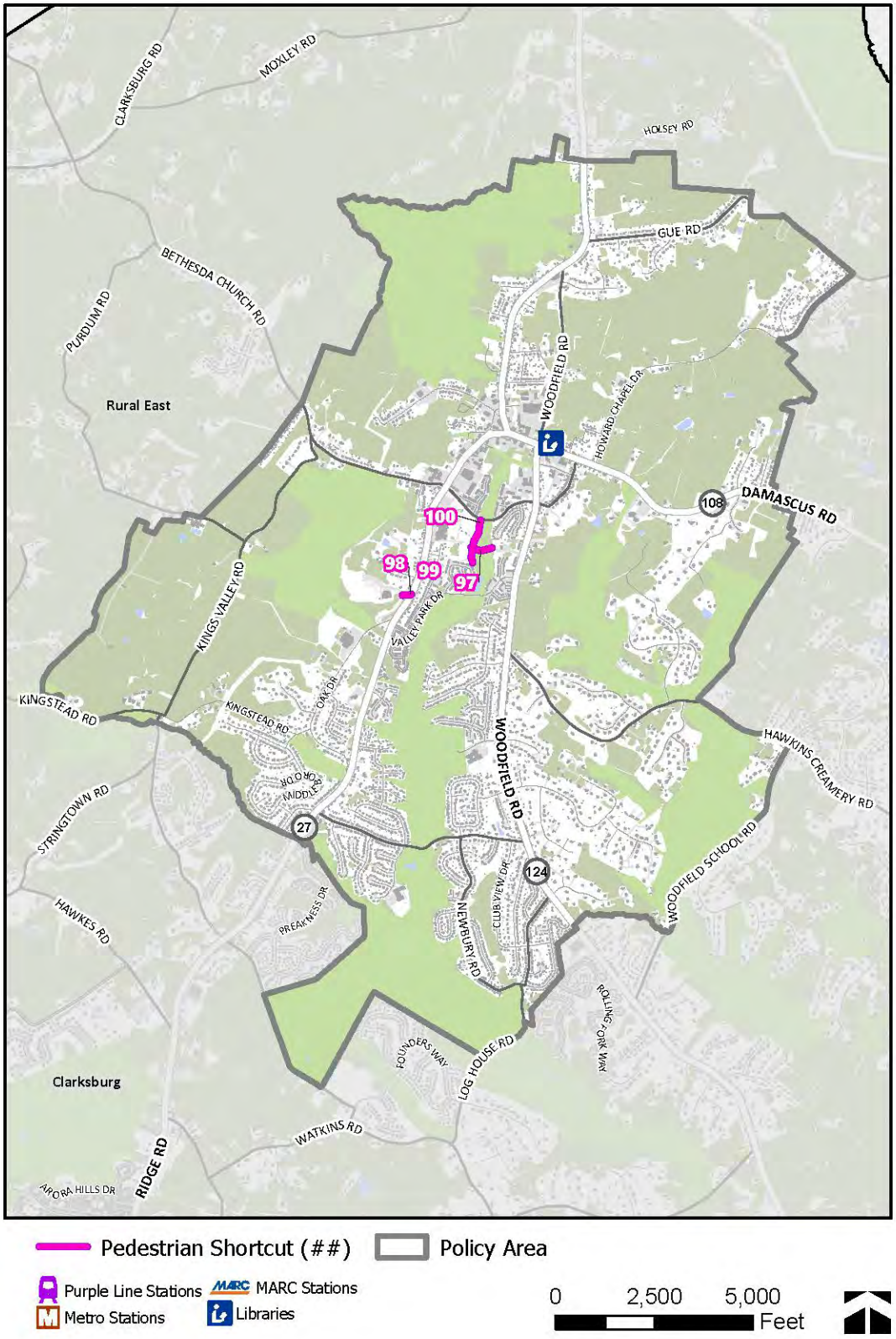
Bethesda/Chevy Chase Policy Area



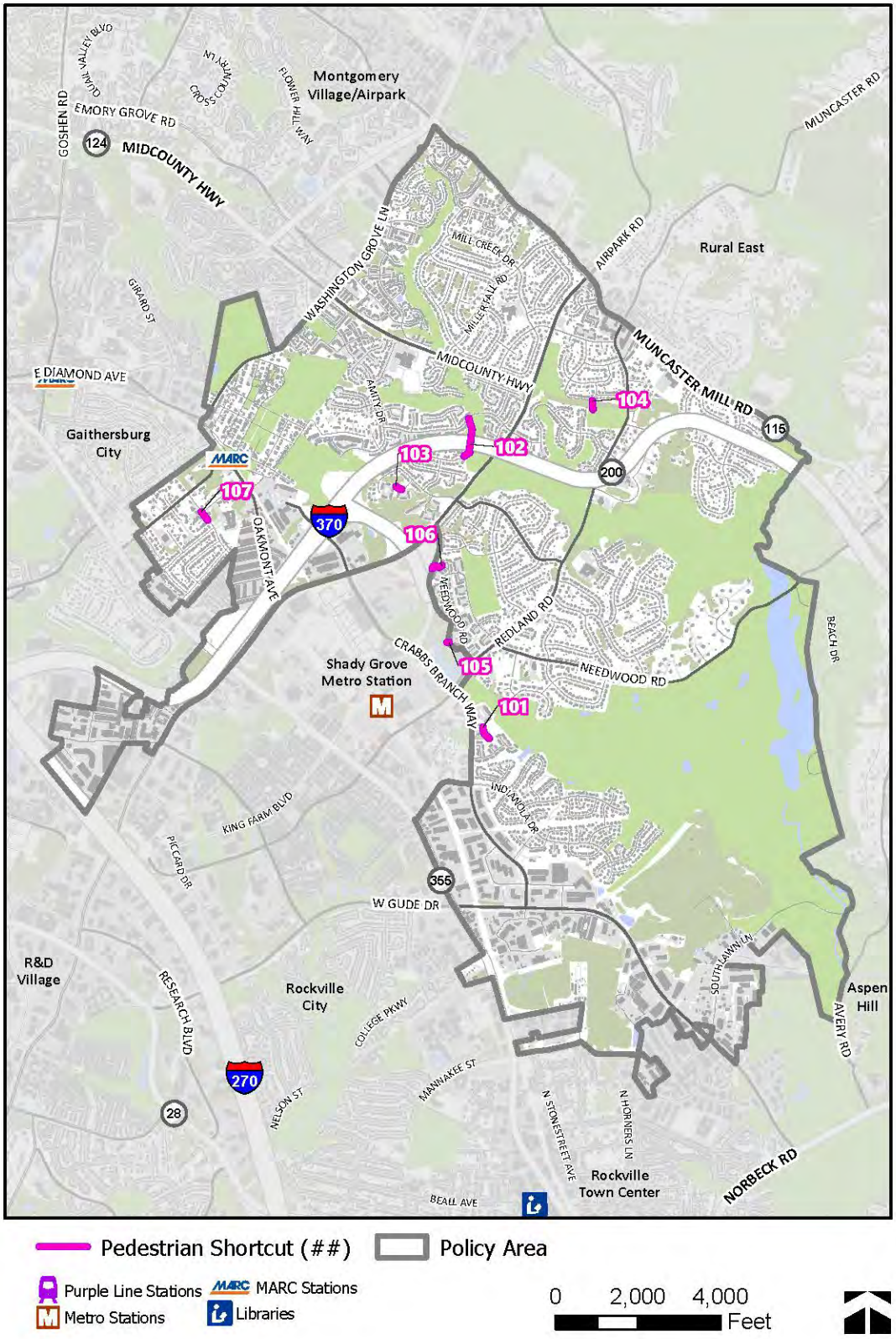
Cloverly Policy Area



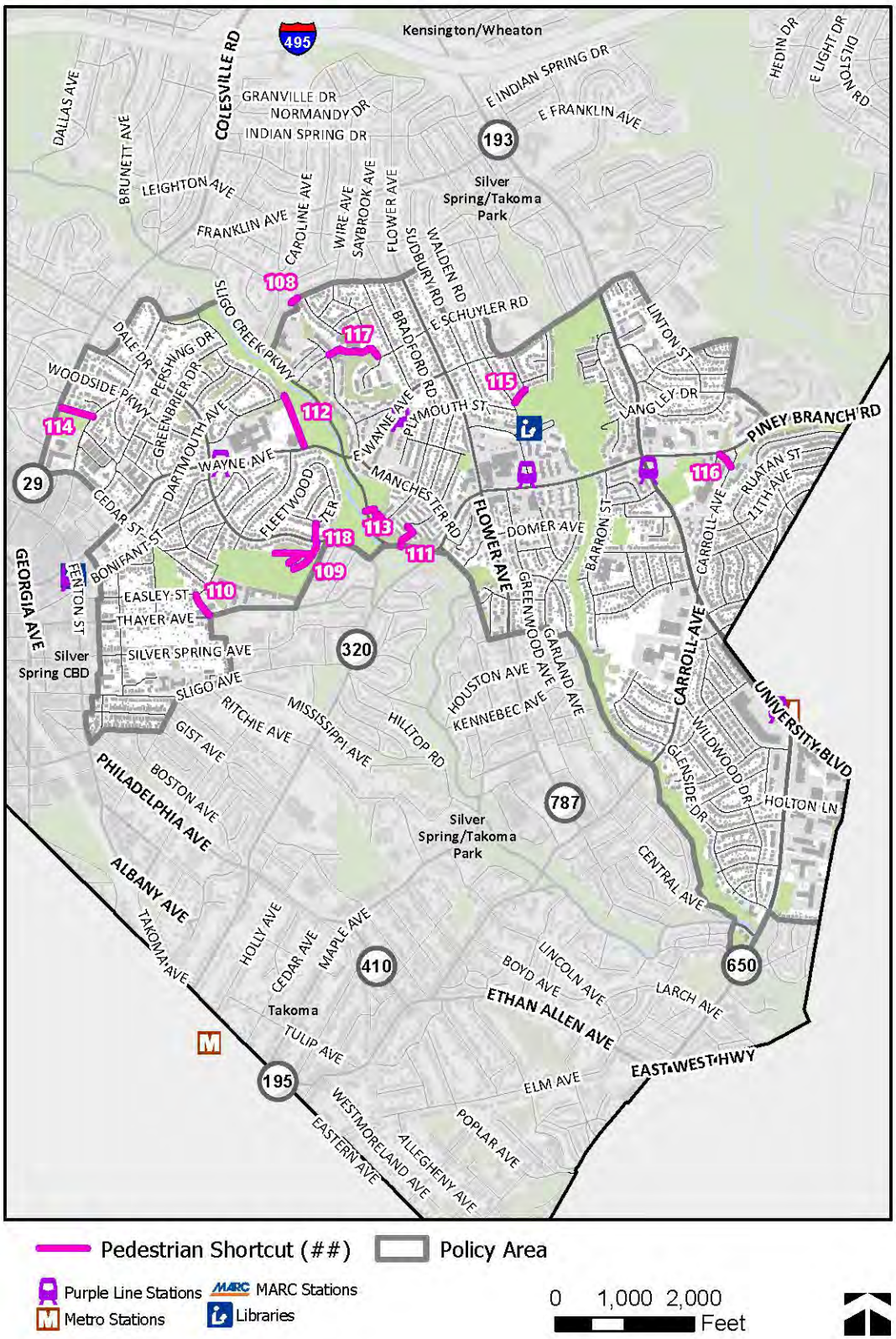
Damascus Policy Area



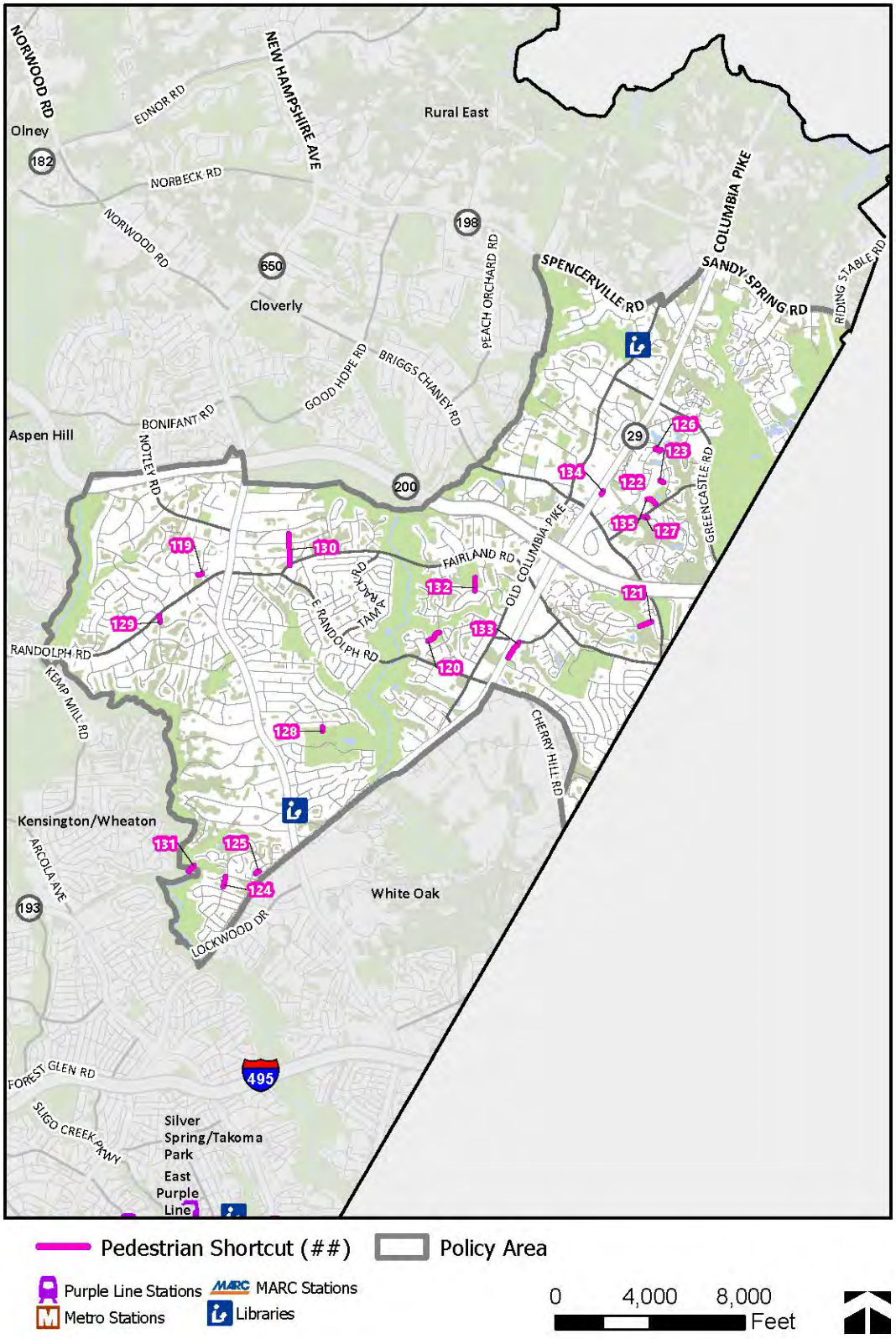
Derwood Policy Area



East Purple Line Policy Area



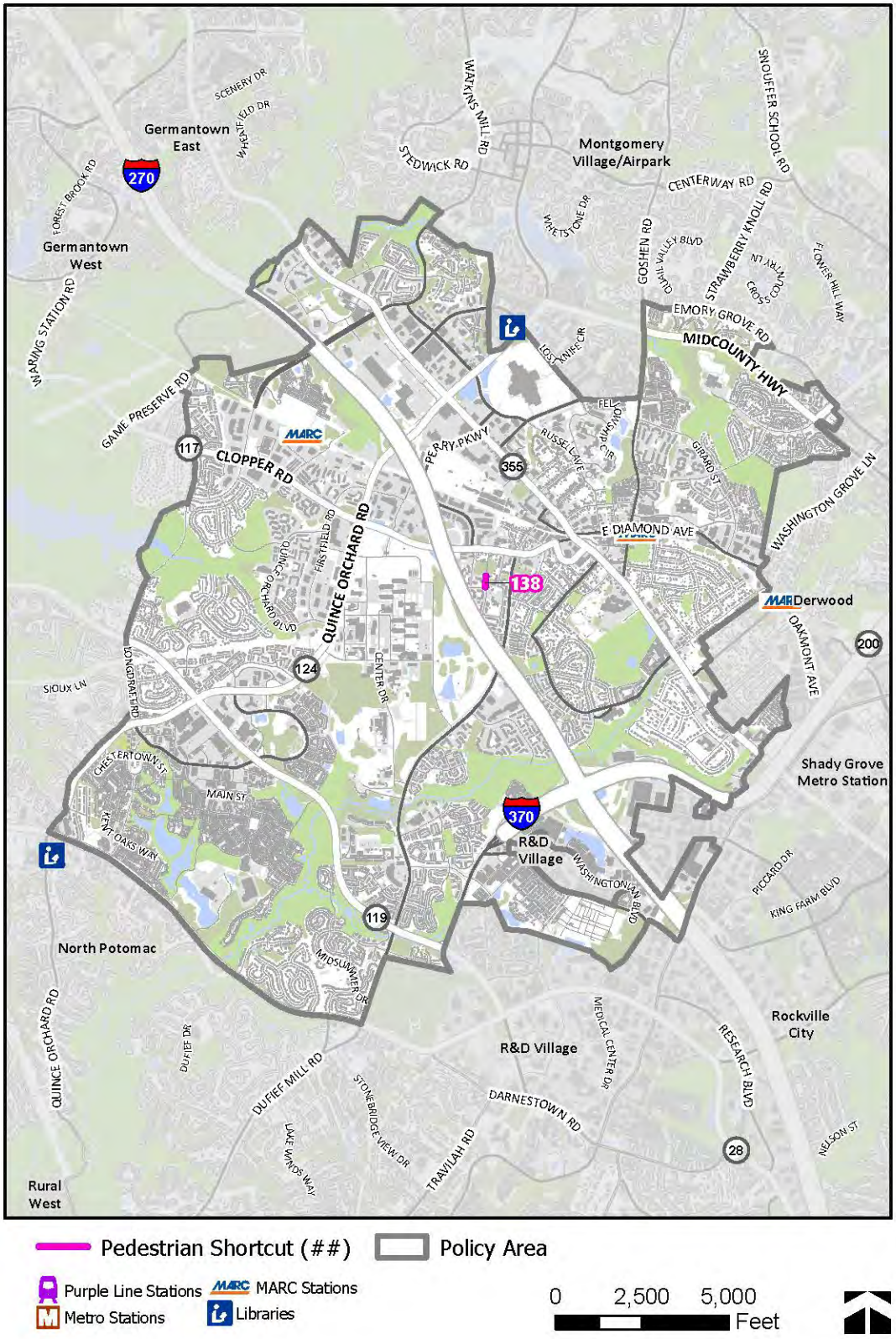
Fairland/Colesville Policy Area



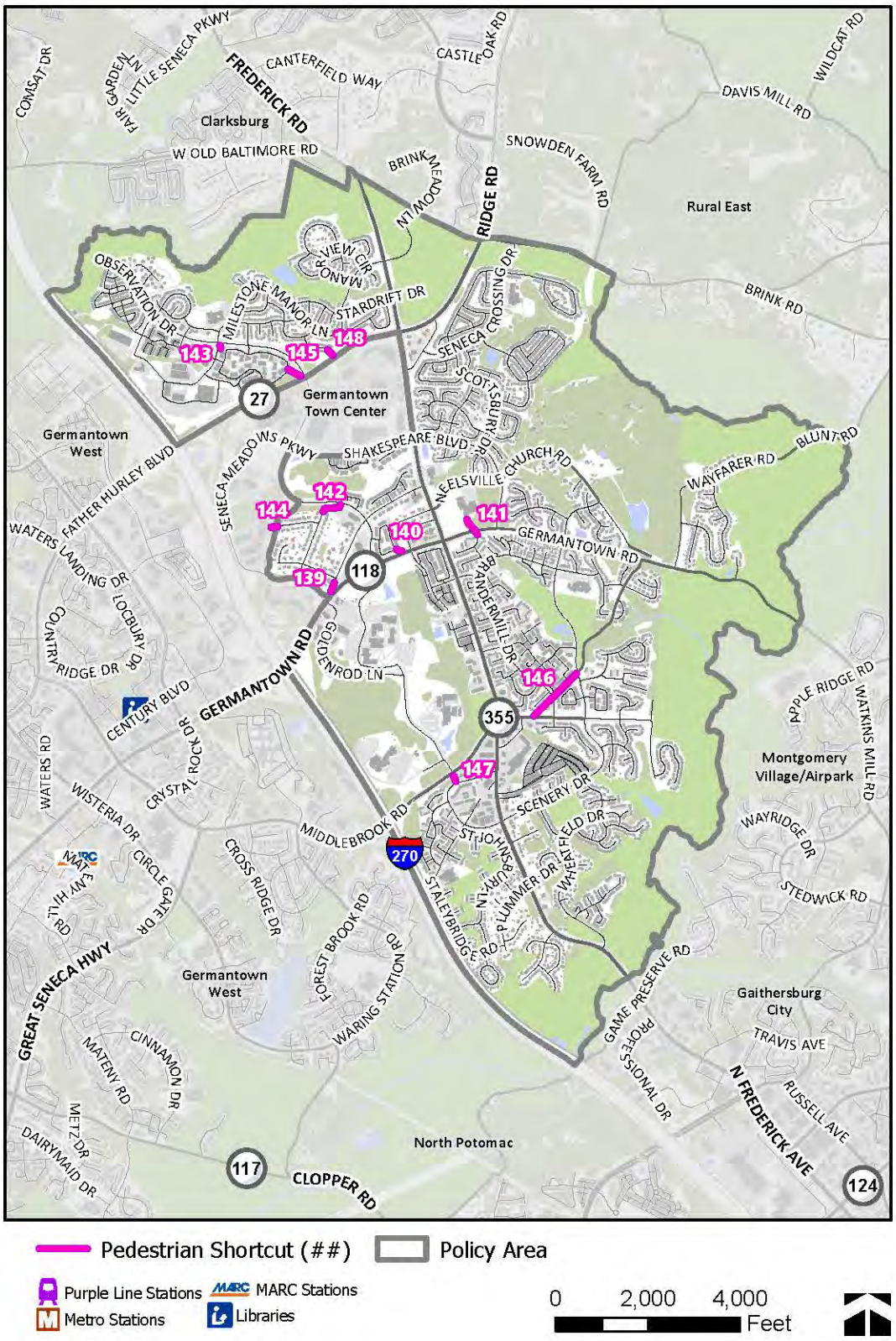
Forest Glen Policy Area



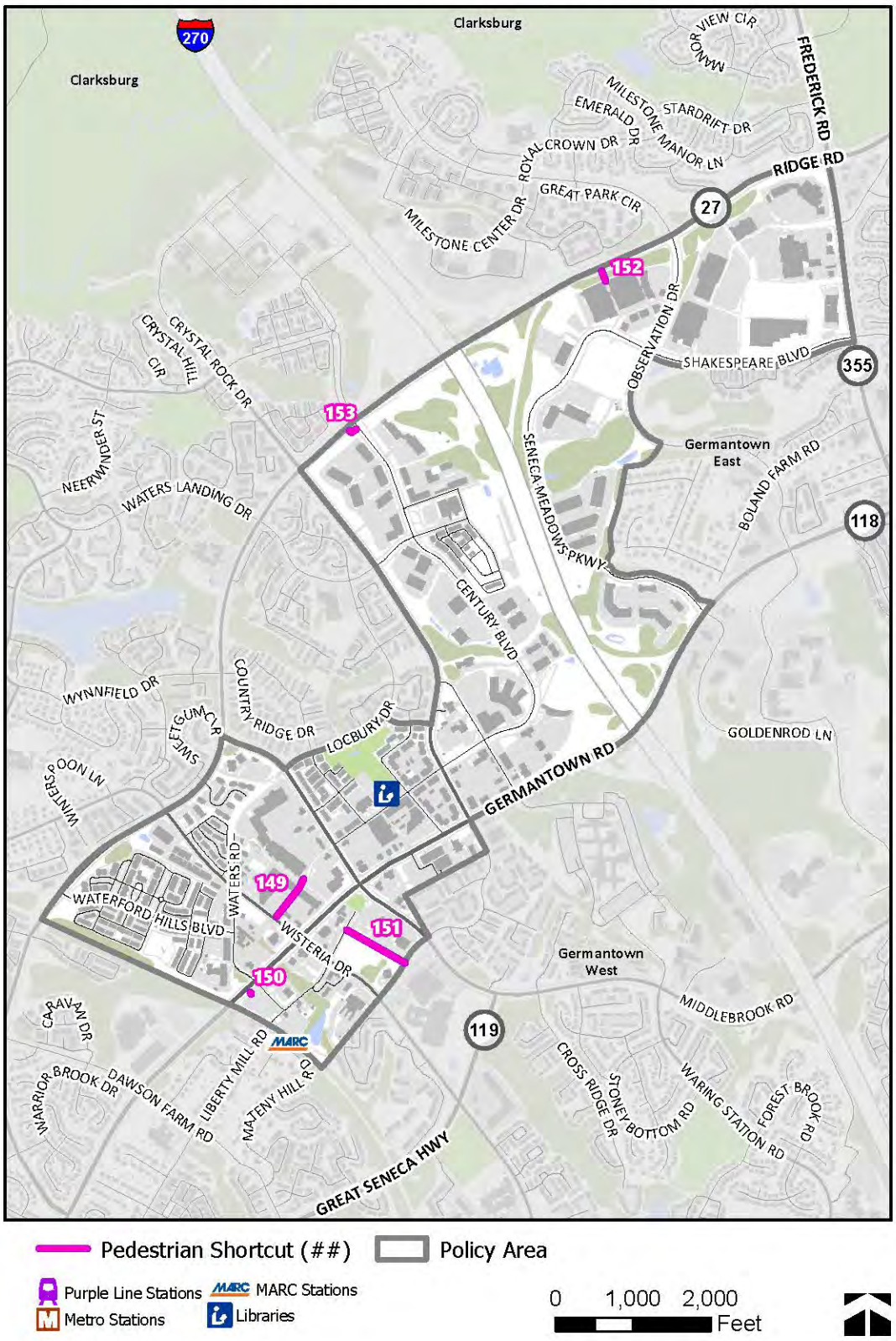
Gaithersburg City Policy Area



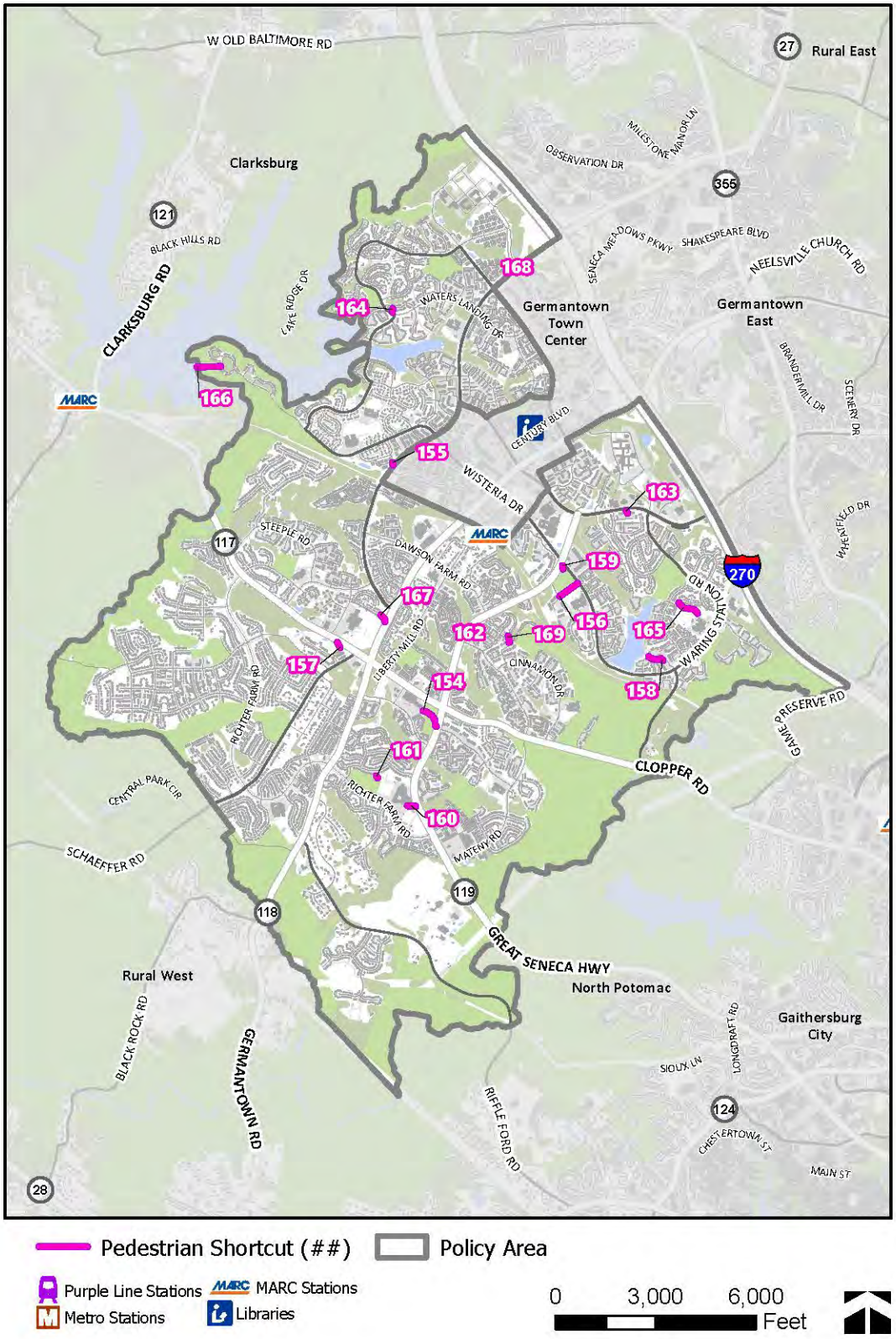
Germantown East Policy Area



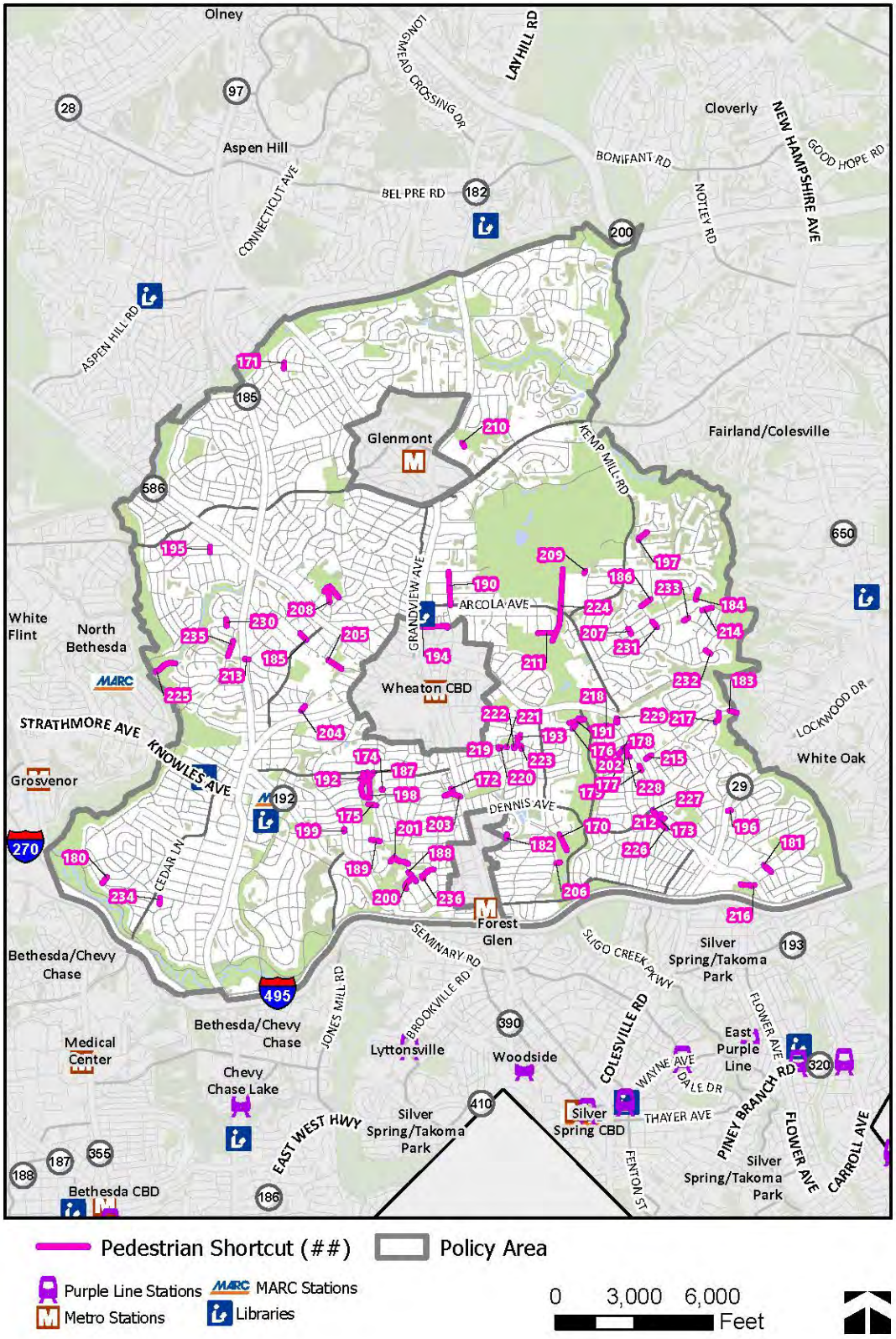
Germantown Town Center Policy Area



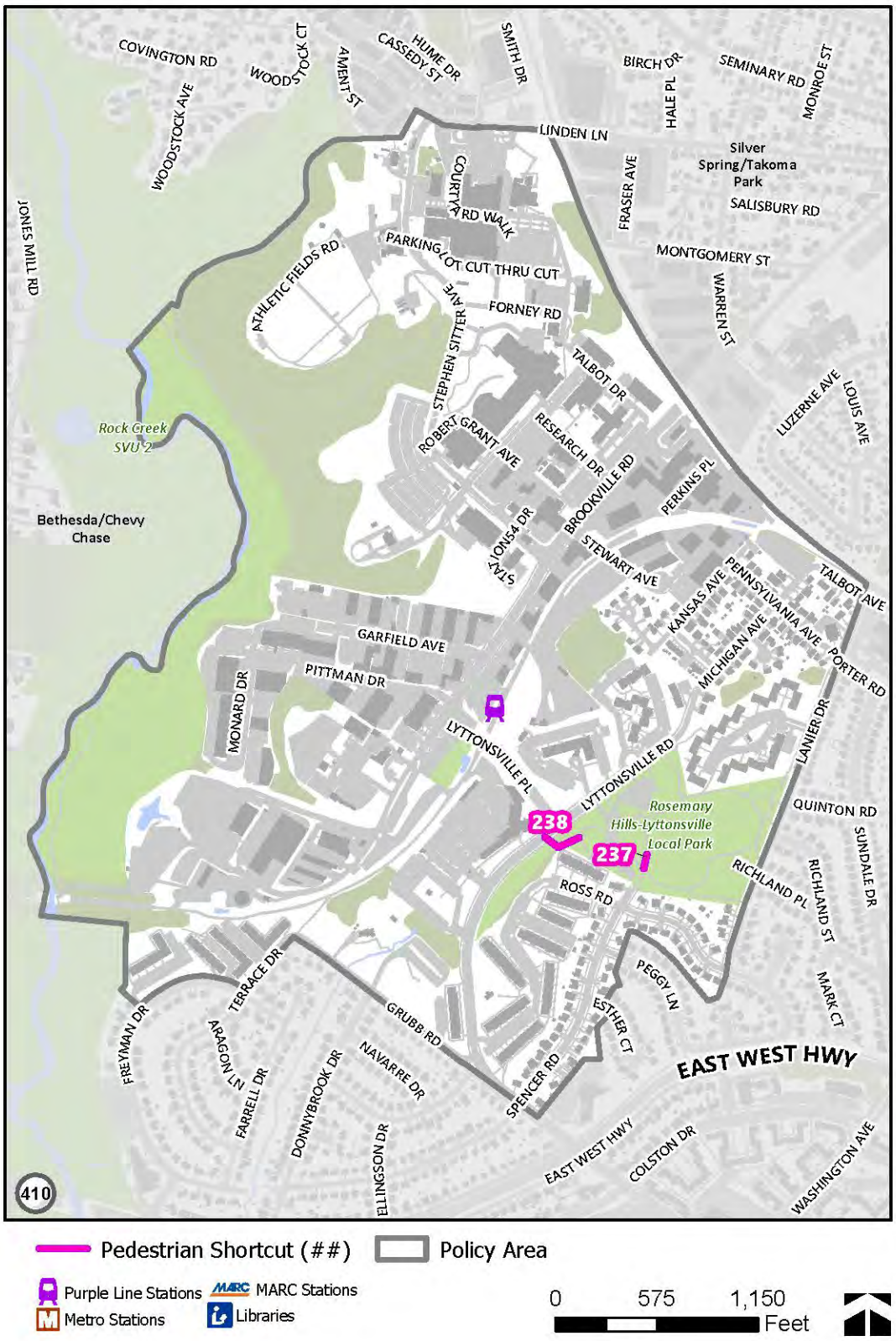
Germantown West Policy Area



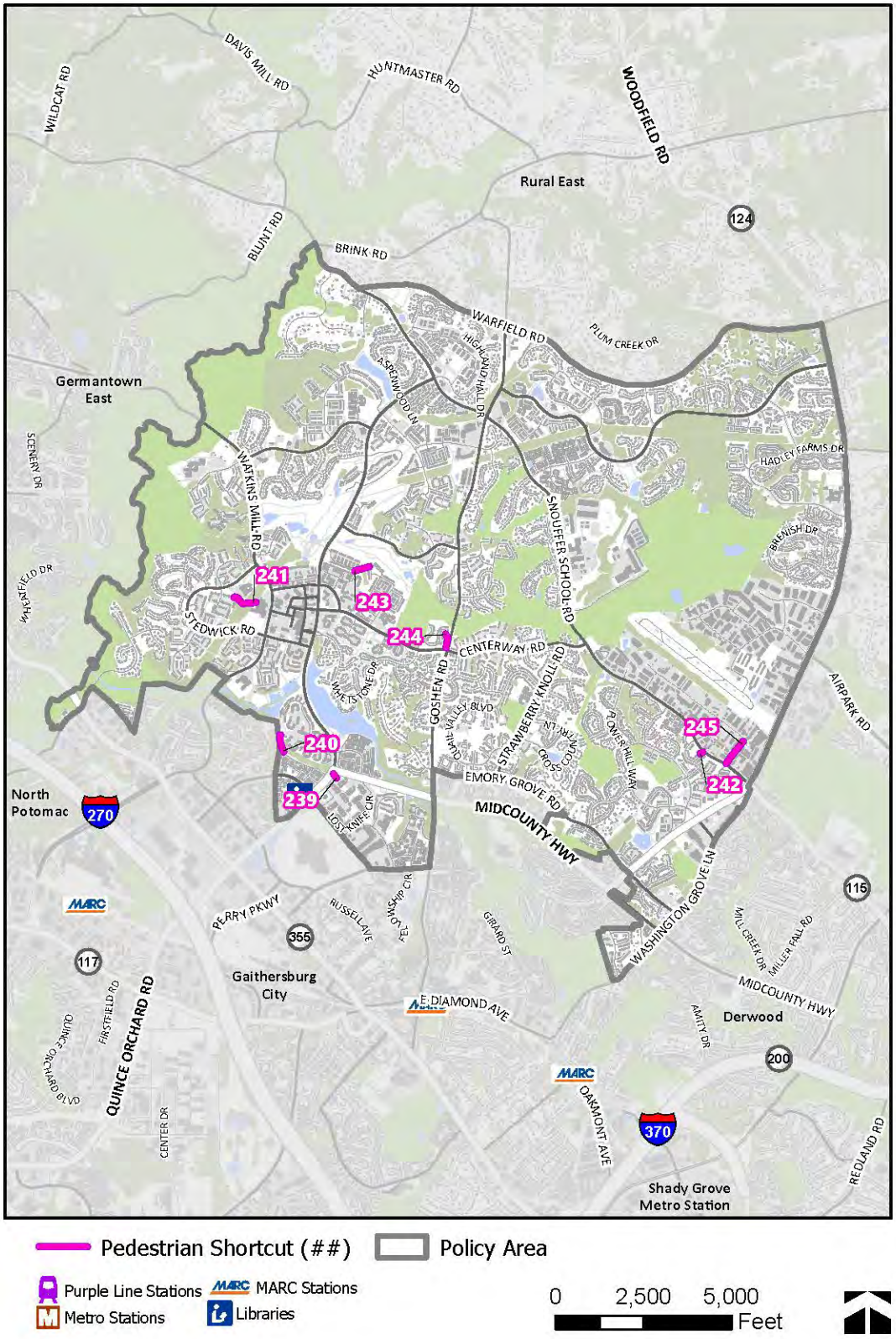
Kensington/Wheaton Policy Area



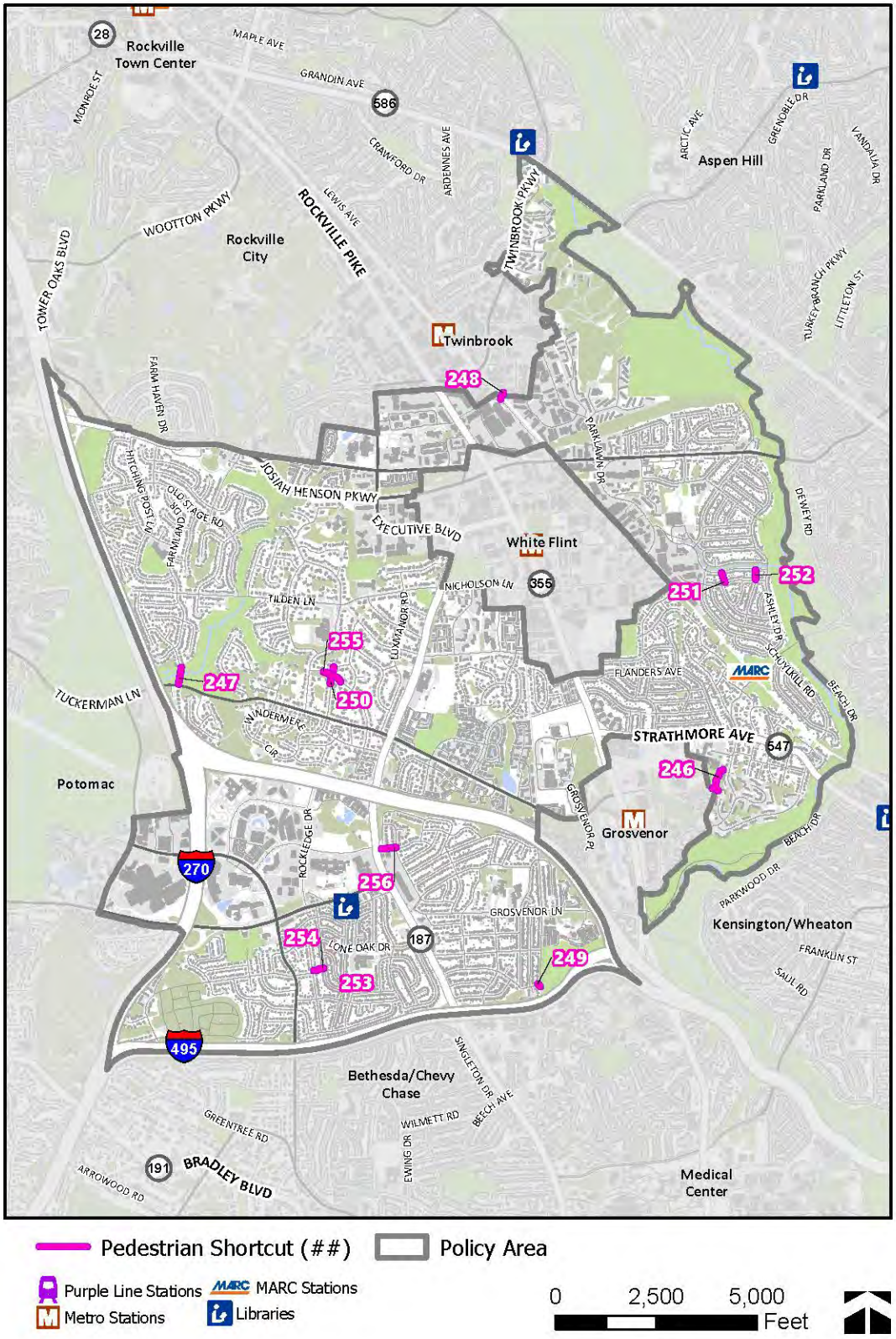
Lyttonsville Policy Area



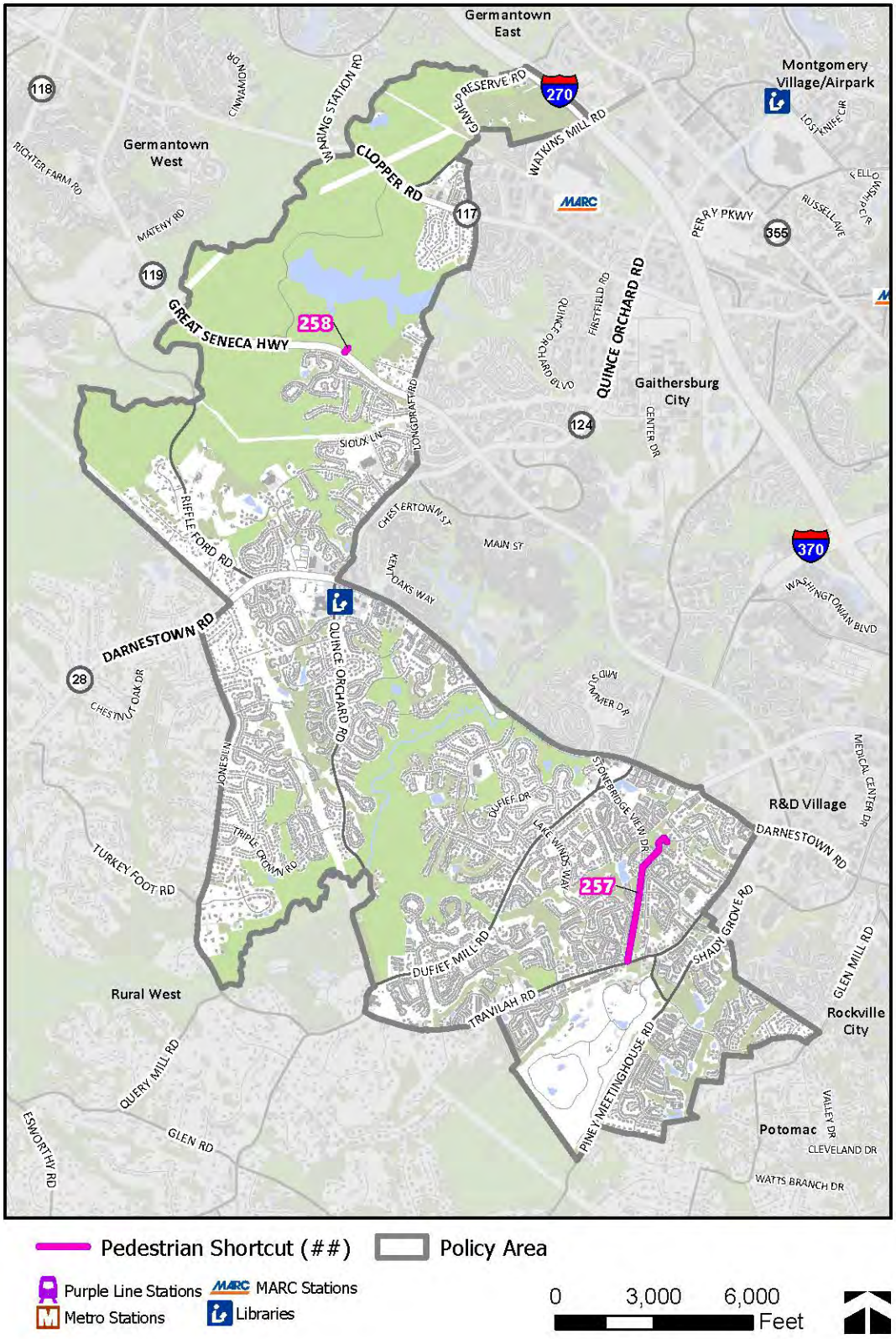
Montgomery Village/Airpark Policy Area



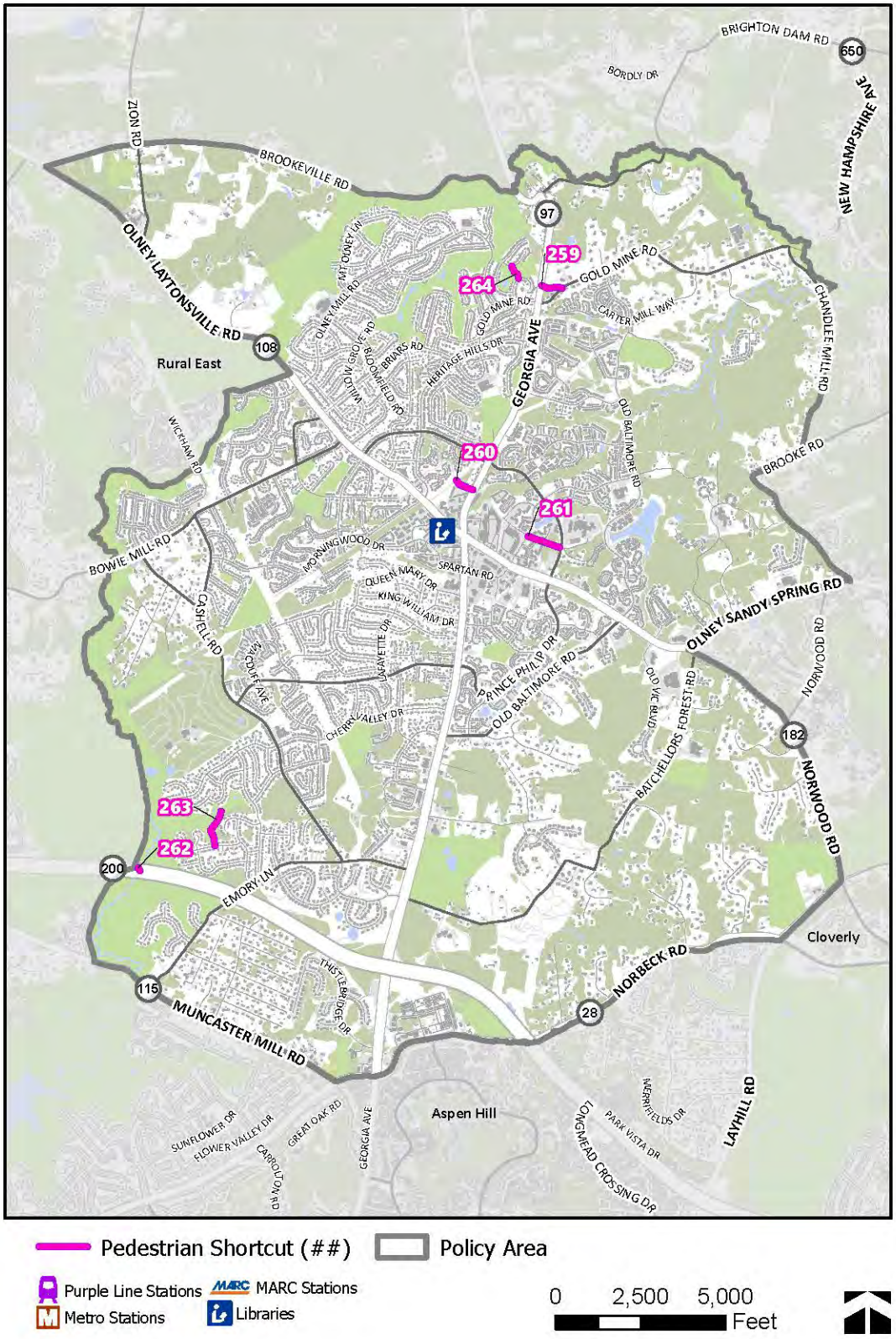
North Bethesda Policy Area



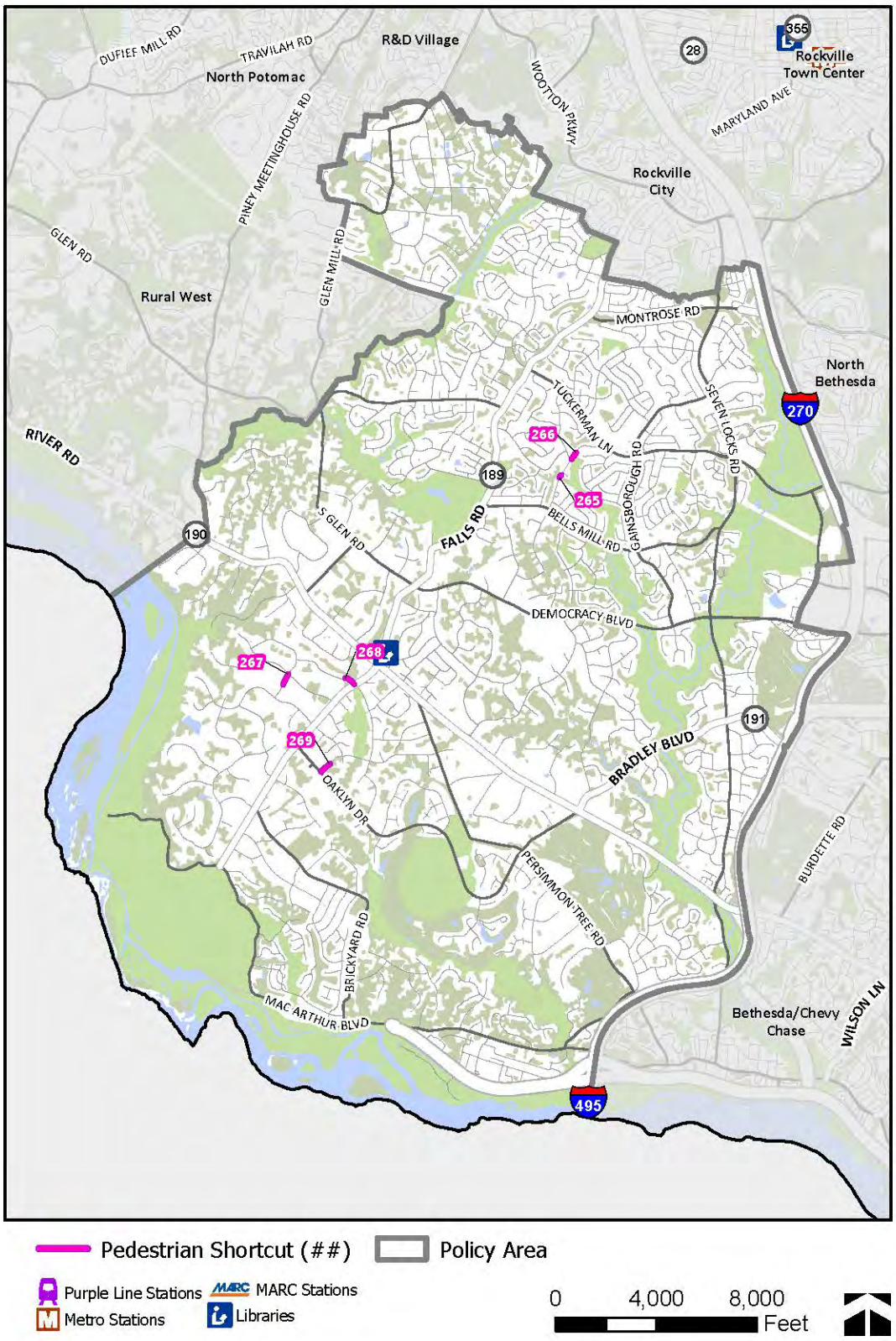
North Potomac Policy Area



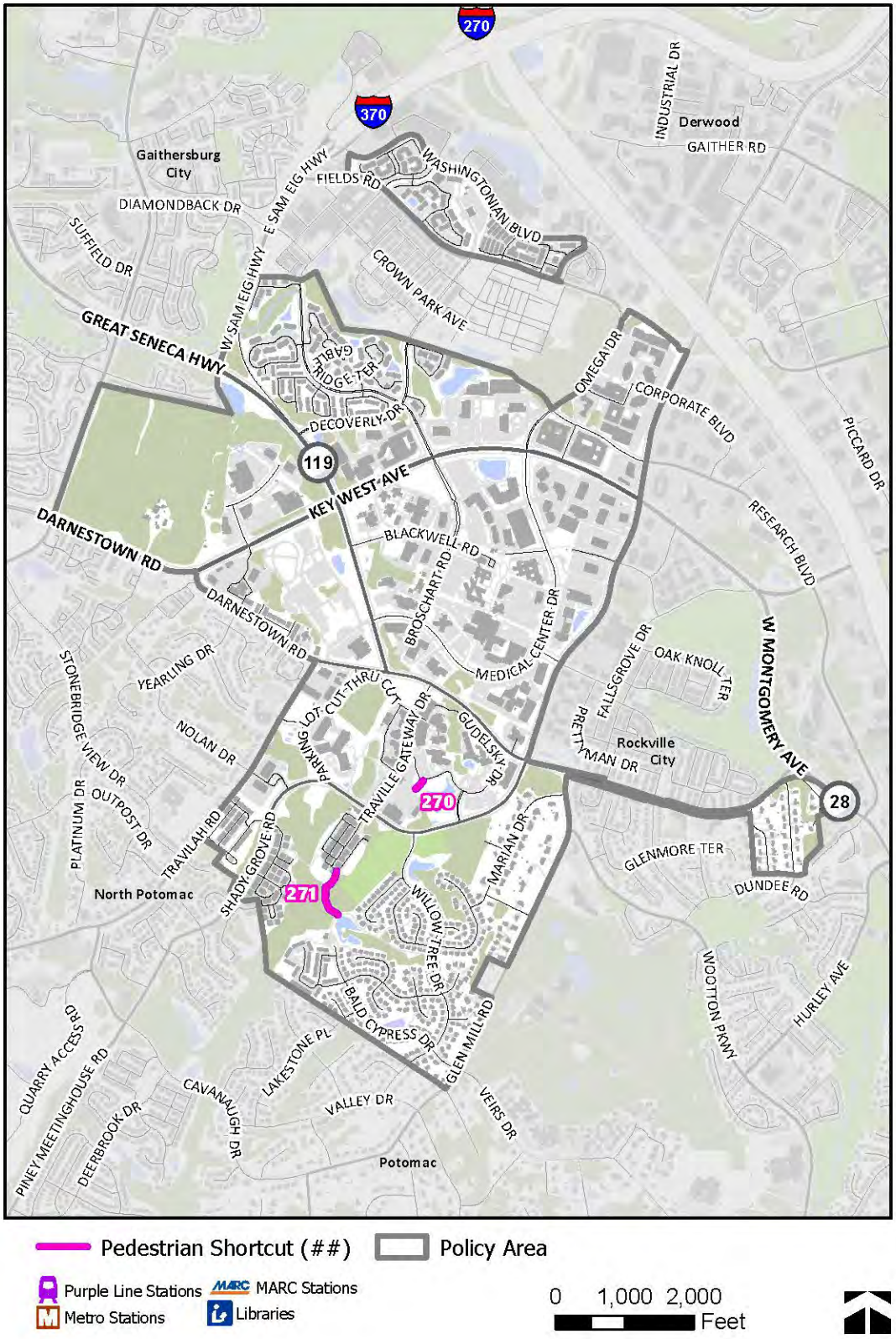
Olney Policy Area



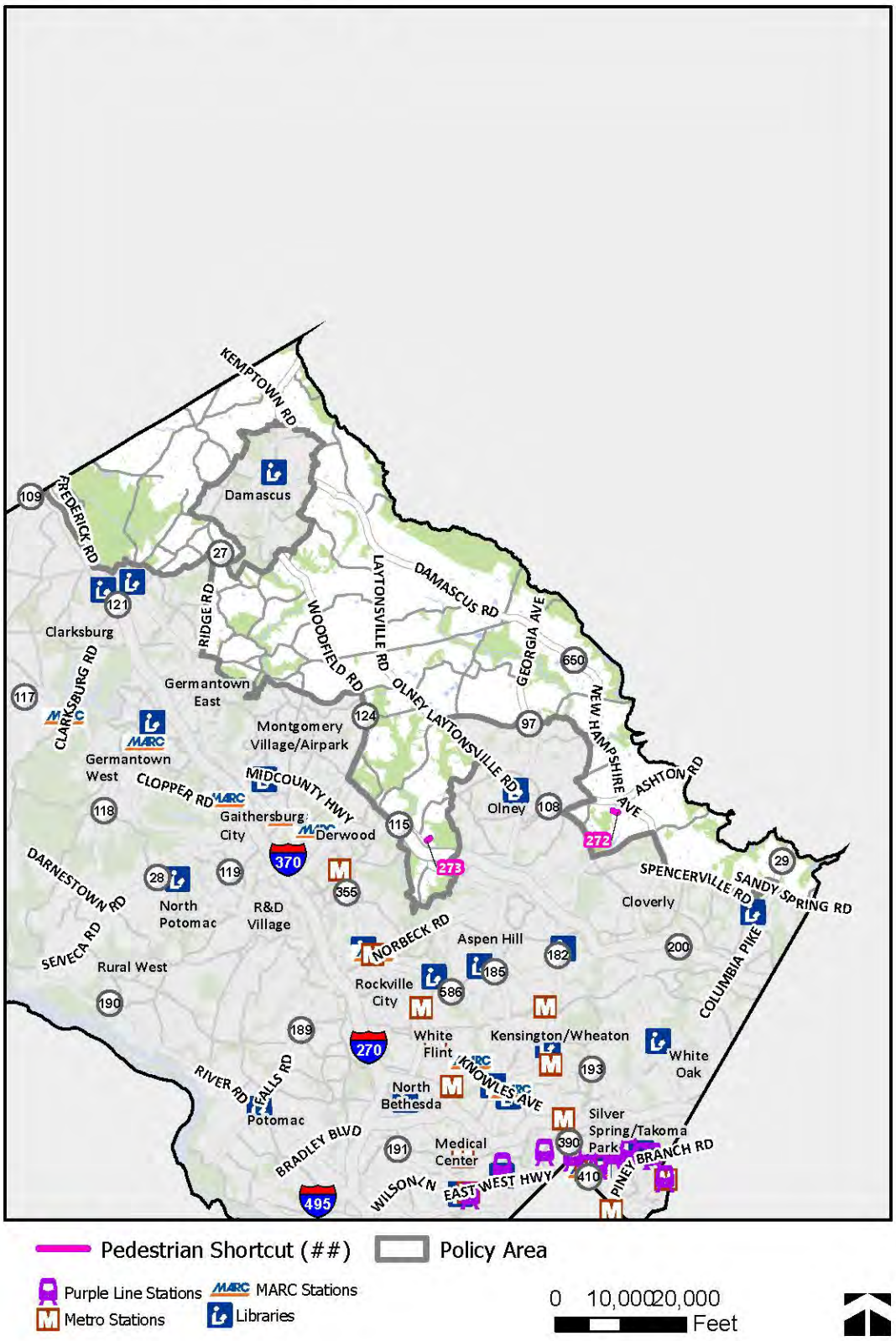
Potomac Policy Area



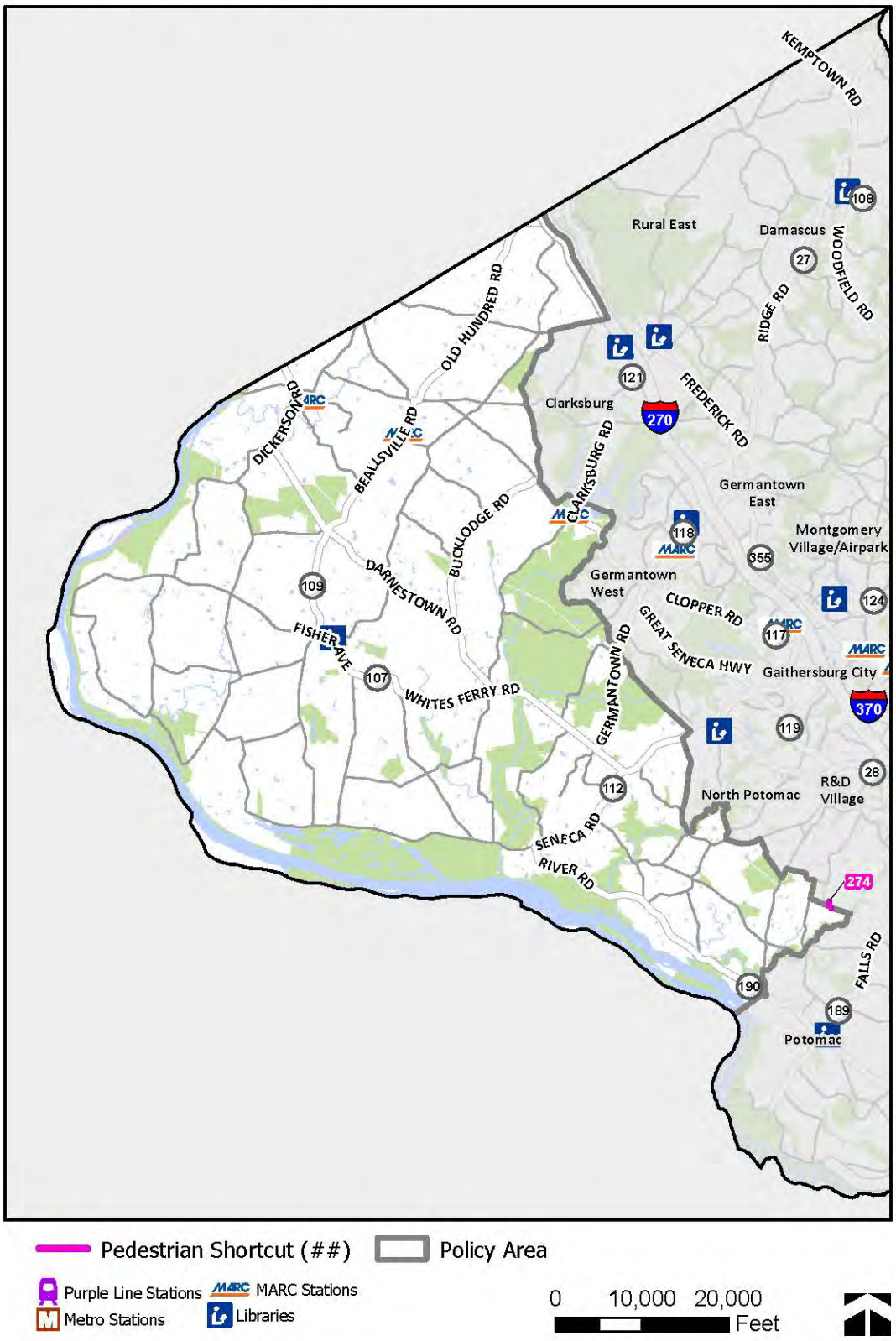
R&D Village Policy Area



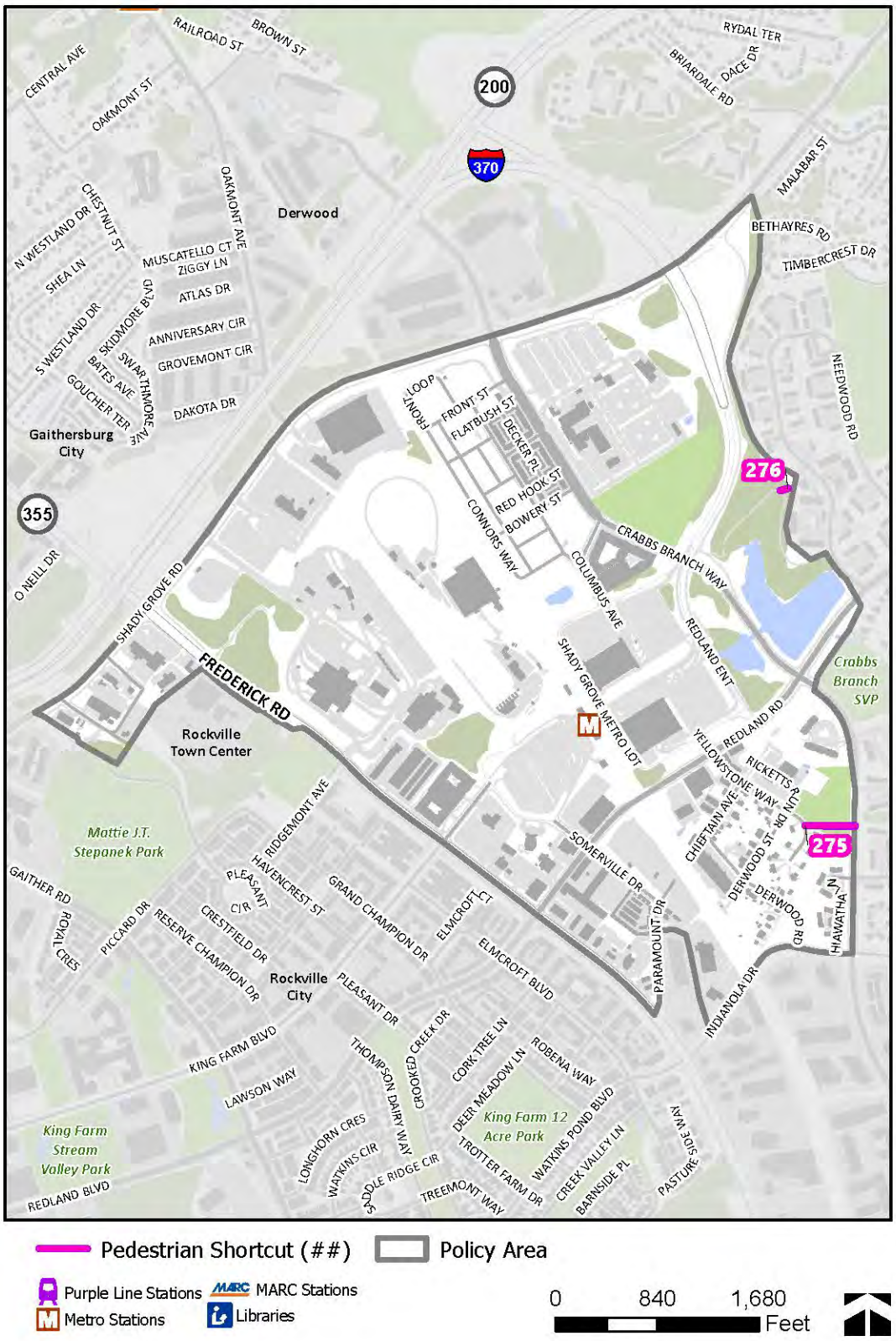
Rural East Policy Area



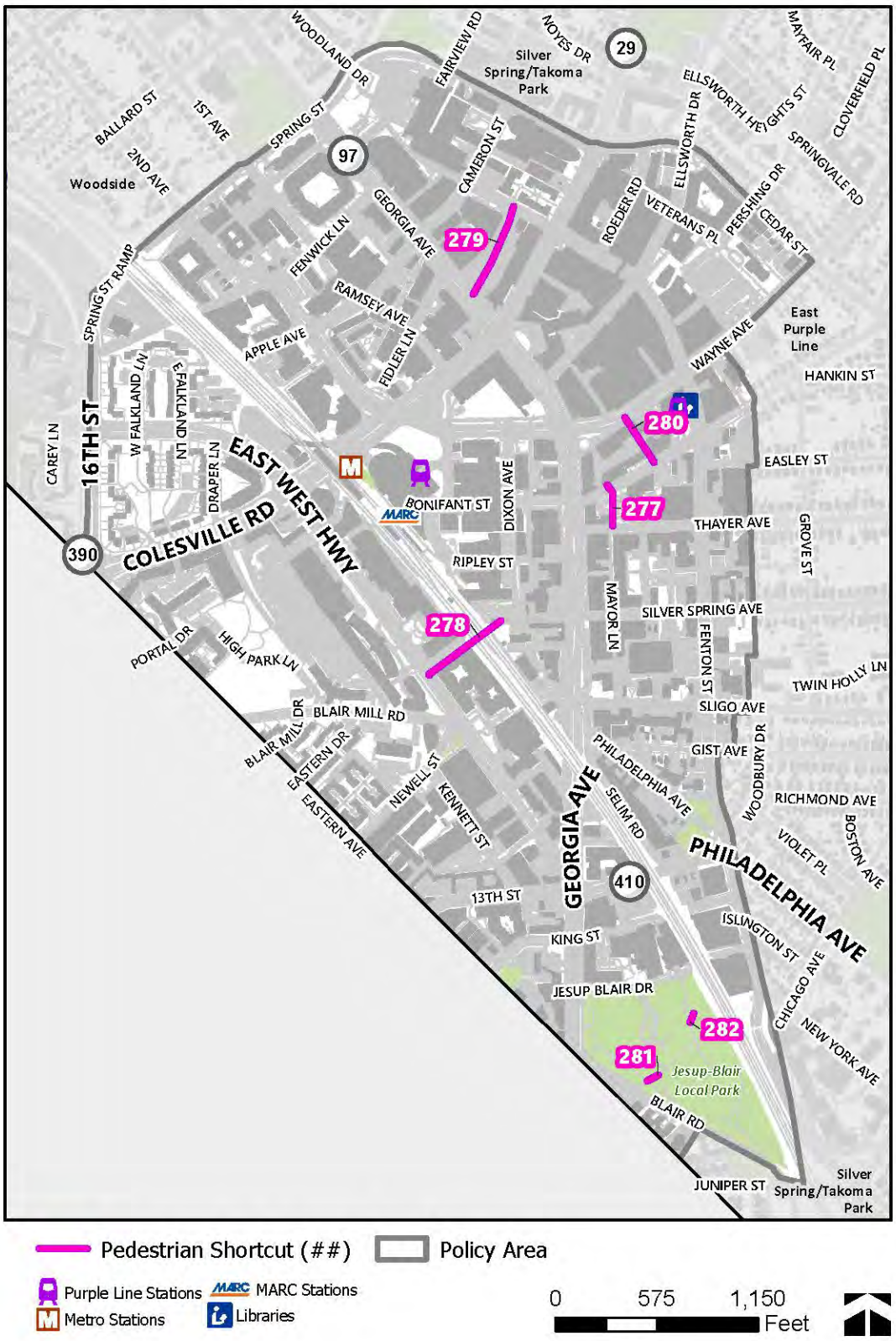
Rural West Policy Area



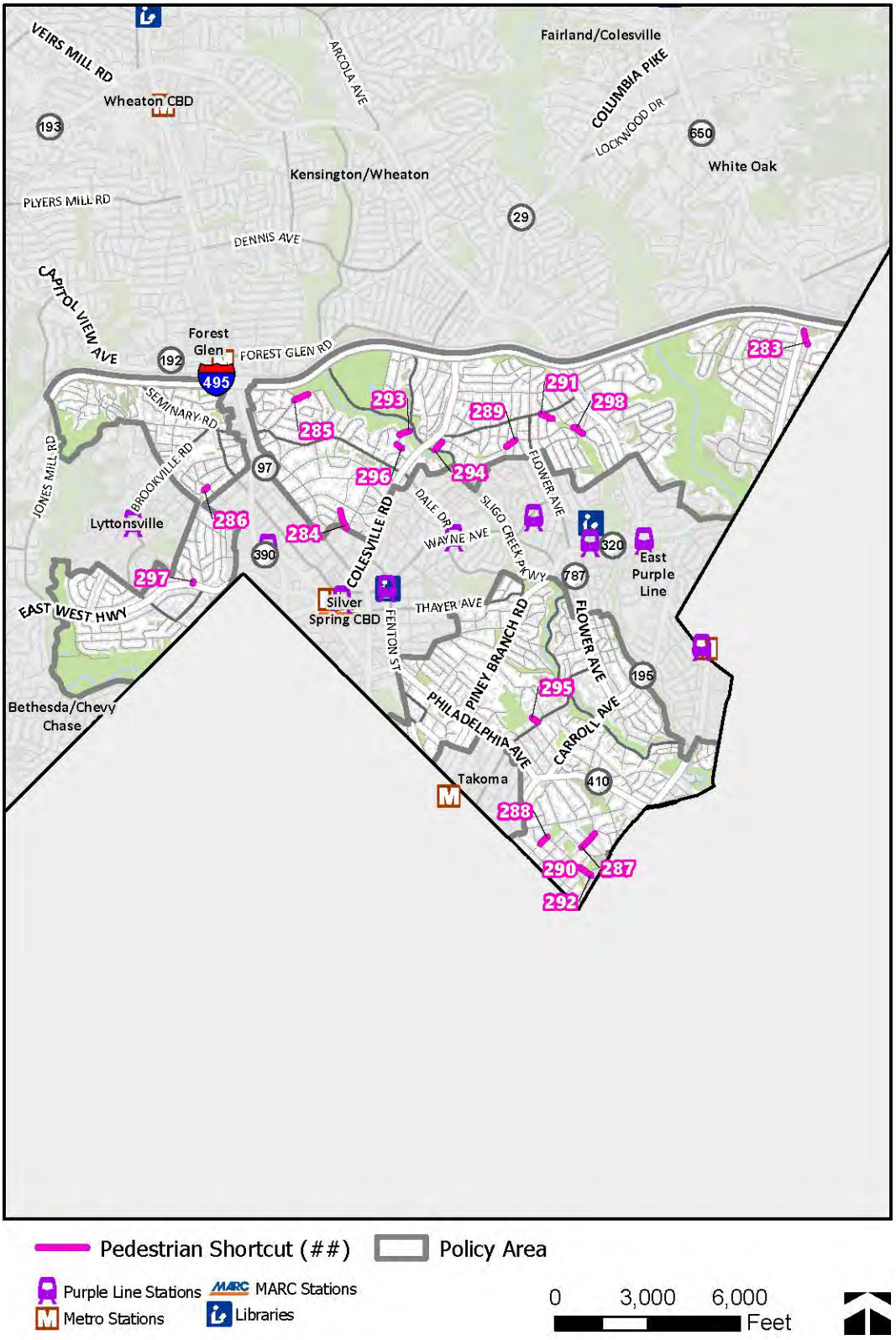
Shady Grove Metro Station Policy Area



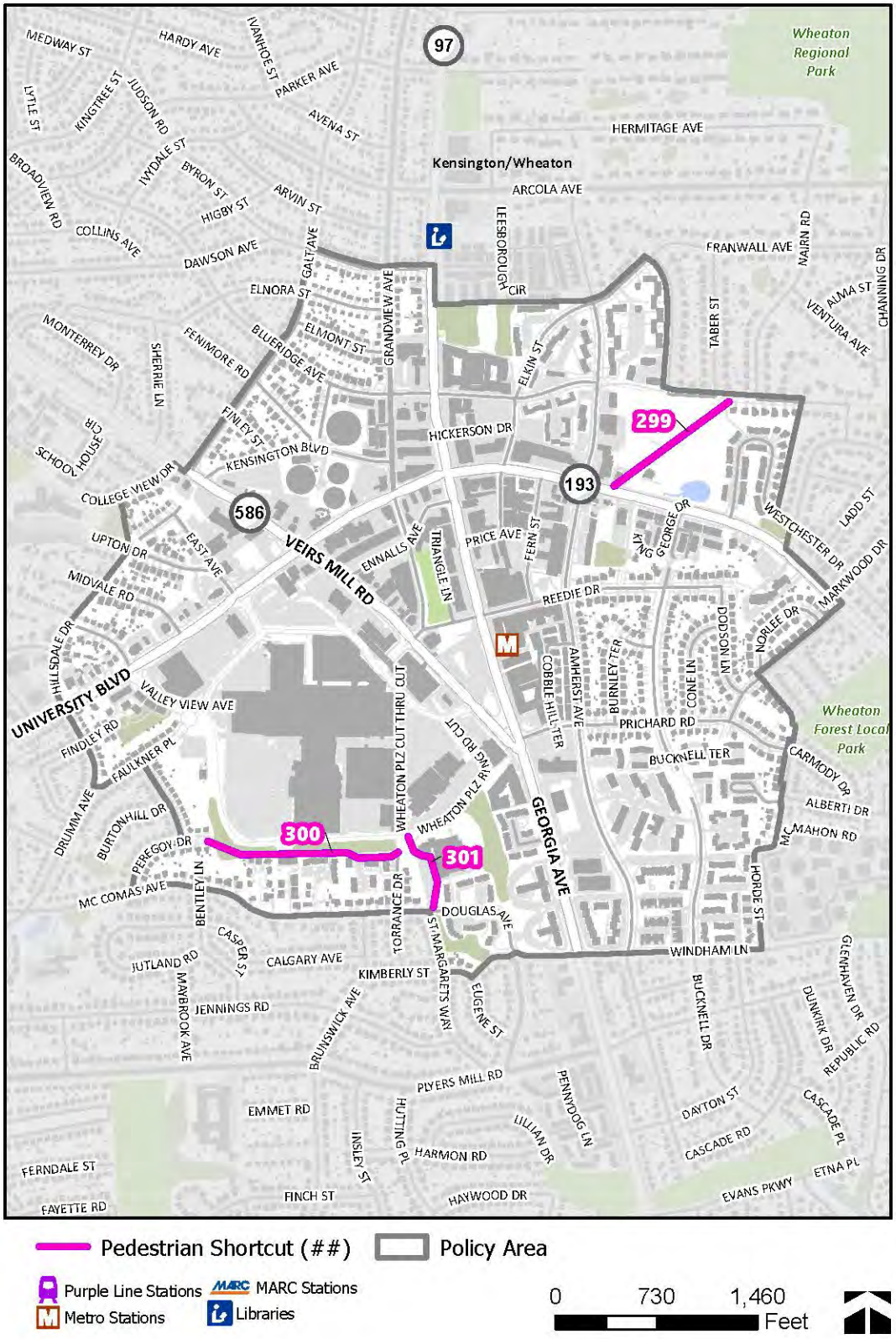
Silver Spring CBD Policy Area



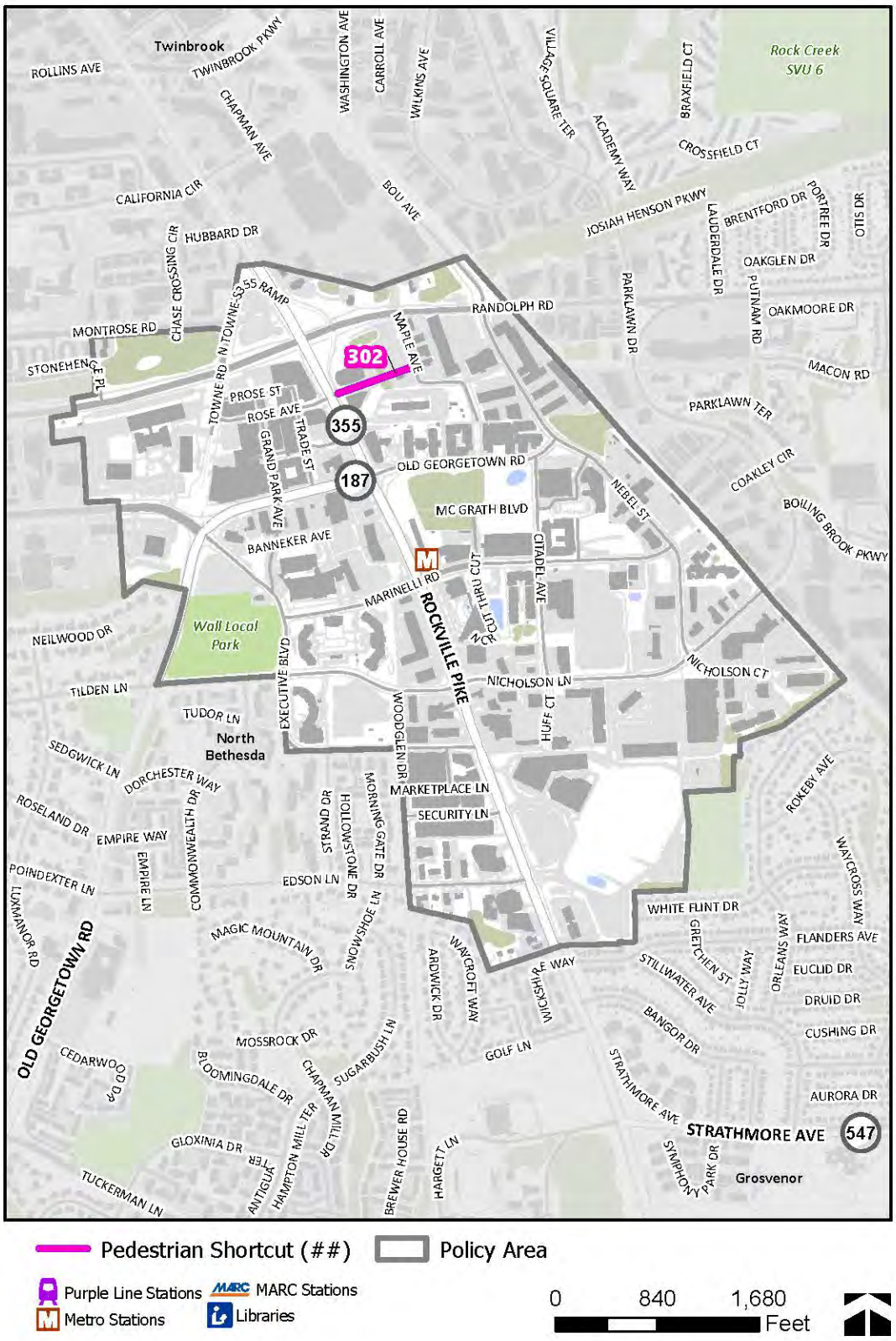
Silver Spring/Takoma Park Policy Area



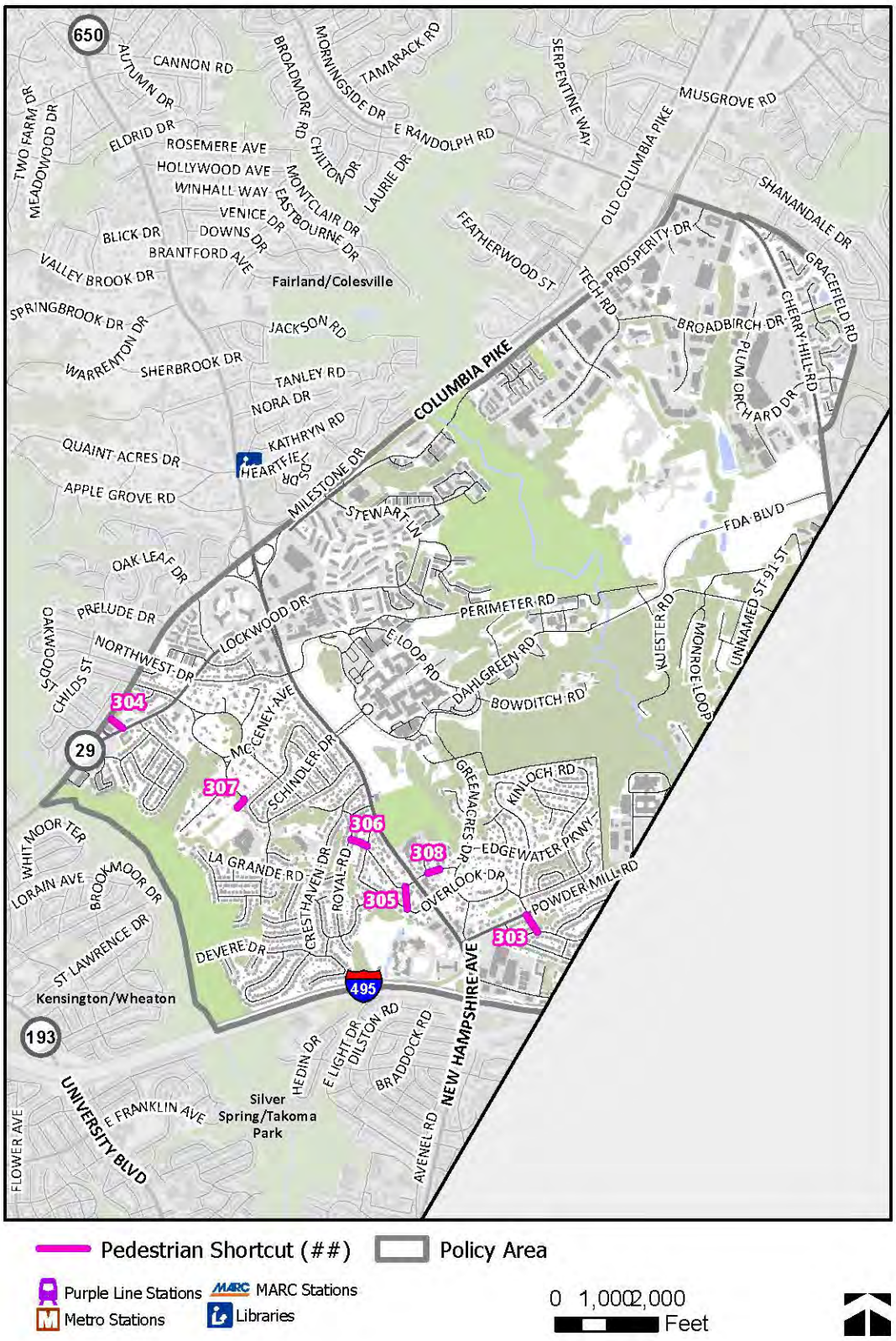
Wheaton CBD Policy Area



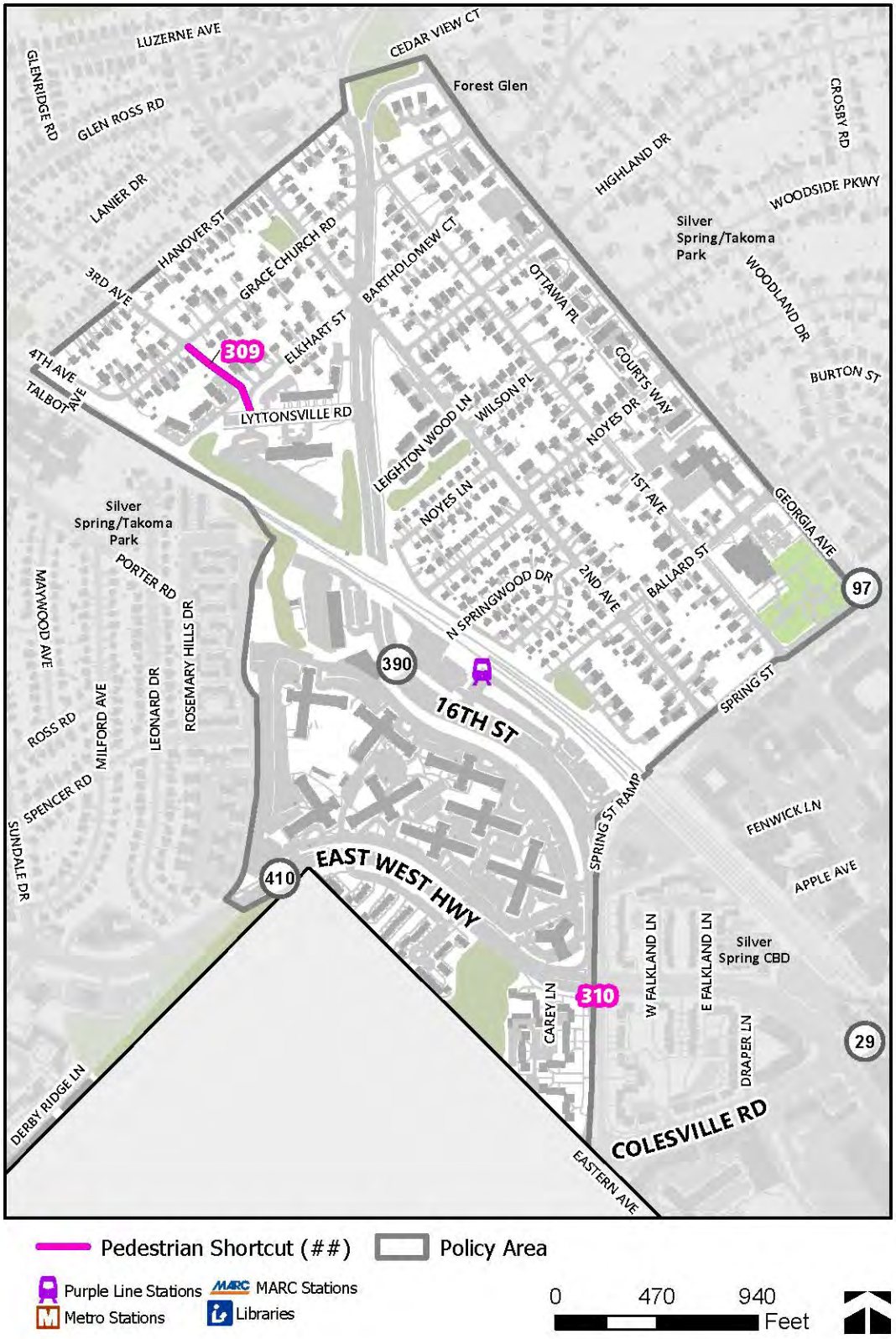
White Flint Policy Area



White Oak Policy Area



Woodside Policy Area



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Country Sidepaths

The CSDG identifies the need to include sidepaths—a shared space for walking and bicycling that is typically 10 feet wide—on two country street types: Country Connectors and Country Roads. A comprehensive review of streets in the rural areas of Montgomery County supports the provision of sidepaths along the streets shown in Table 35~~Table 34~~ and depicted in subsequent maps. While the *Bicycle Master Plan* assigns a prioritization level to about half of all bikeway recommendations, the remaining bikeways are not prioritized. For consistency with the *Bicycle Master Plan,* the sidepath recommendations in Table 35~~Table 34~~ are not assigned a prioritization level and therefore are the lowest priority bikeways in the county. Policy area maps start on page 269.

Table 35~~34~~: New Sidepath Recommendations on Country Roads and Country Connectors

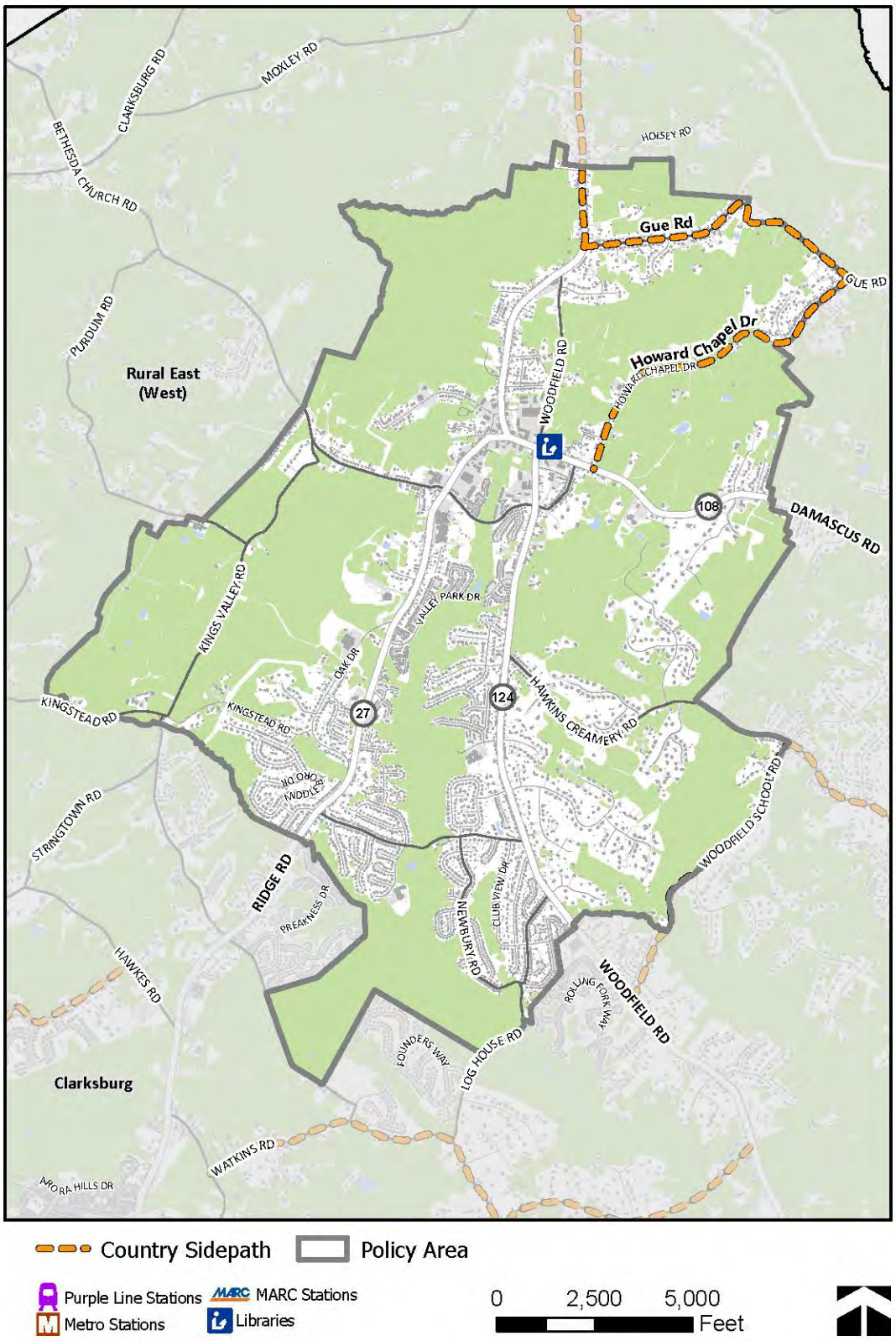
Policy Area	Street Name	From Street	To Street	Facility Type	Bikeway Type
Clarksburg	Piedmont Road	Snowden Farm Parkway	Hawkes Road	Separated Bikeway	Sidepath
Damascus	Gue Road	Ridge Road	Howard Chapel Drive	Separated Bikeway	Sidepath
Damascus	Howard Chapel Drive	Gue Road	Damascus Road	Separated Bikeway	Sidepath
Potomac	South Glen Road	Deep Glen Drive	Falls Road	Separated Bikeway	Sidepath
Rural East (East)	Dorsey Road	Warfield Road	Olney-Laytonsville Road	Separated Bikeway	Sidepath
Rural East (East)	Ednor Road	New Hampshire Avenue	Howard County Line	Separated Bikeway	Sidepath
Rural East (East)	Georgia Avenue (MD 97)	Brookville Road	Utility Corridor #2	Separated Bikeway	Sidepath
Rural East (East)	Griffith Road	Laytonsville Road	Damascus Road	Separated Bikeway	Sidepath
Rural East (East)	New Hampshire Avenue (MD 650)	Utility Corridor #2	Olney-Sandy Spring Road / Ashton Road	Separated Bikeway	Sidepath
Rural East (East)	Tucker Lane	New Hampshire Avenue	Patuxent Drive	Separated Bikeway	Sidepath
Rural East (West)	Hawkins Creamery Road	Woodfield School Road	Hawkins Landing Road	Separated Bikeway	Sidepath
Rural East (West)	Kemptown Road	Ridge Road	Frederick County Line	Separated Bikeway	Sidepath
Rural East (West)	Ridge Road (MD 27)	Gue Road	Kemptown Road	Separated Bikeway	Sidepath
Rural East (West)	Watkins Road	Ridge Road	Woodfield Road	Separated Bikeway	Sidepath
Rural East (West)	Woodfield School Road	Woodfield Road	Hawkins Creamery Road	Separated Bikeway	Sidepath

Policy Area	Street Name	From Street	To Street	Facility Type	Bikeway Type
Rural West	Darnestown Road	Whites Ferry Road	Seneca Road	Separated Bikeway	Sidepath
Rural West	Esworthy Road	River Road	Seneca Road	Separated Bikeway	Sidepath
Rural West	Germantown Road	Darnestown Road	Great Seneca Creek (Northern Branch)	Separated Bikeway	Sidepath
Rural West	Seneca Road	Esworthy Road	Darnestown Road	Separated Bikeway	Sidepath
Rural West	Spring Meadows Drive	Darnestown Road	Seneca Road	Separated Bikeway	Sidepath
Rural West	Whites Ferry Road	Poolesville eastern boundary	Darnestown Road	Separated Bikeway	Sidepath

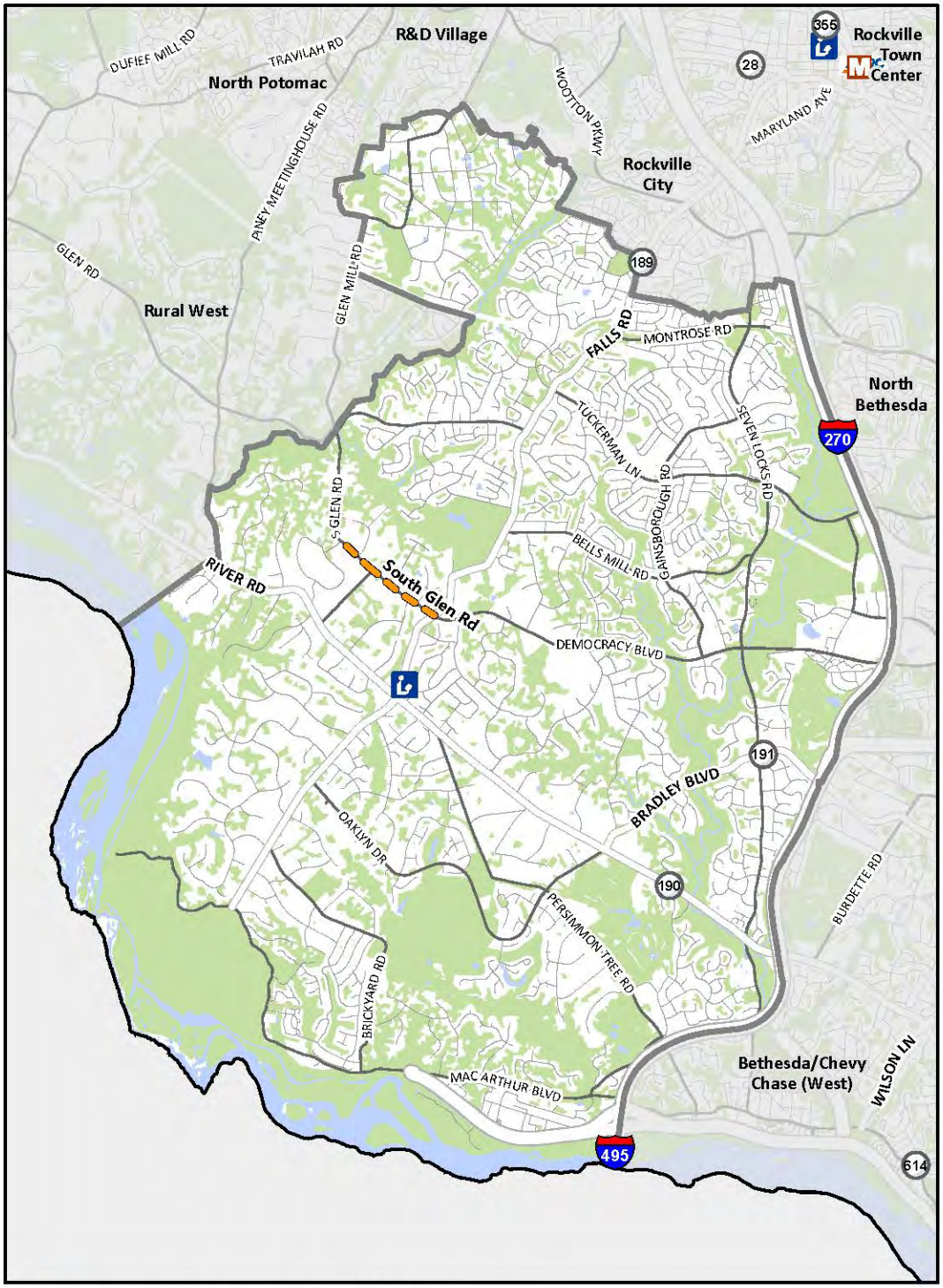
Clarksburg Policy Area



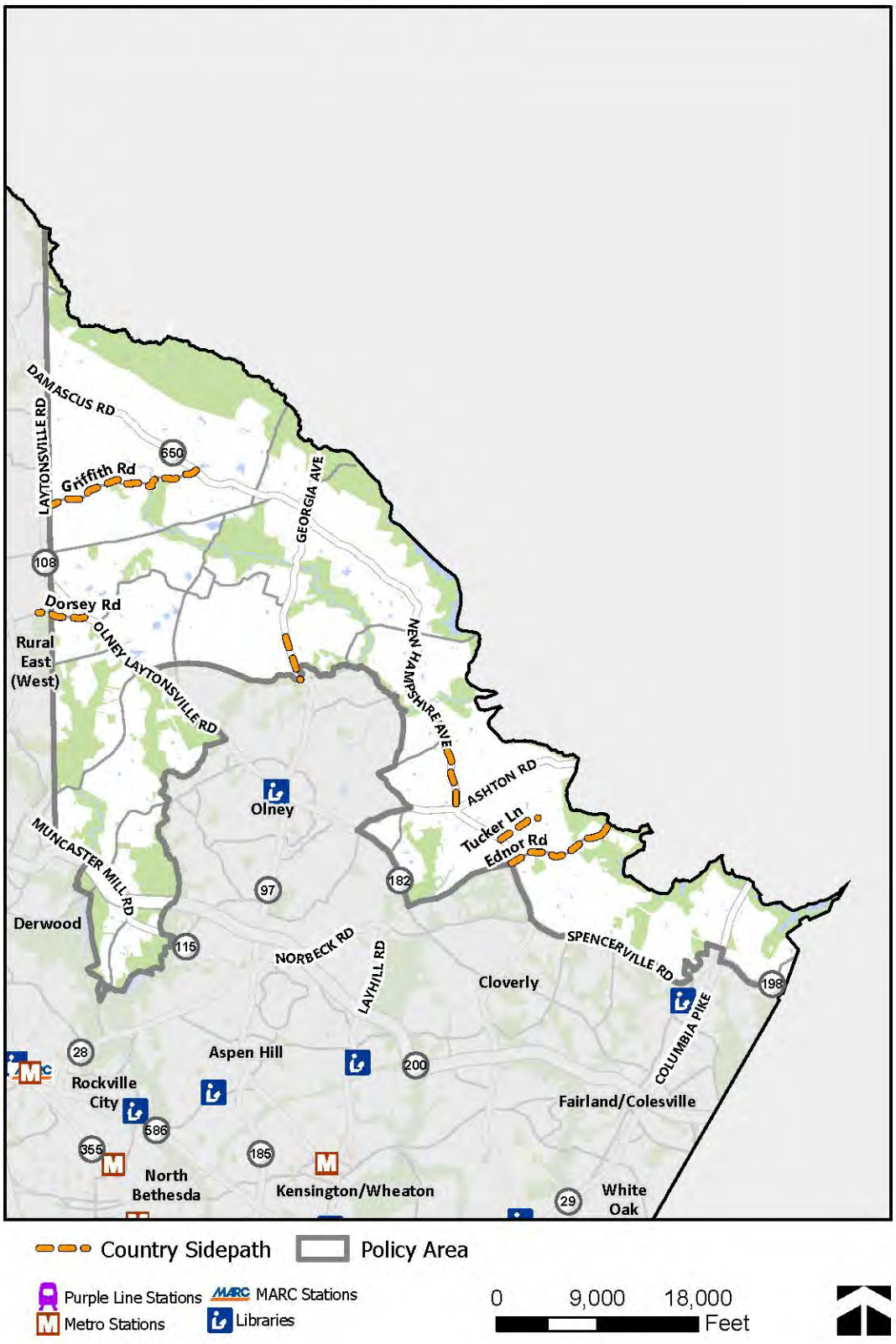
Damascus Policy Area



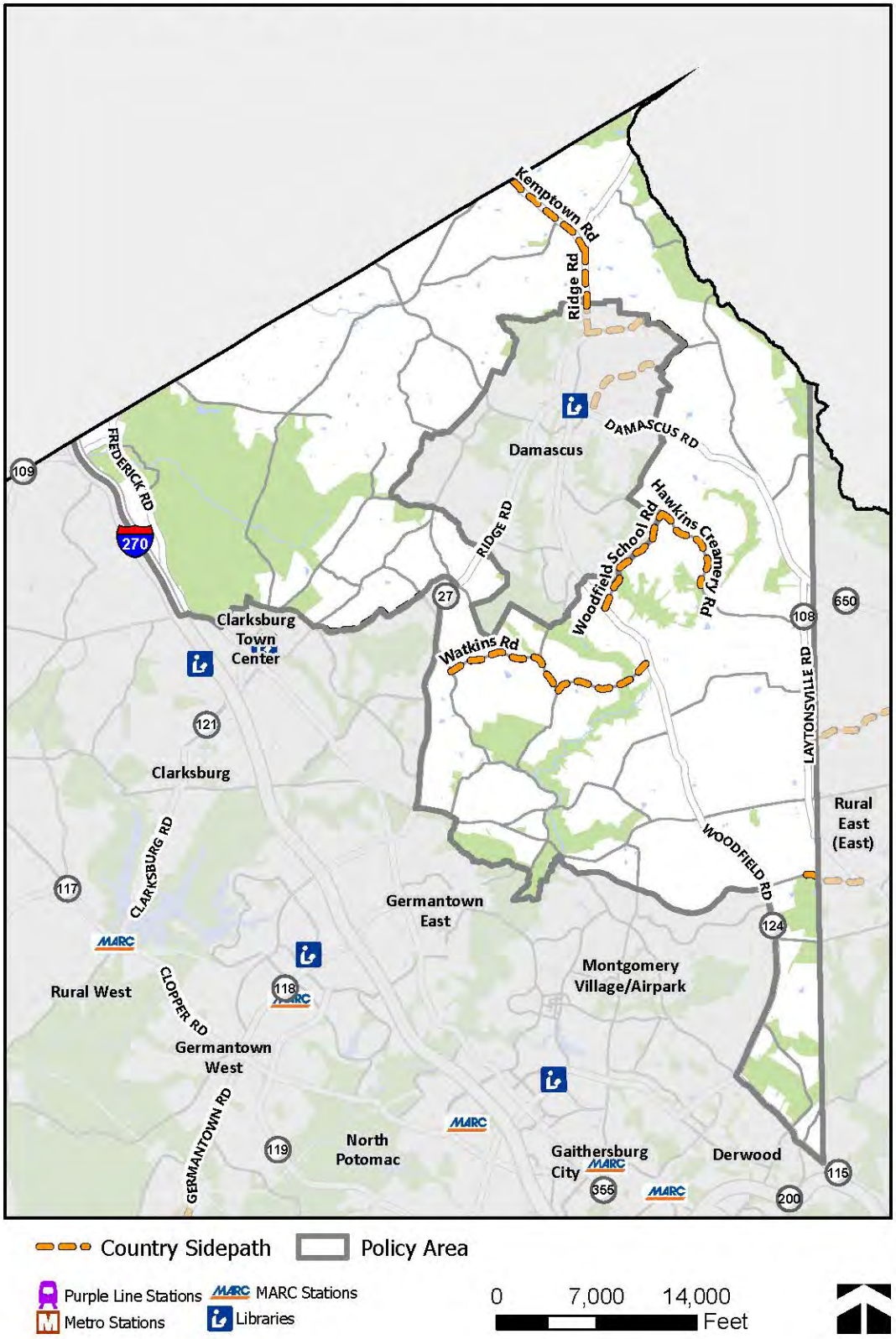
Potomac Policy Area



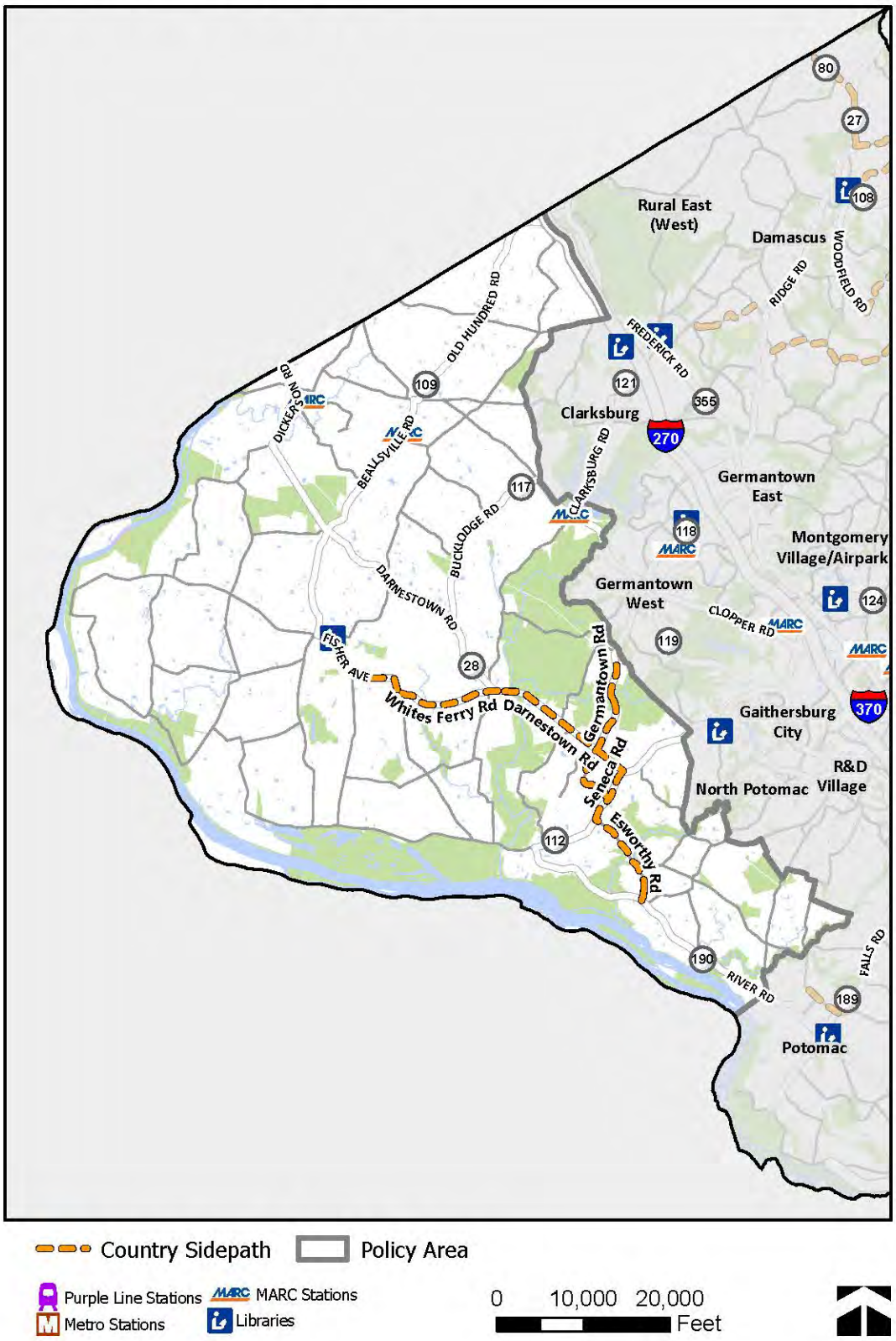
Rural East (East) Policy Area



Rural East (West) Policy Area



Rural West Policy Area



IMPLEMENTATION



Moving the Pedestrian Master Plan from vision to reality will require effectively implementing the plan's recommendations. This chapter provides specific information about the multiple ways recommendations can be achieved. Each set of recommendations has different implementation opportunities, but all rely on support from county and state agencies, elected officials, advocates, and the community to make the investments and policy changes necessary to realize the plan's goals. Potential approaches for each type of recommendation are discussed below.

Design, Policy, and Programming Recommendations

- **State and County Agency Action**
  State and county agencies can implement many recommendations by adopting new processes or changing how they carry out a specific action or how they make decisions about a certain topic. Recommendations about how and where to build sidewalks, traffic signal timing, pedestrian crossing locations, school siting, and other similar topics can be addressed in this manner.

- **County Council Action**
  For certain recommendations, it may be appropriate for the County Council to pass legislation to support implementation. This approach is particularly suitable for situations where additional funding is required or the recommendation is a County Council priority. Examples include recommendations to provide dedicated funding for building pedestrian shortcuts and developing additional funding sources for pedestrian projects.

- **State Legislature Action**
  A subset of recommendations—those that affect the driver licensing process, vehicle registration, and Automated Traffic Enforcement, for example—will require legislation at the state level to be implemented. This approach will likely require sustained effort by the county's Legislative Delegation and supportive advocates over a number of years to build support and approval.

Pedestrian Infrastructure Prioritization

- **State and County Agency Action**
  The Montgomery County Department of Transportation (MCDOT) and Maryland Department of Transportation can adopt the Pedestrian Master Plan's recommended infrastructure prioritization approach for capital projects involving pedestrian safety and connectivity. By doing so, projects within the high-priority areas of the county will be designed and constructed before projects in other areas.

- **County Council Action**
  As the County Council approves the county's capital budget, it has the ultimate say on how funds are expended.

Complete Streets Design Guide Area Type Designations

- **Pedestrian Master Plan Approval and Adoption**
  Per Section 49-31(d) of the County Code, *Complete Streets Design Guide* (CSDG) area types are authorized through approved functional plans, such as the Pedestrian Master Plan, or other master plans and area plans.

Pedestrian Shortcuts and Country Sidepaths

- **Capital Projects**
  One way that master-planned pedestrian shortcuts and country sidepaths (and all other pedestrian infrastructure) can be built is through the county's capital improvements program (CIP). Montgomery County's capital budget provides the spending authority that county agencies need to implement projects. This six-year program for construction projects and improvements is comprehensively amended on even-numbered years and with less substantial adjustments during odd-numbered years. The capital budget includes funding for both level-of-effort programs (those that provide funding for a specific type of project, like building residential sidewalks) and stand-alone projects (projects that are more complicated, more expensive, and require more advanced engineering and design).

  Many of the recommended pedestrian shortcuts could likely be constructed through a level-of-effort program (Policy Recommendation Key Action B-7b), but some may be more complicated and require a stand-alone CIP item. Country sidepaths will likely require stand-alone CIP items to construct because they tend to be more complex.

- **Development Approvals**
  Like many jurisdictions, Montgomery County supplements its capital projects by requiring the construction of pedestrian facilities through the development approval process. Developers are required to construct pedestrian facilities within their site and along their property frontage, as required by applicable master plans and local law. Master-planned pedestrian shortcuts and country sidepaths can both be constructed in this way. Private construction can result in substantial contributions to the pedestrian network, such as long segments of high-quality sidepath or pedestrian shortcut connections along or through larger-scale development projects.

  Additionally, development projects of a certain size are also required to provide additional pedestrian connections within a certain distance of the project frontage through the Local Area Transportation Review process. Through this process, improved pedestrian connections are constructed between development sites and the surrounding community. Depending on which sites are under development, master-planned sidepaths and/or pedestrian shortcuts could be constructed in this manner.

- **Public Facility Construction**
  The construction of public buildings—like schools, fire stations, and libraries—is another opportunity to build master-planned sidepaths, pedestrian shortcuts, and other pedestrian infrastructure. These buildings are a significant investment of community resources. Ensuring they can be safely and directly accessed by residents and visitors is essential. The funding and design of these projects should include adjacent master-planned facilities, including pedestrian infrastructure. At a minimum, public projects should provide the same quality and extent of accommodations as private projects. There are also potential opportunities to coordinate construction of these public buildings with other public projects in the area so broader pedestrian infrastructure improvements can be made.

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MONITORING

A biennial monitoring program led by Montgomery Planning will track how well the plan vision is being achieved through implementation of plan recommendations and progress meeting performance measure targets identified in the plan's goals and objectives.

Continued monitoring is an important component of the Pedestrian Master Plan for several reasons:

- **Transparency**
  It is a basic "good government" measure in line with Montgomery County's commitment to effective public communication.

- **Accountability**
  It makes it easier for community members to effectively advocate about the pedestrian issues important to them. This advocacy can support increased funding, a more targeted implementation of specific recommendations, and a continued emphasis on improving pedestrian conditions countywide.

- **Reevaluation**
  It is an opportunity for the county to understand the obstacles that have slowed plan implementation over the prior two years. This accounting will make it easier to identify an effective path forward for Montgomery Planning and partner agencies to remove these barriers.

Recommendations

Monitoring recommendations track the county's progress in achieving the Pedestrian Master Plan's goals and objectives. These recommendations also identify opportunities to improve the quality of the data collected countywide so decisions on project prioritization and funding can be more equitable.

MO-1: Track implementation of the Pedestrian Master Plan.

The Pedestrian Master Plan contains performance measures to better understand progress toward achieving plan goals over time. A biennial monitoring report would allow planners, elected officials, and members of the public to track progress on Pedestrian Master Plan implementation and help guide future priorities. In conjunction with the *Bicycle Master Plan Biennial Monitoring Report,* the Pedestrian Master Plan Biennial Monitoring Report would be merged with the Planning Department's *Travel Monitoring Report* to present a comprehensive review of transportation conditions in the county.

Key Actions:

MO-1a: Develop a Pedestrian Master Plan Biennial Monitoring Report.

Create a monitoring report that is reviewed by the Planning Board and County Council's Transportation and Environmental (T&E) Committee in the fall of odd-numbered years to influence the county's capital budget.

Goals: Walking Rates, Comfortable/Connected Pedestrian Network, Pedestrian Safety, Equitable and Just Pedestrian Network

Lead: Montgomery Planning

MO-1b: Conduct a Biennial Pedestrian and Bicycle Survey.

Conduct a comprehensive pedestrian and bicycle survey every two years to better understand the effects of Pedestrian Master Plan implementation. Data collected will include satisfaction metrics, trip purpose, average distance traveled, and others. The results of the survey will be incorporated in the Biennial Monitoring Report.

Goals: Walking Rates, Comfortable/Connected Pedestrian Network, Pedestrian Safety, Equitable and Just Pedestrian Network

Lead: Montgomery Planning

MO-1c: Conduct a student travel tally annually.

The 2019 MCPS Student Travel Tally is an invaluable tool to increase understanding of student travel patterns. Conducting this travel tally annually will allow policymakers to better understand changes in student travel behavior that may result from improvements to pedestrian infrastructure, programming, and policy.

Goal: Walking Rates

Leads: MCPS, Montgomery Planning

MO-1d: Expand the county's pedestrian count program.

MCDOT and Montgomery Parks maintain a growing network of pedestrian and bicycle counters throughout the county. Expanding the current pedestrian count program to more locations will provide more complete data understand pedestrian travel patterns just as we do for motor vehicle travel.

Goal: Equitable and Just Pedestrian Network

Leads: MCDOT, Montgomery Parks, Montgomery Planning

MO-1e: Develop a public-facing dashboard that shows sidewalk coverage and other pedestrian metrics.

A regularly updated dashboard would provide transparency in implementation of the Pedestrian Master Plan. The dashboard would include data about PLOC changes over time, comfortable pedestrian connectivity, crashes, sidewalks constructed, and other metrics to provide members of the public insights into the state of pedestrian activity and infrastructure.

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network

Lead: Montgomery Planning

MO-1f: Consider revisiting the objectives, metrics, and targets for each objective as part of the Pedestrian Master Plan Biennial Monitoring Reports.

As the Pedestrian Master Plan is implemented, there may be opportunities to add or remove objectives, change metrics, and adjust objective targets in response to county policy, changes in existing conditions, and other factors.

Goal: Walking Rates

Lead: Montgomery Planning

MO-2: Conduct a pedestrian 311 equity review.

Pedestrian safety and equity concerns should be addressed equitably. However, studies in other communities have shown that overreliance on 311 reporting to inform safety improvements leads to inequitable outcomes because residents in some communities are less likely to use 311 due to technology issues, lack of time, distrust in government, and other barriers. The key action identifies a path forward to improve equity.

Key Actions:

MO-2a: Conduct a study to determine how 311 reporting of pedestrian safety and accessibility concerns is distributed across the county and whether reliance on 311 leads to inequitable outcomes. Identify more equitable alternatives if 311 reporting is found to be inequitable.

Goal: Equitable and Just Pedestrian Network

Lead: County Executive, County Council

MO-3: Assess transportation capital projects post-construction for effectiveness.

To improve stewardship of limited resources and ensure that the county is making investments that provide public benefits, during the initial development of a project, the county should identify goals that projects aim to achieve. Many of the goals may be related to safety, such as reducing pedestrian crashes, run-off-the road crashes, or head-on crashes. For other projects, the goal may be shortening pedestrian trip distance or mitigating the environmental impacts of an existing transportation connection. After project construction, the county should assess whether the project achieved the intended goals and make changes to future projects based on lessons learned.

Key Actions:

MO-3a: Identify clear goals for each transportation capital project and evaluate how effective each project is in achieving those goals.

Goals: Equitable and Just Pedestrian Network, Comfortable/Connected Pedestrian Network, Pedestrian Safety

Lead: MCDOT

Example Monitoring Report

An example of the Pedestrian Master Plan Monitoring Report is shown below.

		2022	Target	Source
Goal 1: Increase Walking Rates in Montgomery County				
Pedestrian Trips as a Percentage of All Trips	Overall	7.5%	12.0%	MWCOG Regional Travel Survey 2017-2018
	Urban	11.3%	22.0%	
	Transit Corridor	7.3%	12.0%	
	Exurban/Rural	4.6%	7.0%	
Percentage of Residents who Commute on Foot (including by Transit)	Countywide	2.2% (17%)	3.0% (30%)	U.S. Census ACS 2015-2019 "Means of Transportation to Work"
Percentage of Pedestrian (including Transit) Commuters to TMDs	Downtown Bethesda	4.9% (23.9%)	10% (40%)	TMD Commuter Surveys
	Downtown Silver Spring	4.8% (36.4%)	10% (50%)	
	Friendship Heights	2.3% (27%)	4% (35%)	
	Greater Shady Grove	0.9% (5.1%)	1.5% (7%)	
	North Bethesda	1.3% (14.8%)	4% (25%)	
	White Oak	--	2% (10%)	
Percentage of People Walking to Access Transit	Red Line	--	50.0%	TBD
	Brunswick Line	--	10.0%	
	Purple Line	--	70.0%	
Percentage of Students Walking (including	Elementary	16% (16.7%)	50% (55%)	2019 MCPS Student Travel Tally
	Middle	11% (12.5%)	30% (35%)	

		2022	Target	Source
Transit) to School	High	8% (11%)	15% (25%)	
Percentage of Students Walking (including Transit) from School	Elementary	19% (19.6%)	55% (60%)	2019 MCPS Student Travel Tally
	Middle	15.5% (17.8%)	40% (45%)	
	High	12.2% (20.8%)	20% (35%)	
Pedestrian Satisfaction	Overall	52%	75.0%	2020 Countywide Pedestrian Survey
	Access to Retail, Restaurants, Parks, Etc	44%	60.0%	
	Amount of Sidewalks Along Route	44%	60.0%	
	Width of Sidewalks	44%	60.0%	
	Shading by Trees or Buildings	39%	50.0%	
	How Often Driveways Cross Sidewalks	35%	50.0%	
	Distance between Sidewalks and Cars	31%	50.0%	
	Snow Removal	28%	50.0%	
	Speed of Cars along Sidewalks and Paths	21%	50.0%	
	Distance to Cross the Street	49%	60.0%	
	Time to Cross the Street at Pedestrian Signals	47%	65.0%	
	Number of Marked Crosswalks	46%	65.0%	
	Wait Time for a Pedestrian Walk Signal	44%	60.0%	
	Number of Places to Safely Cross the Street	42%	60.0%	
	Drivers Stopping for Me When I Cross the Street	34%	50.0%	
	Places to Stop Partway while Crossing	33%	50.0%	

		2022	Target	Source
	Number of Vehicles Cutting across the Crosswalk	22%	50.0%	
	Overhead Lighting along Sidewalks and Pathways	32%	50.0%	
	Overhead Lighting at Crossings	31%	50.0%	

		2022	Target	Source
Goal 2: Create a Comfortable, Connected, Convenient Pedestrian Network in Montgomery County				
Comfortable Connectivity	Pathway Comfort	58%	70%	PLOC Network
	Crossing Comfort	44%	55%	
		Pathway/Crossing		
Comfortable Pedestrian Access to Destinations (Pathway / Crossing)	Elementary Schools	40% / 32%	80% / 60%	
	Middle Schools	21% / 13%	65% / 50%	
	High Schools	7% / 5%	30% / 20%	
	Parks	71% / 34%	80% / 40%	
	Red Line	86% / 66%	100% / 80%	
	Brunswick Line	84% / 72%	90% / 80%	
	Purple Line	79% / 79%	95% / 90%	
	Libraries	77% / 62%	85% / 70%	
	Recreation Centers	79% / 62%	90% / 70%	
Percentage of Sidewalks that are Shaded by Tree Canopy		28%	40%	2020 Planning Tree Canopy Data/ PLOC Network

	2022	Target	Source
Goal 3: Enhance Pedestrian Safety in Montgomery County			
Pedestrian Fatalities and Serious Injuries	80	0	2019 County Crash Data
Percent of Respondents Satisfied or Very Satisfied with Personal Safety while Walking	52%	75%	2020 Countywide Pedestrian Survey
Pedestrian Crashes	503	N/A	2019 County Crash Data

		2022		Target	Source
Goal 4: Build an Equitable and Just Pedestrian Network					
Pathways Inaccessible to Persons with Disabilities		93.8%		0%	2020 MCDOT Sidewalk Condition Data
		Title I/Focus/High FARMS Designated Schools/Non-Designated Schools			
Comfortable Pedestrian Access to Schools (Title I/Focus/High FARMS Designated Schools vs. Non-Designated Schools)	Elementary Schools	Pathways	43% / 36%	No Disparities	PLOC Network
		Crossings	34% / 30%	No Disparities	
	Middle Schools	Pathways	18% / 20%	No Disparities	
		Crossings	11% / 14%	No Disparities	
	High Schools	Pathways	6% / 7%	No Disparities	
		Crossings	3% / 7%	No Disparities	
		EFA/Non-EFA			
Comfortable Pedestrian Access to Destinations (EFA vs. Non-EFA)	Purple Line	Pathways	73% / 81%	No Disparities	PLOC Network
		Crossings	73% / 80%	No Disparities	
	Red Line	Pathways	88% / 85%	No Disparities	

		2022		Target	Source
		Crossings	59% / 68%	No Disparities	
	Brunswick Line	Pathways	88% / 83%	No Disparities	
		Crossings	79% / 69%	No Disparities	
	Parks	Pathways	83% / 66%	No Disparities	
		Crossings	34% / 34%	No Disparities	
	Libraries	Pathways	83% / 66%	No Disparities	
		Crossings	34% / 34%	No Disparities	
	Recreation Centers	Pathways	77% / 77%	No Disparities	
		Crossings	55% / 66%	No Disparities	
Ratio of Severe Injuries and Fatalities per Mile in EFAs vs. Non-EFAs			4.8	1	2019 County Crash Data
Difference in Pedestrian Satisfaction between People with and without Disabilities			10%	0%	2020 Countywide Pedestrian Survey

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GLOSSARY

Abandonment: An amendment to a plat of subdivision that releases the right-of-way from future public use.

Access Management Study: A study to coordinate regulation and design of access between roadways and land development to systematically improve the safety and efficiency of moving people and goods while reducing conflicts between all modes of transportation using and crossing the roadway, including cars, heavy vehicles, transit, bicycles, and pedestrians.

Accessible Pedestrian Signals (APS): Devices that communicate information about the WALK and DON'T WALK intervals at signalized intersections and mid-block crossings in non-visual formats to pedestrians who are blind or who have low vision.

Accessibility: People with a disability are afforded the opportunity to acquire information, engage in interactions, and enjoy services in a similar amount of time and effort as people without a disability.

- **ADA Accessibility Guidelines**: Accessibility standards issued under the Americans with Disabilities Act (ADA) that apply to places of public accommodation, commercial facilities, and state and local government facilities in new construction, alterations, and additions.
- **Architectural Barriers Act Accessibility Standards**: Federal requirements to ensure that buildings and facilities are accessible to and usable by persons with disabilities.
- **Maryland Accessibility Code**: The section (Chapter 09.12.53) of the Maryland code that provides for the accessibility and usability of buildings and facilities by individuals with disabilities.
- **Public Rights-of-Way Accessibility Guidelines (PROWAG)**: A draft set of guidelines that will address access to sidewalks and streets, crosswalks, curb ramps, pedestrian signals, on-street parking, and other components of public rights-of-way.

Annual Sidewalk Program: Montgomery County's funding program to retrofit sidewalks on roadways where none have previously existed. The projects under the Annual Sidewalk Program are derived from resident requests and are installed without the guidance of an engineer.

Automated Traffic Enforcement (ATE): Infrastructure involving video cameras and other sensors used to police speed and other traffic safety infractions in an impartial way.

Bus Rapid Transit (BRT): A high-quality and high-capacity bus-based transit system that delivers fast, comfortable, reliable, and cost-effective transit service.

Capital Improvement Program (CIP): A six-year comprehensive statement of the objectives of capital programs with cost estimates and proposed construction schedules for specific projects. The proposed Montgomery County CIP is submitted by the County Executive to the County Council every two years and a general amendment is typically submitted in the off-years. See Montgomery County's Capital Improvements Program at montgomerycountymd.gov/omb/.

***Complete Streets Design Guide* (CSDG)**: A guide for designing, operating, and maintaining streets to provide safe accommodations for all users, including people who walk, bicycle, use transit, and drive motor vehicles. Learn more: montgomeryplanning.org/planning/transportation/complete-streets/

Conflict Point: Locations where motor vehicles, pedestrians, and bicycles cross paths.

Corral: An on-street or off-street space designated for parking micromobility devices such as bicycles and scooters.

County Code: Montgomery County's collection of written laws located at: codelibrary.amlegal.com/codes/montgomerycounty/

- **Chapter 49 (Road Code)**: The section of Montgomery County's code that addresses road design standards.
- **Chapter 59 (Zoning Code**): The section of Montgomery County's code that addresses what can be built on a particular parcel of land.

Crossing Locations:

- **Mid-block Crossing**: A marked crossing located in between two crossings.
- **Controlled Crossing**: Locations where sidewalks or designated walkways intersect a roadway at a location where traffic control (traffic signal or STOP sign) is present.
- **Uncontrolled Crossing**: Locations where sidewalks or designated walkways intersect a roadway at a location where no traffic control (traffic signal or STOP sign) is present.
- **Protected Crossing**: A crossing designed to improve the safety and comfort of pedestrians and bicyclists crossing the street with traffic control devices, such as full traffic signals and Pedestrian Hybrid Beacons, that prohibit conflicting left turns and through vehicular movements.

Curbside Management Plan: A plan that guides the use of space along the street curb, including loading and unloading passengers and freight, motor vehicle and bicycle parking, parklets, outdoor dining, etc.

Dockless Vehicle: A shared-mobility vehicle that is available to the public to rent in public space, does not require any specialized installations of equipment other than the vehicle itself, and can be located and unlocked using a smartphone application or by manually entering a customer's account number.

Easement: A contractual agreement to gain temporary or permanent use of, and/or access through, a property.

Equity Focus Area (EFA): Parts of Montgomery County that are characterized by high concentrations of lower-income people of color, who may also report speaking English less than "very well." Learn more: montgomeryplanning.org/planning/equity-agenda-for-planning/the-equity-focus-areas-analysis/

Forest Conservation Plan: A document that outlines the specific strategies for retaining, protecting, and reforesting or afforesting areas on a site, pursuant to the 1991 Maryland Forest Conservation Act.

Forest Conservation Plans are approved by the Planning Board with conditions that are binding on applicable private and public development, and certain land disturbing activity. Learn more: montgomeryplanning.org/development/development-applications/forest-conservation-plan/

Impervious Surface: Any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including structures, buildings, patios, decks, sidewalks, compacted gravel, pavement, asphalt, concrete, stone, brick, tile, swimming pools, and artificial turf.

Leading Pedestrian Interval (LPI): An approach to traffic signalization that allows pedestrians or bicyclists to enter the intersection in advance of vehicles traveling in the same direction.

Marked Crosswalk: Pavement markings that indicate the preferred location for pedestrians to cross the street and help motorists identify areas to look for pedestrians. Marked crosswalks may be located at intersections or mid-block locations.

- **Ladder-Style Crosswalk**: A type of high-visibility marked crosswalk that uses pavement markings that are both parallel and perpendicular to the motor vehicle path of travel.
- **Continental Style Crosswalk**: A type of high-visibility marked crosswalk that uses pavement markings that are parallel to the motor vehicle path of travel.
- **High-Visibility Crosswalk**: a type of marked crosswalk that uses enhanced pavement markings to improve the visibility of pedestrians to approaching motorists.
- **Transverse Edge Line**: Crosswalk markings that are perpendicular to the motor vehicle path of travel that indicate the preferred location for pedestrians to cross the street.

Maryland Manual of Uniform Traffic Control Devices (MdMUTCD): The combined document of the national set of traffic control device standards and guidance promulgated by Federal Highway Administration (FHWA) rulemaking on December 16, 2009, and Maryland Supplement to the MUTCD.

Master Plan: Comprehensive amendments to the General Plan for the Maryland-Washington Regional District ("On Wedges and Corridors") that provide detailed and specific land-use and zoning recommendations for specific areas of the county. They also address transportation, the natural environment, urban design, historic resources, public facilities, and implementation techniques.

Neighborhood Connector: Short paths that provide critical connection in the residential walking and bicycling network. They create shortcuts and often bypass or minimize the amount of travel along higher-stress streets.

Paper Street: A dedicated public right of way for a road or street that has not been built.

Passive Detection: A means of detecting the presence of pedestrians in a stationary or moving state at the curbside of and/or in a pedestrian crossing by means other than those requiring physical actuation by the pedestrian.

Pedestrian Clear Zone: The primary portion of the sidewalk that is intended to be free from landscaping, street furniture, structures, or furnishings.

Pedestrian Clearance Interval: The pedestrian clearance time is intended to allow pedestrians who started crossing a street during the walk interval to complete their crossing.

Pedestrian Crossing Phase Configuration: At signalized intersections, pedestrian phases can be configured as recall or pushbutton actuated.

- **Pedestrian Recall**: A traffic signal function in which the pedestrian crossing phase is triggered automatically, without the need to push a button to request the right-of-way.
- **Pushbutton Actuation:** A traffic signal function in which the pedestrian crossing phase is triggered manually by pushing a button to request the right-of-way.

Pedestrian Level of Comfort (PLOC): A methodology that captures how comfortable it is to walk and roll in different conditions in Montgomery County. Lean more here: mcatlas.org/pedplan/

Predictive Safety Analysis: Montgomery Planning's study that estimates the expected number of crashes at a given roadway segment or intersection based on the attributes and context of that location. This analysis then allows the county to prioritize where and how to invest in safety improvements most effectively through capital projects, development approvals, and master planning. Learn more: montgomeryplanning.org/planning/transportation/vision-zero/predictive-safety-analysis/

Raised Crossing: Crosswalks at sidewalk-level (also known as continuous sidewalks) that span the entire width of the roadway.

Right-of-Way (ROW): A strip of land intended for use by the public. A public right-of-way is occupied or intended to be occupied by a road, bikeway, sidewalk, path, or transit facility, as well as any ancillary facilities such as storm drains and stormwater management facilities. Public utilities such as electric transmission lines, telephone lines, cable TV lines, gas mains, water mains, and sanitary sewers may be permitted in the public right-of-way. A public right-of-way may be obtained by dedication as part of the development process or purchased in whole or in part by a public agency.

Right Turn on Red (RTOR): A principle of law permitting vehicles at a traffic light showing a red signal to turn into the direction of traffic nearer to them when the way is clear, without having to wait for a green signal.

Safe Routes to School (SRTS): Programs that aim to make it safer for students to walk and bike to school and encourage more walking and biking where safety is not a barrier.

Special Protection Area (SPA): A geographic area where existing water resources and related environmental features are of high quality or unusually sensitive. In these areas, proposed land uses would threaten the quality or preservation of those resources if special water quality protection measures are not put in place. SPAs are designated by the County Council under Section 19-62(a) of the Montgomery County Code. Learn more: montgomeryplanning.org/planning/environment/water-and-wetlands/special-protection-areas/

Speed Governor: A device installed in a vehicle to limit the top speed that vehicle can achieve.

Streetery: A dining concept to create additional restaurant seating outdoors, especially with the use of temporary street closures.

Student Travel Tally: A quick, in-class survey that provides valuable information on student travel patterns, including arrival and departure mode of transportation.

Traffic Calming: Physical changes to a street or roadway used to improve safety by decreasing traffic speed and volume. Methods of traffic calming include traffic circles, speed humps, and curb extensions.

Vision Zero: A strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all.

Vision Zero 2030 Plan: Montgomery County's plan of activities to eliminate all traffic fatalities and severe injuries by 2030, available here: montgomerycountymd.gov/visionzero

REFERENCES

The following documents were used as resources throughout the development of the Pedestrian Master Plan:

- State and National Design Guidance
  - AASHTO Roadside Design Guide
  - Maryland Manual of Uniform Traffic Control Devices
  - PROWAG
  - NACTO Urban Street Design Guide
- Local Design Guidance
  - Montgomery County Complete Streets Design Guide
- National and International Planning Documents
  - Portland (Oregon) Citywide Pedestrian Plan
  - Portland (Oregon) Regional Active Transportation Plan
  - Charlotte (North Carolina) WALKS Pedestrian Plan
  - Indianapolis/Marion County (Indiana) Pedestrian Plan
  - JCWALKS (Jersey City, New Jersey) Pedestrian Enhancement Plan
  - New York City Pedestrian Safety Study and Action Plan
  - City of Santa Monica (California) Pedestrian Action Plan
  - Seattle (Washington) Pedestrian Master Plan
  - London (United Kingdom) Walking Action Plan
  - Melbourne (Australia) Walking Plan
  - District of North Vancouver (Canada) Pedestrian Master Plan



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