Arlington's Transportation Future

Transportation Snapshot

March 2025

Arlington's **Transportation Future**

ARLINGTON VIRGINIA

Table of Contents

Overview

Arlington's Transportation Future is a County initiative to develop a refreshed transportation plan to replace the 2007 Master Transportation Plan (the current MTP). With this refreshed plan, the County will be better positioned to fulfill our commitments to safety, equity, accessibility, ease of use, and climate resiliency and address the transportation needs of the Arlington community, including current and future residents, workers, and visitors. The plan will serve as the Transportation Element of the County's Comprehensive Plan, guiding community investment in the coming decades and ensuring that Arlington continues to be a place where people want to live, businesses choose to locate, and visitors come to enjoy.

The plan will include:

- A vision and goals for the future of transportation in Arlington
- Policies and strategies that will guide future decision-making and help us achieve our goals
- A guide for prioritizing improvements to Arlington streets based on safety, equity, accessibility, and other needs
- The integration of other Board-adopted County plans, programs, and initiatives

The plan will provide:

- A cohesive transportation plan that integrates the six modal elements (bicycle, transportation demand and system management, parking and curb space management, pedestrian, streets, and transit) of the 2007 Master Transportation Plan
- A new framework for transportation planning and decision-making that will set clear expectations and develop a shared understanding of priorities and tradeoffs

The plan will be developed in the four phases shown in **Figure 1** from fall 2024 to 2026. In the first three phases, the community will be able to share thoughts through questionnaires, in-person public events, and online tools. The final phase will be Board adoption of the Plan. Public participation will ensure the plan reflects the unique transportation needs and preferences of our community.

Figure 1: Arlington's Transportation Future Timeline

Purpose of this Document

This document represents a snapshot of the current transportation network, providing a data-informed understanding of transportation in Arlington today, including the state of transportation policy, how people currently travel, and how people experience the transportation network. This document also presents findings from technical analyses of how each mode of travel (walking, biking, bus transit, and driving) operates independently and as part of a larger system. In addition, this document is supported by three supplemental reports that provide a more detailed review of additional information. These supplemental reports include:

- **Existing Plan and Policy Supplemental Report**, focusing on existing County, state, and regional policy and planning documents
- **Precedent Plan Supplemental Report**, focusing on best practices from mobility and long-range transportation plans from peer jurisdictions
- **Current Master Transportation Plan Summary Supplemental Report**, focusing on the structure and use of Arlington's current 2007 Master Transportation Plan

This snapshot, along with the valuable feedback the community shared during Phase 1 of public engagement, will be used to guide the development of a draft vision and goals for Arlington's refreshed transportation plan.

Planning Context

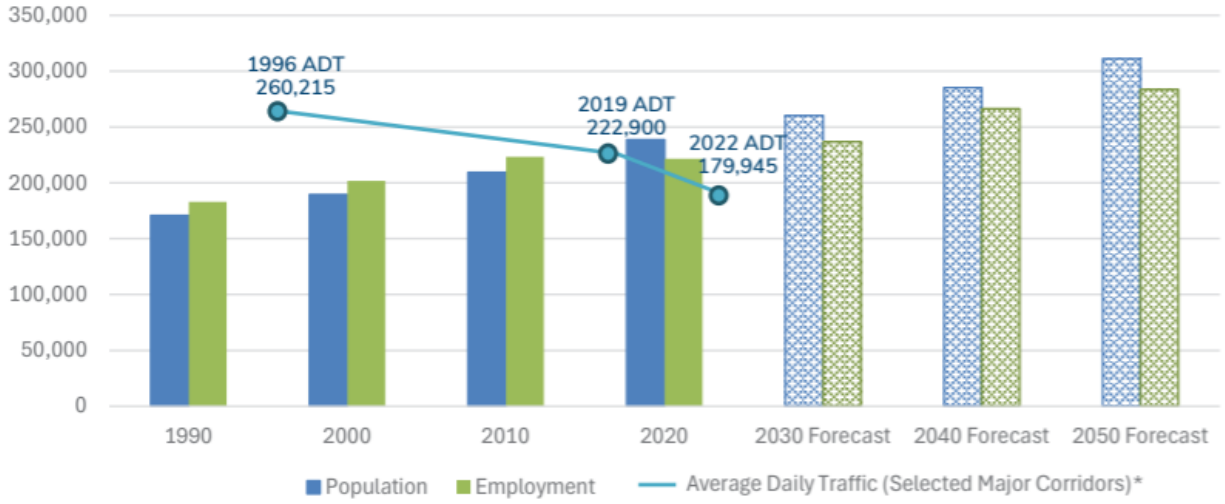
Arlington is an urban county located directly across the Potomac River from Washington, DC. Just under 26 square miles in size, Arlington is the smallest self-governing county in the United States. This combination of scale and urban form has contributed to the County promoting "urban village" concepts, where people are encouraged to walk, bike, and use public transit in an environment that is tailored to make these options comfortable and convenient. The County works to proactively create policies and guidelines that support these concepts; policies that are informed by an understanding of the diverse community of people who live, work, and play in Arlington.

Today, just over 15 percent of Arlington residents are Hispanic or Latino, and 25 percent are Black or African American, Asian, multiracial, or another non-white race. More than 22 percent are foreign-born, and children in Arlington County public schools speak 92 different languages. Arlington's population is culturally diverse, highly educated, civically minded, and deeply participatory in their community at both the neighborhood and county level. The County's median resident age is 35.3 years, compared to the United States city average age of 38 years; the nearly 51 percent of residents under the age of 35 represent a generation that lives an increasingly active lifestyle that may have a greater propensity toward multimodal travel.

The Arlington Community Profile

Arlington is home to an estimated 240,900 residents and 221,400 workers as of 2024. This is a nearly 43,000-person increase (a 22 percent increase) in population and a 26,200-person increase (a 13 percent increase) in employment compared to 2005, when the current MTP was developed. Arlington has experienced steady growth through recent history that is expected to continue in future decades (**Figure 2**). Between 2020 and 2050, Arlington is expected to add more than 72,000 residents and more than 62,000 jobs, approximately 2,400 people and 2,000 jobs a year on average. This estimated increase in population and employment will further increase the use of and demand on the transportation network.

Figure 2: Population, Employment, and Traffic Trends in Arlington



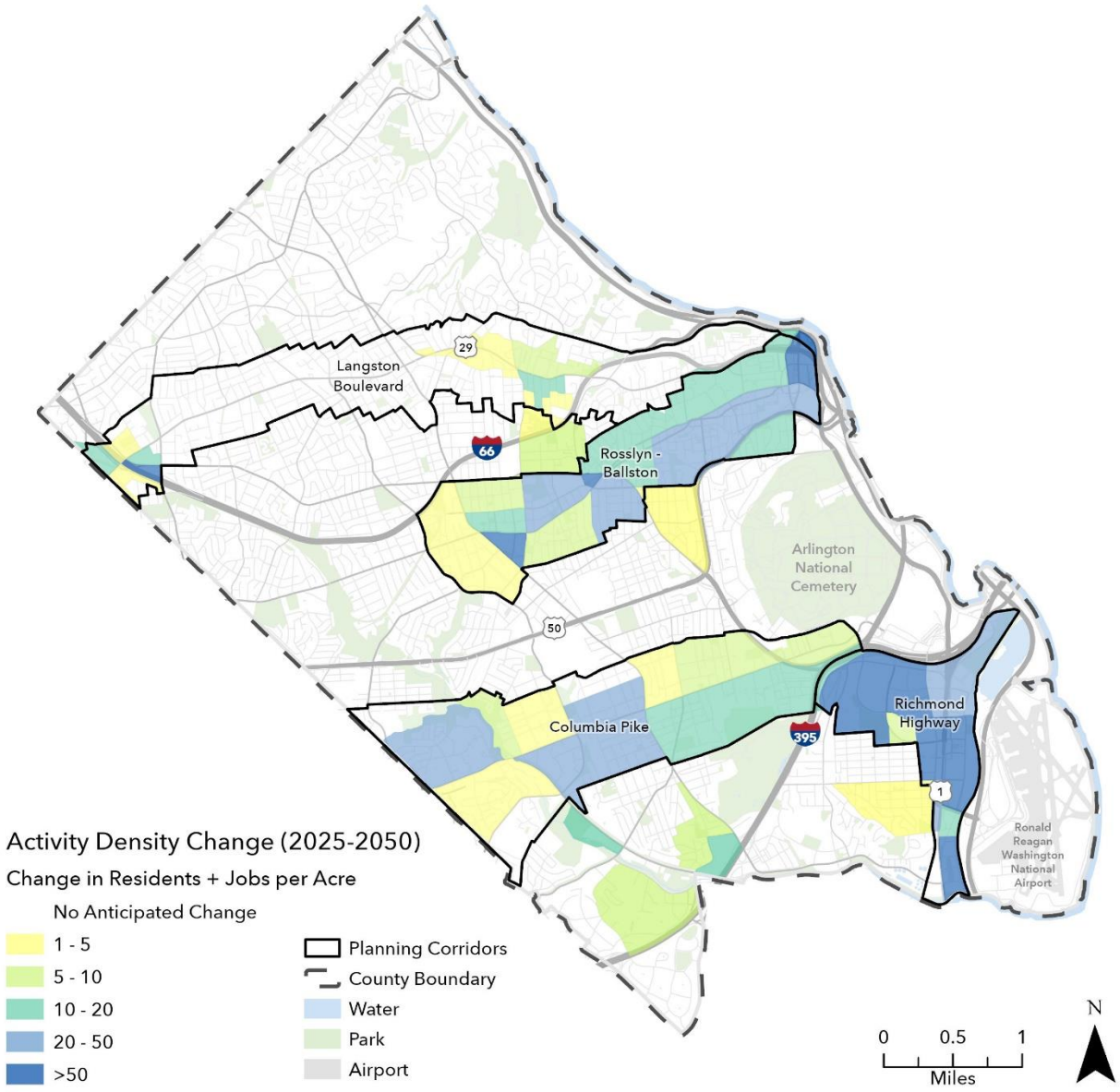
Source: MWCOG Cooperative Forecasts(1990: Round 5.1; 2000: Round 6.3; 2010: Round 8.1; 2020-2050: Round 10.0, VDOT Traffic Counts, FY23, FY23 Capital Improvement Plan Presentation

**ADT from selected corridors represents Langston Boulevard, Wilson Boulevard, Clarendon Boulevard, Glebe Road, Richmond Highway, George Mason Drive, and Arlington Boulevard.*

However, in Arlington, past data shows that more growth does not necessarily result in more traffic. **Figure 2** also shows that while Arlington grew by 68,000 people between 1990 and 2020, the average daily traffic (ADT) on major roadways has steadily declined. This seemingly counterintuitive outcome is due in large part to Arlington's intentional planning and policy efforts to invest in multimodal transportation improvements and to co-locate higher-density development along transit corridors. Much of Arlington's growth has been and continues to be concentrated in the County's four major planning corridors, which include Langston Boulevard, Rosslyn-Ballston, Columbia Pike, and Richmond Highway. Sixty-three percent of Arlington's population currently lives in these planning corridors, which only account for 32 percent of the County's land area. This pattern of development has allowed more people to live in and access these transit-rich, walkable corridors where traveling to work and for other daily needs does not require a car, greatly reducing the amount of personal vehicle travel in Arlington.

Figure 3 maps the locations of projected change in population and employment density in Arlington over the next 10 years, showing that most of the future growth in the County is expected to fall within these same planning corridors, which have allowed Arlington to grow without increasing traffic. The highest concentration of anticipated growth is projected to occur in the Richmond Highway corridor.

Figure 3: Anticipated Change in Activity (Jobs and Residents) Density from 2025 to 2050



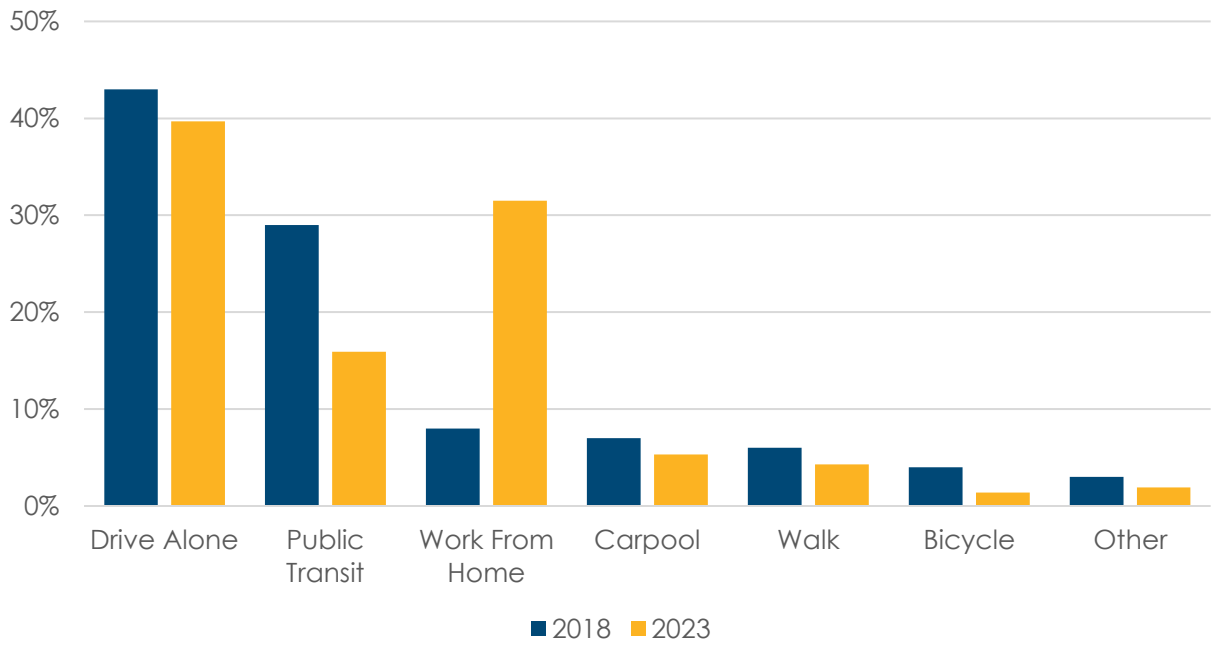
Source: MWCOG Cooperative Forecast Round 10.0, 2024

In the two decades since the adoption of the current MTP, new transportation technologies have been developed and best practices in transportation planning have evolved. Additionally, many of the County's present-day guiding principles related to and influencing transportation were established and defined after the adoption of the current MTP, including recent commitments to safety, sustainability, and equity. Further, evolving and emerging transportation modes, changing preferences, and policy shifts

have increased demand for a multimodal network. This has ultimately increased competition for space within the County's limited public right-of-way.

Transportation patterns also have changed following the COVID-19 pandemic. Data shows that the biggest shifts are in how frequently people ride public transit (less often) and telework/work from home (more often). The difference in commuter mode split before and after the pandemic is shown in **Figure 4**.

Figure 4: Pre- and Post-Pandemic Commute Mode Split in Arlington



Sources: Arlington County Oversample and Special Analysis of the 2017-2018 MWCOG Regional Travel Survey; 2018-2022 American Community Survey 5-Year Estimates (Table S0801)

History of Transportation in Arlington

Arlington's historical transportation decisions created the network and travel patterns we see today. Key milestones in Arlington's transportation history, and how these decisions and trends affected Arlingtonians, can be found in the **Transportation History Timeline**.

The Current Master Transportation Plan

The Arlington County Board adopted the current MTP in November 2007. The current MTP provides general guidance for Arlington's transportation system through 2030 and is an element of Arlington's Comprehensive Plan. The project team reviewed the current MTP to understand how it fits into Arlington's planning environment, the successes that have stemmed from its adoption, the challenges of the current MTP, and the opportunities presented by a refreshed plan.

Background

Arlington's Comprehensive Plan is comprised of the 12 plan elements shown in **Figure 5**, one of which is the MTP. The Comprehensive Plan is a decision-making tool that guides the coordinated development of Arlington to achieve the County's vision.

Figure 5: Arlington Comprehensive Plan Elements

Source: Arlington County Comprehensive Plan

The current MTP is made up of three key components: (1) a Goals and Policies document, (2) six separate "modal element" documents, and (3) a Transportation Plan Map. The Goals and Policies document introduces the County's transportation vision and supporting goals, policies, and strategies; the modal elements provide more detailed guidance for each mode; and the Transportation Plan Map identifies planned transportation facilities and street typologies.

Combined, the purpose of these three components is to guide decision-makers, help the public understand the rationale behind transportation decisions, and support the advocacy and implementation of County transportation policy.

Successes and Accomplishments

The implementation of the current MTP has resulted in many successful County projects and programs. Specific initiatives that have contributed to making Arlington multimodal and transit-oriented include the Transportation Capital Improvement Plan and its Complete Streets portfolio, Vision Zero program, Performance Parking Pilot, improvements to bus and rail service, WalkArlington and BikeArlington education and encouragement programs, and the Bus Stop and Shelter program. The **Current Master Transportation Plan Summary Supplemental Report** includes a more detailed review of accomplishments over the past two decades.

Many of Arlington's transportation programs and projects are guided by its "Complete Streets" policy, found in the current MTP. This approach directs that streets be constructed and managed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists, and other users. Through initiatives including the Neighborhood Complete Streets program, the Resurfacing for Complete Streets process, and the overall Transportation Capital Improvement Plan, Arlington has built and retrofitted many of its streets to be complete streets.

Challenges and Opportunities

Arlington's transportation landscape and the County's priorities have evolved since the adoption of the current MTP more than 15 years ago, and new and refreshed policy guidance is needed to reflect today's Arlington. Some elements have been updated since, most recently the Bike Element in 2019, but other modal elements remain untouched, including the Parking and Curb Space Management Element and the Demand and System Management Element. Industry practices for these topics, and others, have evolved significantly since the current MTP was adopted. The six separate modal elements of the current MTP, some of which were developed years apart, also resulted in the development of modally-focused policies and priorities that are, at times, in conflict.

Without clear guidance on how to address these modal overlaps and conflicts, the current MTP no longer provides sufficient direction for County staff as they develop the Capital Improvement Program, review site plans, allocate limited public right-of-way, prioritize transportation investments, or engage the community on transportation plans and studies. It also does not reflect Arlington's more recently adopted policy priorities, including those focused on equity, Vision Zero, biophilia (incorporating nature in planning and design), and responding to climate change.

Arlington's Transportation Future offers an opportunity to develop transportation guidance based on the County's core values and create a refreshed transportation plan that better represents today's transportation priorities. It will address all modes of

transportation holistically, provide guidance on how to implement programs and projects, and communicate how the County will prioritize the use of Arlington's constrained right-of-way.

Other County Plans, Programs, and Initiatives

The project team reviewed 43 County, state, and regional documents to identify existing policies and approaches relevant to Arlington's Transportation Future. The goals of this review were to:

- Confirm values to inform the refreshed transportation plan's vision and goals
- Identify key County policies related to transportation
- Use recent technical analysis to inform the existing conditions snapshot
- Identify opportunities for the refreshed transportation plan and other (non-transportation) plans to reinforce one another

The findings from the reviews revealed several major topics related to transportation across relevant existing policy and plans. The list below highlights strategies and key takeaways within these topics.

Safety

Safety is a major priority in the vision and goals of many existing plans. Initiatives and recommendations for advancing safety highlighted include expanding the Capital Trail Network, addressing bicycle/pedestrian network gaps/deficiencies, improving intersection safety for walking/biking, and incorporating Complete Street principles into street design. In addition, the County's Vision Zero Action Plan and initiatives promote a framework for eliminating transportation-related deaths by 2030 and identify areas of safety priority through crash hot spots and a High Injury Network.

Equity

Many documents outline strategies for incorporating equity into the planning process. Plans and policies focusing on equity include prioritizing investment for disadvantaged areas or populations and ensuring transportation access to historically underserved areas. It is also acknowledged that areas with the most demand for multimodal connections are often those with concentrations of zero- and one-car households and lower incomes.

Sustainability

Sustainability is a major theme throughout the vision, goals, and policies of the existing documents. Many plans highlight priorities to reduce greenhouse gas emissions through practices such as reducing personal vehicle travel and congestion through multimodal options, carbon neutral transit fleets, increasing access to natural public spaces, investing in electric vehicle (EV) infrastructure, and strengthening shared vehicle and micromobility options.

Multimodal Connections

A major priority found in the vision for transportation in Arlington and the region represented by the existing planning documents is expanding connections between transportation modes. Strategies highlighted in this area include ensuring first/last mile connections for transit through options such as car-share and shared micromobility, inclusive street design for walking/biking in areas around transit, providing access to activity centers by different modes, mitigating gaps in the walking/biking network, redesigned bus routes that connect efficiently to Metrorail stations, convenient micromobility parking at transit stations, and multimodal transfer facilities in high activity areas. In addition, collaboration between regional entities and jurisdictions is emphasized as a key component to multimodal connection across the greater region.

Transit Oriented Development

Several documents identify plans and policy changes for ensuring ties between mixed-use development and multimodal transportation. These include sector/area plans that identify specific land use development around transportation connections and development regulations that promote private-sector investment in multimodal improvements beyond roadway improvements.

Resiliency

Resilience is prioritized throughout existing plans to evolve a transportation system that can withstand and adapt to changes and stressors in the community. Strategies promoted for resilience include anticipating growth trends to plan a balanced system that can adapt to travel demand changes and stressors on different modes while also leveraging and adapting to new technologies that affect modes and travel choices.

User Experience and Comfort

Many documents emphasize the importance of the quality of experience and comfort level for users of different or connecting modes. Priorities identified include: ensuring a transit system that is efficient and easy to understand and navigate; a sidewalk, trail and bike lane network that is comfortable to use and easy to access; Complete Streets that provide for all uses, have attractive and tree-lined streetscapes, facilitate ease of transfer between modes, provide adequate and convenient parking that does not conflict with other modes, and contain attractive and accessible public spaces.

The **Existing Plan and Policy Supplemental Report** includes the above major topic summaries along with a condensed summary of each document reviewed, highlighting relevant transportation vision, goals, and policies for the County. In addition, the supplemental report includes a summary table listing each of the documents reviewed along with the major topics found within them.

Precedent Plans

The project team reviewed mobility and long-range transportation plans from four peer jurisdictions to identify best practices in planning that respond to current and emerging transportation trends. This review of precedent plans generated ideas and strategies the County can consider as the refreshed transportation plan is developed. These plans were selected for:

- Being similar in size (geographically and/or by population) to Arlington
- Having progressive or innovative approaches to historical challenges
- Receiving national awards
- Supporting a wide variety of travel options
- Offering modally integrated plans
- Having been completed since the pandemic

The four plans selected include:

- Washington, DC: moveDC (2021)
- Richmond, Virginia: Richmond Connects (2023)
- San Diego, California: Mobility Master Plan (2024)
- Brussels-Capital Region, Belgium: Good Move (2020)

The **Precedent Plan Supplemental Report** includes a detailed review describing each plan, its relevance, and takeaways that could inform the refreshed transportation plan.

moveDC: Washington, DC

The District of Columbia released an update to its long-range transportation plan, "moveDC," in 2021. moveDC was selected as a precedent plan for Arlington due to Washington, DC's proximity to Arlington and the number of shared challenges and opportunities between them. moveDC also includes "Mobility Priority Networks" (MPNs), created through the recognition that not all streets can accommodate dedicated infrastructure for every transportation mode. The moveDC MPNs prioritize streets for either surface transit, bicycles, or freight based on their design, geometry, adjacent land use, and community input. This framework provides the County with an example of an effective method to identify overlapping modal priorities, as well as gaps, to strategically allocate its limited street space, particularly on arterials with competing demands. moveDC also developed an annual reporting process that includes staff tracking and reporting of strategy implementation progress and the publication of a public-facing progress report.

Richmond Connects: Richmond, Virginia

The City of Richmond published its long-range transportation plan, "Richmond Connects," in 2023, which built on the city's previously adopted comprehensive plan and citywide equity guide. The Richmond Connects plan was selected as a precedent plan for Arlington due in part to its emphasis on equity and aim to address historical injustices by creating a transportation network that serves all community members effectively and equitably. The needs identified in the plan were directly informed by both transportation network gaps and by populations and geographies impacted by past inequities.

Mobility Master Plan: San Diego, California

The City of San Diego published the latest edition of its Mobility Master Plan in October 2024, designed to advance the directives of the city's climate action plan, comprehensive plan, and Vision Zero initiative. This plan was selected as a precent plan for Arlington due to its direct linkages to the city's climate action plan, which sets ambitious transportation objectives such as increasing the number of people who walk, bicycle, and ride transit—reducing the number of people who drive and therefore reducing traffic. San Diego's plan also included a deliberate tie to its Vision Zero program, incorporating crash and other safety data into the prioritization of projects and identification of geographic areas for transportation investment.

Good Move: Brussels-Capital Region, Belgium

The Brussels-Capital Region in Belgium adopted their 10-year mobility plan, "Good Move," in 2020. Good Move was selected as a precedent plan for Arlington because it provides an international perspective to addressing modern-day challenges and opportunities as well as innovative policies and strategies to promote multimodal transportation. The plan included a modal hierarchy, which created the prioritization of different transportation modes to be (in order of descending priority) walking, cycling, transit, and personal automobiles. For each of these modes, the plan also created a network map that categorized roads by their intended purpose and how they meet community needs.

Reflecting County Values

Transportation in Arlington affects the daily lives of everyone in the community, no matter how often they use or how they interact with the transportation system. Arlington's Transportation Future recognizes that transportation has direct links to several County values and priorities such as **equity**, **safety**, and **sustainability.** Equity ensures that all community members, regardless of race, ethnicity, income, age, or ability, have fair access to transportation options, fostering inclusivity and access to opportunity. Safety underpins the comfort and reliability of the transportation system, ensuring all users can travel without fear of harm. Sustainability addresses the long-term impact of transportation on the environment, promoting practices that reduce carbon emissions, conserve resources, and minimize ecological footprints. By integrating these three values into a refreshed transportation plan, the County can create a transportation system that is not only efficient and effective but also just, secure, and environmentally sound.

Commitment to Equity

Arlington's commitment to equity is rooted in the County's vision: that "Arlington will be a diverse and inclusive world-class urban community with secure, attractive residential and commercial neighborhoods where people unite to form a caring, learning, participating, sustainable community in which each person is important." The following sections discuss the County's current local commitments and regional partnerships for advancing equity.

Equity in the Current Master Transportation Plan

Goal 4 of the current MTP is to "establish equity" and aims to "serve the mobility and accessibility needs of all residents regardless of age, income, or ability" through five key strategies.[1] Broadly, the strategies suggest that transportation equity is related to safe and comfortable pedestrian experience, investments in accessible infrastructure to meet Americans with Disabilities Act (ADA) guidelines, the provision of quality and affordable travel options, and emphasis on the travel needs of children, the elderly, and people with disabilities. Though the current MTP does not include dedicated policies that specifically reference equity, these strategies are reflected in some of the mode-specific policies.

[1] https://arlingtonva.s3.amazonaws.com/wp-content/uploads/sites/31/2017/03/Overall-plan-updated-February-25-2017.pdf

Equity Resolution and Realizing Arlington's Commitment to Equity

The Arlington County Board adopted an Equity Resolution in September 2019. This resolution continues to serve as a catalyst for partnerships with organizations such as the Metropolitan Washington Council of Governments (MWCOG), Government Alliance on Race and Equity (GARE), and dozens of local community organizations.

"As an employee, resident, or business in Arlington, advance racial equity as a countywide priority to eliminate, reduce, and prevent disparities in our policies, procedures, practices, engagement, and interaction with and service to the community."

— RACE Mission Statement

The Realizing Arlington's Commitment to Equity (RACE) Strategic Framework establishes a vision for the County: an equitable Arlington in which all are valued, educated, healthy, and safe regardless of race. It contains four goals meant to help continually normalize, organize, operationalize, and assess through the following actions:

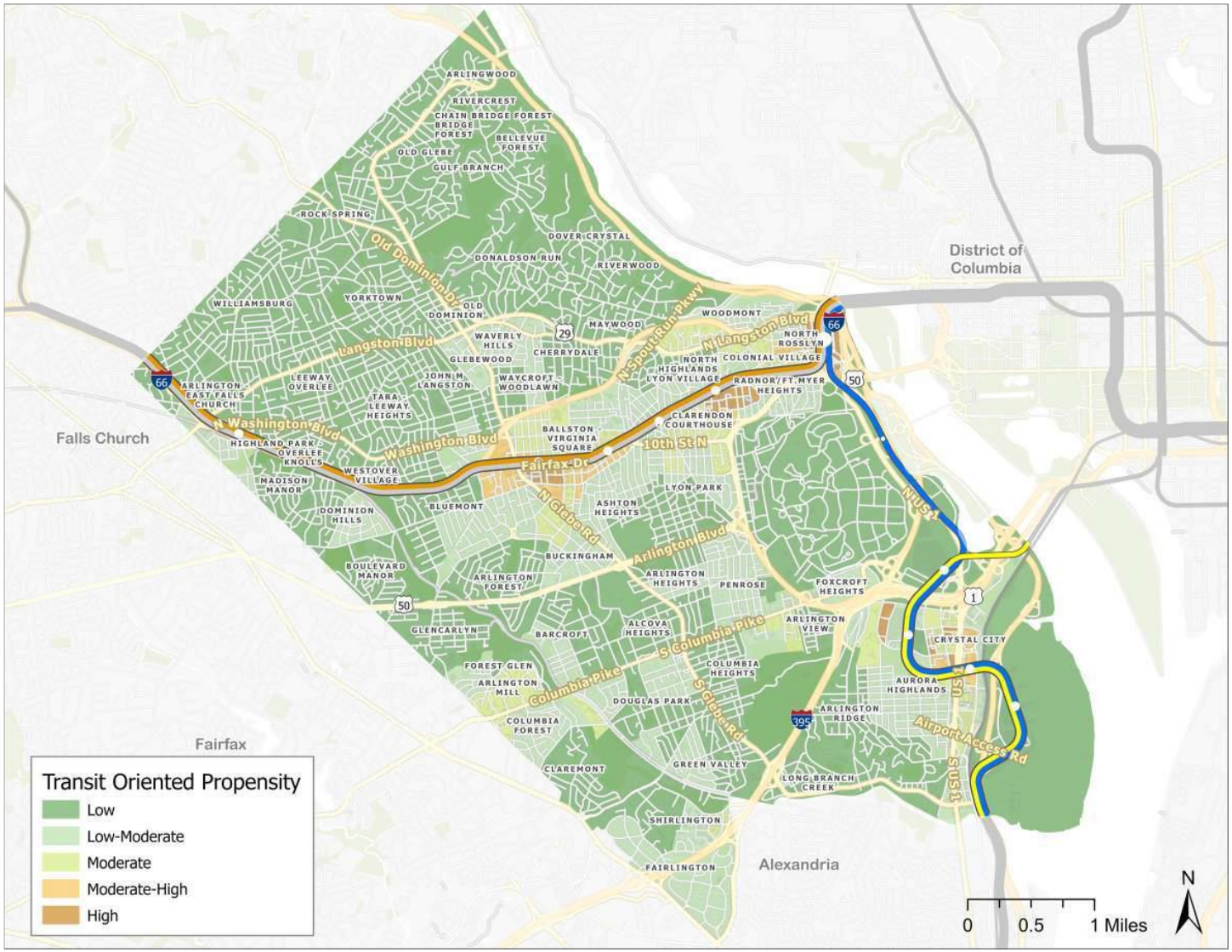
- Normalize the prioritization of racial equity throughout the organization and in the community
    - Ensure the commitment of every individual to meaningfully engage in raising awareness of disparities
    - Commit to having the conversations, engagement, and education needed to share information about disparities due to race and inequities
- Organize to build capacity while committing resources in identified areas of need
    - Build the infrastructure and establish a framework and guidelines in which racial equity work can be implemented
    - Create the culture for systemic and organizational change and management
- Operationalize by using both the racial equity lens and disaggregated data to inform decision-making
    - Analyze planning, programs, services, and policies in the context of a "response-driven government" culture to determine whether they address or exacerbate disparities
    - Define strategies to address and resolve disparities
    - Allocate and distribute resources to support identified strategies
- Assess progress and adjust as needed for continued advancement
    - Track and measure outcomes and strategically manage long-term systemic impact and organizational and cultural change

The Office of R.A.C.E. in the County Manager's Office leads efforts to advance equity work and promote inclusion and diversity across the agency in collaboration with an interdepartmental Racial Equity Core Team. Additionally, the County's publicly accessible Race and Ethnicity Dashboard operationalizes the framework by using data to acknowledge differences in Arlingtonians' lived experiences and better inform policies that promote equitable outcomes.

Arlington Transit Strategic Plan

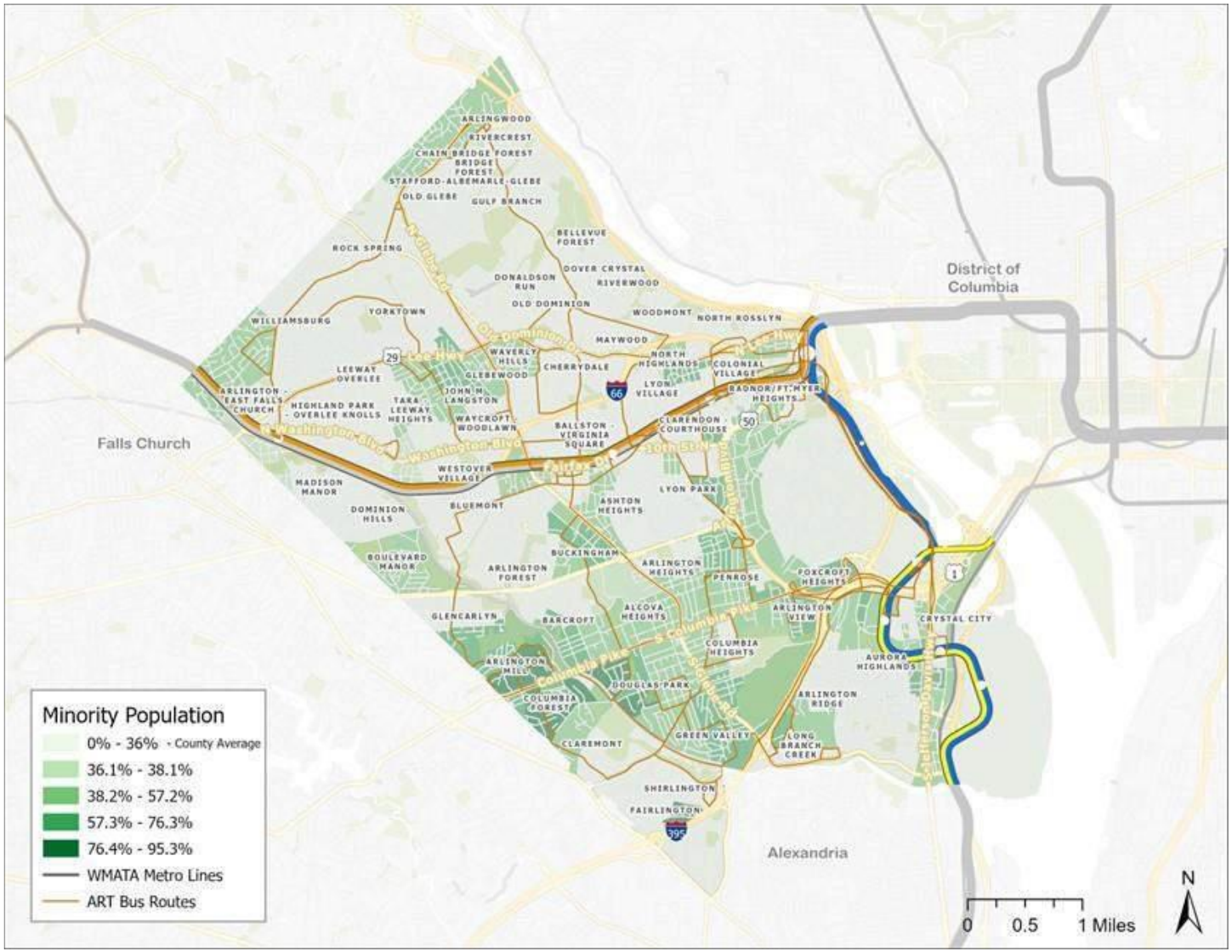
Arlington's Transit Strategic Plan (TSP), updated in 2023 and covering Fiscal Year 2025 to Fiscal Year 2034, outlines the vision, goals, and objectives for transit service in Arlington. The County's vision for transit is to "provide a safe, equitable, accessible, reliable, and convenient transportation system that effectively and efficiently sustains the environment, economy, and quality of life in Arlington." The TSP included an evaluation of how much different underserved communities are dependent on transit (also known as transit propensity) for their daily travel, as shown in **Figure 6.** The analysis considered race and ethnicity, limited English proficiency populations, youth and older adult populations, low-income populations, zero-car households, and persons with disabilities. Additionally, **Figure 7** illustrates where racial minorities live, a requirement of the Title VI Act of 1964, which is important to understand how to provide equitable service. Areas with high transit propensity and higher proportions of racial minorities also align with the County's identified four primary planning corridors: Rosslyn-Ballston, Richmond Highway, Columbia Pike, and Langston Boulevard.

Figure 6: Transit Propensity Index in Arlington



Source: Arlington FY2025–2034 Transit Strategic Plan; 2016–2020 American Community Survey

Figure 7: Minority Population Density in Arlington



Source: Arlington FY202–2034 Transit Strategic Plan; ACS 2016–2020 American Community Survey

Metropolitan Washington Council of Governments Equity Emphasis Areas and Regional Development Principles

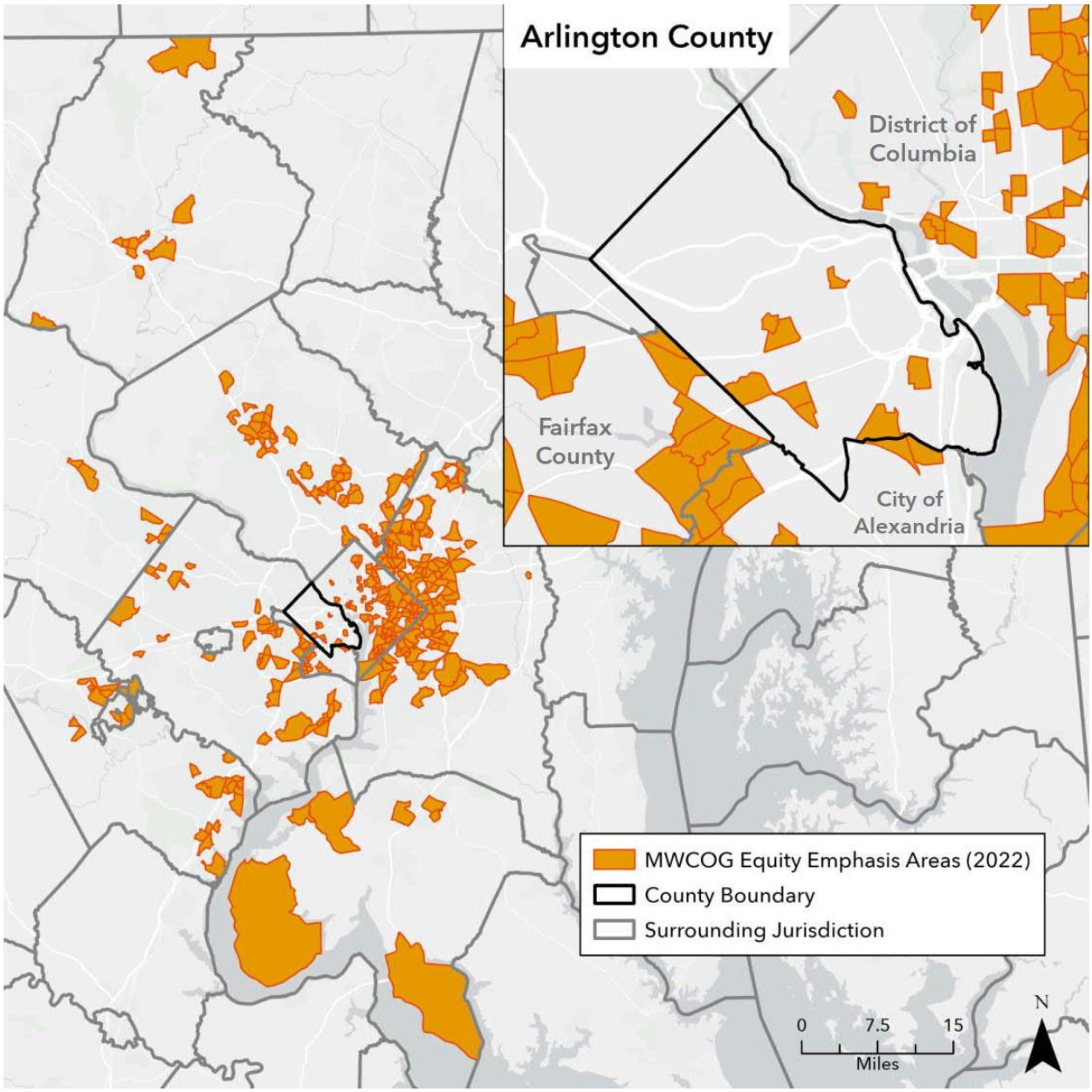
MWCOG is a regional planning organization focused on understanding regional trends and providing consistent data and resources for local jurisdictions. It is comprised of representatives from 24 local governments and the Virginia and Maryland legislatures. The National Capital Region Transportation Planning Board (TPB) is the federally designated metropolitan planning organization (MPO) for the Washington region and updated and adopted the MWCOG's Equity Emphasis Areas (EEAs) in 2022. These regional EEAs, shown in **Figure 8,** include 364 Census Tracts with high concentrations of low-income individuals and/or traditionally disadvantaged racial and ethnic population groups. Because MWCOG's EEAs are based on income and demographics on a scale relative to the region, relatively few areas of Arlington are represented in the mapping.

MWCOG developed Regional Equitable Development Principles in early 2024. The principles, focused on both process and outcomes, are intended to serve as a regional model and standard for local governments to implement equity through land use planning and housing actions. In April 2024, Arlington County adopted these 10 principles[2] for local implementation:

- Acknowledge history and repair past harms
- Practice inclusive and meaningful community engagement
- Commit to implementation with internal capacity and community transparency
- Advance economic opportunity and mobility
- Prevent displacement
- Expand affordable housing options and preserve existing affordability
- Support and strengthen diverse community values
- Promote people-centered multimodal mobility and connectivity
- Develop healthy and safe communities
- Promote and regulate for environmental justice

[2] Regional Equitable Development Principles – Official Website of Arlington County Virginia Government

Figure 8: MWCOG Equity Emphasis Areas



Source: MWCOG Equity Emphasis Areas for TPB's Enhanced Environmental Justice Analysis, 2022

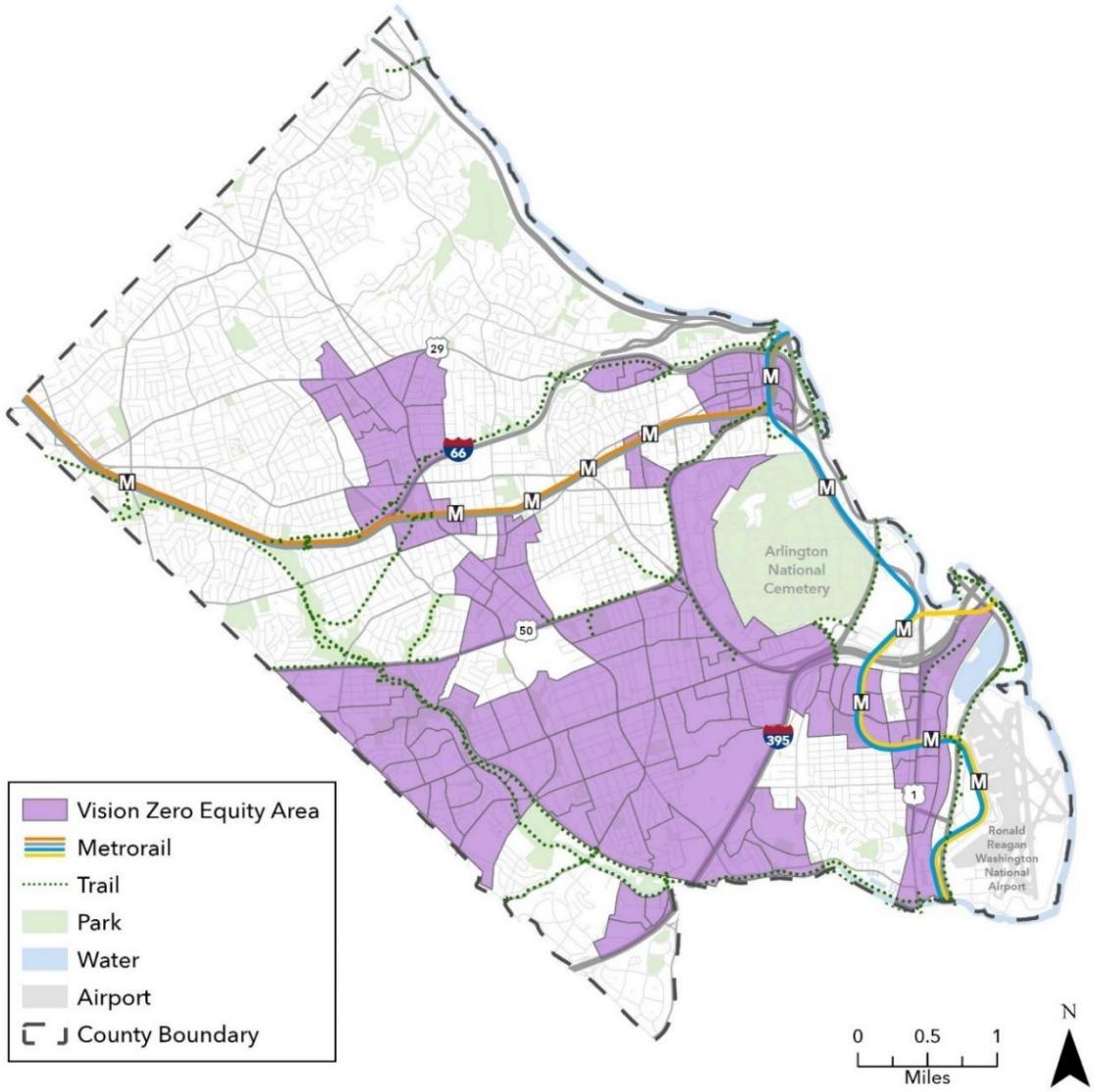
Arlington County Vision Zero Equity Emphasis Areas

The County has identified county-specific EEAs, shown in **Figure 9**, to prioritize and enhance safety analysis, engineering, and public engagement. These areas are identified based on analysis conducted for Arlington Transit's Title VI Requirements and Guidelines, updated in 2023, for Federal Transit Administration (FTA) recipients.

Arlington's EEAs include census block groups with Black, indigenous, or people of color (BIPOC) population of 39.8 percent or more and block groups where 16.7 percent or more of households have a median income of $50,000 or less.

MWCOG's Equity Emphasis Areas are based on income and demographics on a scale relative to the entire region. This results in relatively few parts of Arlington showing up as Equity Emphasis Areas. The Vision Zero Team used the Arlington Transit Title VI thresholds to better grasp income and demographics relative within the County and maintain consistency with Arlington Transit. All MWCOG EEAs in Arlington County are included in the County-specific EEAs, which demonstrates consistency with regional equity efforts.

Figure 9: Arlington County Vision Zero Equity Emphasis Areas



Source: Arlington County Vision Zero Equity Emphasis Areas, 2024

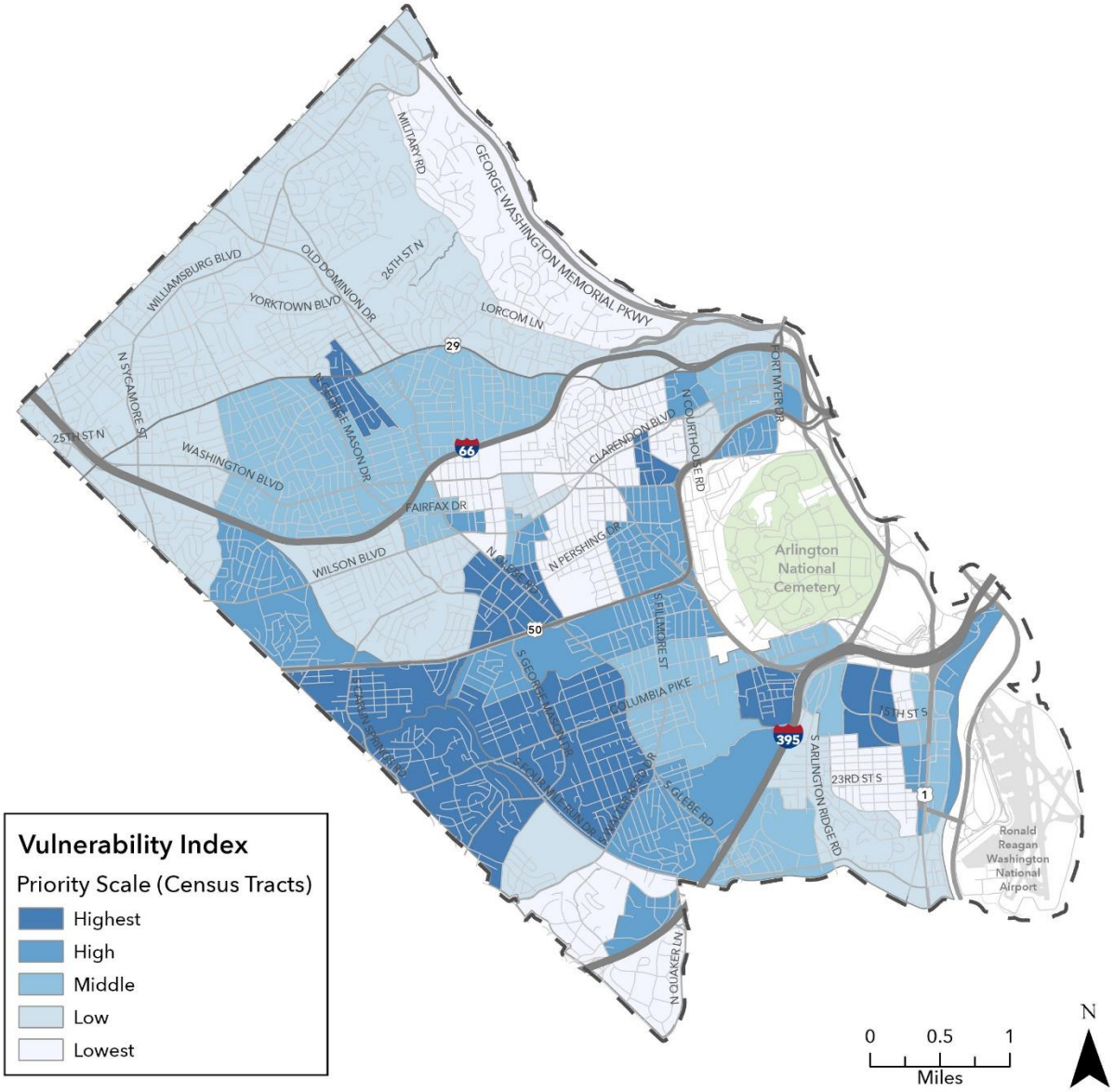
Community Vulnerability Index Map

Arlington's Department of Community Planning, Housing and Development (CPHD) developed the Community Vulnerability Index Map (CVIM), a geographic layer that identifies concentrations of the County's vulnerable populations. In this context, vulnerability is examined in terms of Arlington's composition and how demographic, socioeconomic, and geographic factors may increase an individual's susceptibility to various disadvantages. The map ranks Census Tracts in a "priority scale" from the highest to the lowest concentrations of vulnerable populations based on the following variables:

- Persons of color
- Persons under the age of 18
- Persons over the age of 65
- Lower-income households
- Low-income persons
- Low educational attainment
- Persons born outside of the United States

The goal of the CVIM is to provide a common geographic tool unique to Arlington with multiple data points that can be used, in coordination with other project data, to apply an equity lens to planning. The equity lens helps identify how the existing built environment and potential changes to it may benefit or impact the County's most vulnerable populations. The project team will use the CVIM Priority Areas throughout the Arlington's Transportation Future process to assess equity. **Figure 10** below visualizes these Priority Areas.

Figure 10: Community Vulnerability Index Map



Source: Arlington County CPHD, 2024

Prioritizing Safety and Vision Zero

Transportation safety is a critical priority for the County. Everyone in Arlington interacts with some part of the transportation network each day, and everyone should be able to travel safely regardless of how they get around. A focus on transportation safety and crash reduction directly promotes public health. The following sections discuss Arlington's current commitments to improving the safety of the transportation system for all users and to eliminate transportation-related fatalities and serious injuries.

Safety in the Current Master Transportation Plan

Goal 3 of the current MTP is to "promote safety" through transportation operations that are safe and secure while enabling prompt and efficient emergency response. Many of the mode-specific MTP elements also promote safety within their respective goals and policies. In line with these goals, the County's adoption of the Vision Zero Resolution in 2019 provided explicit direction of assessing and addressing transportation safety issues in Arlington. Specifically, the Vision Zero Resolution represented a County commitment to working toward achieving zero traffic-related deaths and serious injuries through a Vision Zero Action Plan.

Vision Zero Action Plan

In 2019, the Arlington County Board adopted a resolution committing to a Vision Zero safety strategy, affirming that one death or severe injury on Arlington County's streets is one too many. In 2021, the Vision Zero Action Plan solidified the County Board's commitment to eliminating severe and fatal injuries on Arlington's transportation network by 2030. Through the Action Plan, the County recognized that effective data and transparent communication and monitoring are key to eliminating these severe and fatal crashes in Arlington, and the County is committed to "a proactive, data-driven approach to better identify and address the top risk factors before they result in a fatality or serious injury."

In support of this Vision Zero approach, the County has undertaken several key analyses and initiatives, which are discussed below. **Figure 11** illustrates the locations of the County's Vision Zero initiatives for 2023 and 2024.

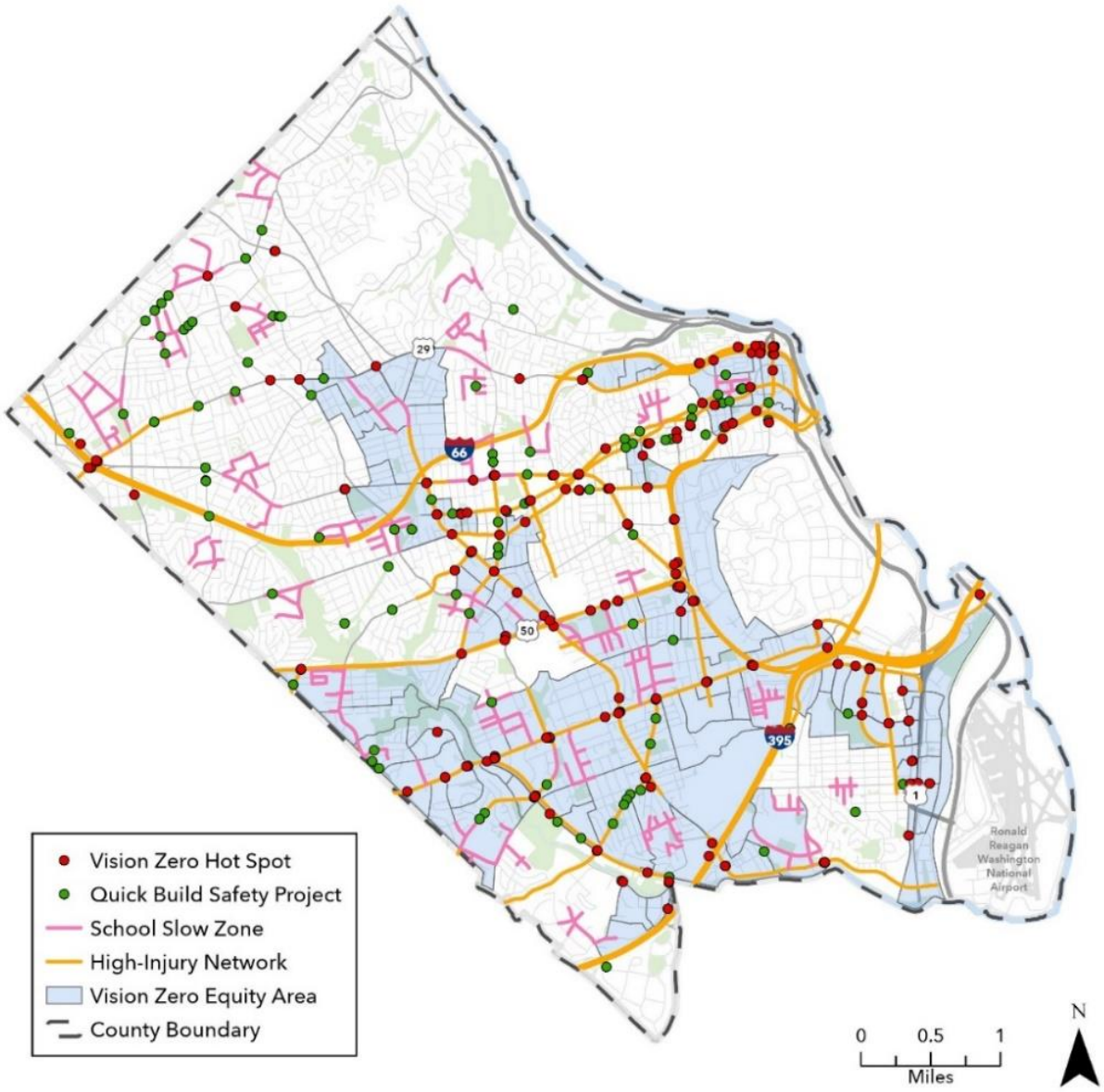
- High-Injury Network
  - Identifies corridors that have recent concentrations of critical crashes to prioritize safety audits
- Hot Spots Analysis
  - Identifies points of concentrated vehicle, pedestrian, and bicycle crashes to target implementation of quick-build crash mitigation projects
- Critical Crash Reviews
  - "Arlington police, state police, transportation engineers/planners, public health representatives, and a County manager representative participate

in a quarterly, interdisciplinary review of all critical crashes" (fatal or serious injury), which results in subsequent action items for mitigation[3]

- Systemic Safety
  - Safe System Approach to minimize risks to prevent crashes from happening and minimize injury when they do
- Safety Projects (Quick-Build, Capital, Pilot)
  - Quick-Build: Small-scale safety improvement projects using tactical or permanent materials and funded by state and local sources
  - Safety-Driven Capital Projects: Funded through the Capital Improvement Plan (CIP)
  - Safety Pilot Projects: Testing new, context-driven projects to solve nontraditional problems
- Speed Limit Reviews and Speed Reduction Strategies
- School Zones
  - Strategies employed around school access points and school crossings to improve safety for school children
- Automated Safety Enforcement
  - Red light cameras and speed cameras to promote safety by enforcing driver compliance
- Outreach and Education
  - Resources and toolboxes to gain feedback and educate the public on Vision Zero and traffic safety initiatives
  - A year-round critical crash mitigation campaign uses data to inform behavior-change messaging shared through online advertisements, County newsletters, partner organizations, printed materials, and in-person pop-up events
- Performance Metrics
  - Measures identified in the Action Plan that reflect the program target areas, reported on in Annual and Mid-Year Progress Reports
  - Informational dashboards including the Vision Zero Program Dashboard and the Crash Data Dashboard provide community members with interactive, up-to-date information on safety initiatives and data to promote transparency and accountability

[3] Vision Zero — Maps and Safety Data – Official Website of Arlington County Virginia Government

Figure 11: Vision Zero initiatives 2023–2024



Source: Arlington County Vision Zero Programs Snapshot, 2024

Vision Zero Resources

The County provides several tools and resources within its Vision Zero programs, including:

- Multimodal Safety Engineering Toolbox
  - Comprehensive and easy-to-follow overview of safety improvement options and how/when to use them, facilitates coordination between different stakeholders, and "[the] creat[ion of] a shared understanding and realistic expectations around safety treatments"[4]
- Dashboards and Open Data
  - Program Dashboard: Interactive maps showing data on crashes, infrastructure, initiatives, speed limits, and public outreach
  - Crash Dashboard: Interactive, Power BI-based site including maps, graphs, charts, and statistics on crash data trends sortable by several different attributes
  - Annual and Mid-Year Program Progress Reports on progress toward goals and performance measures
  - Annual Crash Reports that show detailed analysis and identify new crash patterns or safety needs each year
  - The Vision Zero website provides details and data supporting all key initiatives and is updated on a regular basis to ensure the program meets its goal of transparency and accountability
- Engineering Guidelines
  - "Throughout the Action Plan process, the County's data, analyses, and progress reports will be readily accessible to the community to ensure that the Vision Zero effort is transparent and meaningful"[5]
- Monthly Newsletter
  - Updates on current projects and progress toward Vision Zero goals
- Critical Crash Mitigation Campaigns
  - Focused behavior-change messaging created to address issues identified in crash data analysis
- Public Education Toolbox
  - Informative safety-related information sorted by topic and often linked to critical crash mitigation campaign materials.

To maintain its commitment to transparency, the County provides Annual and Mid-Year Reports that track progress on actions from the 2021 Action Plan. The reports include updates on performance measures, crash data, current and planned actions, and next steps in preparation for future Action Plan updates.

---

[4] Vision Zero Tools and Guidelines – Official Website of Arlington County
[5] Vision Zero — Maps and Safety Data – Official Website of Arlington County

Advancing Sustainability

Sustainability is a major priority and overarching commitment for Arlington. The Office of Sustainability and Environmental Management (OSEM) is a division of the County's Department of Environmental Services (DES) and acts as the County's central agency for strategic planning, coordination, and implementation of Arlington's energy and climate objectives. Several programs operate under OSEM to advance the County's sustainability goals, including many related to transportation.

Sustainability in the Current Master Transportation Plan

Goal 6 of the current MTP "advances environmental sustainability" through strategies that reduce the impact of the transportation system on community resources, including air and water quality, as well as increasing energy efficiency. In addition to the overarching goal, many of the mode-specific elements in the current MTP have a sustainability focus underlying their goals and policies.

Arlington Initiative to Rethink Energy

The Arlington Initiative to Rethink Energy (AIRE) is a division of OSEM and "operates as the County's core agency for climate mitigation, adaptation/resilience programs, and community-facing energy programs."[6] AIRE also is responsible for executing the objectives in the Community Energy Plan (CEP), which is an element of the Comprehensive Plan focused on defining energy goals and policies that drive Arlington to remain sustainably competitive. The CEP highlights transportation factors within its goals of reducing emissions and moving toward carbon neutrality, which include increasing multimodal transportation, reducing vehicle miles traveled (VMT) per capita, and increasing use of electric vehicles (EVs). The CEP also sets the goal for Arlington to become a carbon-neutral community by 2050, with interim milestones including:

- One hundred percent of Arlington's electricity will be from renewable sources by 2035
- County Government operations to achieve 100 percent renewable energy by 2025 (accomplished in 2023)

Arlington County Commuter Services

Arlington County Commuter Services (ACCS) is the transportation demand management (TDM) agency for the County with the mission to educate and empower everyone who travels to, through, and within Arlington with timely and useful information about transit, walking, biking/scootering, and carpooling/vanpooling. ACCS provides information and services to increase the use of alternative modes of travel through programs including WalkArlington, BikeArlington, Arlington Transportation

[6] Arlington Initiative to Rethink Energy (AIRE) – Official Website of Arlington County Virginia Government

Partners, The Commuter Store®, CommuterDirect.com, TDM for Site Plan Development, and Mobility Lab. ACCS manages the shared micromobility (rentable e-bikes, e-scooters) program in the County and manages Arlington's portion of the regional Capital Bikeshare system.

Biophilia and Green Streets

In December 2019, the County Board passed a resolution in support of joining the Biophilic Cities Network, "a network of cities from around the globe dedicated to improving the connection between residents and urban nature."[7] As a partner, the County continues to apply biophilic principles to its design policies and practices. As an example, Arlington is committed to creating Green Streets within its public right-of-way. A Green Street "includes a rain garden and vegetated area along a street that reduces runoff and filters out pollutants to protect local streams, Potomac River and the Chesapeake Bay."[8] A typical Green Streets project includes a rain garden in the median or at the curb where stormwater can collect, filter through the soil, and soak into the ground or be released into the stormwater system. **Figure 12** shows an example of a Green Streets project on Williamsburg Boulevard. Arlington's Green Streets program currently funds design and construction of two green streets per year.

Figure 12: Green Streets Project on Williamsburg Boulevard

Source: Arlington County Green Streets Program

Arlington Transit Strategic Plan

Sustainability is identified in the vision for transit and in TSP Goal 5, "creating a resilient community though environmentally sustainable transportation." The objective of this goal is to use high-quality and reliable transit to reduce greenhouse gas emissions, to make transit a viable option for more daily trips, and to advance green energy, design, and building principles in transit vehicles and systems.

[7] Arlington's Biophilic Goals – Official Website of Arlington County Virginia Government
[8] Green Streets – Official Website of Arlington County Virginia Government

Transportation Today

As a growing, urban village community, Arlington's transportation supports pedestrians, cyclists, transit users, and drivers with a wide range of transportation options.

The County has embraced a world-class, multimodal transportation approach that is focused on moving people—efficiently, equitably, safely, sustainably, and reliably—without more traffic. This has led the County to integrate transportation with land use and development decisions for the past several decades.

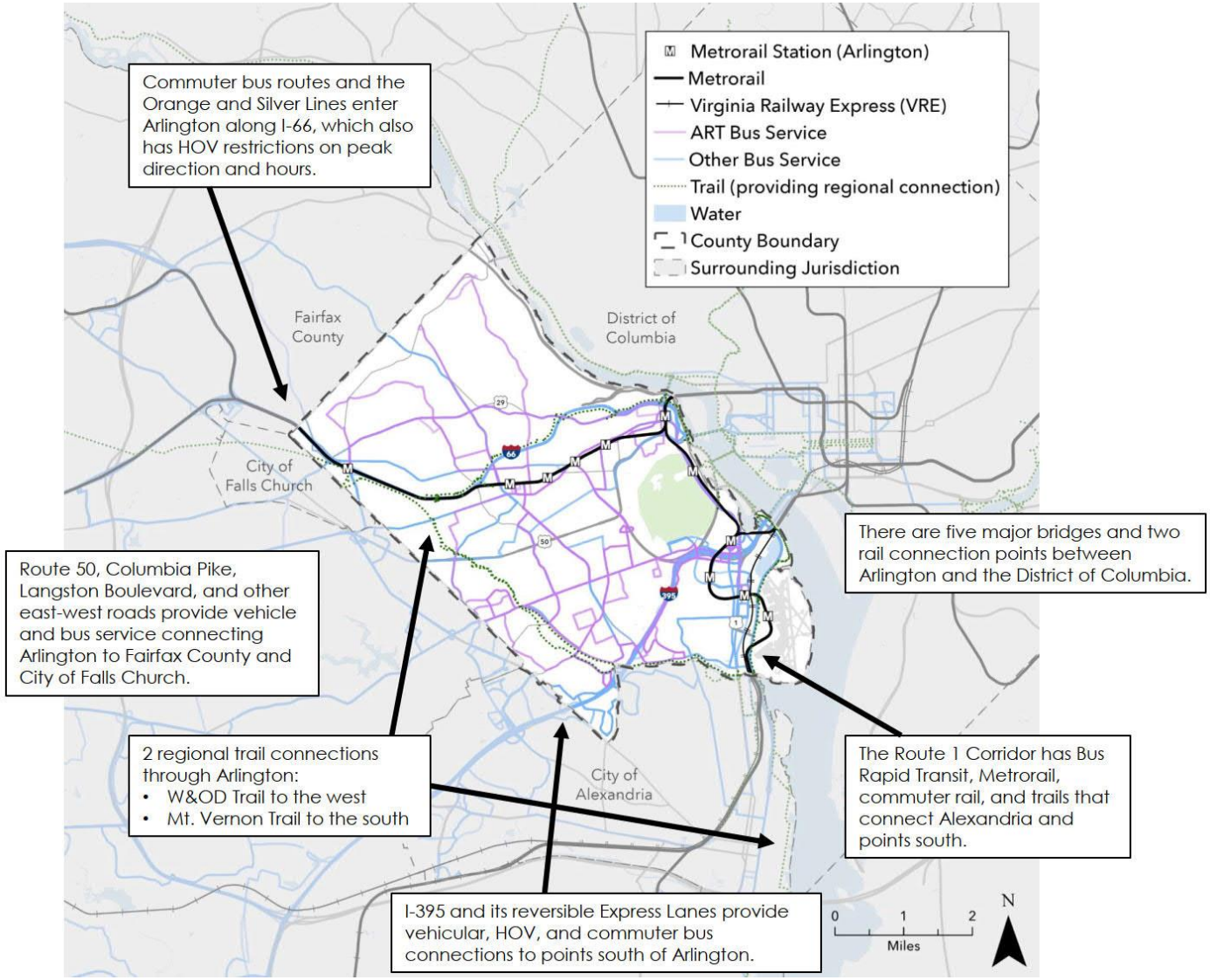
Arlington's transportation is scaled, fully integrating with regional transportation facilities and services while providing local connections to neighborhood destinations and community services.

Arlington's Regional Context

Arlington is a vital part of the broader transportation network within the Metropolitan Washington region. Arlington's position adjacent to Washington, DC results in thousands of commuters traveling on rail, bus transit, roadway corridors, and trail networks that pass through Arlington.

Figure 13 provides a visual representation of Arlington's place within the regional transportation network, including the rail, bus, trail, and state/interstate highway connections that pass through it.

Figure 13: The Regional Transportation Network



Source: Arlington County, Open Data DC, National Capital Trail Network, 2024

Arlington's Transportation Network

Arlington's surface transportation network— its streets, sidewalks, trails, rails, parking infrastructure, and various ways people travel along them—is critical to the success and wellbeing of Arlington's residents, businesses, and visitors. **Figure 14** shows the several transportation options within Arlington that can be used to reach various destinations, including:

Rail

- The Washington Metropolitan Area Transit Authority (WMATA) Metrorail system and its 11 stations in Arlington along the Orange, Silver, Blue, and Yellow lines
- Virginia Railway Express (VRE) commuter rail service and its station in Crystal City along the Fredericksburg and Manassas lines

Bus Transit

- 16 Arlington Transit (ART) local bus routes connecting to key destinations and rail stations
- WMATA Metrobus local and regional bus routes connecting destinations within the County and surrounding jurisdictions, including Metroway bus rapid transit (BRT) service, which travels in dedicated lanes for portions its route along Route 1
- Between January and September of 2023, there were a total of 1.6 million ART riders and 520,000 riders on Metrobus routes serving the County
- Other regional bus routes including regional commuter buses and buses from neighboring jurisdictions
- Intercity bus services

Bicycle/Micromobility

- An extensive multi-use trail network, including the 16-mile Arlington Loop
- A network of 131 miles of dedicated on-street lanes and off-street trails
- Designated bike routes on streets without dedicated bike lanes
- Capital Bikeshare and shared mobility scooters and e-bikes
- Dedicated bike and scooter parking at transit stations, along commercial and mixed-use corridors, and at County parks and facilities

Walking

- An existing pedestrian network comprised of 821 miles of sidewalks and paved trails supplemented by 326 miles of local streets and alleyways
- An extensive multi-use trail and sidewalk network
- Walkable neighborhoods and corridors across Arlington

Private Vehicle (including cars and motorcycles)

- A network of 390 miles of County operated and maintained roadways excluding interstate highways, access ramps
- Connections through interstates (I-66, I-395), US Routes (Routes 50, 29, 1), and George Washington Parkway
- Local streets that provide connections to community destinations and County services
- Public parking, both on- and off-street, prevalent in activity areas
- Carpooling, carsharing, ride-hailing, and slugging options for commuters

Figure 14: Arlington's Roadway, Transit, and Trail Network

Source: Arlington County, Open Data DC, National Capital Trail Network, 2024

The Pedestrian Network

Arlington recognizes the importance of a safe, complete and comfortable walking experience. Walking is a low impact, low-cost travel option to reach many daily destinations. Walking is also a means of healthy recreation. The County has invested in sidewalks, paved multi-use trails, and hiking and natural surface trails to meet the needs of residents. These investments stem from policies in the current MTP as well as specific programs through which the County encourages and supports pedestrians. The investments have contributed to Arlington being nationally recognized for walkability, and ranked in 2022 as one of only five Platinum-level Walk Friendly Communities.

At some point in each trip, everyone is a pedestrian. Almost every transportation trip includes a portion taken by foot or wheelchair, making the pedestrian experience a key part of the entire transportation system experience. When walking is safe, comfortable, and convenient, it makes meaningful progress towards achieving broader County goals around public transit, integrated land use, and community health. The County remains focused on completing gaps in the pedestrian network and ensuring that connections to community destinations are convenient and comfortable.

Policy in the Current Master Transportation Plan

The County's current MTP recognizes the importance of Arlington's pedestrian network and provides policies that promote pedestrian safety, accessibility, and connectivity through maintaining and expanding pedestrian facilities. Goal 1 of the current MTP outlines strategies that advance complete streets and a safe and comfortable pedestrian experience. Goal 4 of the current MTP—Establish Equity—identifies a safe and convenient pedestrian network as key to equitable outcomes.

The Pedestrian Element of the current MTP offers 12 further policies to guide pedestrian-oriented planning and design, including:

- Creating new pedestrian facilities and fixing gaps in existing facilities (e.g., missing sidewalks, indirect walking routes, and upgraded street crossings)
- Upgrading all existing and new pedestrian facilities to meet ADA standards, adding streetlights where necessary, and adding streetscaping elements
- Focusing on changing driver behavior and reducing speeds through arterial reconstruction and street redesign (e.g., expanded sidewalks, fewer pedestrian-vehicle conflict points)

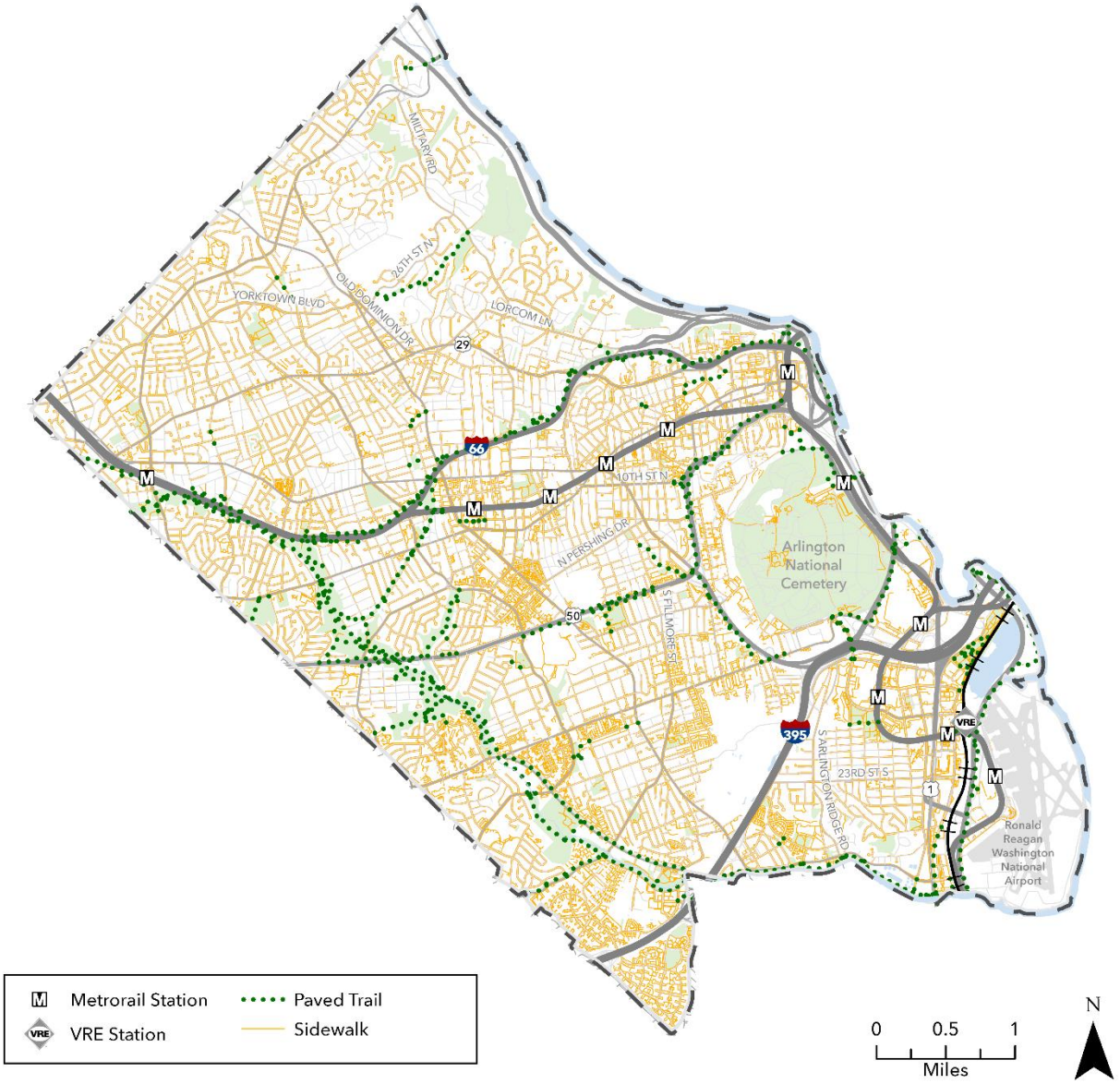
Existing Context

The Existing Pedestrian Network

Almost every trip in Arlington involves walking along or across streets, sidewalks, and trails, even if only for short distances to and from other modes of transportation. Arlington's existing pedestrian network, shown in **Figure 15**, consists of 821 miles of sidewalks and paved trails. Where sidewalks and trails are not present, the 326 miles of

local streets and alleyways help to provide additional connectivity, although at reduced levels of comfort and accessibility. Today, walking accounts for approximately 36 percent of all weekday trips within Arlington, making it the second most common mode of transportation in the County after driving (56 percent). These walking trips have an average length of 11.4 minutes and an average distance of 0.6 miles. Forty-four percent of walking trips in Arlington originate within a quarter mile of a Metrorail corridor, demonstrating the importance of the pedestrian network for first- and last-mile connections to and from transit.

Figure 15: Arlington's Pedestrian Network



Source: Arlington County, 2024

The County implements most of its pedestrian improvements in two ways: 1) County-led projects and capital-funded programs such as the Neighborhood Complete Streets Program and Arlington Neighborhoods Program, and 2) improvements made as a condition of private redevelopment. The Pedestrian Element of the current MTP includes a methodology for prioritizing sidewalk improvements through Priority Pedestrian Zones (PPZs), defined as areas near transit stops/stations, County facilities (such as libraries and community centers), neighborhood retail centers, and public schools. In addition, Arlington's MTP Map provides guidance to planners and developers on preferred dimensions for sidewalks and sidewalk elements (greenery, trees) along arterials and neighborhood streets based on street typology.

Priority Pedestrian Zones (PPZs) are areas that are prioritized for public investment in pedestrian infrastructure because they meet one or more of the following criteria:

- *Within 0.25 mile of a transit stop*
- *Within 0.5 mile of a Metrorail station entrance*
- *Within 0.5 mile of a County facility or a neighborhood retail center*
- *Within 1.0 mile of a public school*

WalkArlington Program[9]

WalkArlington is the County's pedestrian education and encouragement program. Its goal is to promote walking as a healthy, sustainable, and accessible mode of transportation. Through education, outreach, and collaboration, WalkArlington empowers residents, employees, and visitors to incorporate walking into their daily lives. The program aims to enhance the walking experience by providing information on pedestrian-friendly policies and infrastructure as well as by fostering a culture of walking. By prioritizing safety, accessibility, and connectivity, WalkArlington contributes to a more vibrant, active, and livable community.

9 https://www.walkarlington.com/

Analyses Conducted

As part of the Arlington's Transportation Future process, a series of analyses were conducted to measure the degree to which the pedestrian network is connected, accessible, and comfortable. Taken together, these analyses characterize the experience of people walking in Arlington today.

Pedestrian Connectivity Analysis

Purpose

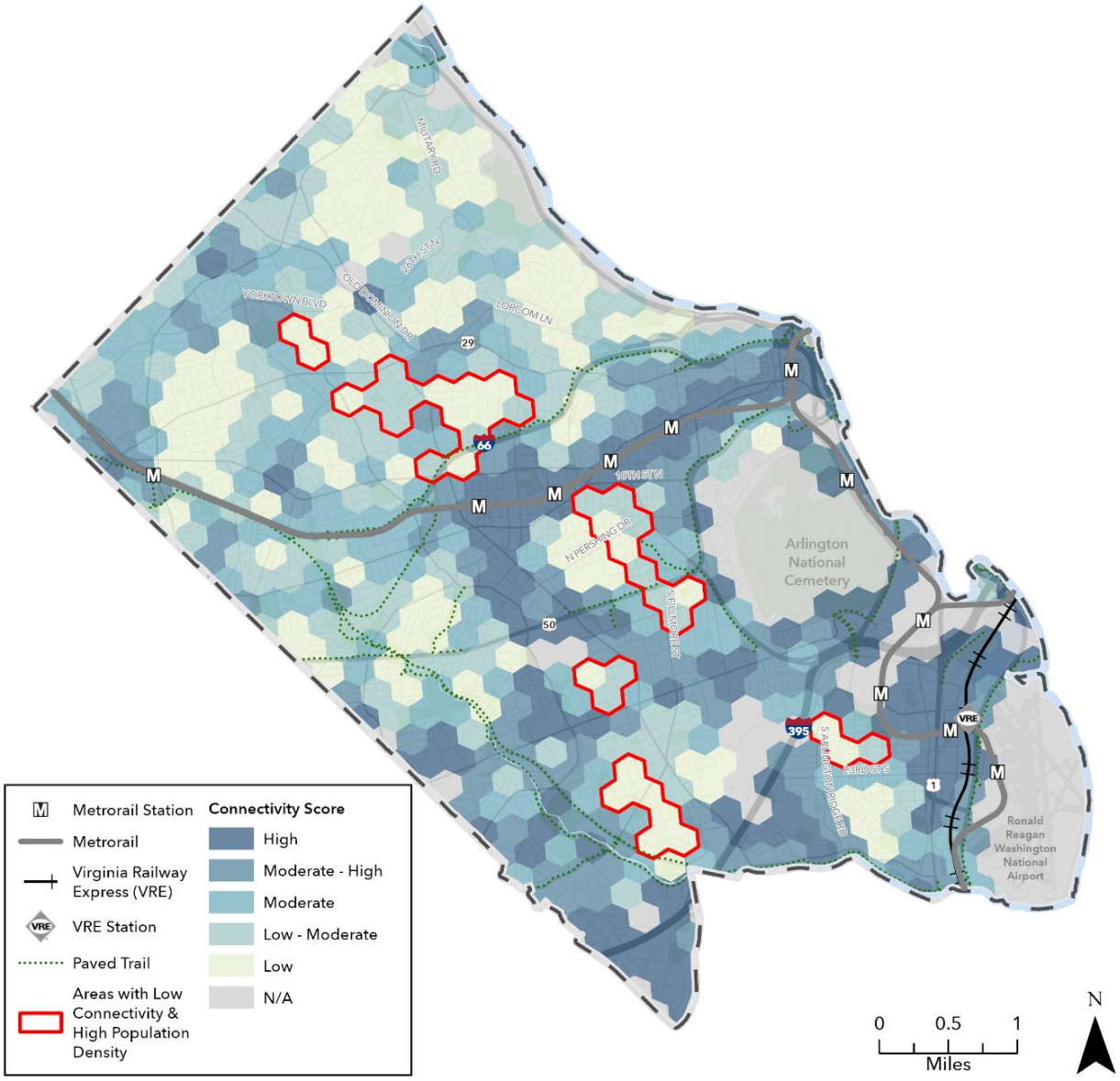
To better understand the connectivity of Arlington's network of sidewalks, trails, and marked crosswalks, the project team conducted a pedestrian connectivity analysis. The results of this analysis identified areas of the County where infrastructure gaps or physical barriers may limit continuous and safe walking trips. Gaps and barriers identified in this analysis can guide investment to where it is most needed.

Methodology, Limitations, and Assumptions

The connectivity analysis measured the degree of connectivity provided by existing pedestrian infrastructure—incorporating data on existing sidewalks, trails, and marked crosswalks. Specifically, the project team evaluated the number of quarter-mile connections possible while traveling exclusively on sidewalks, trails, and marked crosswalks. The results illustrate the areas where people walking may encounter challenges due to missing sidewalks or crosswalks, long distances between marked crosswalks, and/or barriers or difficult links associated with curvilinear streets, cul-de-sacs (dead-end streets), or steep slopes.

Recognizing that pedestrian infrastructure needs vary both geographically and across a range of people's ages and abilities, the project team ranked areas based on factors of connectivity and population density. This identified areas of the County with low connectivity and higher population densities, and therefore with the greatest need for pedestrian network improvements. Specifically, the project team mapped areas with connectivity scores in the lowest 25 percent and population densities in the highest 25 percent to determine where pedestrian network enhancements would benefit the greatest number of people. The results of the Pedestrian Connectivity Analysis are shown in **Figure 16**.

Figure 16: Pedestrian Network Connectivity Score



Analysis Findings

The results shown in **Figure 16** illustrate high pedestrian connectivity along the Rosslyn-Ballston and Route 1 corridors, which are the County's two Metrorail corridors. These corridors have a network of complete, connected sidewalks, a strong, regular grid of streets, and frequent marked crosswalks.

Areas with lower pedestrian connectivity include neighborhoods north of I-66 (such as Cherrydale, Wavely Hills, and parts of Yorktown) along and smaller pockets in predominantly residential neighborhoods (such as Arlington Forest, Ashton Heights, and Green Valley).

The lowest connectivity (the most gaps in pedestrian infrastructure) and the highest population densities (the highest concentration of residents) are found in areas dispersed across Arlington, such as Alcova Heights, Arlington Ridge, Green Valley, and Waycroft-Woodlawn. These areas often have missing or incomplete sidewalks and few marked crosswalks at intersections.

Pedestrian Destination Access Analysis

Purpose

Building on the connectivity analysis, the project team conducted a pedestrian destination access analysis, which evaluated connections to pedestrian priority destinations, helping to determine how easy it is for people to walk to important places across the community. The project team modeled travel along existing sidewalks, trails, and marked crosswalks to assess the level of connectivity to priority destinations.

The results provide granular insight into pedestrian connectivity, using destinations the County prioritizes for pedestrian infrastructure investments. Critically, this approach identified specific locations where gaps in infrastructure may limit the ability for people to walk safely to destinations.

Methodology, Limitations, and Assumptions

The project team assessed the extent to which Arlington's population[10] has walking access to pedestrian priority destinations (PPDs). These priority destinations, derived from the Priority Pedestrian Zones (PPZs) included in the Pedestrian Element of the current MTP, include transit stops and stations, County facilities, neighborhood retail centers, and public schools—locations that generate higher levels of pedestrian activity.

To understand access to these destinations, the project team estimated the number of residents living within a half-mile ("as the crow flies") of each destination with uninterrupted pedestrian access via sidewalks, trails, and marked crosswalks. The result was a comparison of residents with network access (i.e., along sidewalks, trails, and marked crosswalks) with the total number of residents living within a half mile (i.e.,

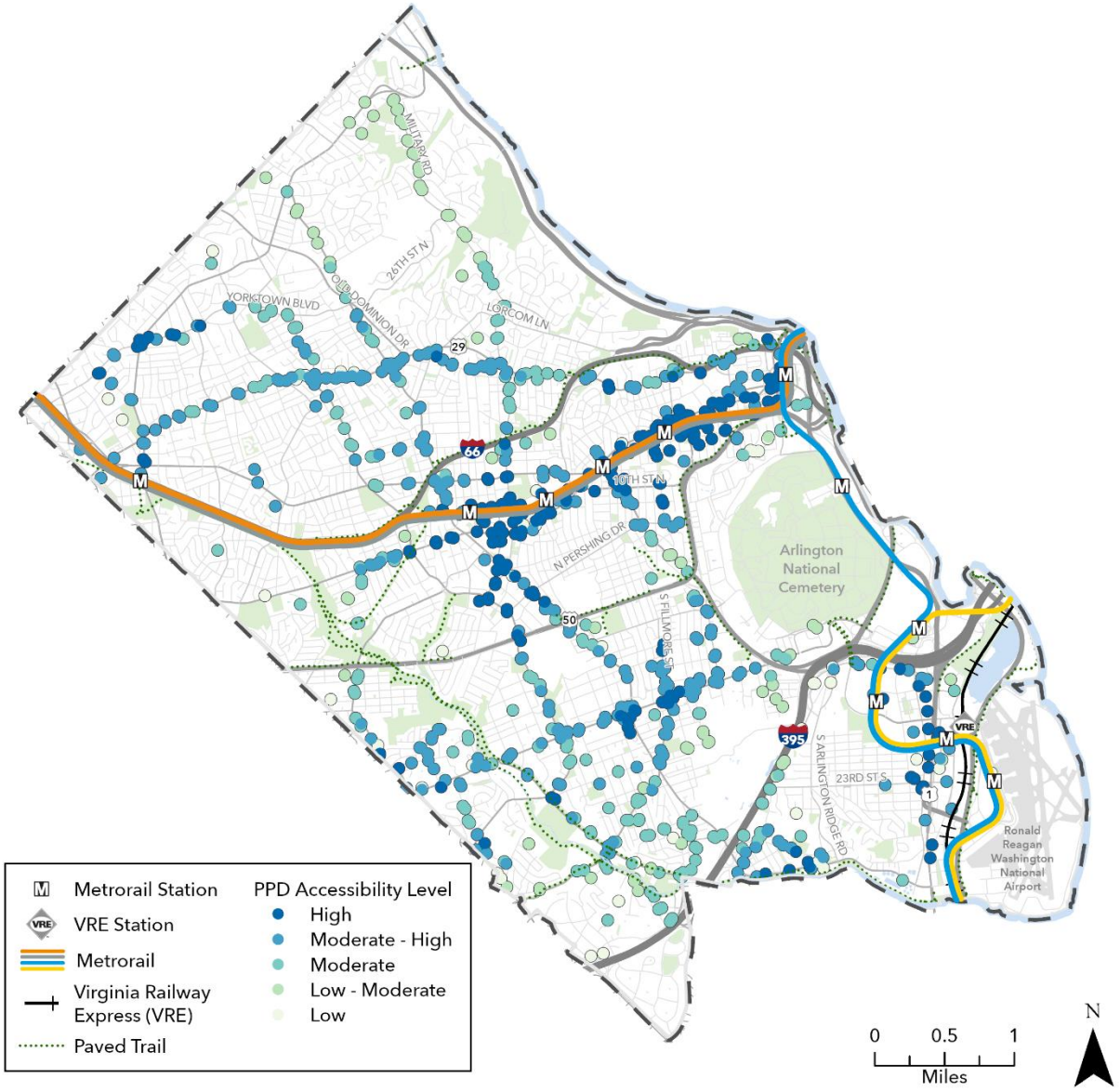
[10] Identified using American Community Survey data (2018-2022 five-year estimates)

people living within a comfortable walking distance, but not necessarily connected via pedestrian infrastructure). This analysis showed where areas of concentrated populations do or do not have safe, comfortable, convenient walking access to important destinations.

Analysis Findings

The analysis results, shown in **Figure 17**, showed high levels of access to priority destinations along Metrorail corridors, namely between Rosslyn and Ballston on the Orange and Silver lines, and in Crystal City and Pentagon City. These areas correlate with the areas of high connectivity in the Pedestrian Connectivity Analysis. While that connectivity analysis focused on identifying areas with lower connectivity, this accessibility analysis highlights specific streets and corridors. Corridors with high concentrations of priority destinations and clusters of moderate-high and high destination access levels are found along Langston Boulevard, Columbia Pike, and Glebe Road. Limited access exists in neighborhoods between Columbia Pike and I-395 and in other areas of the County. Areas with low levels of access but high concentrations of priority destinations present opportunities to create new and improved connections and to eliminate existing barriers to pedestrian access.

Figure 17: Pedestrian Access Score for Pedestrian Priority Destinations



Pedestrian Comfort Analysis

Purpose

The previous two analyses focused on the ability to access areas of Arlington and specific destinations based on the presence—or lack thereof—of physical infrastructure. To consider not just connectivity and access, but also how trips may be experienced by people walking, the project team conducted a pedestrian comfort analysis.

This analysis evaluated the overall pedestrian experience across different parts of the county, focusing on the factors that influence how people feel when using the network. By gauging pedestrian comfort, satisfaction, and willingness to walk, the project team identified areas with opportunities to create more pleasant, safe, and inviting environments for pedestrians.

Methodology, Limitations, and Assumptions

The project team measured pedestrian comfort by evaluating key factors that influence the experience of people walking. This approach assessed several specific elements of the pedestrian network using County data, including:

- **Sidewalk availability and length**: A connected sidewalk network enhances pedestrian comfort and safety by separating pedestrians from vehicular traffic. Abundant and well-maintained sidewalks contribute to a more connected and accessible walking environment.
- **Speed and traffic management devices**: Speed and traffic management devices work to slow drivers and control the flow of traffic. There are currently more than 300 speed and traffic management devices throughout the County, including speed humps/cushions, chicanes, hardened centerlines, and traffic circles.
- **Presence of obstructions**: Obstructions within the pedestrian environment (e.g., fire hydrants or utility poles) can hinder the walking experience. Clear and unobstructed pathways improve pedestrian comfort by allowing for smoother, safer movement.
- **Shade trees**: Shade is important for pedestrian comfort, especially during the daytime in hot or sunny conditions.
- **Street lighting:** Lighting is essential for safety and comfort in low light conditions.
- **Rectangular rapid flashing beacons (RRFBs):** RRFBs alert drivers to the presence of people walking and encourage them to stop at crosswalks, improving safety for pedestrians and bicyclists.

The project team aggregated the results of this analysis using H3 geographies, a hexagon-based spatial indexing system that allows for consistent, scalable aggregation across geographic areas. Each element received a unique weight based on its relation to the above pedestrian comfort factors, after which the project team calculated a weighted pedestrian comfort index. Below are the detailed weights assumed for each input based on available data and professional judgement:

- Length of sidewalks (25 percent)
- Number of speed and traffic management devices (25 percent)
- Number of pedestrian obstructions (20 percent)
- Percent of sidewalks with tree cover (10 percent)
- Number of street lighting devices (10 percent)
- Number of RRFB devices (10 percent)

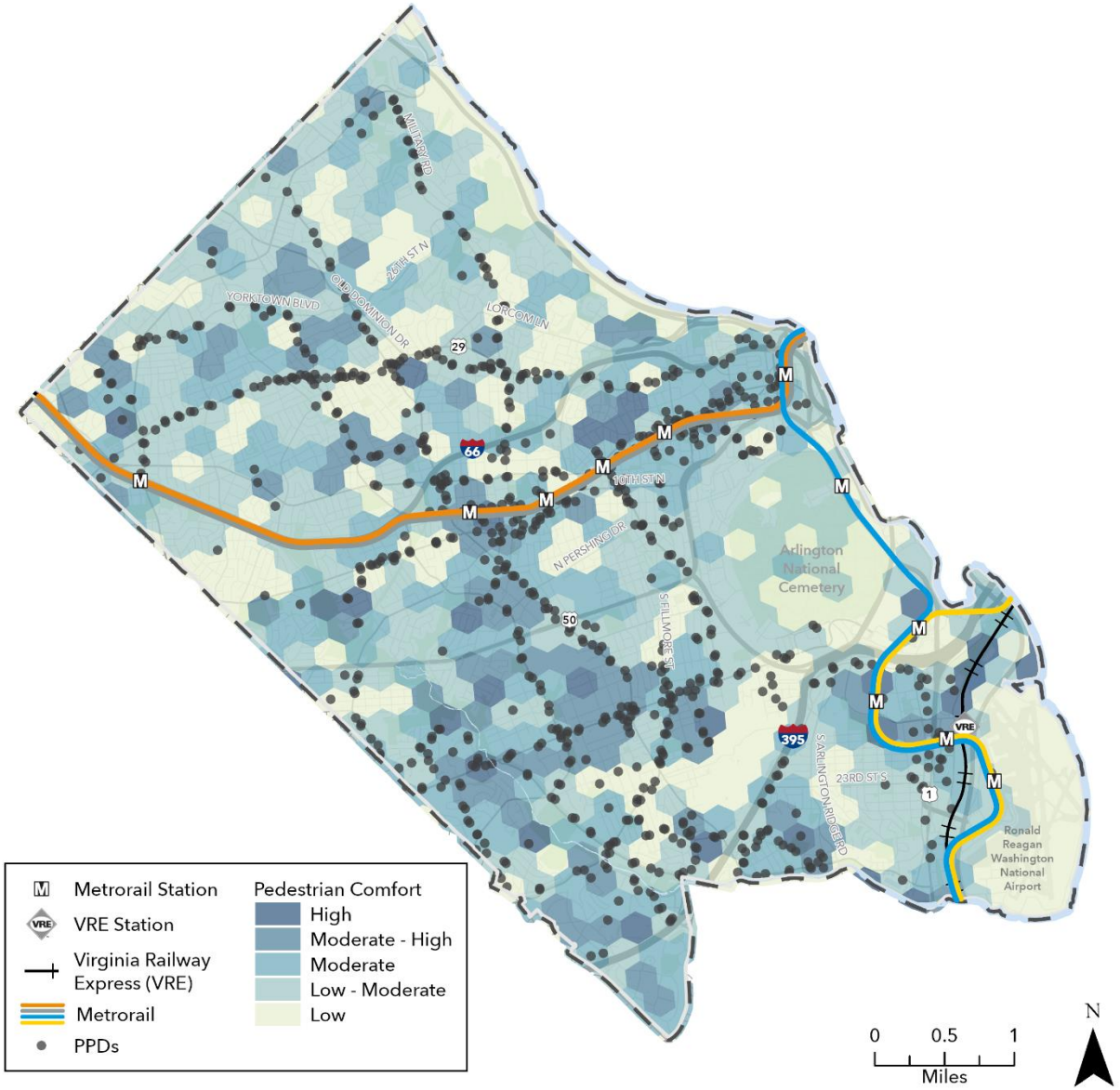
By measuring these elements, the analysis compiled a multi-faceted picture of pedestrian comfort in Arlington.

Analysis Findings

The pedestrian comfort analysis results shown in **Figure 18** identifies higher pedestrian comfort in the southwestern portion of the County, including in areas of Shirlington, Claremont, and Columbia Forest. These results can be attributed to these areas having more speed and traffic management devices and few obstructions, making them more comfortable for people walking. High-comfort areas were also found in more dense areas of high-quality connectivity and access such as the Rosslyn-Ballston corridor, Crystal City, and Pentagon City where past redevelopment efforts have delivered significant pedestrian improvements.

The project team found lower levels of pedestrian comfort in northern portions of Arlington, such as parts of Donaldson Run and Waycroft-Woodlawn, along with Arlington View and Green Valley in southeastern Arlington. These results confirm fewer speed and traffic management devices, and potentially more obstructions that make travel more difficult for people walking. Areas with lower pedestrian comfort would benefit from targeted investments to improve the walking experience, such as adding shade, improving lighting, building new sidewalks, and removing obstructions.

Figure 18: Pedestrian Comfort Index



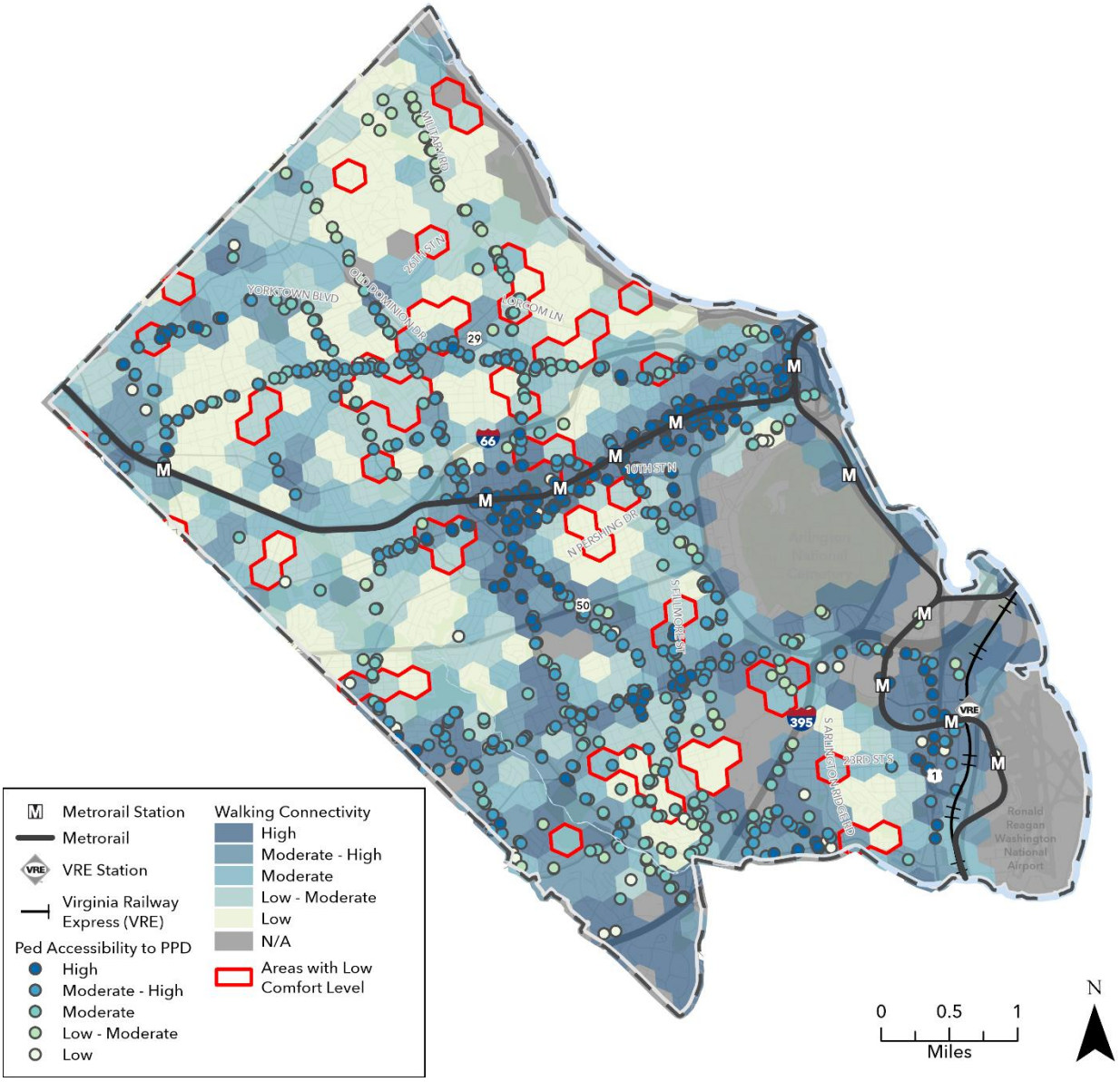
Pedestrian Connectivity, Destination Access, and Comfort

People walking in Arlington often experience the County's connectivity, access, and comfort simultaneously. Often, people will choose to walk when there are destinations within a reasonable distance and with safe and comfortable infrastructure. To better understand how the above analyses relate to each other and reflect the experiences of people walking today, the project team overlaid all three of the pedestrian network analyses in **Figure 19**.

The overlay indicates that, generally, in areas with moderate to high walking connectivity, there is a similar level of accessibility to PPDs along the corridor. Additionally, areas with low comfort levels are more likely to correspond with areas of lower walking connectivity, though there are a few locations in which there is low comfort but higher connectivity.

While these three variables are often related, it is important to note that conditions vary across the County. Some areas may rank highly in all three categories while others may only rank moderate to high in two of the categories. For example, along I-395, some PPDs have low pedestrian accessibility, though they are located in areas with moderate to high connectivity and do not have low comfort. This highlights how infrastructure barriers such as freeways may impact the ability for people walking to access destinations that may be relatively close ("as the crow flies") but remain inaccessible due to the surrounding infrastructure.

Figure 19: Overlay of Pedestrian Connectivity, Destination Access, and Comfort



Key Takeaways

Safe, connected, comfortable, and complete sidewalks and paths are important for people who walk in Arlington. When gaps and barriers in the pedestrian network are addressed, walking becomes a safer, more appealing and convenient, and more comfortable way to travel. The pedestrian network analyses confirmed that people walking in Arlington have access to a largely complete and connected network of sidewalks, crosswalks, and trails—but gaps in the network, challenging conditions, and opportunities for improvement remain. These analyses indicate that:

- **Arlington's Rosslyn-Ballston and Richmond Highway Metrorail corridors are among the most pedestrian-friendly areas of the County.**
    - These corridors have some of the highest levels of pedestrian connectivity in the County.
    - Accessibility to pedestrian priority destinations is also highest along these corridors.
    - This correlation of connectivity and accessibility suggests a strong alignment between transit infrastructure and pedestrian network design.
    - These areas feature high levels of connectivity, accessibility, and comfort, creating conditions where people are most likely to make walking their mode of choice.
- **Streets that lack continuous sidewalks and/or marked crosswalks, create gaps in pedestrian connectivity and accessibility.**
    - Gaps in pedestrian connectivity are most notable in areas north of I-66, where roads lack continuous sidewalks or marked crosswalks.
    - The project team also observed connectivity gaps in smaller pockets in residential neighborhoods, where streets are not laid out in a consistent grid or have features such as cul-de-sacs, which create fewer, more indirect walking routes Destinations with low levels of access but a high concentration of priority destinations present opportunities for the County to create new and improved connections and to eliminate existing barriers to pedestrian access.
- **Street design directly influences pedestrian comfort.**
    - Areas in the southwest portion of the County like Shirlington, Claremont, and Columbia Forest have higher pedestrian comfort, due to the presence of safety treatments and amenities for pedestrians.
    - Lower connectivity and comfort levels are often found in lower-density residential areas, where pedestrian volumes are lower and streets carrying relatively few vehicles may be more easily and safely used even though they lack sidewalks or crosswalks.
- **Addressing the challenges and opportunities of the current pedestrian network requires strategies and policies that go beyond individual location-based projects.**
    - Many County small area plans or corridor studies have already identified specific improvements based on a geography-focused analysis. Streamlining a process to prioritize and implement these projects should be a focus of policy and strategy development.
    - Examples from other jurisdictions or plans include setting targets for the number of projects to be implemented each year, identifying specific focus corridors based on Vision Zero or specific modal networks, and implementing quick-build pilot projects.

The Bicycle and Micromobility Network

Policy in the Current Master Transportation Plan

The current MTP's updated Bicycle Element was adopted in 2019. Bicycle Element recommendations include reconfiguring street space to add dedicated bicycle facilities and improving access to transit stations, schools and other places people want to visit by bicycle. Such improvements can help create safer and more comfortable streets for people bicycling, reduce conflicts between bicyclists and other modes of transportation, and encourage bicycling as a primary mode of travel. There are 15 policies guiding the County's approach to bicycling, centering on:

- Providing high-quality bicycle facilities and supporting facilities at destinations (e.g., showers, lockers, bicycle parking, etc.) to make bicycling accessible for all ages and abilities
- Ensuring safety for all network users
- Supporting bicycle education, safety programs and bike-sharing programs
- Completing the County's low-stress bikeway network, focusing on overcoming infrastructure barriers to bicycling (e.g., large roadways, conflict-prone intersections, street design, etc.)

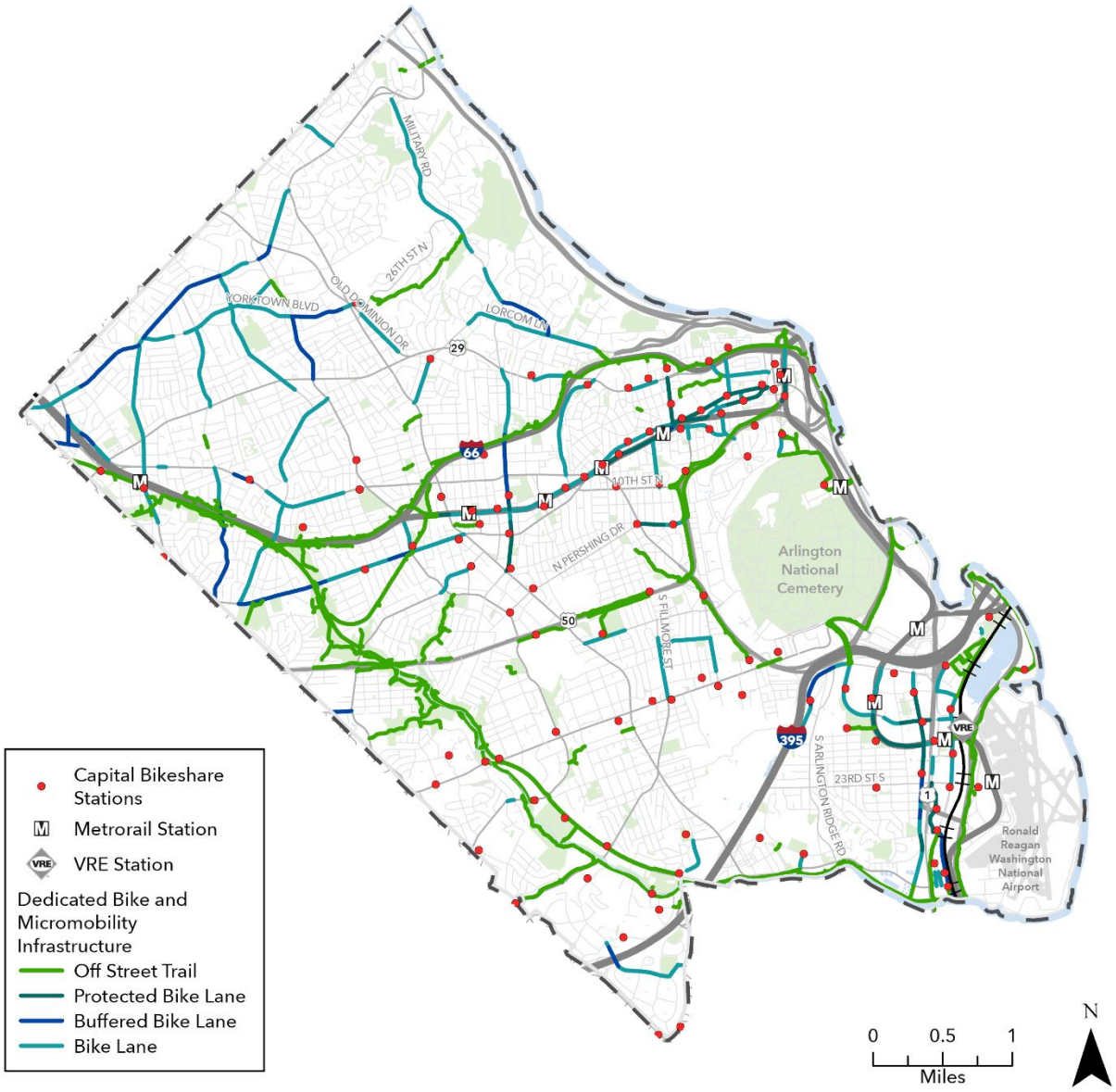
Existing Context

The Existing Bicycle and Micromobility Network

Arlington's existing bicycle and micromobility network, shown in **Figure 20**, consists of 131 miles of dedicated lanes and infrastructure. Today, bicycling accounts for approximately 2.9 percent of all weekday trips within Arlington. These trips have an average length of 11 minutes and cover an average distance of 2 miles[11].

[11] Replica – Spring 2024 Trip Table

Figure 20: Arlington's Bicycle and Micromobility Network



Source: Arlington County, 2024

Bicycling in Arlington supports the current MTP's general policies of providing multiple viable travel options and managing travel demand and transportation systems. The County has long had a reputation as a bicycle-friendly community and was recently recognized by the League of American Bicyclists as a gold-level Bicycle Friendly Community. Bicycling is supported by initiatives and programs across several County departments that help plan for and encourage bicycling as a viable means of travel, whether to work, to shop, or for recreation and fitness.

Since the adoption of the Bicycle Element of the current MTP, other private and shared micromobility options have become popular. Rentable e-scooters, e-bikes, and traditional bicycles from vendors like Capital Bikeshare, enhance first- and last-mile connectivity to places like transit stations and provide more opportunities for more people to get to the places they want to go. The use of shared micromobility devices has evolved rapidly, overlapping with many of the same operational and infrastructural characteristics and challenges as personal bicycles and scooters.

Micromobility refers to a category of small, lightweight transportation modes designed for short trips. These include shared or personal devices such as bikes, scooters, skateboards, and other similar vehicles. Micromobility enhances first- and last-mile connectivity while offering environmentally friendly travel options.

The County continues to analyze the use of shared mobility devices. Because of their similar operational, infrastructure, and usage characteristics, policies that support bicycles have proven effective at supporting micromobility. The refreshed transportation plan will consider and refer to bicycling and micromobility together.

County planners and project managers as well as private developers reference the Bicycle Element of the MTP, the Bikeway Network, and the Primary Bicycling Corridors maps to implement the County's planned bikeway and low-stress bike networks. The County prioritizes projects using several criteria including those that:

- Enhance safety for all users
- Help to complete the bikeway network within Arlington and to neighboring jurisdictions
- Reduce traffic level of stress for bicyclists
- Improve network coverage to better serve underrepresented areas and populations
- Provide better coverage to schools and other community facilities

BikeArlington Program[12]

BikeArlington is the County's bicycle education and encouragement program. Its goal is to encourage and support bicycling as a sustainable, healthy, and efficient mode of transportation. Through outreach and education for policies and infrastructure, BikeArlington works to make bicycling safer, more accessible, and enjoyable for everyone. The program promotes a bike-friendly culture by organizing events like the

[12] https://www.bikearlington.com/

Bike to Work Day; providing resources, training, and education for cyclists of all ages; and collaborating with local partners to enhance biking infrastructure and connectivity.

Shared Micromobility Device Permit Program[13]

The County's Shared Micromobility Device Permit Program regulates the operation of "for-hire" shared micromobility services, such as e-scooters and e-bikes, to ensure safety, equity, and alignment with the County's transportation goals. This program established a permitting process for companies to operate in the County, with requirements for fleet size, vehicle equipment, equitable distribution, and adherence to safety and operational standards. Through annual permits, application fees, and per-vehicle fees, the program funds administrative oversight and targeted infrastructure improvements, such as in-street dedicated parking corrals. The initiative also prioritizes education on safety and etiquette while addressing concerns like sidewalk riding, parking, and accessibility, contributing to a well-regulated, community-focused environment within which micromobility devices operate.

Arlington's Low-Stress Bicycling Network

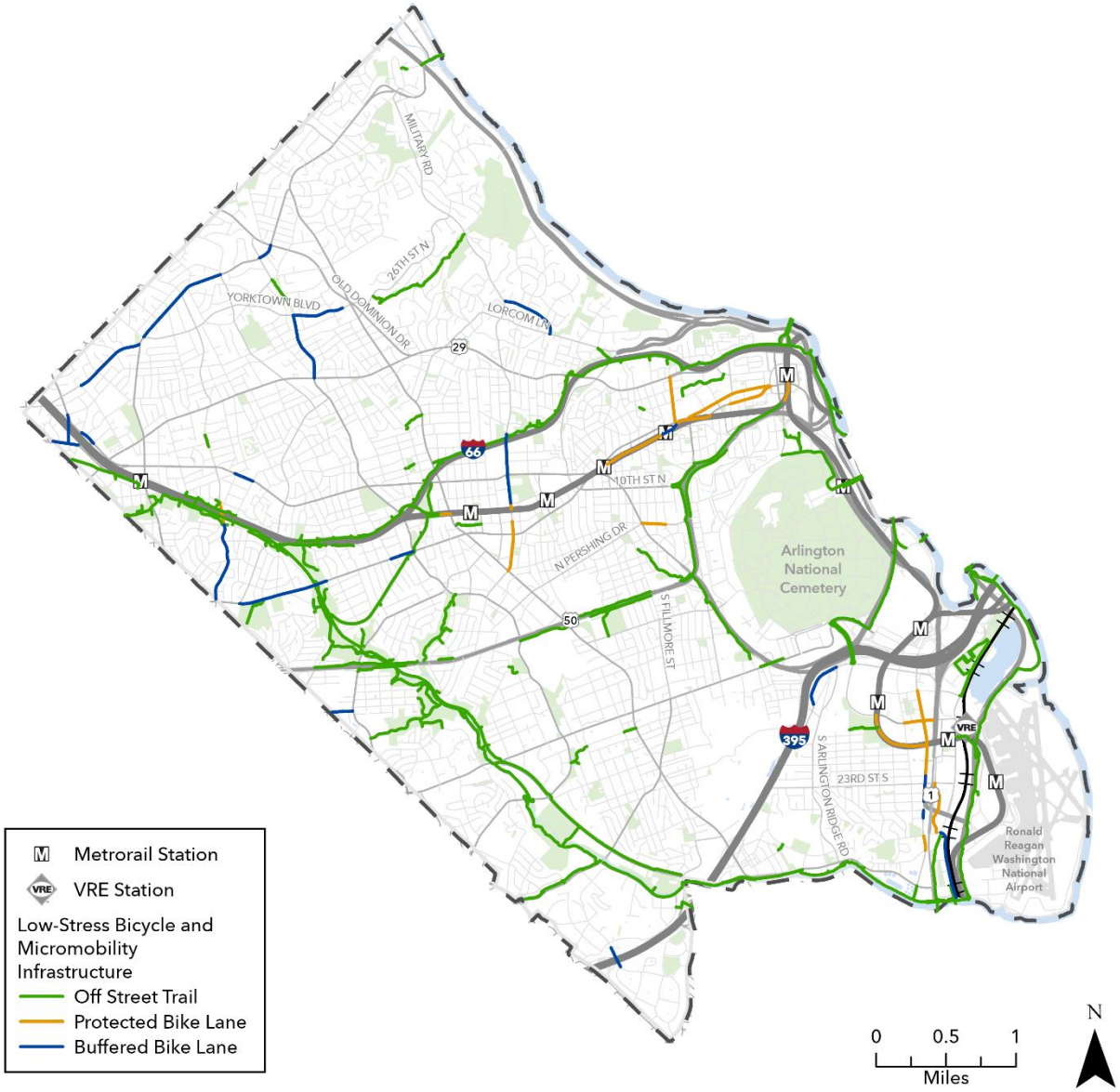
Arlington's planned low-stress bicycle network is designed to provide users with a safe and comfortable experience while traveling in the County. The planned network consists of trails, buffered bike lanes, protected bike lanes, and bicycle boulevards designed to accommodate riders of all ages and abilities. Arlington's existing low-stress facilities include 23 miles of buffered and protected bike lanes as well as 50 miles of shared-use and multi-use trails/paths—34 of which are managed by Arlington's Department of Parks and Recreation and 16 of which are maintained by other entities. This network includes the Arlington Loop, a series of interconnected multi-use trails that form a continuous 16-mile car-free, off-street loop through Arlington. The Arlington Loop includes parts of four key trails: the Mount Vernon Trail, the Custis Trail, the Washington & Old Dominion (W&OD) Trail, and the Four Mile Run Trail. It offers a safe and scenic route for bicyclists, runners, and pedestrians, providing access to parks, neighborhoods, and regional destinations. Known for its accessibility and connectivity, the Arlington Loop supports recreation, commuting and active transportation—making it a vital component of the County's trail system and a hub for outdoor activity and sustainable travel.

Figure 21 shows a map of the County's existing low-stress bicycle network. Concentrations of low-stress facilities exist along the Richmond Highway Corridor, Four Mile Run, I-66, and the eastern section of the Rosslyn-Ballston corridor. Gaps in the low-stress network exist in the northern part of the County as well as along Langston Boulevard, Columbia Pike, and Wilson Boulevard. Even with existing gaps, nearly 70

[13] Shared Micro-Mobility Devices – Official Website of Arlington County Virginia Government

percent of the Arlington population—just over 163,600 people—live within a quarter mile of this low-stress network as of November 2024.[14]

Figure 21: Arlington's Low-Stress Bicycle Infrastructure



Source: Arlington County, November 12, 2024

[14] American Community Survey (2019-2023)

Capital Bikeshare

Arlington is a founding member of Capital Bikeshare, which opened in September 2010 in the District of Columbia and Arlington with 114 stations. Since then, Capital Bikeshare has expanded to include more than 700 stations and provides regional bikeshare service across seven jurisdictions: the District of Columbia; Arlington County; the City of Alexandria; Montgomery County; Prince George's County; Fairfax County; City of Fairfax; and the City of Falls Church. Arlington hosts 111 Capital Bikeshare stations, providing affordable, convenient, and equitable service across the county. Stations are concentrated in the Rosslyn-Ballston corridor, Richmond Highway corridor, Columbia Pike, Shirlington, and Langston Boulevard areas. In 2023, Capital Bikeshare accounted for 266,036 trips beginning in Arlington. Dockless e-bikes were introduced into the Capital Bikeshare fleet in 2023, expanding access to those who live further away from a dock.

Bike Counter Program

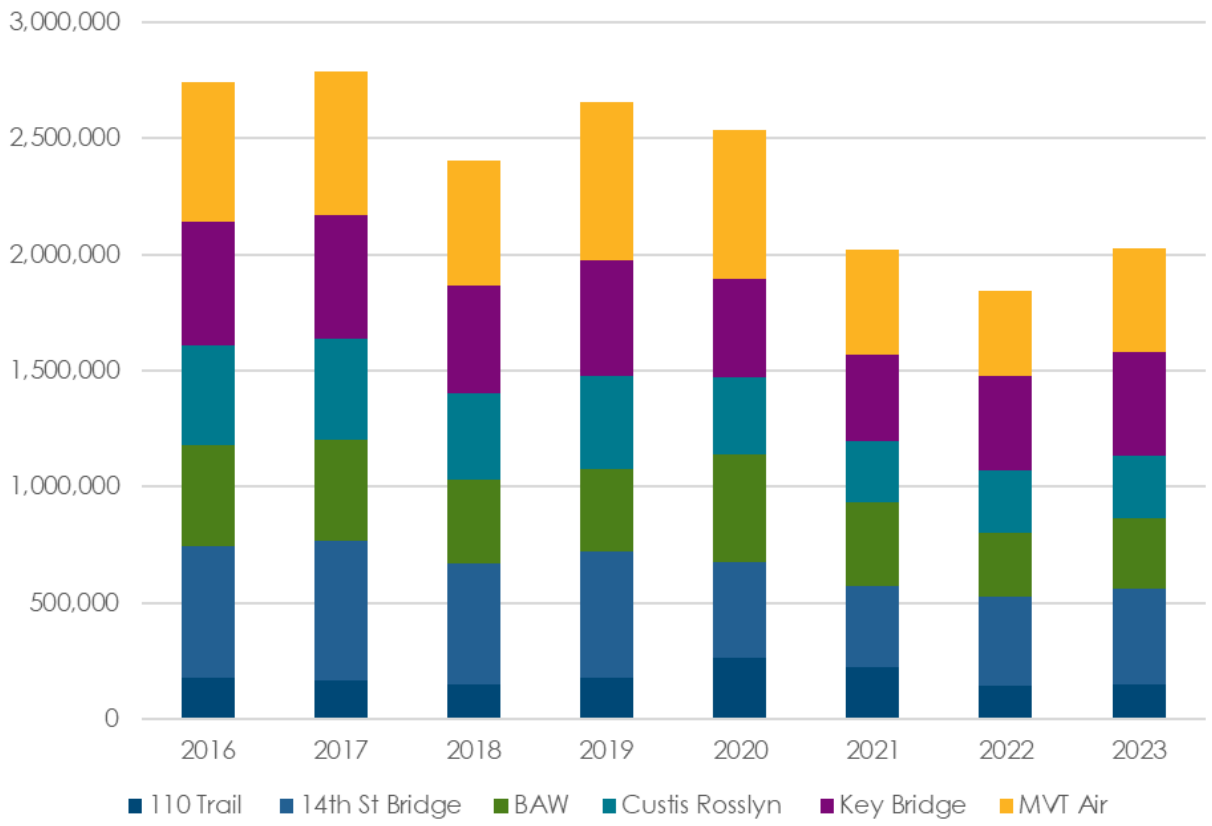
The Arlington bike counter program is an initiative to monitor and analyze bicycling trends across the County's bikeway network. Established in 2009, the program collects data using a network of 40 strategically placed bicycle traffic counters on specific in-street and trail locations Six of the counters (shown in **Figure 22**)—selected for their long-term reliability and historical data dating back to 2016—offer valuable insights into location-specific ridership trends over time. Most of these counters detect and classify bicycles and pedestrians separately, and some of the newer devices are able to detect and classify scooter trips. In addition to the bike counter program, the County utilizes other data collection tools such as Ride Report, which counts and maps trips taken by riders on shared micromobility devices (rentable e-scooters, bikes, and e-bikes).

Figure 22: Selected Bike Counter Location Map

Source: Arlington County Bike Counter Program, 2024

Between 2016 and 2020, bike counts at these six locations remained relatively consistent, near or above 2.5 million combined counts per year (**Figure 23**). Like other modes, bicycling use and counts dropped during the pandemic, likely due to changes in commuting patterns as many people shifted to teleworking. More recent counts suggest that bicycling volumes are beginning to return to pre-pandemic levels, reaffirming the importance of count data to help the County understand travel trends.

Figure 23: Arlington County Bike Counter Data



Source: Arlington County Bike Counter Program, 2016-2023

Bike counts in 2023 show a return to 2021 levels following a period of decline between 2021 and 2022. Bicycling accounts for 2.9 percent of all weekday trips within Arlington; these trips have an average length of 11 minutes and an average distance of 2 miles.
(Replica, Mid-Atlantic Fall 2023 model)

Analyses Conducted

A safe, accessible, comfortable, and complete network of bicycling and micromobility facilities is important for people who bicycle in Arlington. When gaps in the network are addressed, bicycling becomes a safer and more appealing and convenient travel method for daily activities.

The project team conducted bicycle and micromobility access and comfort analyses to better understand the conditions that people bicycling or using micromobility devices experience.

Bicycle and Micromobility Destination Access Analysis

Purpose

The project team evaluated connections to priority destinations to determine how easy it is for people to bicycle or use micromobility devices to reach important places, represented in this analysis by PPZs, across the community.

The resulting figures provide insight into bicycle and micromobility access, focusing on the destinations the County prioritizes for infrastructure investments. Critically, this approach identified specific locations where gaps in infrastructure may limit the ability for people to safely bicycle or use micromobility devices to reach their destinations.

Methodology, Limitations, and Assumptions

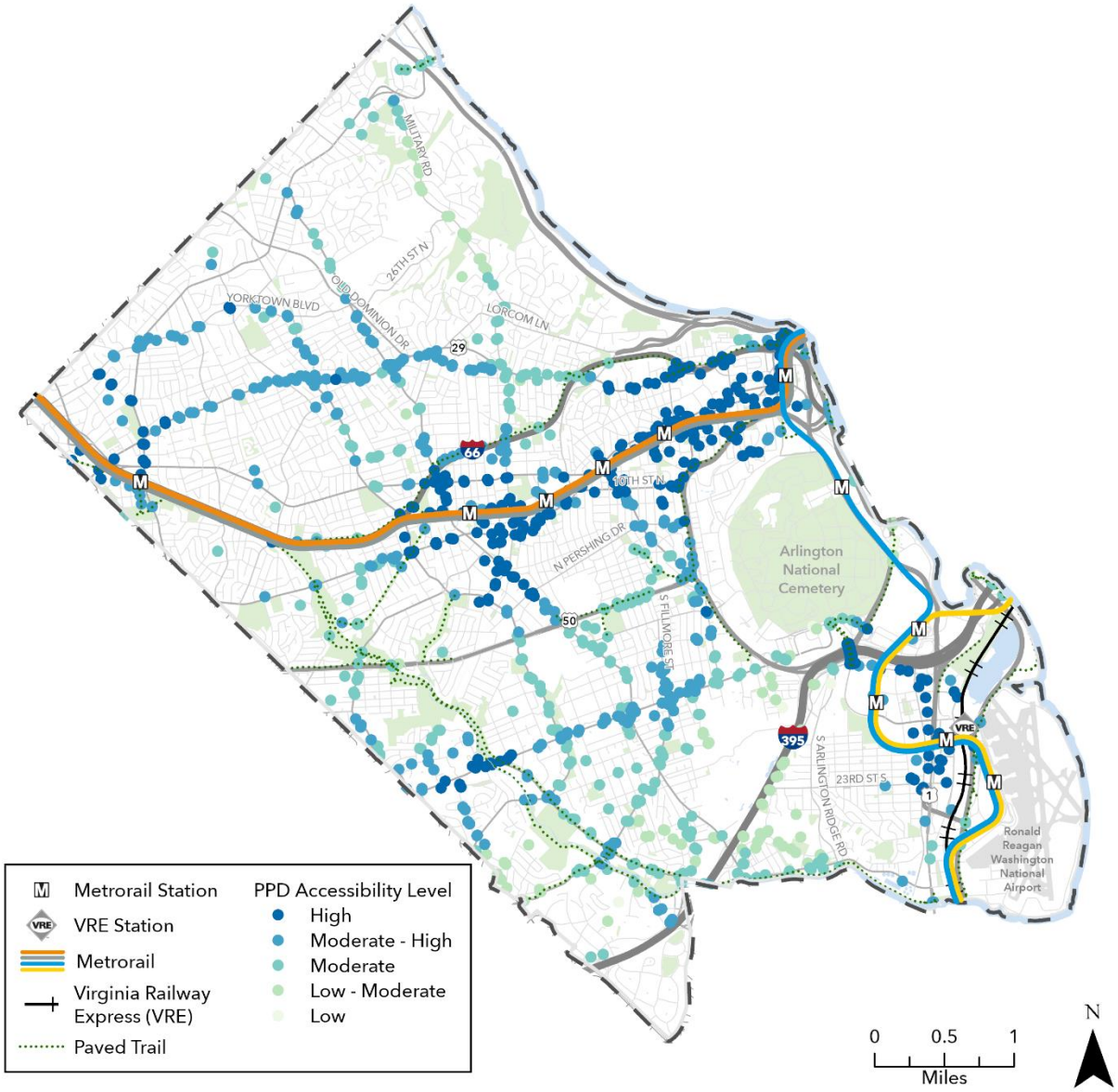
The project team assessed the extent to which Arlington's population has access to both destinations associated with PPZs and regional trails, focusing specifically on access via bicycling and micromobility devices along trails and roadways that have a low level of traffic stress (LTS1 and LTS2) as defined by the County's Bicycle Comfort Index (BCI). The Level of Traffic Stress (LTS) Methodology used by the BCI numerically scores roads based on how uncomfortable they may be for bicycling due to interactions with vehicles. The goal of the analysis was to measure how effectively the County's infrastructure serves its residents in providing bicycling and micromobility access to these important destinations. The methodology and data sources for this analysis were similar to those from the pedestrian destination access analysis. The access levels were calculated as a ratio of the number of residents within a 1-mile radius of a destination with access to a low-stress bike route and the total number of residents within a 1-mile radius.

Analysis Findings

The results of this analysis, shown in **Figure 24,** revealed that people living within one mile of the Rosslyn-Ballston and Richmond Highway Metrorail corridors have higher levels of safe and comfortable routes to priority destinations. Those who live near infrastructure barriers such as interstates, have varying access to destinations. For example, the gridded roadway pattern, overpasses, and trails near I-66 provide more safe and accessible routes to get to priority destinations, just not as many as the Metrorail corridors.

Conversely, residents living in areas surrounding I-395, Four Mile Run Drive, and Military Road live further away from safe and comfortable routes and may find it difficult accessing priority destinations by bicycle.

Figure 24: Bicycle and Micromobility Access Score for Pedestrian Priority Destinations



Bicycle and Micromobility Comfort Analysis

Purpose

In the context of this analysis, comfort refers to how easy it is for a bicyclist or micromobility user to travel with confidence on a particular street or trail. Several factors influence how confident someone using these modes may feel riding on a given road, including traffic volume, topography, land use, vehicle speeds, and the presence of dedicated or protected infrastructure. Context is also important; riding on a flat, wide street with a bike lane may sound easy, but if that street happens to be in a mixed-use neighborhood with significant traffic, and if the bike lane is frequently blocked by delivery trucks, it may not feel as safe and comfortable as it initially sounds.

The project team conducted a bicycle comfort analysis to evaluate the overall bicycling experience when accessing different parts of the County. The analysis utilized factors that influence how people bicycling feel when using the network, which contributes to comfort, satisfaction, and willingness to travel by these modes. By assessing the built and natural environments, the project team identified areas where there may be opportunities to create a more pleasant, safe, and inviting environment for people bicycling and using micromobility devices.

Methodology, Limitations, and Assumptions

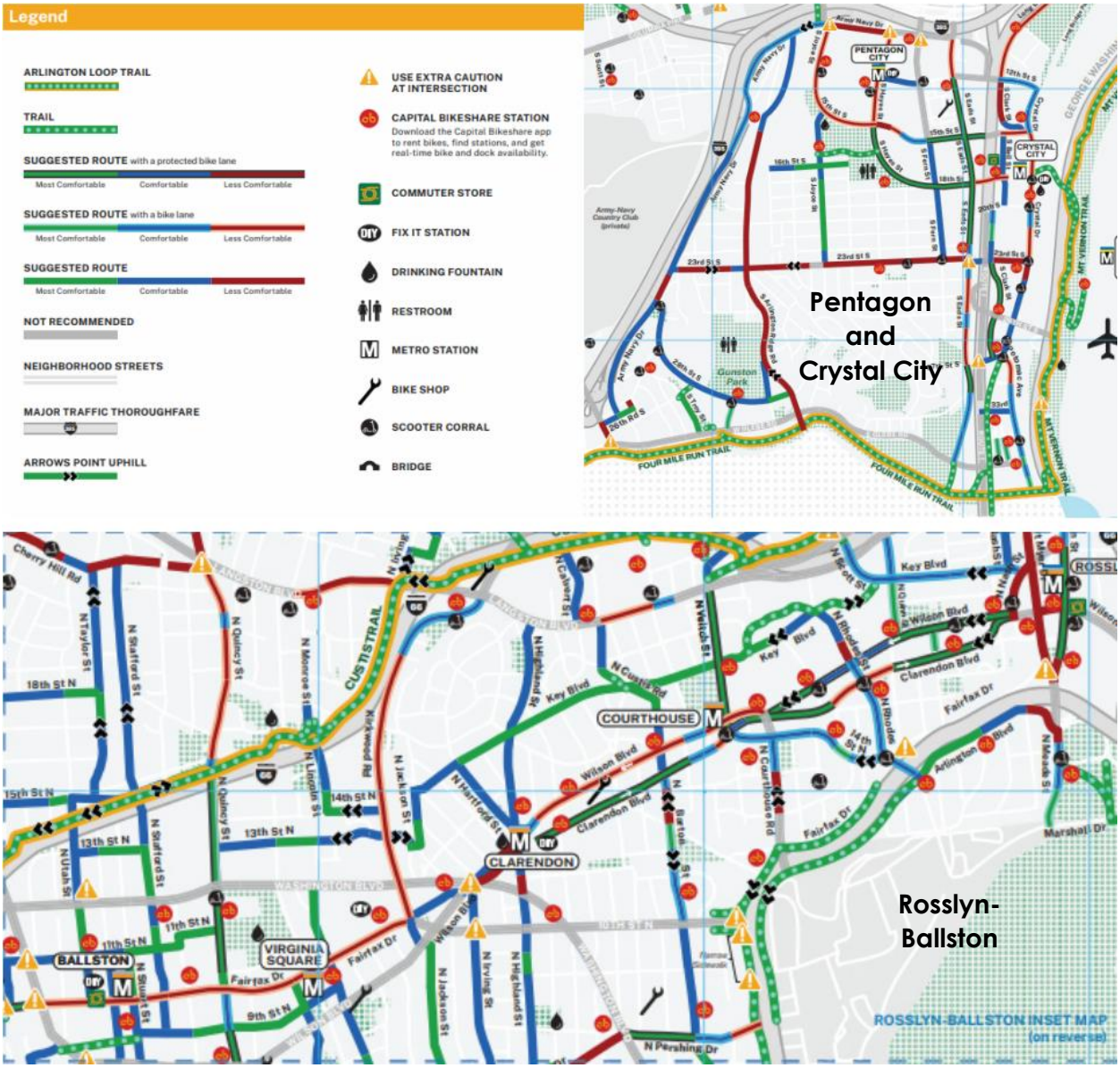
This analysis used the County's BCI to capture the interplay between three factors affecting bicycle comfort: context, traffic, and bicycle infrastructure. Inputs in each of these categories combine to form that category's sub-score. The sub-scores are added together to produce comfort scores, which classify trails and roads as "Most Comfortable," "Comfortable," "Less Comfortable," and "Not Recommended." The County categorized limited-access highways, interstates, and airport roads as "Major Traffic Thoroughfares," that are unacceptable for bicycling.

Analysis Findings

The analysis results depicted in **Figure 25** show the County's trails are among the most comfortable places for people to ride bicycles and micromobility devices. Trails are separated from traffic, offer scenic views, and provide shade with ample adjacent trees and landscaping. There is a higher concentration of more comfortable routes in the area between Columbia Pike and I-66, including up to Langston Boulevard, while other parts of Arlington have fewer comfortable routes.

Notably, north-south corridors (such as North and South George Mason Drive and Walter Reed Drive) are less comfortable due to higher volumes of traffic and less dedicated and protected infrastructure. These conditions may discourage people from bicycling or using micromobility devices to get to their preferred destinations.

Figure 25: Bicycle and Micromobility Comfort Index (Insets on Next Page)



Source: Arlington County BikeArlington Comfort Map, 2024

Key Takeaways

The bicycle network analyses confirmed that people bicycling and using micromobility devices have access to a robust and growing network of low-stress facilities. However, gaps in the network, challenging conditions, and opportunities for improvement remain. These analyses indicate that:

- **Arlington's Metrorail corridors are among the most bicycle-friendly, as well as the most pedestrian-friendly areas of the County.**
    - These corridors have some of the highest levels of bicycle accessibility and comfort in Arlington, constituting areas of dense urban activity, proximity to key landmarks, and integrated transportation infrastructure.
- **Streets with complex intersections or streets that lack dedicated space for bicycling create gaps in bicycle access.**
    - Lower levels of access are concentrated in places with challenging intersections and limited infrastructure.
    - Areas like Arlington Village and Arlington Ridge experience reduced access, indicating gaps in infrastructure that could limit bicycle usage and mobility options.
- **Off-street trails and physically protected bicycle lanes provide the highest level of comfort for people bicycling.**
    - These low-stress facilities bring together the highest degrees of access and comfort, creating ideal conditions for people choosing to travel by bike.
    - Nearly 70 percent of Arlingtonians live within a quarter mile of the low-stress network today, representing successful effort to expand and enhance the low-stress network.
    - Comfort decreases in locations with heavy vehicular traffic, inadequate bicycle facilities, and/or limited separation from car traffic. These locations present opportunities to further improve and expand the low-stress network.

The Transit Network

Policy in the Current Master Transportation Plan

The Transit Element of the MTP, updated in 2016, establishes a framework for improvements to WMATA regional transit service as well as Arlington's local transit services. The Transit Element encompasses both bus and rail transit service and aims to make transit more accessible and convenient to all users through strategic transit-oriented land use. The key takeaways of the Transit Element's 11 policies include:

- Developing a premium transit network (PrTN) and a primary transit network (PTN) that will provide additional connectivity and high-frequency service
- Developing a secondary transit network (STN) to connect local destinations (e.g., neighborhoods, community facilities, commercial centers, larger transit corridors, etc.)
- Expanding access to transit facilities to ensure ease of transfer between services

Existing Context

The Existing Transit Network

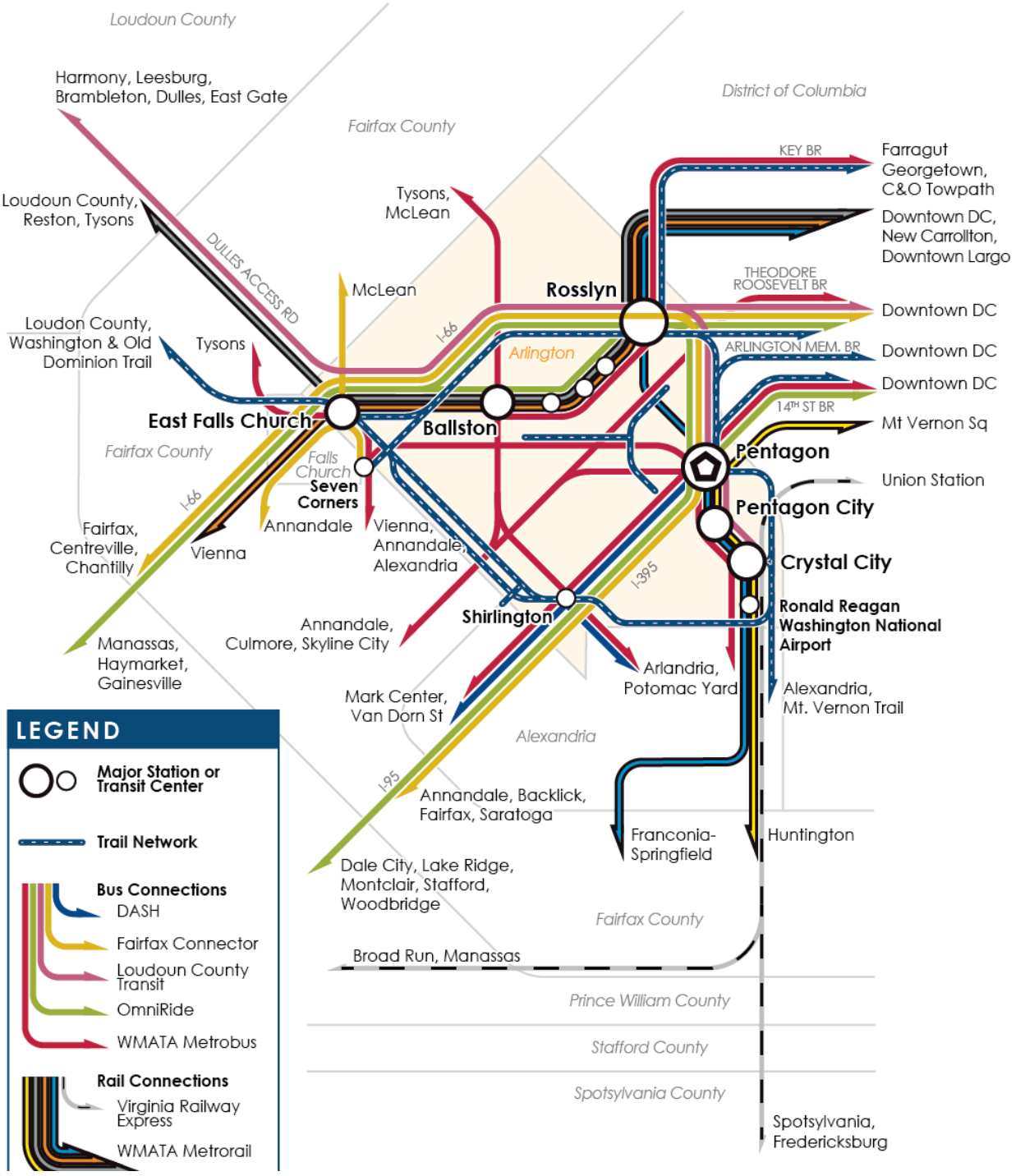
Arlington is served by a robust transit network that integrates many transportation options shown in **Figure 26**. The WMATA Metrorail system—including the Orange and Silver lines along the Rosslyn-Ballston corridor and the Blue and Yellow lines along the Richmond Highway corridor—provides direct access to adjacent areas of Northern Virginia, Washington, DC, and Maryland. These Metrorail lines form the backbone of Arlington's transit-oriented development strategy of smart growth. WMATA Metrobus service complements the Metrorail system with a network of bus routes that provide connections within the County and to other jurisdictions. This network is further supplemented by Arlington Transit (ART) bus routes, which link neighborhoods, shopping centers, and key destinations in the County. Arlington also is served by Virginia Railway Express (VRE) commuter rail with a station in Crystal City and by regional commuter buses.

In addition to ART and regional transit services, Arlington is served by several transit agencies of adjacent jurisdictions, as shown on **Figure 27**.

Figure 26: Arlington's Transit Network

Source: Arlington County GIS, Open Data D.C., 2025

Figure 27: Regional Transit Connections To and Through Arlington



Source: Arlington County Commuter Assistance Program Strategic Plan, 2024

Transit Network Hierarchy

As previously mentioned, the Transit Element of the current MTP guides the development of a premium (PrTN), primary (PTN), and secondary transit network (STN). The PrTN is a high-capacity network in areas of the County where significant growth and development is planned, consisting of the Columbia Pike, Langston Boulevard, Glebe Road and Metroway corridors. The PTN is a network of transit corridors that can be easily accessed by most Arlington residents and is adjacent to high-density communities. The STN is a network of streets with localized transit service that serves lower-density areas of the County. Although these designations guide development of the network, they are not prescriptive to the types of service that operate on them.

An example is the Columbia Pike Forward initiative, which aims to make Columbia Pike—a key part of the PrTN—a safer, more accessible street that balances all modes of travel and supports high-frequency transit. Columbia Pike is one of the most heavily traveled transit corridors in Virginia, underscoring the need for safety improvements and multimodal infrastructure upgrades. The project includes enhanced transit stops (including near-level boarding platforms) and improved streetscapes (including wide sidewalks and landscaping), which will improve access to transit and enhance user experience and comfort. The project is divided into segments, several of which have been completed as of late 2024. The project is expected to be completed in 2026.[15]

In addition, the Arlington TSP builds on the current MTP network classifications with specific route distinctions of Core, Connector, and Coverage:

- **Core**: high-frequency and high-productivity routes that predominantly provide service to the PrTN
- **Connector**: moderate- to high-frequency and moderate- to high-productivity routes that provide connections to Core routes and the PrTN
- **Coverage**: moderate-frequency and moderate-productivity routes that predominately provide coverage to areas with low transit propensity, maintaining coverage across the County and providing transit access to all Arlington residents

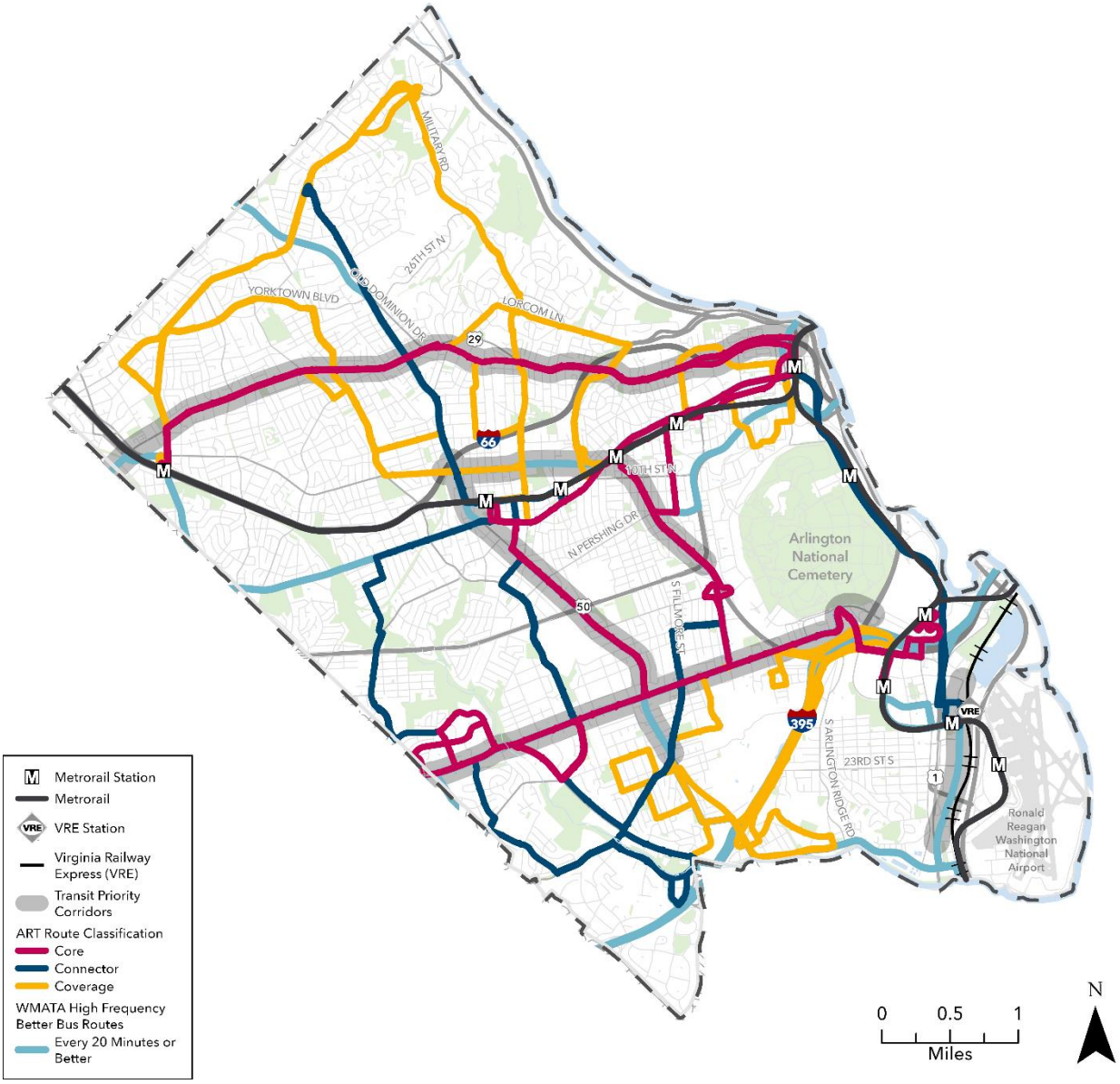
Transit Priority Corridors

Arlington is also focusing on making transit run faster and more efficiently along five high-ridership and high-congestion corridors. These transit priority corridors, shown in **Figure 28**, have service and ridership levels that warrant enhanced, dedicated transit infrastructure along streets, at intersections, and at bus stops. These priority corridors align with the PrTN and much of the Core high-frequency service identified in the TSP.

---

[15] Arlington County. (n.d.). *Columbia Pike Forward*. Arlington County, Virginia. Retrieved December 5, 2024, from https://www.arlingtonva.us/Government/Projects/Project-Types/Transportation-Projects/Columbia-Pike-Forward

Figure 28: Arlington's Transit Priority Corridors



Source: Arlington Transit Strategic Plan FY 25-34, WMATA Better Bus Network, 2024

Local and Regional Transit Trends

Recent data shows that the pandemic has reshaped how and when people take transit. In Arlington, transit ridership has yet to fully recover to pre-pandemic levels, and recovery rates vary significantly by time of day and type of transit. While WMATA Metrobus ridership has recovered to (and has exceeded) pre-pandemic (December 2019) ridership levels, ART ridership has recovered to between 80 to 85 percent of pre-pandemic levels.

Figure 29 and **Figure 30** show pre- and post-pandemic ridership levels for WMATA Metrobus and ART services in Arlington.

Figure 29: Ridership of Metrobus Routes Serving Arlington (January–September 2019 and January–September 2023)

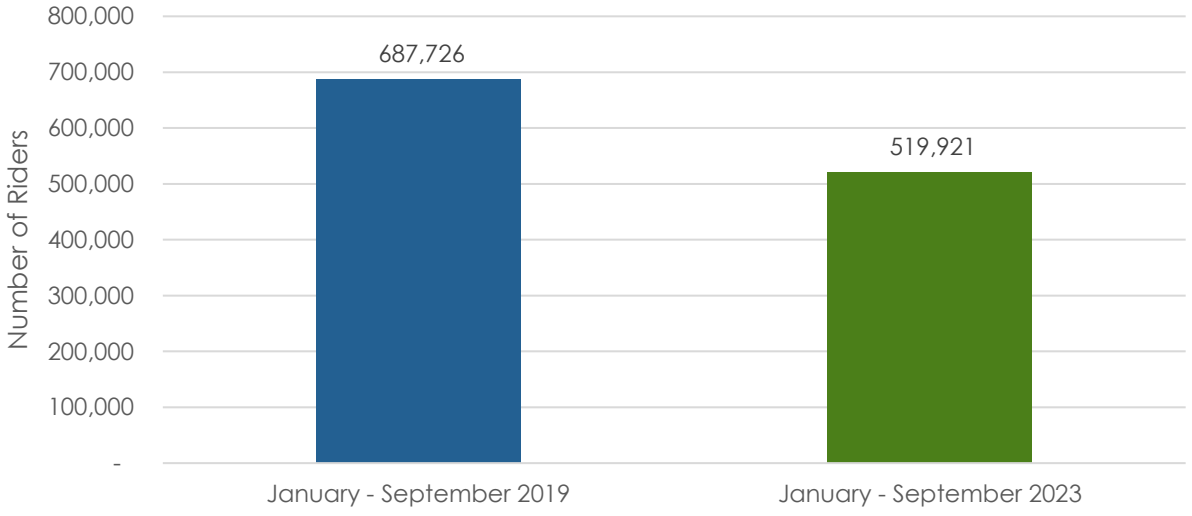
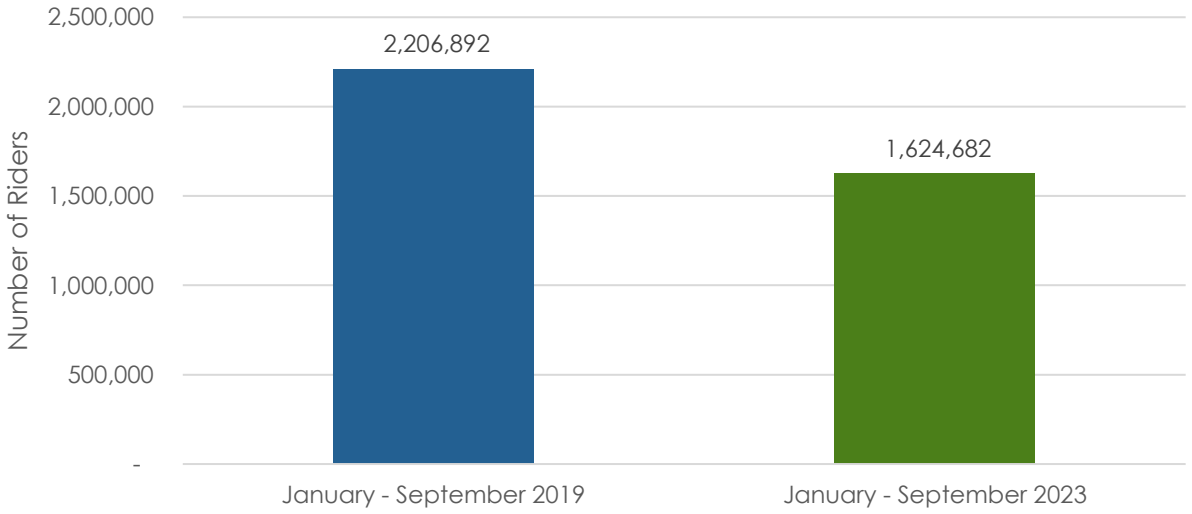


Figure 30: ART Ridership (January–September 2019 and January–September 2023)



Transit demand by time of day and day of week also has shifted since the pandemic. Several transit agencies across the country are reporting that off-peak service demand was less impacted by the pandemic than peak-period service.[16] Off-peak riders tend to include people who are working shift jobs or using transit for a purpose other than commuting such as shopping, medical trips, or recreation. Some of these changes can be attributed to a long-term trend toward telework for office workers but continued reliance on transit for essential and service workers without telework options. This national trend also is reflected in Arlington and the Metropolitan Washington region. Average weekday peak-hour entries at WMATA Metrorail stations in Arlington between January and September 2023 were 54 percent lower than in 2019, but only 29 percent lower for weekday off-peak trips and 6 percent lower for weekend trips. For agencies like Fairfax Connector, OmniRide, and Loudoun County Transit, which operate commuter and local bus service, recovery rates are much higher than the local fixed-route service that operates throughout the day, as opposed to traditional peak-period-only commuter bus routes.

While rail ridership has still not rebounded from pre-pandemic levels, bus ridership has seen steady increases. Between summer of 2021 and summer of 2024, ART's average weekday bus ridership increased from 5,500 to 8,200 riders, while WMATA's average weekday bus ridership increased from 208,200 to 393,300 riders. The ridership increases observed by both agencies represents a return to about 80 to 85 percent of December 2019 numbers.[17] As a result, both ART and WMATA have adjusted service to better meet rider needs in a continually changing travel environment.

Arlington Microtransit Pilot

The County has been considering microtransit service since the completion of the 2016 Transit Development Plan (TDP) and plans to launch a pilot program in 2025. Microtransit is a form of demand-responsive transit in which users can request a ride, usually with a mobile application, to a location within a defined zone. The ride may be shared by others and users may need to walk short distance to their pickup point or destination. In 2023, the County's TSP proposed a microtransit zone in northwest Arlington that was prioritized due to the removal of low-performing fixed-route bus service in the area and its proximity to Virginia Hospital Center. Through the Arlington Microtransit Implementation Plan, the County aims to accelerate this microtransit project and propose a service model for the proposed zone in northwest Arlington. The plan will outline recommended procurement procedures, a service launch process, and methods to assess program success.

---

[16] https://nap.nationalacademies.org/catalog/26487/assessing-equity-and-identifying-impacts-associated-with-bus-network-redesigns

[17] American Public Transportation Association. (1996-2024). *Ridership report*. American Public Transportation Association. https://www.apta.com/research-technical-resources/transit-statistics/ridership-report/

Regional Transit Planning Initiatives

There are other recent or ongoing transit studies and plans that are relevant to transit in Arlington, including:

- Northern Virginia Transportation Commission's (NVTC) Advancing Bus Priority Report (2023)
- NVTC's Northern Virginia Regional Bus Strategic Plan (2024)
- NVTA's Bus Rapid Transit Preliminary Deployment Plan (ongoing)
- WMATA's Better Bus Network Redesign (BBNR) (2025 and Visionary Networks)

These plans identify inefficiencies, evaluate transit demand, and propose improvements that align with the needs of the area. The findings and recommendations from these plans could individually or collectively enhance Arlington's transit landscape. Together, the plans facilitate a cohesive approach to transit planning, aiming to improve mobility, accessibility, and sustainability in Arlington.

Data Reviewed

As part of the Arlington's Transportation Future process, data and findings were reviewed from recently completed transit studies to better understand the conditions that people riding the bus in Arlington experience today.

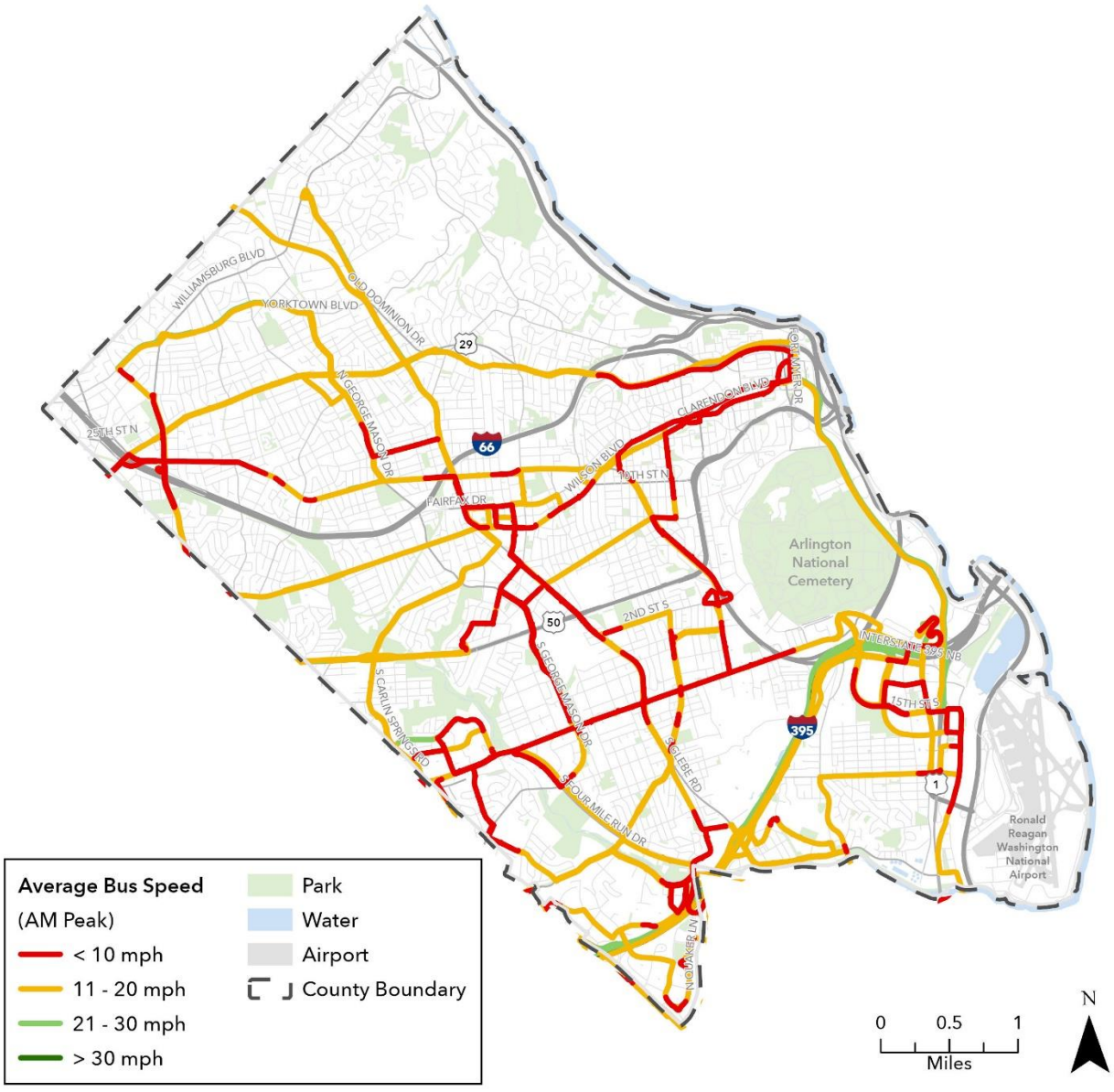
Bus Speed Data

The NVTC Advancing Bus Priority Report identified locations where buses face recurring delays due to traffic congestion, offering insights into current and potential opportunities to make service more reliable and efficient. By analyzing how congestion affects bus speeds and service costs, NVTC highlighted key areas where the transportation network is not effectively prioritizing bus service and therefore negatively affecting people using transit. These findings help inform where future transit priority improvements can be made to ensure efficient and reliable service.

In Arlington, NVTC studied travel speeds on major bus corridors, including Columbia Pike, Glebe Road, Washington Boulevard, Langston Boulevard, the Shirlington area, Crystal City-Pentagon City, and the Rosslyn-Ballston corridor. These corridors are critical for transit connectivity but face congestion that slows down buses. The analysis included both ART service as well as Metrobus and regional commuter buses that use the streets in Arlington.

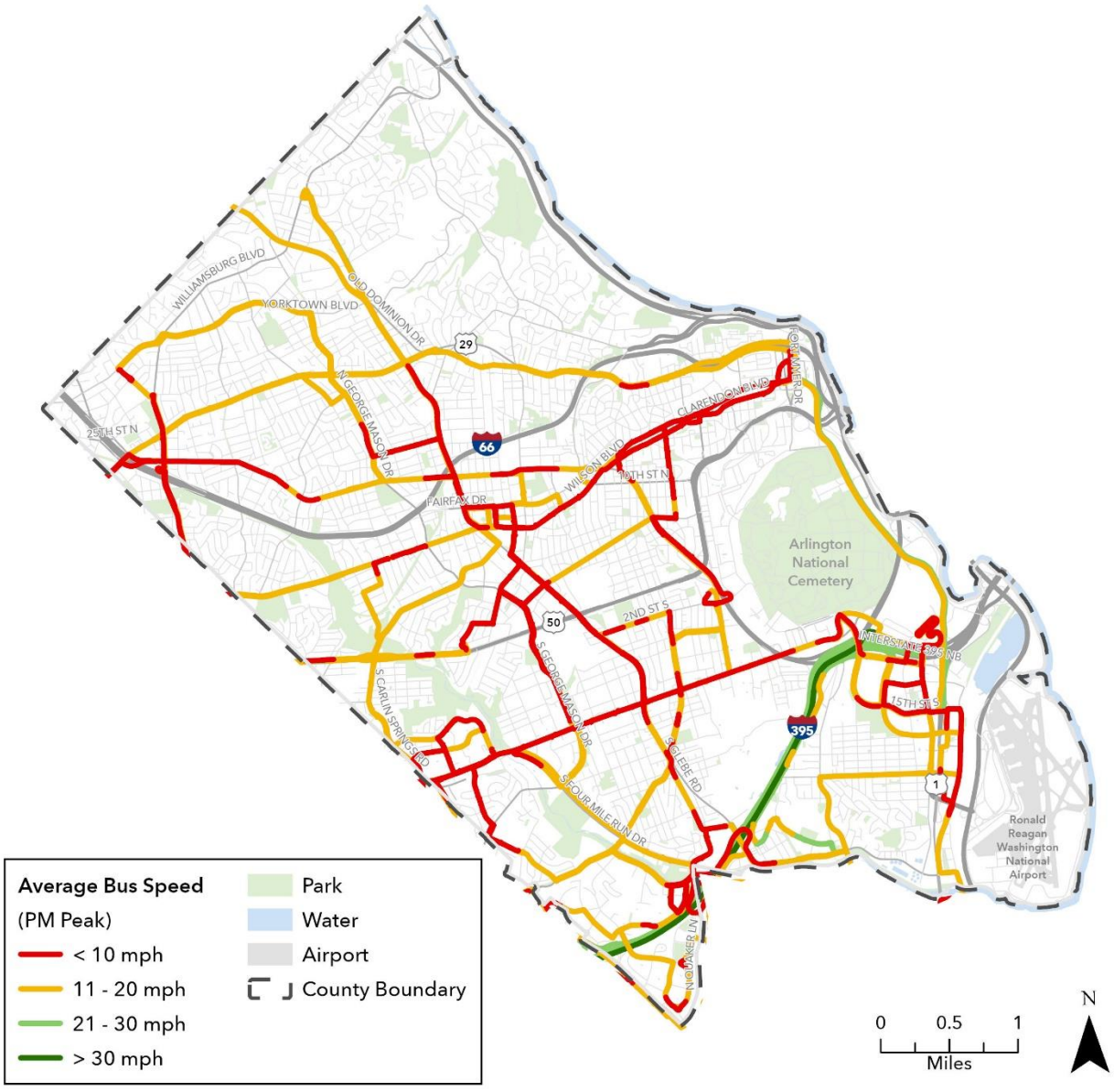
There are two ways the data was presented. The first shows the speeds that buses travel during a specific period of time. This was shown for the AM and PM peak periods. AM peak-period bus speeds are shown in **Figure 31** and PM peak-period bus speeds are shown in **Figure 32**. Lower bus speeds do not always indicate problems, but buses that are able to move with the "free flow" speed of traffic make the trip time more reliable and reduce the amount of time people are waiting at bus stops.

Figure 31: Average AM Bus Speeds



NVTC Advancing Bus Priority: Interactive Report, 2023

Figure 32: Average PM Peak Bus Speeds



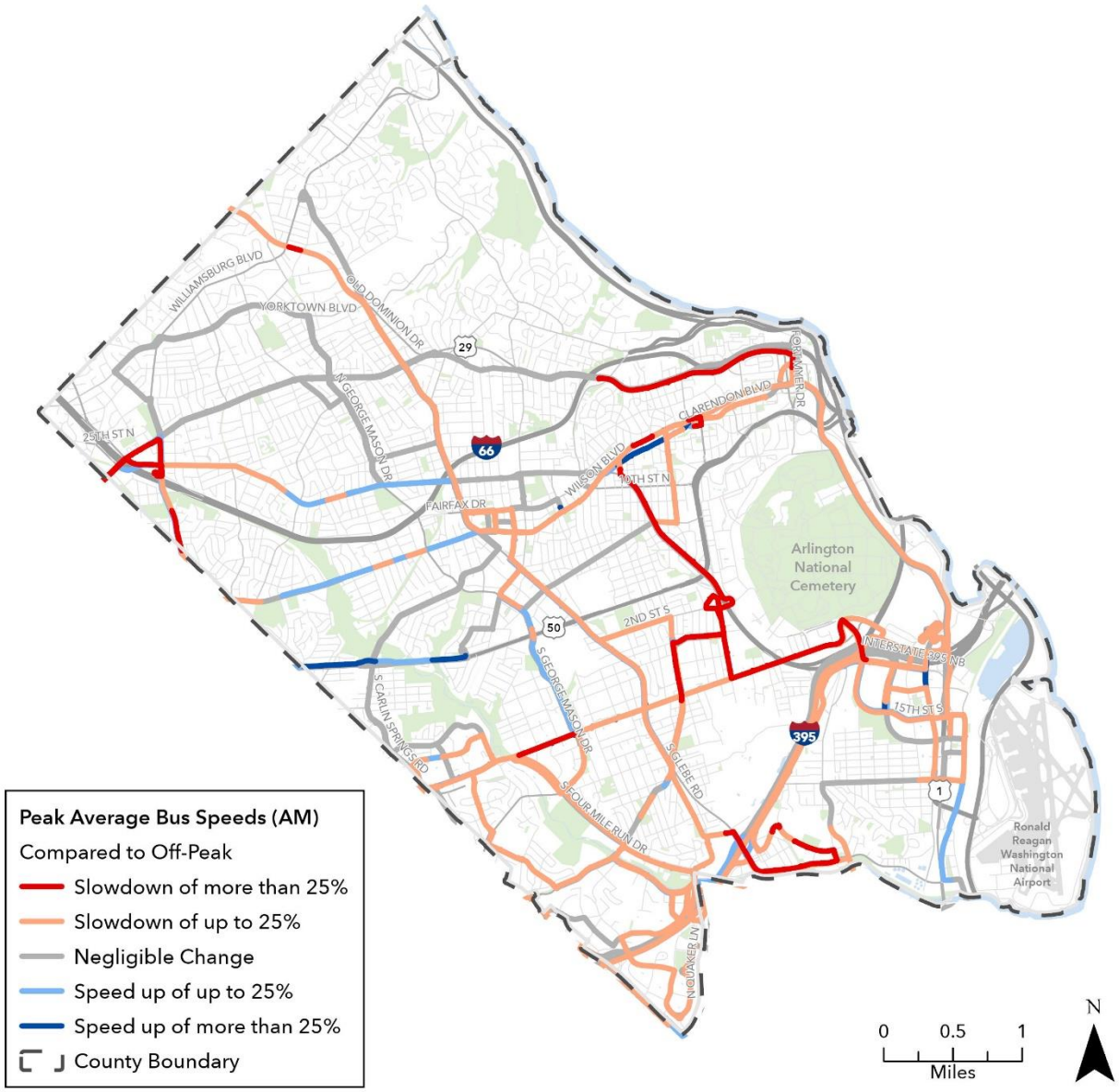
NVTC Advancing Bus Priority: Interactive Report, 2023

Locations with average travel speeds at or below 10 mph during the morning or afternoon peak are concentrated along key corridors, including Columbia Pike, Glebe Road, Langston Boulevard, and Washington Boulevard. Notable areas of slow bus speeds include stretches of Columbia Pike between Washington Boulevard and S Oakland Street, and Glebe Road between Washington Boulevard and Columbia Pike.

Langston Boulevard also shows multiple slow sections, particularly between N Glebe Road and Cherry Hill Road.

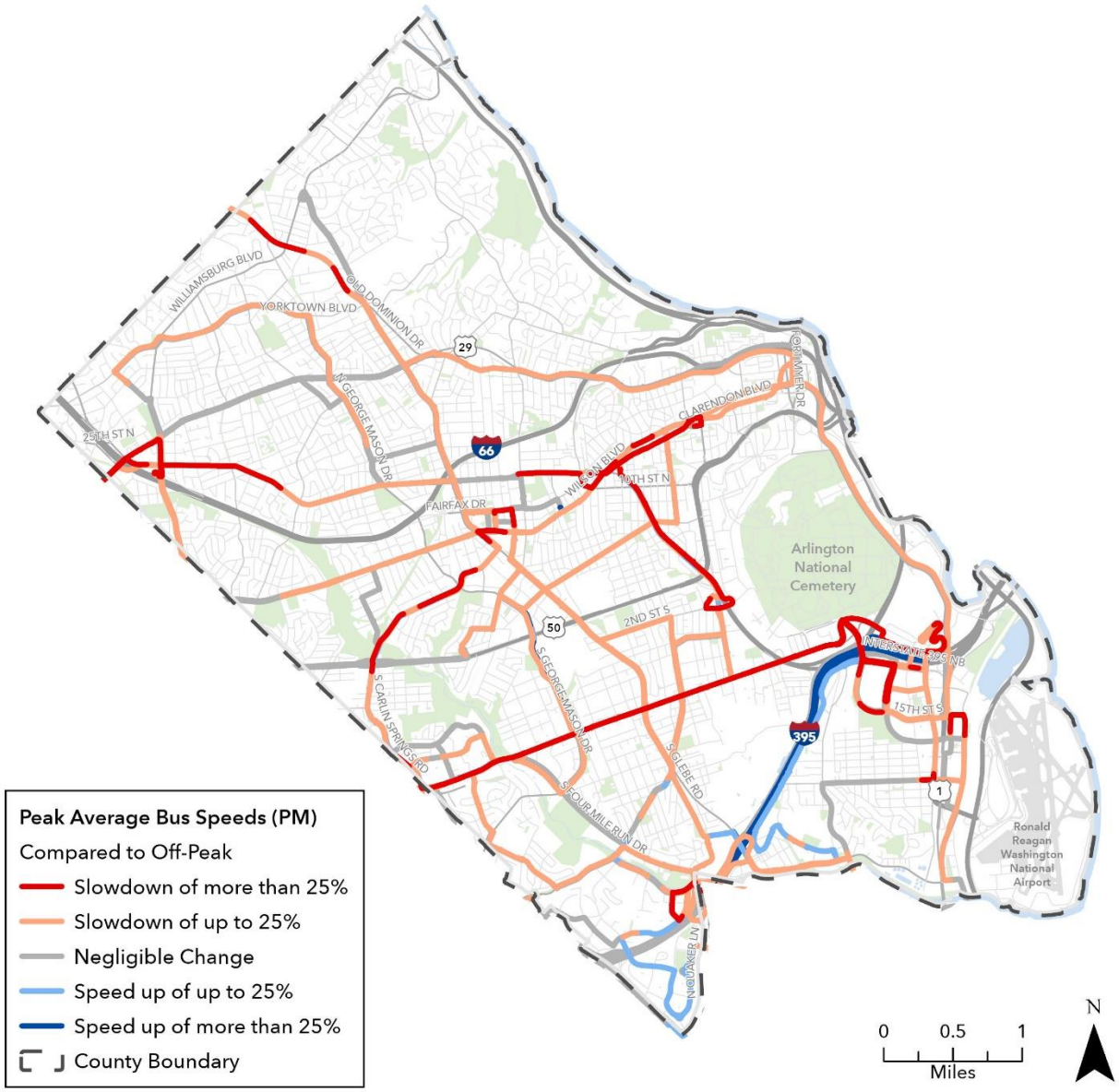
In addition to looking at the speeds in peak periods, NVTC also looked at how the speeds during the peaks differ from the off-peak (midday). This helps reveal where slowdowns in traffic may be affecting bus travel. Peak periods typically see more buses on the streets and generally higher ridership. **Figure 33** shows the difference in bus speeds between the AM peak hour (7:00–8:00 a.m.) and midday (10:00–11:00 a.m.) and **Figure 34** shows the difference between PM peak hour (5:00–6:00 p.m.) and the midday.

Figure 33: AM Peak Average Bus Speeds Compared to Off-Peak



NVTC Advancing Bus Priority: Interactive Report, 2023

Figure 34: PM Peak Average Bus Speeds Compared to Off-Peak



NVTC Advancing Bus Priority: Interactive Report, 2023

NVTC concluded that some of the bus routes can take up to twice as long to complete during a rush-hour period, as compared to midday. The slowdowns in the afternoon are generally more severe than the morning. Some of the areas with more than 25 percent slower speeds in the AM compared to the midday include Columbia Pike, Washington Boulevard, Langston Boulevard, Pentagon City and surrounding areas, and Glebe Road (north of Langston Boulevard). These areas of slowdowns also are present when looking at the PM peak. Additional roads or segments that appear in the PM comparison include Carlin Springs Road, Clarendon Boulevard, and more portions of Washington Boulevard and Wilson Boulevard.

Transit Strategic Plan Service Gaps

Recent and ongoing regional and local transit studies have not identified significant long-term gaps in transit service in Arlington; however, recent studies, including Arlington's TSP, have identified needs and recommendations for improvements throughout the County. These recommendations can be summarized by the following themes:

- **Coverage**: increase in access to transit service
- **Level of service**: modifications to, or increases in, the level of transit service (schedule, span, frequency)
- **Type of service**: recommendations for higher-capacity transit service such as bus rapid transit, or piloting new service models like microtransit
- **Infrastructure**: bus priority treatments (transit signal priority, queue jumps, bus lanes), transit passenger amenities, improving pedestrian access to transit

The recommendations of the County's TSP largely address service and operational needs by closing gaps in transit coverage and better aligning transit service levels with community needs. Some recommendations have already been implemented while others await additional funding.

Key Takeaways

The review of recently completed transit studies and analyses confirm that Arlington has a robust and well-utilized public transit network today, but gaps in service, impediments to fast and reliable service, and other opportunities for improvement remain. The review of these recent analyses indicates that:

- **Nearly all Arlingtonians have access to transit within a quarter mile of their homes.**
    - Geographically, nearly 100 percent of Arlington residents have access to bus service within a quarter of a mile of their homes, except lower-density northern portions of the County that have less transit coverage; some of these gaps will be closed in 2025 when new microtransit service is piloted.
- **Existing transit service appears to largely meet demand, but opportunities exist to expand off-peak and weekend service, improve amenities, implement bus priority, and streamline north-south service.**
    - Transit service in Arlington is generally well matched to existing density.
    - While analysis indicates that current transit service meets demand, it is important to note that many people choose transportation options based on what is convenient and comfortable. What appears to be a lack of unmet transit demand may be a function of people not considering transit due to a lack of convenient service that meets their needs.
    - Not all transit needs are currently met, and the County, in coordination with WMATA, is working to address these unmet needs by expanding and tailoring service in a variety of ways, including:
        - Better serving key destinations
        - Providing more early-morning, evening, and weekend service
        - Improving access to bus stops and improving bus stop amenities
        - Implementing bus priority treatments and more frequent service in key corridors
    - Traveling from north to south in Arlington via transit is long, indirect, and/or inconvenient.
- **Only portions of Arlington's Transit Priority Corridors have contiguous high-frequency service.**
    - Besides Langston Boulevard, only portions of the County's five Transit Priority Corridors have contiguous (uninterrupted for the entire length of the corridor) high-frequency service; both the ART TSP and WMATA Better Bus Network Redesign plans include recommendations that directly address these issues by providing more contiguous corridors with frequent service.
    - These priority corridors also experience more congestion, which reduces bus speed and on-time performance. Continued investment in both high-frequency service and physical infrastructure improvements on these corridors will help make bus service more reliable and efficient.

The Vehicular Network

Policy in the Current Master Transportation Plan

One of the current MTP's six overarching goals is to reduce the proportion of personal vehicle travel through strategies, including TDM, that promote shifts to other, nonvehicular travel modes. Rather than focusing on the vehicle network alone, the MTP's Streets Element is focused on the multimodal use of public streets and rights-of-way with policies that encourage Complete Streets design principles.

Existing Context

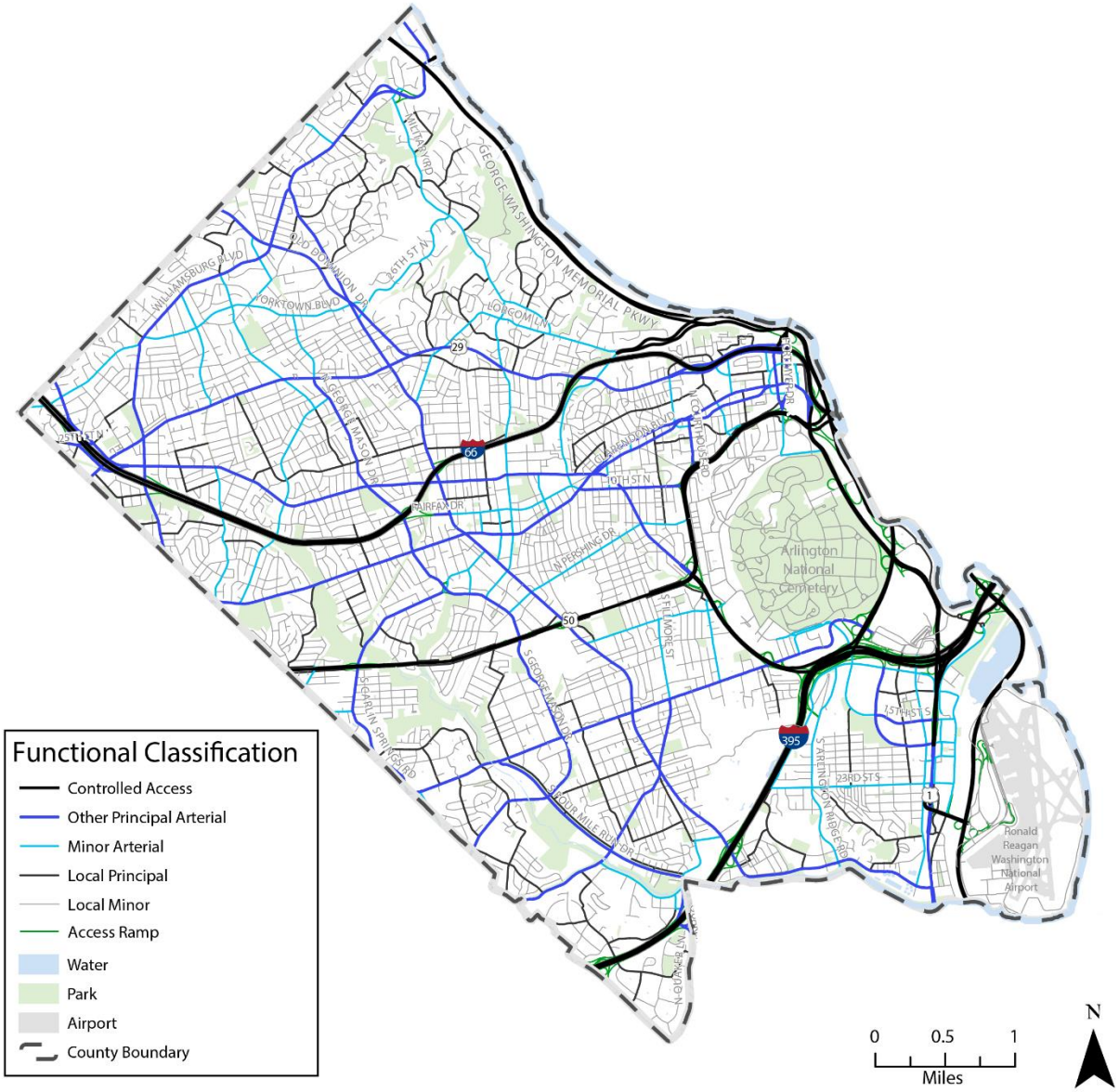
The Existing Vehicular Network

The roadway network is the foundation of many of Arlington's transportation options today, especially for vehicles. Arlington's roadway network—excluding interstate highways, access ramps, and roadways owned by other entities—totals nearly 390 miles. Roadways in Arlington are broken down into various functional classifications, which categorize how streets are used for travel. According to the Streets Element of the MTP, the primary way that a street is categorized is based on the degree to which vehicle travel is related to access to immediate locations. Arlington currently has six types of roadway classifications shown in **Figure 35**, Controlled Access Highways, Arterial Streets (principal and minor), Local Streets (principal and minor), and Alleys.

Arterial streets ("Minor Arterials" and "Other Principal Arterials") provide for local or "through" travel and represent 19 percent of County streets. Principal arterial roadways report higher speeds and higher traffic volumes than minor arterial roadways. As shown in **Figure 36**, more than half of County streets are classified as "Local Minor;" which serve mostly traffic generated by, or destined for, adjacent locations.

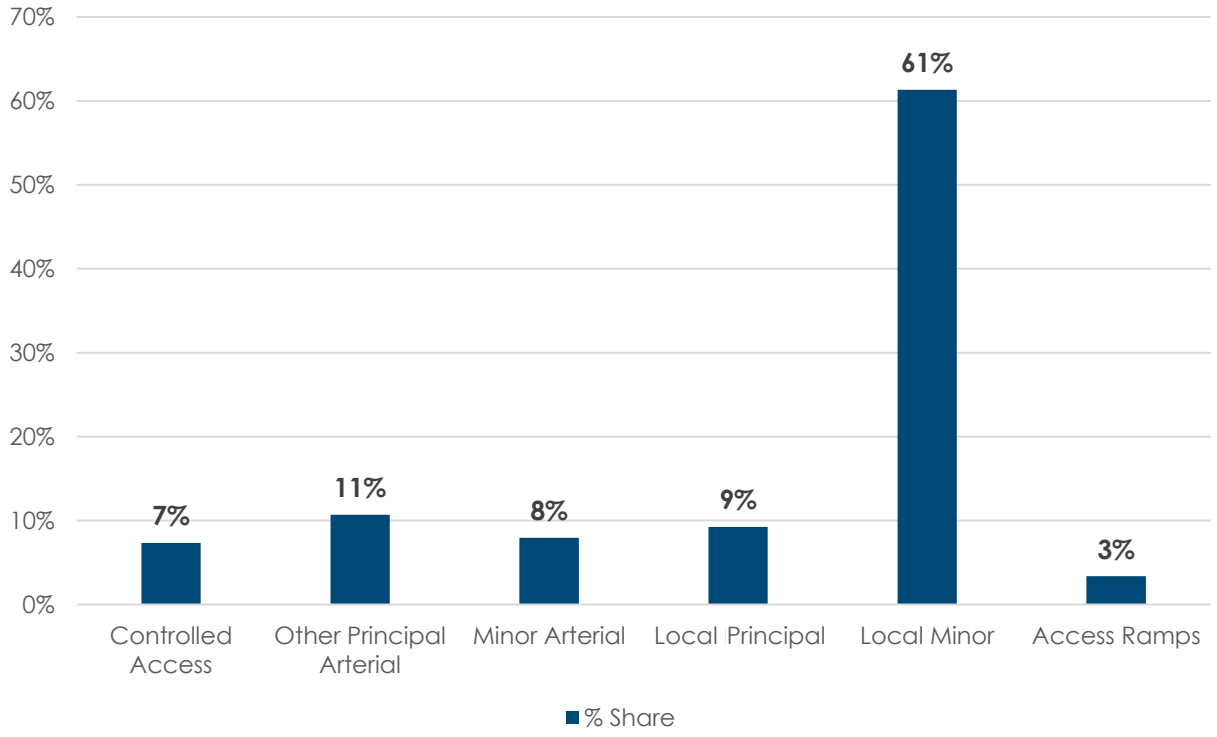
Approximately 70 percent of vehicle trips that start and end in Arlington today are less than three miles long. Shorter vehicle trips like these have the greatest potential to be taken by other modes of transportation such as bicycling or transit. (Replica, Mid-Atlantic Fall 2023 model)

Figure 35: Arlington's Vehicular Network by Functional Roadway Classification



Source: Arlington County, 2024

Figure 36: Percent Share of Roadway Classifications (by length) in Arlington County



Source: Arlington County, 2024

Traffic Signals, Intelligent Transportation Systems (ITS) & Streetlights Network

Traffic signals in Arlington ensure safe and orderly traffic flow for vehicles, buses, pedestrians, bicyclists, and other modes of travel. Signals can provide priority to public transit with transit signal priority (TSP). Signal phasing and optimization can enhance safety for pedestrians and bicyclists, as well as vehicles. Traffic signals are imperative to more safely managing conflicts efficiently throughout the transportation network.

Additional types of signaling devices used in the County's transportation network include:

- Pedestrian Hybrid Beacons (also known as HaWK signals): Yellow and red beacons mounted overhead at major street crossing locations.
- Rectangular Rapid Flashing Beacons (RRFB): Yellow flashing lights mounted with pedestrian crossing signs at uncontrolled crossings.
- School Speed Limit Beacons: Yellow flashing beacons mounted onto school zone speed limit signs that indicate when the school speed limit is enforceable.
- Speed Feedback Indicator Signs: Devices that have a speed-measuring device and a messaging sign that displays feedback to drivers going above the posted speed.

Additionally, the County uses Intelligent Transportation Systems (ITS) to monitor and gather information on the way people navigate the transportation network. ITS focuses on leveraging the existing transportation facilities by using technology to improve the efficiency of use. These types of systems usually overlap with existing deployments of equipment and rely on data to help inform decisions and operations. The County's ongoing Transit ITS and Security Program includes implementation of TSP in congested corridors, beginning with Langston Boulevard. **Figure 37** shows existing TSP locations along with traffic signal, RRFB, and pedestrian hybrid beacon locations. As shown in **Figure 37**, signals are normally concentrated in high-activity corridors, while lower-density residential areas have fewer signals.

Figure 37: Intersection Signal Types in Arlington

Source: Arlington County Open Data, Arlington County Vision Zero (Updated November 2024)

The County's streetlight network provides improved visibility for the various street users and facilities, including pedestrians and bicyclists, along the roadway. Streetlights improve user safety and comfort, reduce nighttime crash rates, and create a vibrant neighborhood atmosphere after dark. Streetlights in Arlington vary by ownership. Some are maintained by the County, while others are maintained by utility companies or state or federal agencies. Arlington follows a Streetlight Management Plan that provides guidelines and standards for the County's street lighting.

Analyses Conducted

The project team conducted a series of analyses to explore existing vehicular traffic conditions, capacity, and maintenance and better understand the conditions that people using the street network experience today.

Average Annual Daily Traffic Analysis

Purpose

Average annual daily traffic (AADT) refers to how many vehicles use a street segment on an average day. AADT can be used to compare levels of vehicle traffic along portions of a corridor to the rest of the street network and also can inform more detailed transportation analyses on street safety, user comfort, and travel demand.

Methodology, Limitations, Assumptions

The project team completed the AADT analysis with data sourced from StreetLight Data, Inc. between 2020 and 2023. To account for the influence of pandemic-induced changes to travel patterns between 2020 and 2022, this analysis focused on data from 2023. StreetLight Data is a "big data" source that aggregates anonymized data from mobile devices to provide information about travel volumes and times. The dataset provided comprehensive traffic data for this analysis, including AADT by street segment.

To focus on roadways controlled by the County, this analysis excluded roadways owned by other entities, such as interstate highways, controlled access roadways, and highway ramps.

Analysis Findings

The analysis results shown in **Figure 38** show that in 2023, 62 percent of all street segments in Arlington had fewer than 1,500 vehicles per day—conditions found primarily on local streets. More heavily trafficked streets make up a smaller share of the roadway network, with only 3 percent of street segments seeing more than 30,000 vehicles per day.

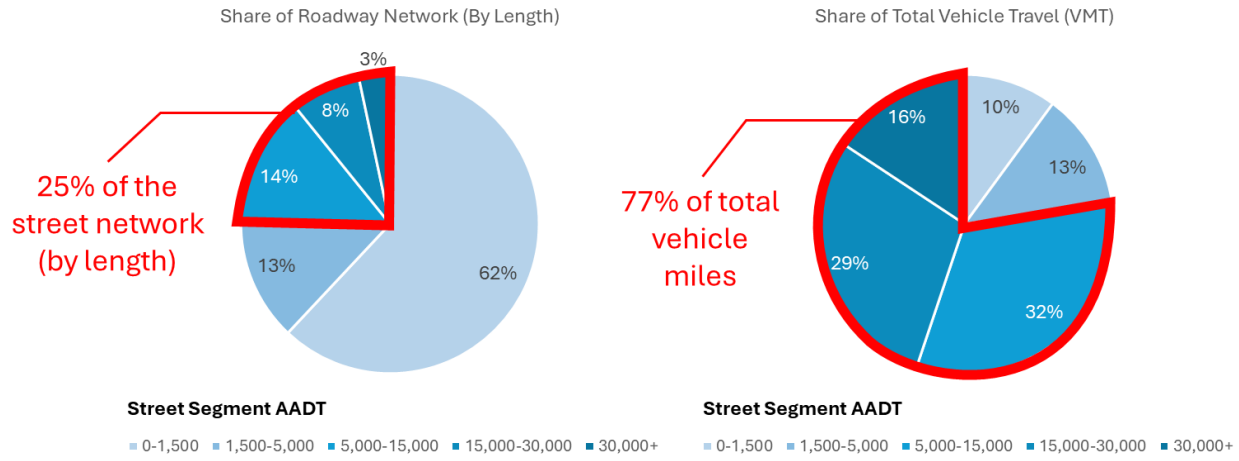
Figure 38: Average Annual Daily Segment Traffic for All Street Segments In Arlington

Source: Streetlight, 2023

While AADT is an important data point that shows how many vehicles use a given street segment per day, vehicle miles traveled (VMT) illustrates the importance of the segment to the overall network.

As shown in **Figure 39**, a large amount (77 percent) of all VMT is carried on a relatively small portion (25 percent) of the County's total roadway miles—meaning that the vast majority of traffic in Arlington is carried on a relatively small portion of the overall street network.

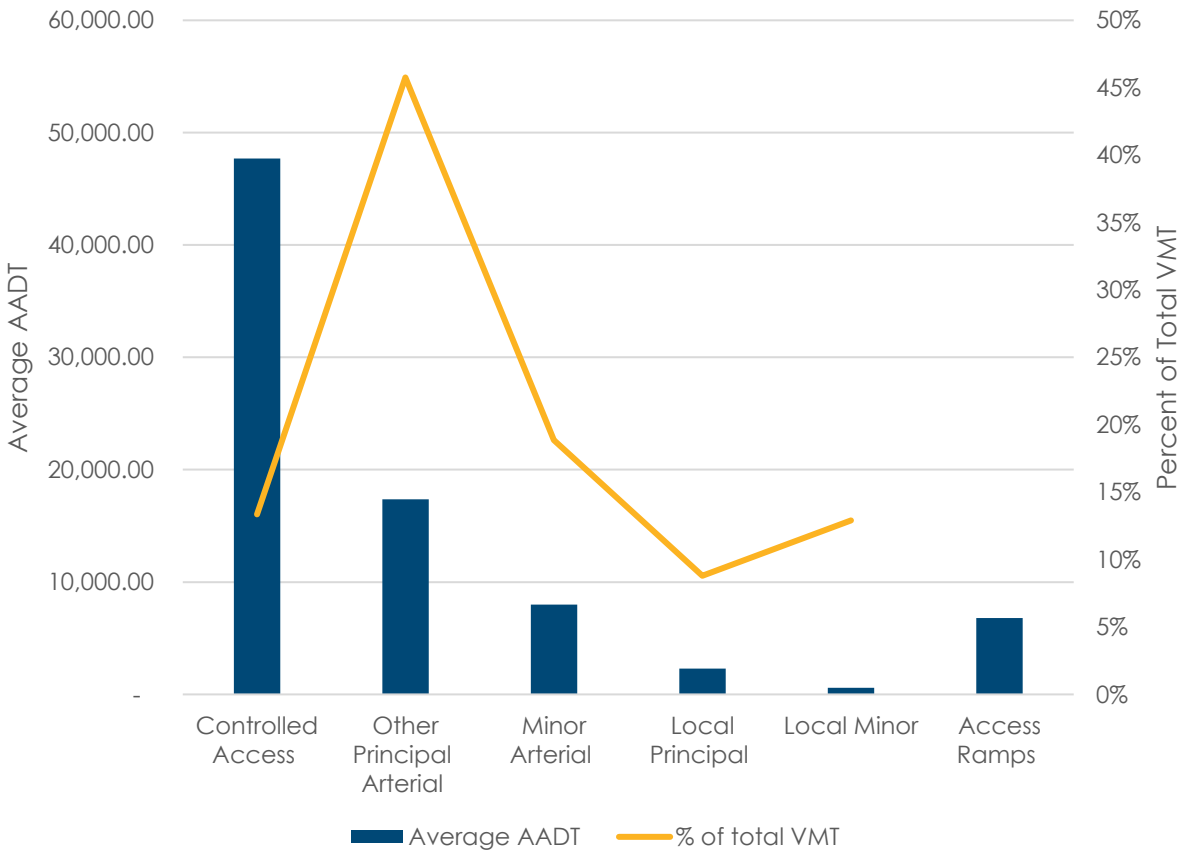
Figure 39: Average Annual Daily Traffic and VMT For Street Segments in Arlington



Source: Streetlight, 2023

Building upon the findings above, further investigation of VMT data helps to identify which street classifications carry the most trips. For example, as shown in **Figure 40**, controlled access streets have the highest AADT by far (bars in **Figure 40**), but they represent only 13 percent (line in **Figure 40**) of all the miles travelled in the County. The majority of miles traveled in the County are on arterial streets, with arterial categories making up nearly 60 percent of all miles traveled. Therefore, though controlled access streets see the most traffic, most of the miles driven in Arlington are on arterial streets such as Arlington Boulevard and Columbia Pike. These arterial streets connect neighborhoods and commercial centers across Arlington.

Figure 40: Average AADT By Functional Classification And Percent Share Of VMT In Arlington



Source: Streetlight, 2023

Street Utilization Analysis

Purpose

To help shape the future street network in Arlington, it is important to understand the current volume of traffic on the County's streets and consider the capacity for which they were designed. While AADT provides data on the number of vehicles on a street, other analyses can consider traffic volume in relation to street capacity. Looking at traffic through this lens helps identify where streets are being well utilized or underutilized to support the County's continued approach to maximizing person-carrying capacity of streets without adding additional vehicles.

Methodology, Limitations, Assumptions

To conduct this analysis, the project team used data from Arlington County's Travel Demand Model to examine projected volume-to-capacity (V/C) ratios for the County, based on 2019 modeled conditions. These ratios compare the amount of vehicle traffic on a street to the maximum vehicle traffic the street is designed to carry, meaning it can identify streets that are generally running under, near, or at their designed capacity. This travel demand model includes analysis for the County's streets during four critical time periods expressed as a ratio:

- **Morning Peak**: from 6:00 to 9:00 a.m.
- **Midday**: from 9:00 a.m. to 3:00 p.m.
- **Evening Peak**: from 3:00 to 7:00 p.m.
- All remaining hours not captured above

The V/C ratios established fall within the following three thresholds:[18]

- **0–0.6**: Results in this range indicate that there are "free flow" traffic conditions and there is no delay. This analysis further breaks down the threshold from 0 to 0.35 and from 0.35 to 0.6 to provide a more detailed view of utilization.
- **0.6–0.8**: Results in this range indicate that conditions present some restrictions in free flow driving, but there is generally only slight traffic delay.
- **0.8–1+**: Results in this range indicate that there are generally enough vehicles on the street to cause moderate traffic delay. Results above 1 indicate that traffic delays are likely.

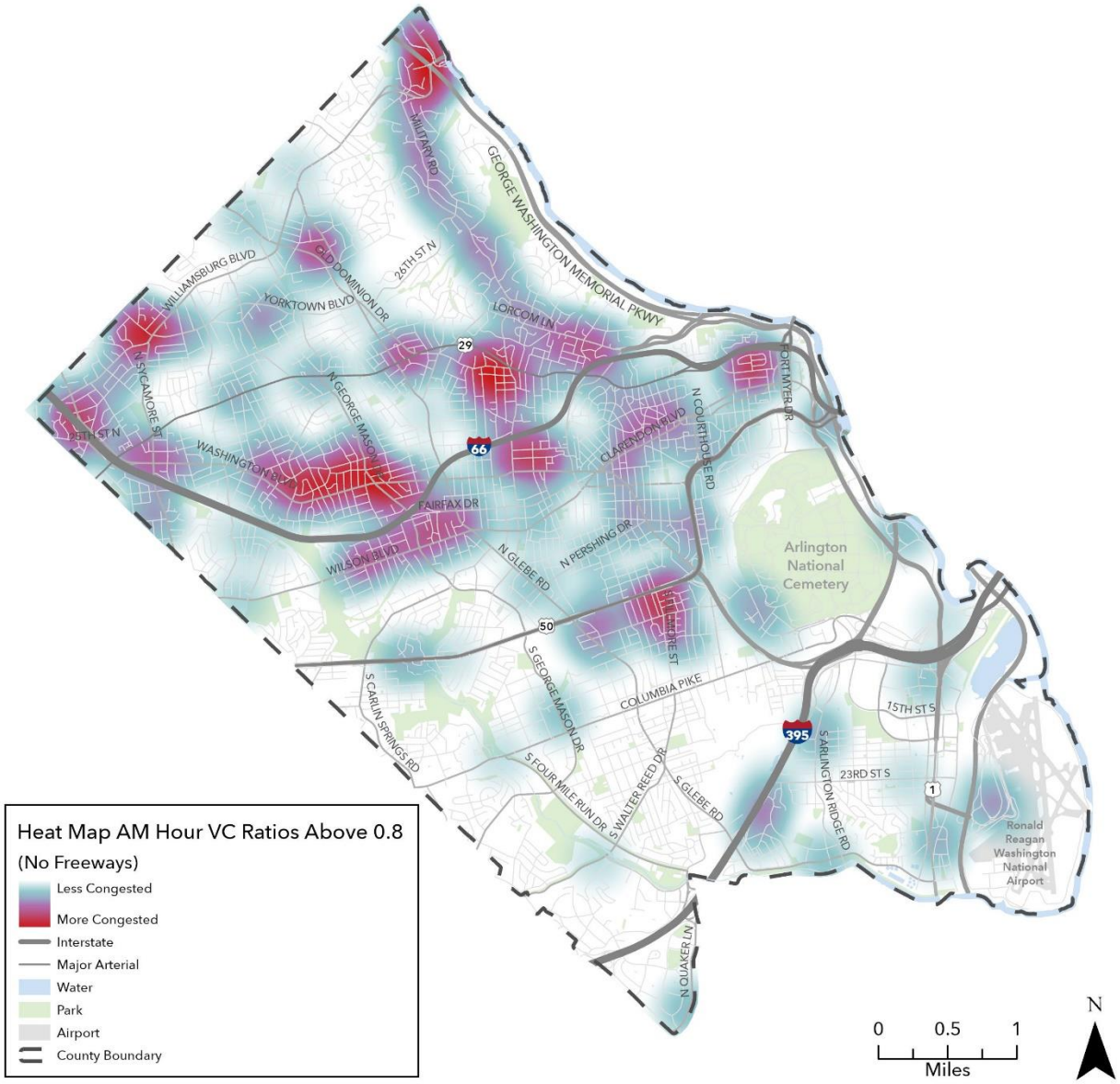
This analysis reports the V/C results for surface streets, which include those classified as major arterials, minor arterials, collectors, and local streets. Limited access roadways such I-66, I-395, and portions of Route 50 were not considered in this analysis so that the heat map results would not be skewed by streets and roads for which the County has limited maintenance, operational, or policy control.

[18] Translation of V/C ratios to LOS based on Highway Capacity Manual, Special Report 209's *Level of Service Criteria for Arterials based on Volume-to-Capacity ratios.*

Analysis Findings

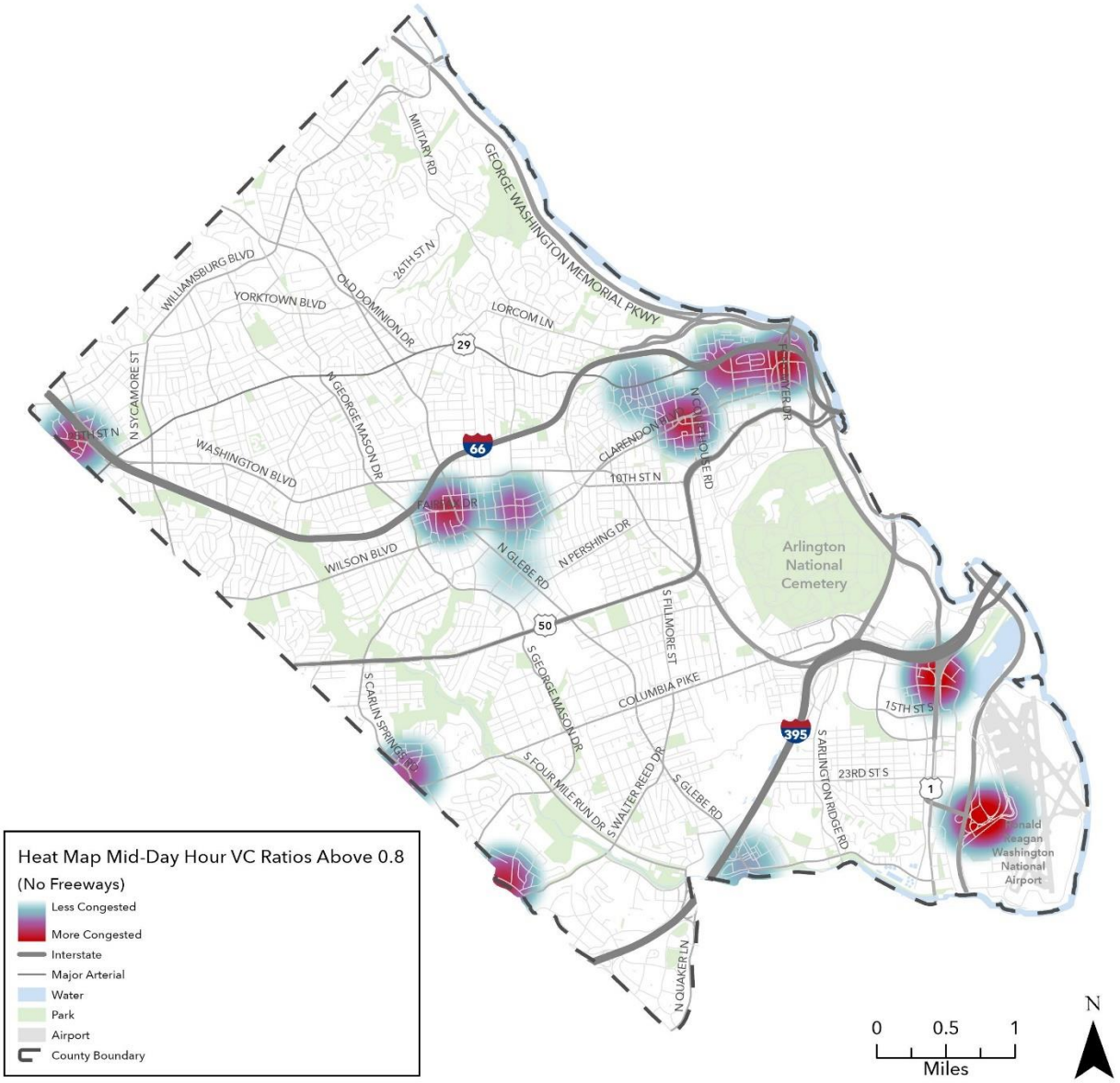
The analysis highlights areas of traffic delay (V/C > 0.8) on surface streets in **Figure 41**, **Figure 42,** and **Figure 43** for morning, midday, and evening conditions, respectively. These time periods were chosen to show the peak rush hour periods contrasted with a midday period.

Figure 41: 2019, Modeled Volume-to-Capacity Analysis for Arlington County for AM Hours, From 6:00 a.m. – 9:00 a.m.



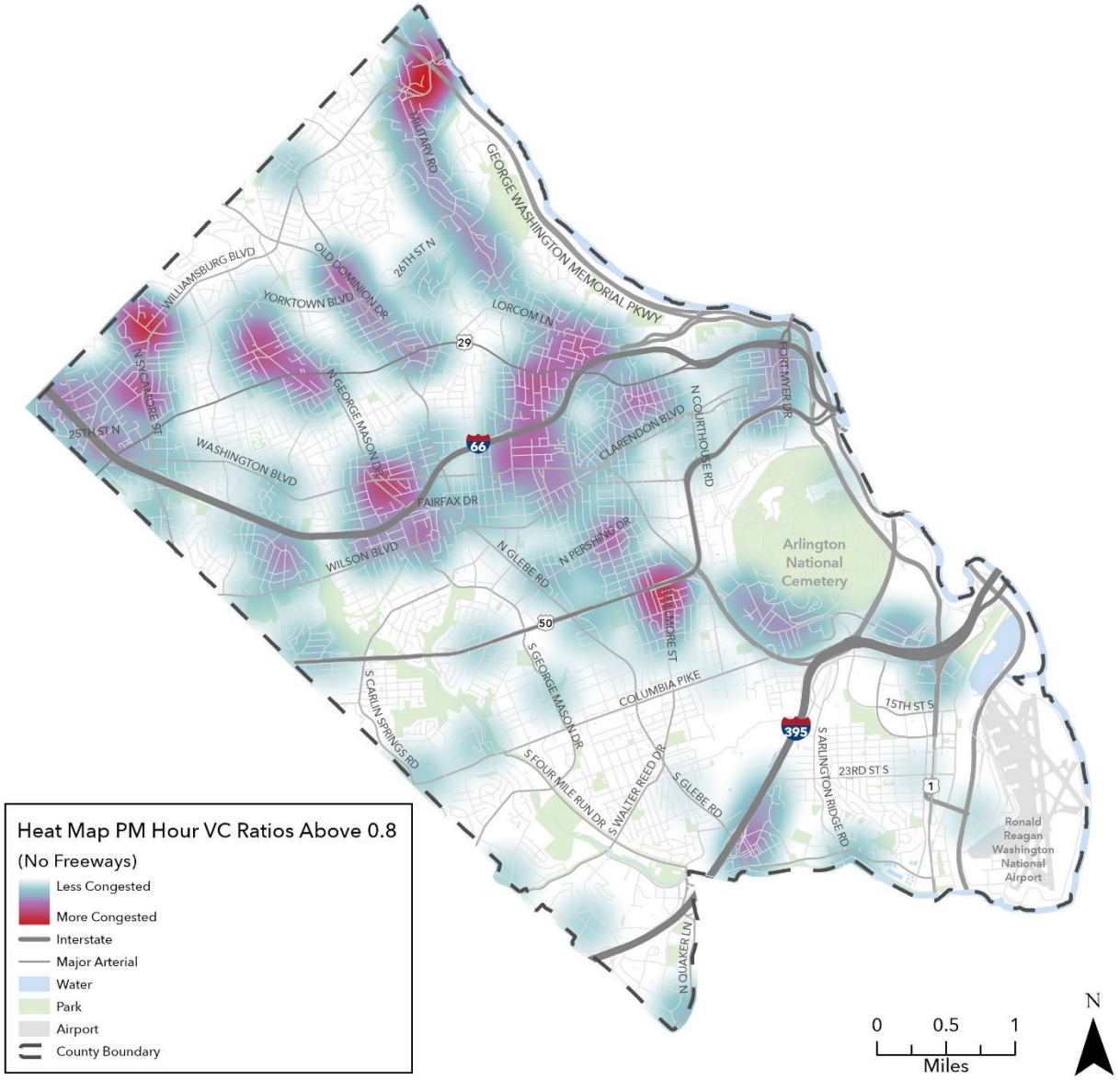
Source: Arlington County Travel Demand Model, 2019

Figure 42: 2019, Modeled Volume-to-Capacity Analysis for Arlington County for Midday Hours, From 9:00 a.m. – 3:00 p.m.



Source: Arlington County Travel Demand Model, 2019

Figure 43: 2019, Modeled Volume-to-Capacity Analysis for Arlington County for PM Hours, From 3:00 – 7:00 p.m.

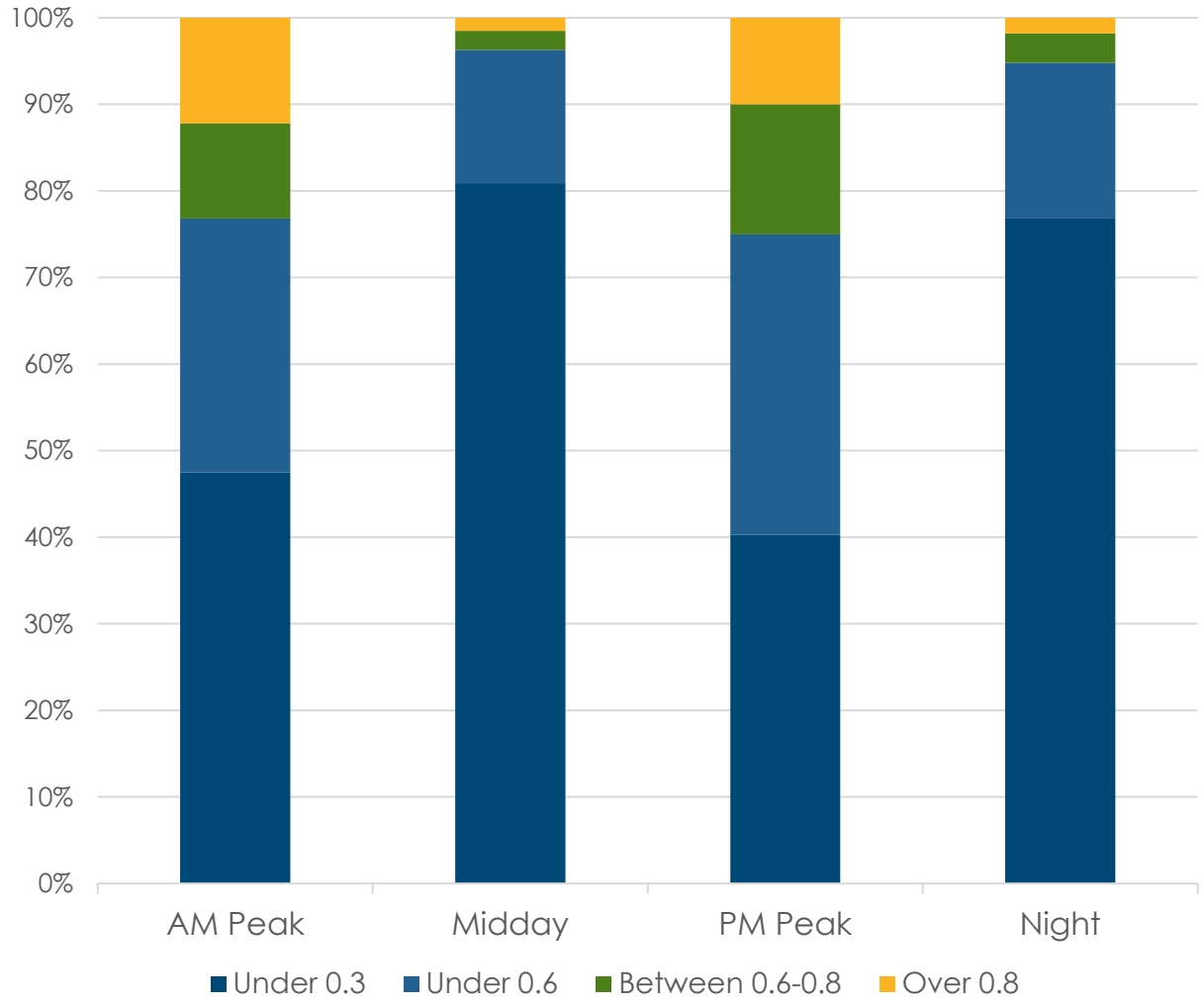


Source: Arlington County Travel Demand Model, 2019

Figure 44 shows that just 10-12 percent of street segments operate above 0.8 V/C in the morning and evening peak periods, while in the midday and night periods, only 2 percent of street segments operate above 0.8 V/C. Some of the segments included in the analysis experiencing congestion during AM and PM peak periods include Washington Boulevard, Route 50 around S Fillmore Street, Washington Boulevard, N Powhatan Street, N Glebe Road, and areas around the Rosslyn-Ballston Corridor. In off-

peak periods, such as midday and nights, more than 75 percent of streets operate well below their designed capacity.

Figure 44: Modeled V/C Ratios for Surface Streets in Arlington County Over the AM Peak, PM Peak, Midday, and Night in 2019



Source: Arlington County Travel Demand Model, 2019

Street Connectivity Analysis

Purpose

Arlington's street network connects residents and visitors to destinations across the County. A well-connected street grid, with a functional classification system that balances regional trips with more local neighborhood-serving trips, can ensure people and goods have an abundance of available routes to move throughout the County. The street connectivity analysis provides a comparison of the total street network in Arlington to the functional streets—those streets that connect two major roadways or neighborhoods.

Methodology, Limitations, Assumptions

The project team developed the connectivity analysis through a step-by-step mapping process. The project team identified and mapped streets in the highest functional classifications—Controlled Access, Principal Arterial, and Minor Arterial – those classifications that most directly are designed and operated to move high volumes of people across Arlington. The project team then reviewed each other street in the network and identified and mapped streets that either connected to the higher functional classification streets or that provided meaningful connections between two different neighborhoods.

Analysis Findings

Arlington has a mix of urban and suburban areas, some with well-connected, gridded streets and other areas with longer, curvilinear streets with frequent dead-ends and limited connections. As shown in **Figure 45,** when compared to the total street network, the functional streets—those that move more people and that provide connections between two other streets—make up 71 percent of total public street mileage. Most areas of the County provide consistent connectivity. Arlington's grid network of streets especially in the planning corridors and near Metrorail stations, enhances connection and creates multiple options to reach destinations. Where the grid is less developed or where streets serve only a single neighborhood such as in North Arlington, Arlington Forest, Arlington View, and Glencarlyn, there is less connectivity. Streets in these areas do not serve "through" travel, often connect back to the same arterial or otherwise terminate in a cul-de-sac.

The arterial/collector street network provides good east-west connectivity, with multiple functional routes extending the length of the County. In comparison, there are fewer efficient north-south functional routes that span the length of Arlington. The barriers to north-south connectivity include larger roadways such as I-66, I-395, Arlington Boulevard, and Four Mile Run. For example, I-395 disconnects Pentagon City from the rest of the County with very few north-south travel options. The presence of north-south arterial streets that can cross barriers like I-395—arterials such as Richmond Highway and Joyce Street in this area or George Mason Drive and S Glebe Road for areas west—are critical to provide convenient opportunities for all residents and visitors to travel from

one neighborhood to another on County streets. It also should be considered that many of the functional streets are used by people walking and biking in addition to those in a personal vehicle or taking bus transit. The multimodal travel demand on functional streets requires specific focus from the County.

Figure 45: Arlington Functional Street Network (Streets that Connect Two Major Roadways or Neighborhoods)

Source: Arlington County Street Network GIS Layer, Updated November 2024

Pavement Conditions Analysis

Purpose

The County maintains and manages more than 1,058 lane miles of paved streets to ensure the safe and efficient movement of people, goods, and services. Street paving conditions are annually assessed by a specialized contractor that generates a Pavement Condition Index (PCI) for every block evaluated following the completion of paving operations each fall, using the national standards developed by the U.S. Army Corps of Engineers.

PCI is a formal rating scale ranging from 100, for brand-new pavement free of distresses, down to 0, the worst condition. Understanding where areas of pavement need repair is important to keeping streets operating smoothly and safely as well as to knowing how current County pavement maintenance efforts may need enhancements to meet immediate and future needs.

Methodology, Limitations, Assumptions

Pavement quality in Arlington was examined using County data on existing pavement conditions. As noted above, the County uses a PCI rating in assessing paving conditions, which is rating based on specific types and severity of deterioration. It is measured from 0 to 100, as shown in **Table 1,**[19] with 100 indicating "good" conditions, 55 to 40 denoting "poor" conditions, and 0 noting "failed" pavement conditions. The County uses PCI information to determine which streets should be repaved each year, and the PCI rating for each street is updated on a rolling basis as streets are repaved or as they deteriorate.

Table 1: Arlington Pavement Condition Index Ratings

Rating	Category
86-100	Good
71-85	Satisfactory
56-70	Fair
41-55	Poor
26-40	Very Poor
11-25	Serious
0-10	Failed

[19] https://www.arlingtonva.us/Government/Programs/Transportation/Streets/Street-Maintenance

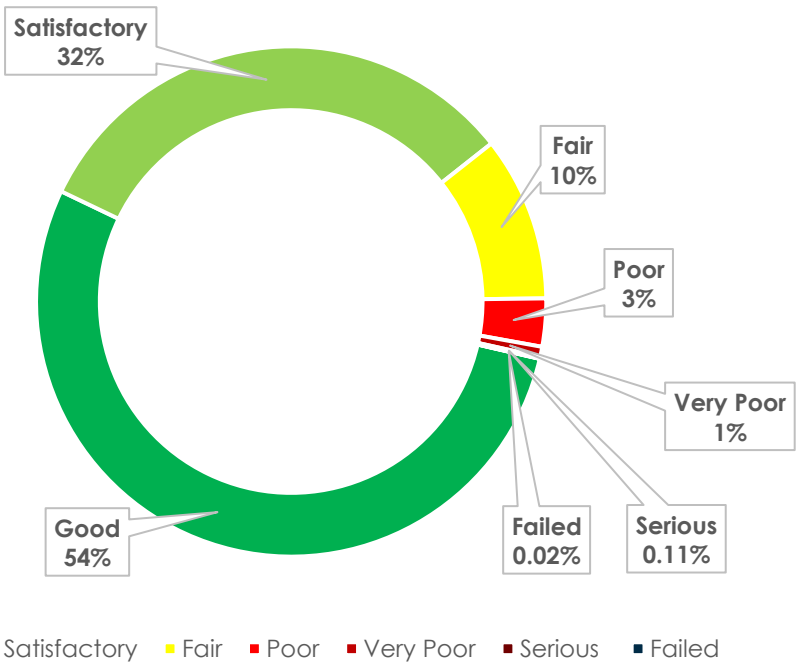
Analysis Findings

Arlington's average PCI has steadily improved from 69.8 in December 2014 to 83.3 in November 2023, after funding for the paving program was significantly increased to its current levels starting in Fiscal Year 2015. Prior to 2015, there was a decade of underinvestment in the paving program that caused it to hover in the high 60s level between 2010 and 2015.

An example of overall breakdown of pavement condition from the 2023 PCI index is shown in **Figure 46**. At the time of the PCI collection, roughly 4.1 percent of roadways were rated as having a poor or below PCI. Of that 4.1 percent, most streets were Neighborhood Minor Streets at 40 percent, followed by Minor Arterials at 24 percent, and Other Principal Arterials at 20 percent. Overall, 86 percent of street segments in Arlington had satisfactory or good pavement conditions, whereas just 4 percent are poor or very poor.

Arlington's annual repaving and resurfacing program provides routing repaving of streets based on their PCI conditions to maintain a network of streets that are in good condition. Street repaving and resurfacing not only address pavement conditions—they provide opportunities to reconfigure the roadway to address multimodal needs through new revised pavement markings following the repaving or resurfacing. Any roadway reconfiguration proposed through the repaving/resurfacing program undergoes public engagement to gather feedback on community needs on the roadway segment.

Figure 46: Percent Share PCI Rating in Arlington



Source: Arlington County, 2023

Key Takeaways

The vehicular network analyses conducted as part of Arlington's Transportation Future confirm that while connections are lacking in some areas, the County's street network provides well-maintained and well-utilized streets. These analyses indicate that:

- **A small portion of Arlington's existing streets carry a large portion of existing vehicular traffic.**
    - Arterial streets make up only 13 percent of street miles in Arlington today, but carry 60 percent of the vehicle miles traveled, helping to concentrate higher traffic levels along targeted corridors rather than smaller local streets.
- **The majority of Arlington's street network is made up of local streets that limit broader countywide connections.**
    - More than half the streets in Arlington today are neighborhood or local streets, which serve residential areas of Arlington; these streets see less than 10 percent of the vehicle miles traveled in the County.
    - While Arlington's network of streets creates a well-connected grid in dense urban centers, it provides limited connections outside of these areas, especially in and between lower-density residential neighborhoods and an incomplete street grid.
- **Traffic congestion is not widespread in Arlington today and is concentrated in specific areas at specific times of day.**
    - In the morning and evening peak periods, only a small number of arterial streets experience high levels of delay and only for short periods of time, indicative of a transportation system that has right-sized its traffic levels to available street capacity and prioritized moving people by all modes, not just in vehicles.
    - Many of the areas that do approach capacity in the peak periods appear to overlap with high-capacity transit corridors, suggesting there may be non-driving alternatives to alleviate localized traffic issues.
    - The high proportion of vehicle trips that are three miles or less also indicates there is potential for trips to be taken by other modes.
- **The street network is in overall good paving condition, which is a key element of a quality transportation network.**
    - The annual repaving and resurfacing program keeps pavement conditions in good condition and allows opportunities for street redesign in the process.

The Parking and Curbside Network

Policy in the Current Master Transportation Plan

The Parking and Curb Space Management Element of the current MTP, adopted in November 2009, focuses on the provision and management of parking and curb space in the County, including on-street and off-street parking. The general theme of the element's policies is to effectively balance demands for curb space and discourage the development of excess parking and its negative effects, including:

- Prioritizing the use of curb space to match the adjacent land uses
- Managing parking effectively and efficiently
- Reducing off-street parking requirements (specifically near transit) and maximizing sharing of parking space
- Using flexible parking meter pricing strategies that vary by hour and location to better match parking availability and demand

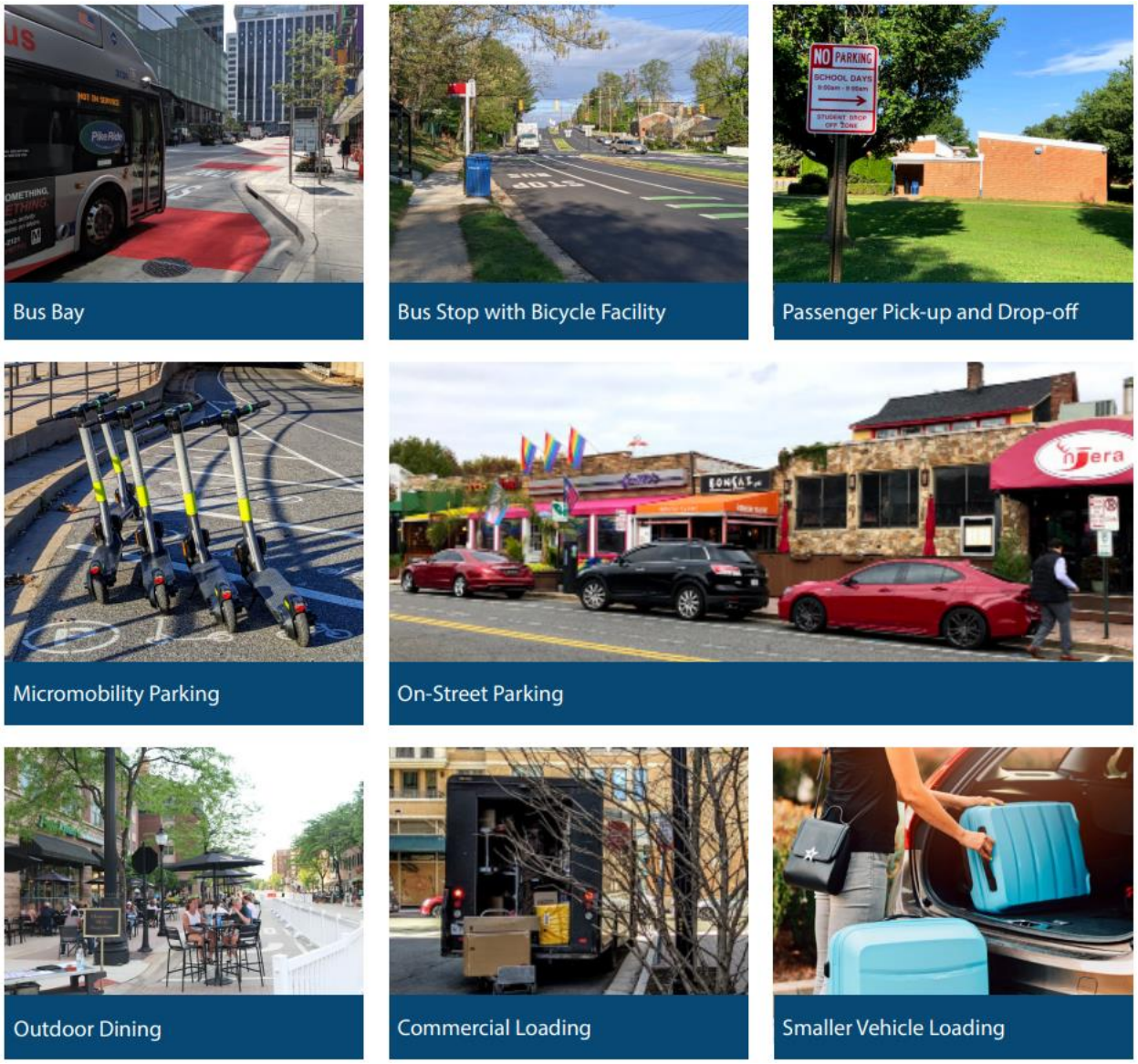
Existing Context

The Existing Parking and Curbside Network

There are many competing demands for the curb across Arlington, and needs often differ depending on land uses and the provision of off-street parking, type of street (e.g., local, collector, etc.), and how the location relates to the broader transportation network.

Arlington's curbside supports a wide range of uses, including transit stops and dedicated lanes, pick-up and drop-off areas, loading/unloading zones, food vending, taxi stands, bike lanes, general travel lanes, parklets,and on-street parking for various kinds of vehicles. **Figure 47** provides a visual of the different types of curbside use throughout the County.

Figure 47: Curbside Uses in Arlington



Source: Arlington County

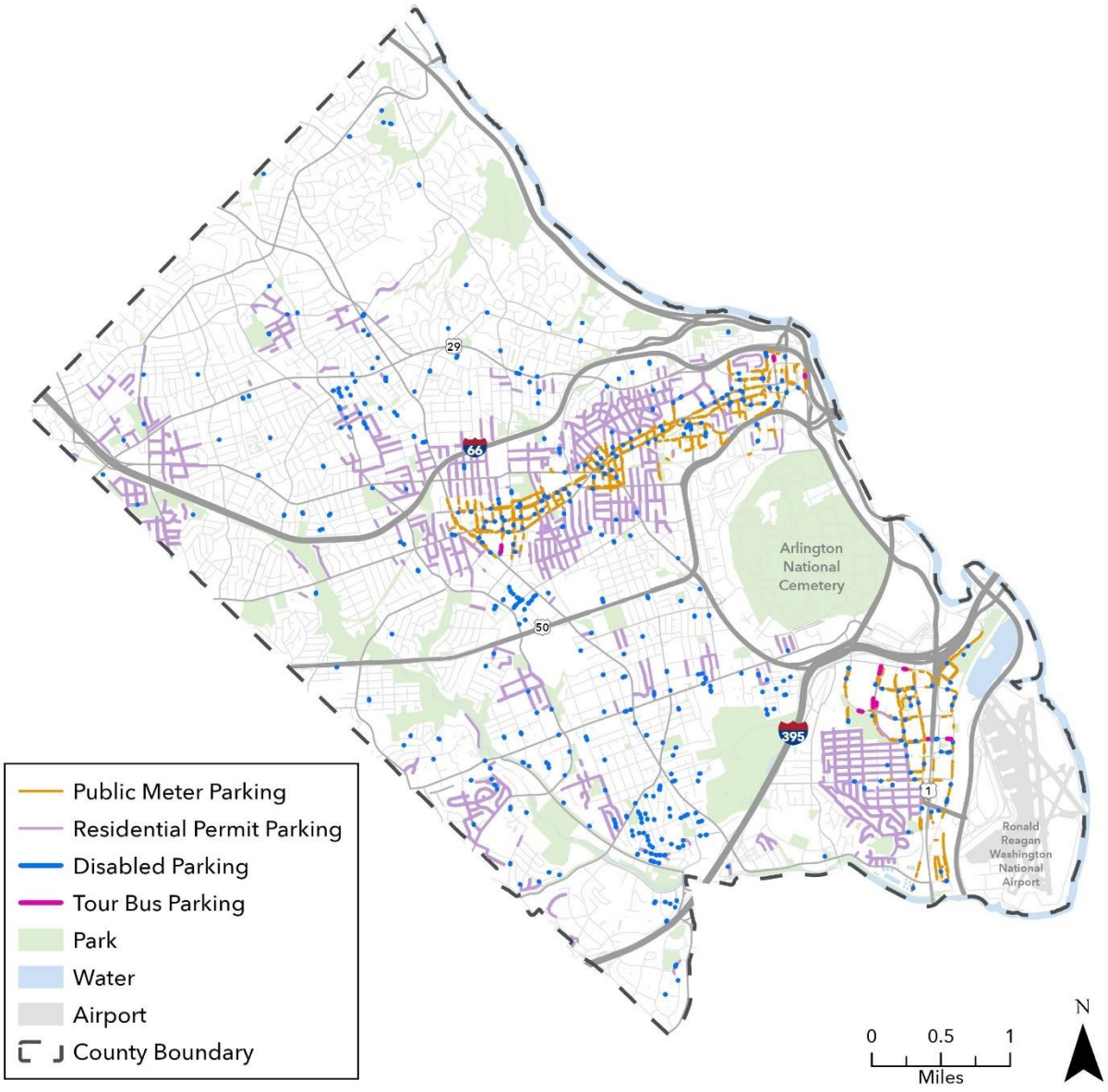
The majority of Arlington's curb space is still unmanaged parking. However, the County provides several types of designated parking areas at the curb to support uses, such as Residential Permit Parking (RPP), metered parking, time-limited parking, disabled parking, tour bus parking, intercity bus pick-up/drop-off, car-share parking, car-share parking, and micromobility or shared mobility device parking also known as corrals. **Figure 48** below maps a few different on-street parking types in Arlington.

RPP zones are regulated under the County's RPP Program, which is an opt-in program that allows neighbors on a given street to establish permit parking on their block, thus requiring a permit for that zone to park there.

Disabled parking efforts range from proactive management of ADA space distribution and space use analysis in high demand areas to public space implementation requests based on personal needs.

In addition to on-street parking, the County manages the Ballston Parking Garage, other garages and surface lots that support County facilities such as parks, libraries and community centers.

Figure 48: On-Street Parking Types in Arlington



Source: Arlington County Open Data 2024

Performance Parking Pilot

The County's ongoing Performance Parking Pilot project, which started in 2023 and runs through 2026, seeks to improve the metered parking user experience by:

- Making metered parking spaces more available, more often
- Sharing useful information about metered parking options in real time
- Reducing the negative impacts associated with the search for metered parking (cruising, double parking, going somewhere else to do business, etc.)[20]

The project targets the high-activity Rosslyn-Ballston and Richmond Highway corridors to combine occupancy technology and pricing tools to provide better information on parking availability and influence demand for metered curb space. For on-street metered parking in this project, the County considers an occupancy of 80 percent to be ideal in high-activity areas so that parking is well-utilized, but spaces are still regularly available.

To date, the project has resulted in pricing being adjusted four times for approximately 4,700 standard metered parking spaces in the Rosslyn-Ballston and Richmond Highway corridors to assess how demand for the curb can be better balanced. Throughout all price change phases, a total of approximately 1,100 spaces did not receive any change, while about 3,600 spaces received either an increase, decrease or both.

While pricing strategies, thus far, have resulted in only small changes to demand, such as a slight decrease in greater than 80 percent occupancy occurrences, the pilot project is ongoing and continues to work toward better matching parking availability and demand.

Additional Parking and Curbside Resources

The County offers several additional parking resources for residents and visitors online including interactive maps of metered parking locations and meter rates in the county, and live parking occupancy maps provided through the Performance Parking Pilot project. Most recently, the County has been testing new digitized signage in the project corridors that show live parking availability and pricing for selected metered spaces.

[20] Performance Parking Pilot – Official Website of Arlington County Virginia Government

Data Reviewed

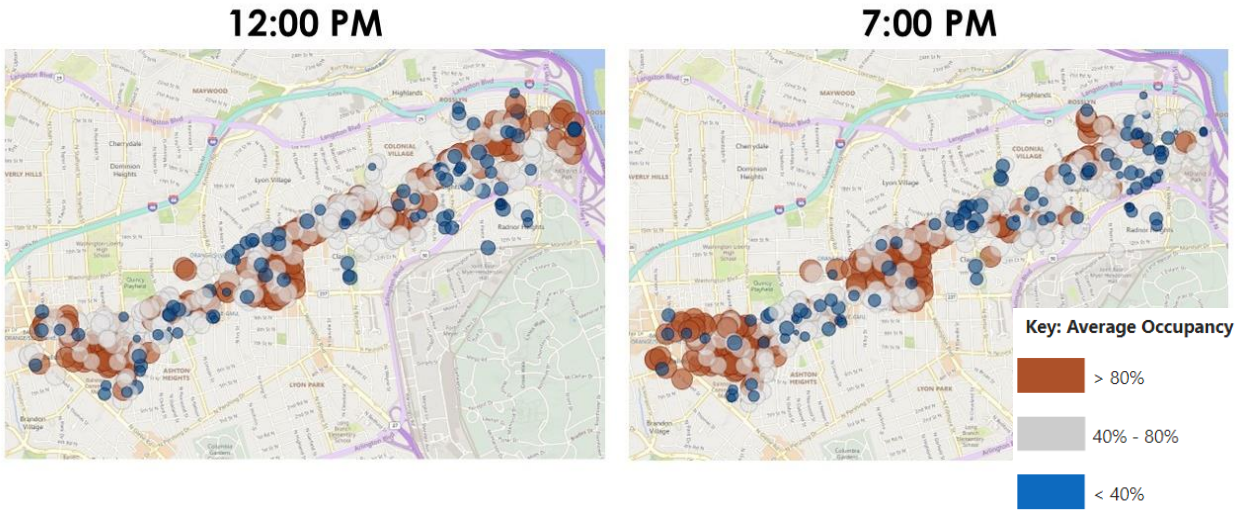
The project team reviewed data and findings from recently completed parking and curb space-related projects and studies to better understand the conditions that people parking and accessing the curb in Arlington experience today.

Parking Occupancy Data

Data from the PPP project is added to a dashboard of parking activity data sortable by year, month, day of the week, time of day and location. The project team reviewed parking occupancy data from the PPP project to better understand the demand for and availability of parking and curbspace in Arlington's Metrorail corridors today.

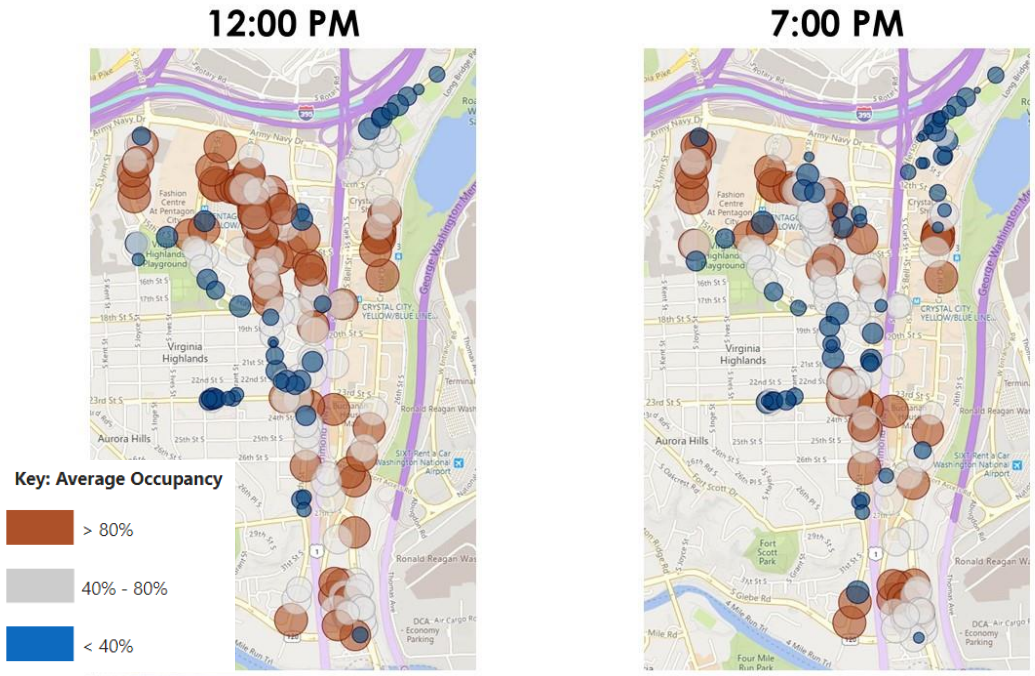
Figure 49 and **Figure 50** show parking occupancy averages in the two major corridors for October 2024 at the peak hours of 12:00 p.m. and 7:00 p.m. Per the Performance Parking Pilot project, occupancy between 40 and 80 percent is considered well-utilized, while occupancy of 40 percent or less is considered under-utilized.

Figure 49: Rosslyn-Ballston Corridor Peak Hour Parking Occupancy Averages, October 2024



Source: Arlington County PPP Dashboard

Figure 50: Richmond Highway Corridor Peak Hour Parking Occupancy Averages, October 2024



Source: Arlington County PPP Dashboard

The County also conducted a parking occupancy study in 2022 for samples of RPP-restricted and unmanaged parking in selected study areas including Clarendon/Virginia Square, Virginia Hospital Center, Columbia Pike and Richmond Highway/Aurora Highlands. The County periodically conducts occupancy studies to monitor the use of RPP restricted areas over time to assess whether the restrictions are working as intended. This was the second such study the County has conducted, with the first being from 2017-2019. The goal of the 2022 study was to monitor potential changes in the study areas compared to 2017-2019, while also adding a new full study in the Ballston Area, which included all RPP restricted streets in that area. The results of this 2022 study showed an occupancy of 85 percent or less in most areas, 60 percent or less in many areas, and an occupancy of higher than 85 percent in just 2 to 7 percent of areas. In Ballston, 14 percent of all observations on RPP streets showed occupancy higher than 85 percent. Another key finding of the study was that in most areas, average occupancy either decreased or stayed the same compared to previous years. The exception to this trend was along Columbia Pike, which saw an increase due to a change in parking management type from RPP-restricted to unmanaged. However, throughout all four study areas, there was no clear trend in occupancy difference between RPP-restricted and unmanaged parking.

Key Takeaways

The parking and curbside network data the County reviewed as part of Arlington's Transportation Future confirmed that limited street space, especially at the curb, has a lot of demands. These demands—which include parking, pick-up and drop-off for goods and persons with disabilities, bicycle facilities, and bus stops—also often compete and have unique needs for accessing the curb. The County's review of this data indicates that:

- **There are many competing and increasing demands for the curb, and needs are different depending on the user, adjacent land use, the type of street, time of day, and how the location relates to the broader street network.**
    - Many demands are for short durations (e.g., goods delivery, pick-up/drop-off) but have significant safety and traffic impacts such as from double-parked vehicles or vehicles parking in bike lanes or at bus stops.
    - The rise in app-based pick-up and drop-off at unpredictable times presents a challenge for designing and managing Arlington's streets.
    - In response to these trends, the County has employed multiple strategies to measure and balance on-street parking demand in key activity areas, with the goal of more effectively allocating curb space to meet new and changing demand.
    - Demand for parking and curb space will continue to be increasingly competitive with emerging trends such as increased home deliveries, the continued popularity of app-based for-hire vehicles such as Uber and Lyft, and the ongoing need to retrofit streets with safe and accessible multimodal facilities/infrastructure.
- **Pricing and information are tools to manage demand and positively impact user experience and behavior.**
    - Once parking gets to around 80 percent used, it becomes difficult to find a space and can lead to negative driver experience and behavior.
    - The County applies several types of designated parking at the curb to support users and manage demand, such as RPP, Public Managed Metered Parking, time-limited parking, and disabled parking.
- **A key limitation facing Arlington is a lack of available data about permanent parking policies (e.g., on-street parking, bus stop zones) and real-time curb use.**
    - To help compensate for this, the existing conditions assessment for parking and curb use also relies heavily on community input gathered from public engagement events.
    - At these events, various community member stakeholders gave input on their experiences with parking and curb use in Arlington, concerns they have, and opportunities they see for improvement.

Freight and Goods Movement in Arlington

Policy in the Current Master Transportation Plan

There are few freight-related policies within the current MTP, but the topic is included in the Parking and Curb Space Management Element and the Streets Element. These elements include policies intended to reduce the conflict between freight and other modes of travel in the County by providing off-street loading access and time-specific curb space regulations.

Existing Context

Existing Freight and Goods Movement

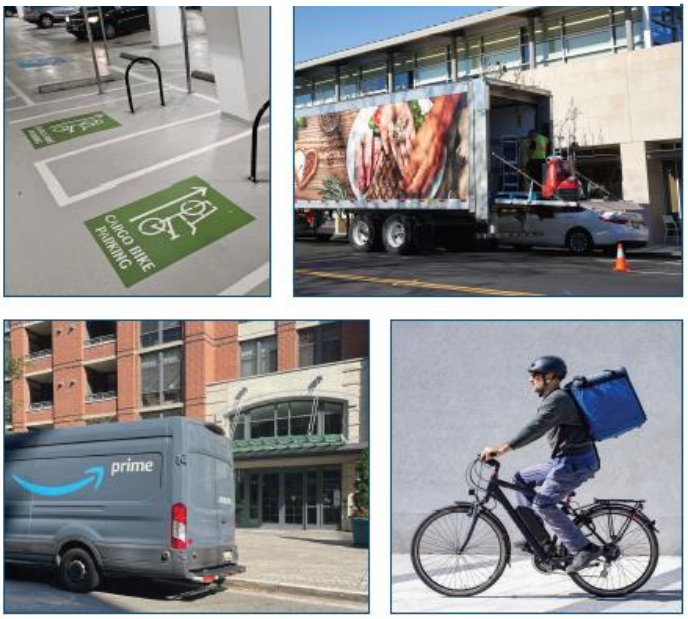
Freight, within the context of this planning effort, focuses on the movement of goods to and through Arlington. Goods movement is integral to the success of Arlington businesses, residents, and visitors in addition to the greater Metropolitan Washington region. Freight and goods move to and through the County by various roadway vehicles, trains, and planes. The following section focuses on goods movement via trucks, bicycles, passenger cars, scooters, and vans. The VTrans Virginia Transportation Plan: Freight Element and MWCOG National Capital Region Freight Plan provide discussion of freight through a regional lens.

The goods movement industry has evolved significantly during the past decade. E-commerce and residential deliveries had been experiencing a gradual increase until the pandemic, when these types of deliveries sharply increased. E-commerce sales are goods purchased online and often delivered to homes or local hubs for pickup, including non-perishable goods as well as groceries, medications, and meals. E-commerce sales account for approximately 15 percent of total sales in the United States.[21] It is expected that e-commerce will continue play an important role in the transportation system.

[21] U.S. Census Bureau Quarterly Retail E-Commerce Sales Q2 2024

E-commerce impacts the transportation network, as many of these goods are delivered to local businesses and residences on vehicles that use local streets. In Arlington, goods move on a range of vehicle types, including large and small trucks, vans, bicycles, and scooters. **Figure 51** highlights some common modes used to transport freight through the County.

Figure 51: Common Freight Types in Arlington



Many of these packages travel through the e-commerce freight flow process, shown in **Figure 52**, via large trucks to facilities where they are transferred to smaller vehicles (such as box trucks, vans, bicycles, or on foot) to complete the last miles of deliveries. "Last-mile deliveries" describe the last part of the journey that brings goods to their final destination at residences, businesses, or package lockers. Arlington's Transportation Future will focus on this last-mile part of the delivery cycle, the segment from the interstate, highway, or arterial to the destination.

Figure 52: E-Commerce Freight Flow Process

E-commerce has become a common way for Arlington's residents and businesses to receive goods and is likely to remain popular. To respond to e-commerce demand and increasing expectations of goods movement (e.g., next-day deliveries), the County, the region, and private industry are considering new technologies such as package hubs (e.g., Amazon Lockers), new modes such as cargo bikes, and emerging strategies such as pick-up and drop-off zones.

Arlington County Freight Policies

The County has a number of existing policies that relate to truck and freight travel to and through Arlington. The policies include routes that prohibit trucks, oversize/overweight vehicle permits, and van and container permits. Curbside policies are discussed in the Parking and Curbside chapter above.

Oversize/Overweight Transport Permit Program

The County's oversize and overweight permit program requires vehicles with weights and dimensions larger than the maximum dimensions specified in the Virginia Hauling Permit Manual to submit permit applications to the County. The permits help ensure trucks are appropriately routed and pay the applicable fees before they can travel through Arlington.

Moving Van and Container Permit Program

The County's moving van and container permit program allows the temporary placement of vans or containers on the street along the curb. Vehicles may include residential moving vans and tour buses and containers may include dumpsters and residential storage pods. The permit program outlines the requirements, time limits, and associated fees.

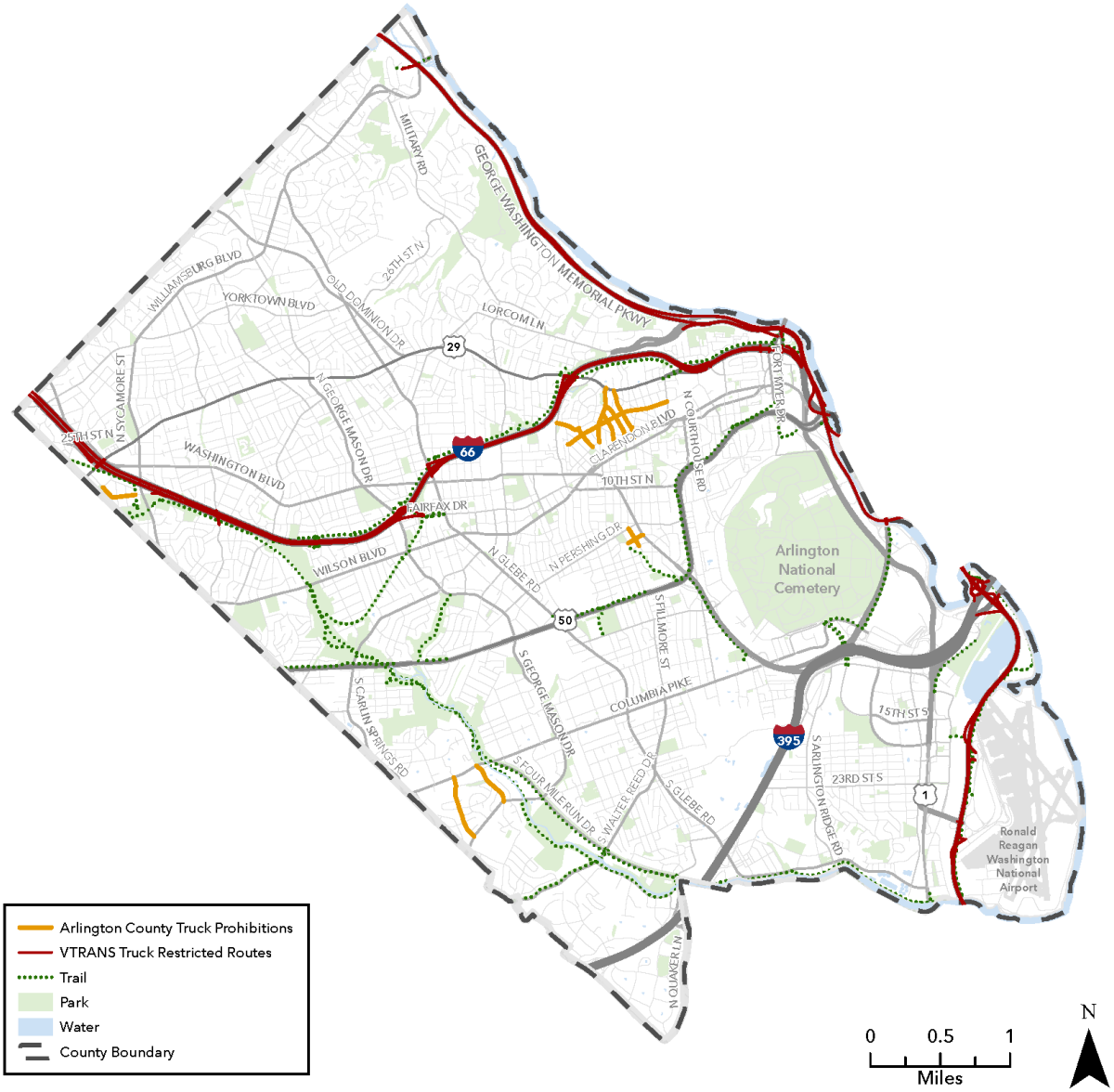
Data Reviewed

The project team reviewed data and findings from recently completed freight and goods movement-related projects and policies to better understand the conditions that influence this mode of transportation in Arlington.

Routes that Prohibit Trucks

In general, trucks are allowed to travel along the majority of the County's roads. Negative (e.g., Trucks Prohibited, No Trucks) truck signage is used in Arlington to direct truck drivers away from specific routes, including I-66 and George Washington Parkway. **Figure 53** illustrates the roadways in Arlington for which trucks are prohibited by the Virginia Department of Transportation (VDOT) or the County.

Figure 53: Routes That Prohibit Trucks

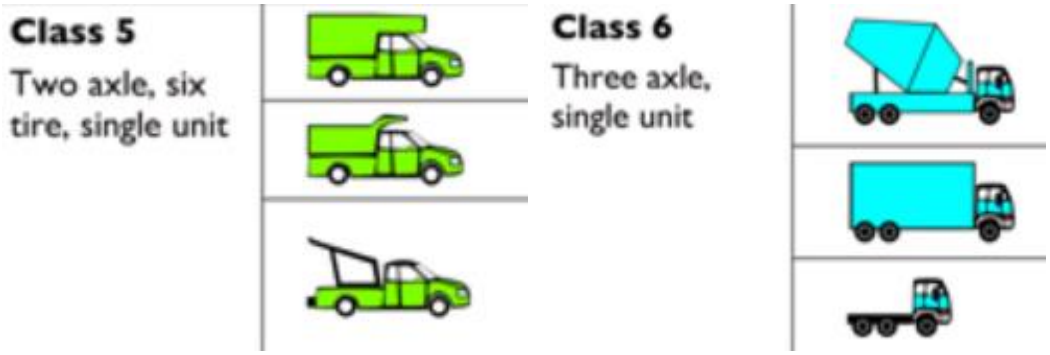


Source: VTRANS and Arlington County, 2022

Common Truck Travel Routes

Statewide data on truck volumes categorizes trucks as two- and three-axle trucks and is collected for most roadway types except for local roadways. Examples of two- and three-axle trucks are shown in **Figure 54**.

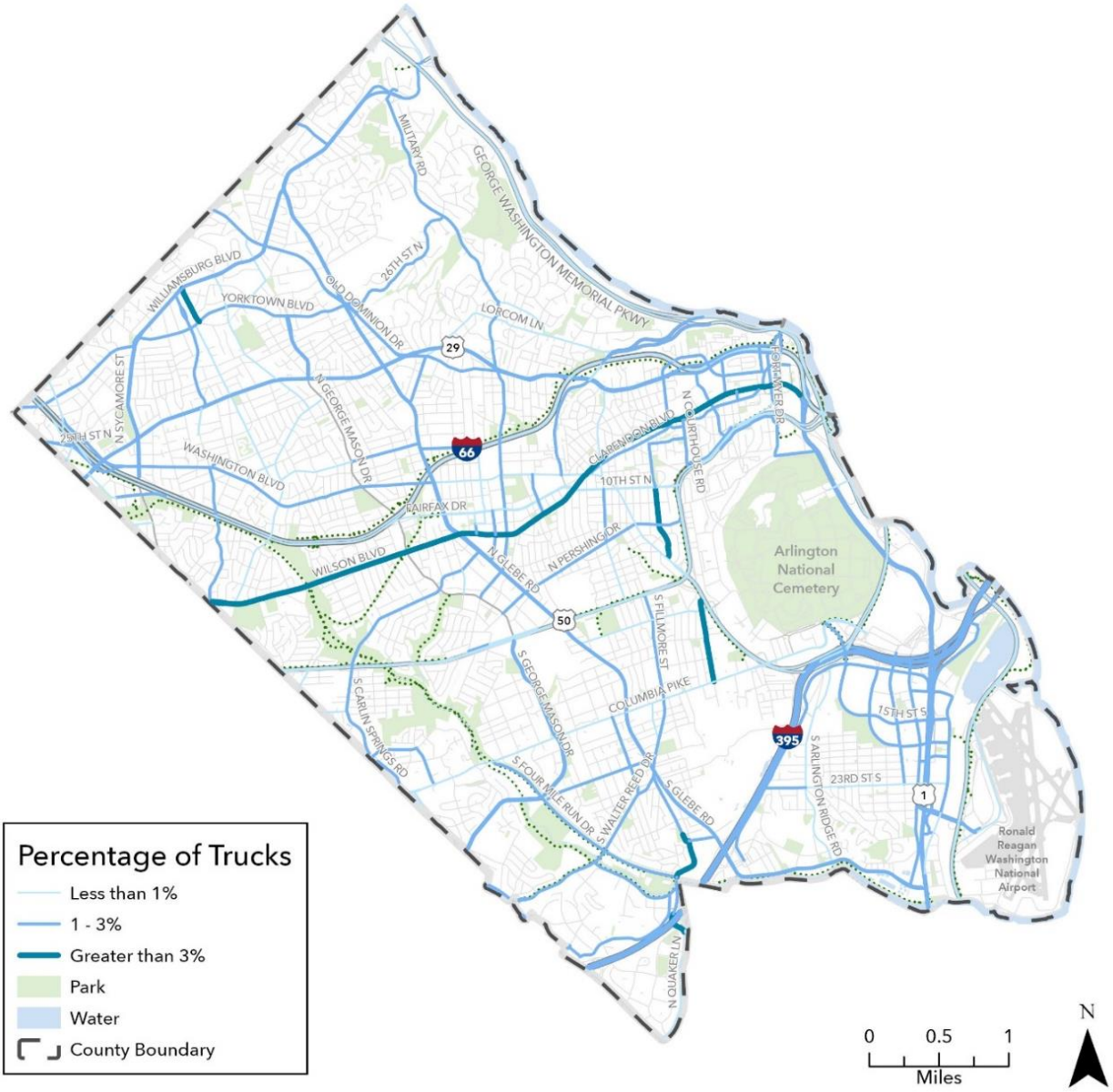
Figure 54: Examples of Two- and Three-Axle Vehicles



Source: Federal Highway Administration

The percentage of Average Daily Traffic (ADT) that is comprised of two- or three-axle trucks ranges between approximately 0 percent and 6.7 percent on County roads, with the trucks accounting for 1 to 3 percent of ADT on most roadways. **Figure 55** illustrates the percentage of ADT from two- and three-axle trucks on roadways for which data is available. Some of the roadways in the County with higher percentages of two- or three-axle trucks, such as Wilson Boulevard and Clarendon Boulevard, also play key roles in moving drivers, buses, pedestrians, and bicyclists through the network.

Figure 55: Percentage of ADT that are Two and Three-Axle Trucks



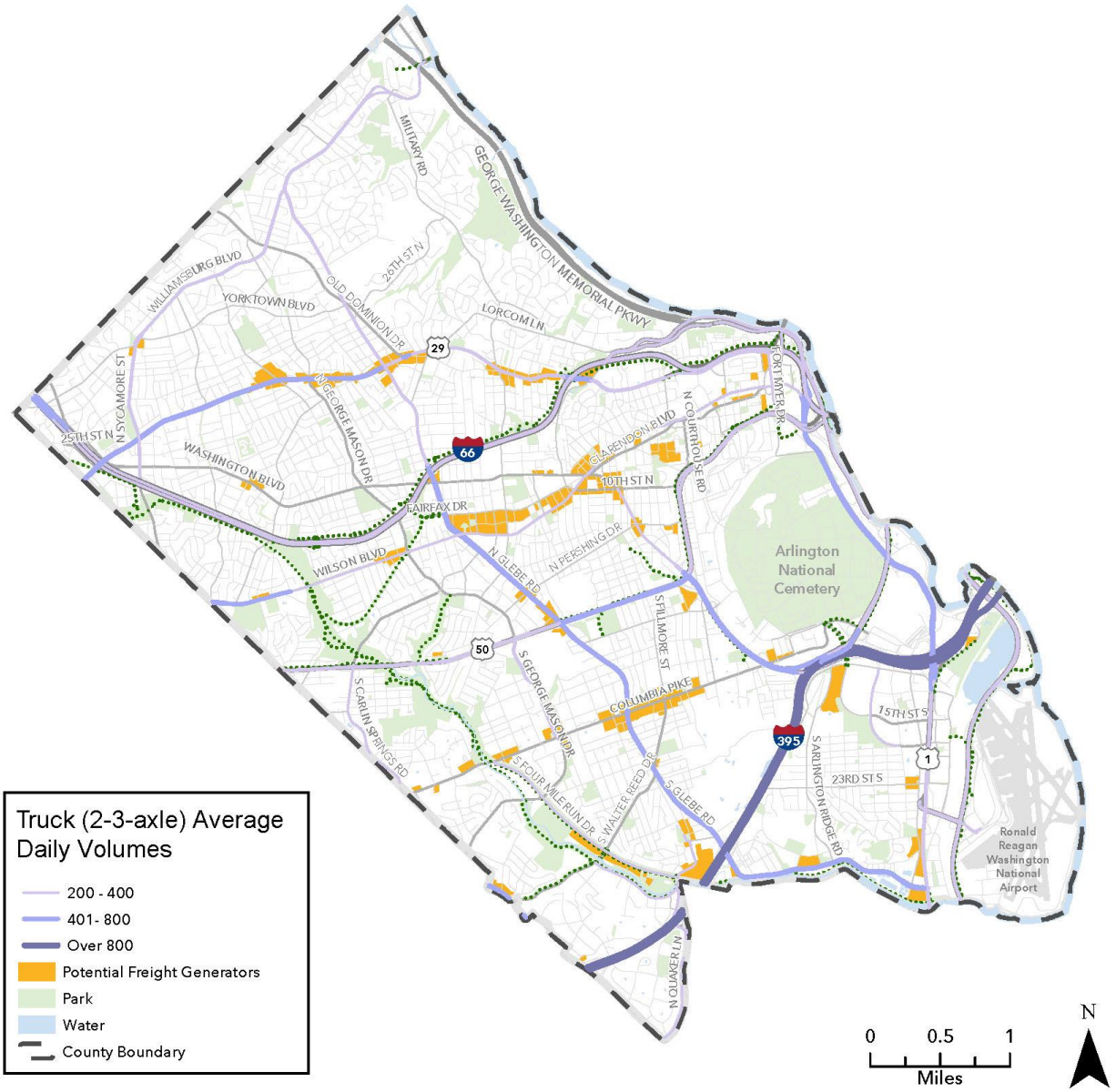
Source: VDOT Bidirectional Traffic Volume | Virginia Roads, 2022

Truck Volumes and Land Use

Coordinated mixed-use, high-residential, medium-density mixed-use development district, service industry, and service commercial land uses[22] often generate more frequent and higher demand for goods and freight. In Arlington, there are concentrations of these land uses along Columbia Pike, Clarendon Boulevard, Wilson Boulevard, and Langston Boulevard. **Figure 56** compares freight-generating land uses to the two- and three-axle truck volumes. Two- and three-axle truck volumes correlate more with roadway type—primarily highways and arterials—than the density of freight-generating land uses. There are a variety of factors that may contribute to this trend. An emerging trend is the transfer of goods from larger trucks to smaller delivery vehicles such as vans and personal vehicles. Additionally, highways and interstates may serve as the through route for trucks carrying goods to destinations outside the County. With the increase and continuation of e-commerce, data for smaller delivery modes such as vans, personal vehicles, cargo bikes, and mopeds is emerging, but currently limited.

[22] Defined in the General Land Use Plan as Coordinated Mixed-Use, High Residential, Medium Density Mixed-Use, Development District, Service Industry, and Service Commercial, respectively.

Figure 56: Average Daily Two- and Three-Axle Truck Traffic and Freight Generating Land Uses



Source: VDOT Bidirectional Traffic Volume | Virginia Roads, 2022 and GLUP and Sectors | Arlington County, Virginia. GIS Open Data (arcgis.com)

Truck Delay

Trucks that travel along the County's roads also experience delays due to roadway congestion. As illustrated above in **Figure 56**, two- and three-axle trucks travel on N Glebe Road and Langston Boulevard, both of which have an AADT of 15,000 to 30,000, as shown in **Figure 38**. Portions of these roadways also often experience near- or at-capacity traffic conditions. Additionally, traffic congestion and/or the lack of available curb space for trucks can lead to additional circulation or maneuverability challenges, which can further add to existing congestion.

VTrans identifies roadway segments along which trucks experience delay and bottlenecks. The I-395 corridor through Arlington (between Fairlington and Washington, DC), also identified as a Critical Urban Freight Corridor by MWCOG, has high to very high truck delay in both directions. The segment of I-395 between Richmond Highway/Route 110 and the Washington, DC, border also has been identified as a truck bottleneck.

Key Takeaways

The freight and goods movement data the project team reviewed as part of Arlington's Transportation Future confirm that these services are critical for the success and wellbeing of Arlington businesses, residents, and visitors and that goods movement in Arlington continues to evolve in response to increased demand and new technologies and capabilities. These analyses indicate that:

- **Goods movement in Arlington continues to evolve in response to increased demand and new technologies and capabilities.**
    - Use of and reliance on e-commerce and fast (e.g., same day, next day) deliveries continues to increase demand along the street and curb for delivery vehicles.
    - To balance competing priorities and provide space for efficient movement of goods, private delivery providers and the County are continuing to evaluate new delivery vehicles and technologies.
- **The County currently does not have goods movement and freight policies.**
    - The County does not have an overarching policy that guides large trucks to preferred routes and/or restricted routes. The few truck-restricted streets that exist today are location-specific and/or managed by VDOT.
    - The County also does not have policies relating to microfreight services, data reporting from private services, and/or other components of the freight flow process.
- **Large trucks make up a small percentage of overall traffic, but goods are increasingly being delivered on smaller vehicles, for which data is limited.**
    - Two- and three-axle trucks account for between 3 and 7 percent of ADT of Wilson Boulevard, Clarendon Boulevard, Shirlington Road, S Courthouse Road, N Barton Street, and N Kensington Street.

  - People may interact with freight and delivery vehicles more often than the data represents, mostly because freight does not only move on two- and three-axle trucks through the County.
  - Challenges are presented due to limited data for smaller freight vehicles. This includes vehicles such as vans, personal vehicles, mopeds, and cargo bikes, making it challenging to measure how these vehicles use and move through the network today.
- **Competing demands for the curb impact the safety and efficiency of goods movement and delivery.**
  - When the curb is blocked and/or unavailable for delivery vehicles and trucks, the delivery vehicle often blocks travel lanes for bicyclists and/or vehicles. This impacts the safety of delivery workers along with other roadway users who must navigate around the vehicle.

Conclusions

The Transportation Snapshot includes a review of the current MTP, industry best practices, existing County plans, and detailed modal analyses—all of which influence transportation in Arlington today. The following sections provide a high-level summary of findings to inform the refreshed transportation plan.

Limitations of the Current MTP

The Arlington County Board adopted the current MTP in 2007, providing guidance for Arlington's transportation system through 2030. While the current MTP has resulted in a wide range of successful County projects and programs, the transportation landscape and community's priorities have evolved since its 2007 adoption. The modal focus of the current MTP creates challenges to identifying solutions and developing projects for an increasingly multimodal transportation network.

Arlington's Transportation Future is an opportunity to develop a refreshed transportation plan that better reflects the County's current multimodal network and priorities. This will better equip County staff to prioritize, plan for, and develop projects that address current needs and emerging trends.

Integrating County Priorities

The transportation network is the embodiment of the County's vision and priorities. Since the adoption of the current MTP, many of the County's priorities, such as equity, safety, and sustainability, have been developed or updated to better reflect community values. Many of these policies have been integrated into other County documents, including the Vision Zero Action Plan, the Arlington Transit Strategic Plan, and various other resolutions, policies, and small area and sector plans.

Arlington's Transportation Future is an opportunity to better integrate County priorities, values, and best practices into a refreshed transportation plan that guides the development of safe, just, and environmentally sound transportation solutions.

Creating Connected and Comfortable Journeys

The transportation network in Arlington provides residents and visitors multiple options to access opportunities, including those available both within the County and the surrounding region. However, access to these transportation options varies widely. While users in some areas of Arlington may have access to connected and comfortable travel options, others may have limited connections or less comfortable options. Even when infrastructure is present, a lack of comfort (real or perceived) can be experienced as a gap in the network similar to missing infrastructure.

Connectivity, access, and comfort are the key ingredients of a transportation network that successfully serves all people and all trips. Arlington's Transportation Future is an

opportunity to improve the connections and comfort of people traveling by all modes to, from, and within Arlington.

Summarizing the Key Takeaways by Mode

Many of Arlington's streets are designed to accommodate a variety of modes of transportation, enabling people to choose different ways to travel based on their preference. However, the overlapping needs of multiple modes can create challenges in providing the safest and most convenient infrastructure for each mode within the limited right-of-way. Providing the best and safest infrastructure for each mode on every roadway in the County is not feasible given space constraints and interactions between modes. Therefore, trade-offs and prioritization are often considered to develop networks for each mode. A summary of the key takeaways for each mode is provided in **Table 2**. The modal analyses and key takeaways can aid in understanding the complex relationships between modes.

Arlington's Transportation Future is an opportunity to identify processes and priorities to inform decision making when multiple modes are competing for limited available space.

Table 2: Summary of Transportation Key Takeaways (By Mode)

Mode	Summary of Key Takeaways
Pedestrian	• Arlington's Rosslyn-Ballston and Richmond Highway Metrorail corridors are among the most pedestrian-friendly areas of the County. • Streets that lack continuous sidewalks and/or marked crosswalks create gaps in pedestrian connectivity and accessibility. • Street design directly influences pedestrian comfort. • Addressing the challenges and opportunities of the current pedestrian network requires strategies and policies that go beyond individual location-based projects.
Bicycle and Micromobility	• Arlington's Metrorail corridors are among the most bicycle-friendly, as well as pedestrian-friendly areas of the County. • Streets with complex intersections or streets that lack dedicated space for bicycling create gaps in bicycle access. • Off-street trails and physically protected bicycle lanes provide the highest level of comfort for people bicycling.
Bus Transit	• Nearly all Arlingtonians have access to transit within a quarter mile of their homes. • Existing transit service appears to largely meet demand, but opportunities exist to expand off-peak service, improve amenities, implement bus priority, and streamline north-south service. • Only portions of Arlington's Transit Priority Corridors have contiguous high-frequency service.

Mode	Summary of Key Takeaways
Vehicular Network	• A small portion of Arlington's existing streets carry a large portion of existing vehicular traffic. • The majority of Arlington's street network is made up of local streets that limit broader countywide connections. • Traffic congestion is not widespread in Arlington and is concentrated in specific areas at specific times of day. • The street network is in overall good paving condition, which is a key element of a quality transportation network.
Parking and Curbside	• There are many competing and increasing demands for the curb, and needs are different depending on the user, adjacent land use, the type of street, time of day, and how the location relates to the broader street network. • Pricing and information are tools to manage demand and positively impact user experience and behavior. • A key limitation facing Arlington is a lack of available data about permanent parking policies (e.g., on-street parking, bus stop zones) and real-time curb use.
Freight and Goods Movement	• Goods movement in Arlington continues to evolve in response to increased demand and new technologies and capabilities. • The County currently does not have goods movement and freight policies. • Large trucks make up a small percentage of overall traffic, but goods are increasingly being delivered on smaller vehicles, for which data is limited. • Competing demands for the curb impact the safety and efficiency of goods movement and delivery.

Next Steps

This report establishes a snapshot of the County's transportation network, highlights the demographic and planning context, and emphasizes the key themes of sustainability, equity, and safety. The County also is conducting a more intensive transportation equity analysis to help realize Arlington's commitment to equity. The Transportation Snapshot, along with the equity analysis and Phase 1 public engagement findings, will inform future phases of the plan process. These phases include the development of a vision statement and goals to guide policies, strategies, and priorities for future investment.