

**Multimodal Transportation Assessment**

# **Ballston Macy's Redevelopment**

**Arlington, Virginia**

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## Executive Summary

The following report is a Multimodal Transportation Assessment (MMTA) for the Ballston Macy's redevelopment in the Ballston neighborhood of Arlington, Virginia.

### Site Location and Study Area

The proposed development site consists of the existing Macy's department store and adjacent private alley located in Ballston. The site is bounded by Wilson Boulevard to the north, N Glebe Road to the south, Ballston Quarter Shopping Mall to the east, and the Ballston Point office building to the west as shown in Figure 2. The general extents of the study area are Wilson Boulevard to the north, N Glebe Road to the west and south, and N Randolph Street to the east.

The vehicular study area consists of eight (8) intersections along Wilson Boulevard and N Glebe Road, as reviewed with and approved by Arlington County Department of Environmental Services staff.

The existing site is generally comprised of the existing Macy's department store, as well as an approximately 21,445-square foot private drive aisle (the "Private Alley") which runs between the department store/office building and the Ballston Point office building located west of the property. The site is currently zoned as C-O-2.5, Commercial Office Building, Hotel and Apartment District and is shown as a medium office-apartment-hotel land use in the General Land Use Plan (GLUP).

### Proposed Project

The proposed project will redevelop the Macy's department store and vacant office space to include an approximately 44,000 square foot grocery store and approximately 555 residential dwelling units.

As part of the proposed development, existing sidewalk facilities along Wilson Boulevard and N Glebe Road will be upgraded. Additionally, the Applicant will transform the Private Alley from an underutilized, "back of house" alley into a more inviting, safe, curbside shared space for pedestrians, bicyclists, and vehicles. The revitalized Private Alley will help stitch together this area of Ballston and provide greater connectivity between N Glebe Road and Wilson Boulevard.

The Private Alley will provide vehicular access into to the new building as well as the existing Ballston Point office building parking garage and loading dock, and will feature high-quality masonry pavers, landscaping and hardscape treatments,

wayfinding signage, public art, pedestrian-scale lighting, and bollards.

The proposed building will be served by 388 onsite parking spaces, 240 of which will be provided for the residential units in a below-grade garage at a ratio of 0.43 spaces per dwelling unit. Ten of the residential spaces (approximately 4.1 percent) are compact parking spaces, which is within the 15 percent threshold established by § 14.3.3.F of the Zoning Ordinance. The proposed residential parking ratio accords with recent County policies supporting significant parking reductions for residential development in close proximity to transit which would allow a ratio as low as 0.3 spaces per dwelling unit.

The Applicant is also constructing 148 parking spaces on the Property which will be reserved for the proposed grocery store. The grocery store's required parking will be satisfied via these spaces with overflow parking being accommodated within the County-owned Ballston Public Parking Garage, which the project will have access to through an existing private party agreement.

The below-grade portions of the project's new parking garage will be connected to the existing Ballston Point parking garage located west of the Property. In terms of circulation, vehicular access for the grocer will be located in a new garage entry along the east side of the Private Alley; vehicular access for residential units will be located via the Ballston Point garage entrance along the west side of the Private Alley.

Loading facilities for the Phase 1 residential component will be provided via the existing mall loading area, accessible from N Randolph Street. Loading facilities for the proposed grocer and Phase 2 residential component will be located on the southern portion of the site, with access from the Private Alley. Inbound access for WB-67 trucks will be provided via N Glebe Road, accessible during non-peak hours only. The loading area has been designed to allow for head-in access from N Glebe Road and accommodate all backing maneuvers within the site. Loading facilities for the existing Ballston Point office building will continue to be provided off of the western side of the Private Alley.

### Policies and Goals

The Arlington County Master Transportation Plan (MTP), adopted in 2011 and updated in 2019, outlines goals to improve various modes of transportation throughout the County. Similarly, the Ballston Sector Plan, adopted by the County Board in 1980, developed a series of goals and objectives ensuring that

development included a mix of commercial, office and residential uses. The proposed development achieves several of the goals and policies of both the MTP, Sector Plan, and other guiding documents for the County.

## Multi-Modal Overview

### Transit

The subject site is well-served by transit. The site is located 0.1 miles from the Ballston-MU Metro Station which is served by the Silver and Orange lines.

The Ballston-MU Metro Station is served by 21 bus routes provided by WMATA (Metrobus), Metroway, ART, and other regional bus routes. There are 19 bus stops within a quarter-mile of the site. These stops are directly served by WMATA (Metrobus), Metroway, Arlington Transit (ART), OmniRide, Fairfax Connector, and Loudoun County Commuter routes.

Planned multimodal improvements to the Ballston-MU Metro Station aim at improving the Ballston-MU Metrorail Plaza and the operation of the nearby streets with a goal to increase traffic safety by decreasing conflict points between pedestrians and buses, improve curbside operations, enhance bus amenities, and provide sustainable infrastructure. As part of the Metrorail Plaza project, improvements will include additional bus bays, new bus shelters, real-time bus information at bus stops, expanded bus customer seating, dedicated kiss-and-ride curb space, and dedicated shuttle bus curb space and bus shelters. A full new entrance will be constructed at the west end of the Ballston-MU Metrorail station to improve access from Glebe Road. This new entrance will be located at the intersection of North Fairfax Drive and North Vermont Street.

### Pedestrian

The site is surrounded by a well-connected pedestrian network. The pedestrian facilities around the site provide a quality walking environment with minor pinch points on N Wakefield Street. Some barriers exist north of the site due to I-66, but overall there is good connectivity and quality infrastructure.

As a result of the proposed development, pedestrian facilities along the perimeter of the site will be improved by improving sidewalks adjacent to the site so that they meet or exceed Arlington County and ADA standards. In addition, as part of the proposed development, the Private Alley extends from N Glebe Road to Wilson Boulevard S to the north end of the site between N Taylor Street S N Stuart Street. The Private Alley is envisioned

to be an approximately 39-foot wide, urban street that provides a safe pedestrian environment. The Private Alley will provide a curbless environment as a non-traditional traffic calming measure to limit vehicular speed through the use of non-traditional paving and streetscape elements.

### Bicycle

The site has access to several on- and off-street bicycle facilities, including buffered bicycle lanes along N Carlin Springs Rd and Fairfax Drive, and a protected bike lane along N Quincy Street which connects to the Custis Trail northeast of the site. There are also on-street routes along Vermont St, N Stuart Street and N Stafford Street. These, in turn, provide regional access to destinations within Virginia and the District.

Several existing bike facilities have been recommended by the Arlington Master Transportation Plan to be upgraded in the future. This includes bicycle lanes along N Glebe Road and Wilson Boulevard, adding on street bicycle lanes along N Tazewell Street, and improving intersection between N Carlin Springs Road, N. Vermont Street and N Park Drive.

A number of planned or approved projects will improve bicycle infrastructure and connectivity in the vicinity of the proposed development, including the Wilson Boulevard Improvement (west of N Glebe, in which bike lanes will be added on both sides of the street). As part of the Ballston Station Multimodal project, additional bike parking will be constructed near the Metrorail station to enhance the attractiveness of transportation choices. As part of the Ballston-Cherrydale Multimodal Safety Improvements the County is looking at potential restriping options along North Quincy Street between Fairfax Drive and I-66 overpass to improve multimodal safety and connectivity along North Quincy Street. Proposed restriping options will include crosswalk improvements to increase the safety of people walking, improved on-street bike facilities, and consolidated bus stops to improve efficiency of transit service and enhance pedestrian safety.

### Vehicular

The site is well connected via two principal arterials; Wilson Boulevard and N Glebe Road. The arterials create connections to I-395, I-66, VA-50 (Arlington Boulevard) and ultimately the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs as well as regional access to I-95. The proposed development has access points along Wilson Boulevard and N



Glebe Road. There are also other minor arterials, collectors, and local roads which can be used to access the site directly.

Access to the project from N Glebe Road will be reconfigured from what currently exists. The intersection of the Private Alley with N Glebe will be designed to allow left turns and right turns into the Private Alley from Glebe Road. These movements are not possible today. Access from Wilson Boulevard is currently right in and right out from the Private Alley and will remain that way with the redeveloped project.

### Existing Conditions

Intersection capacity analyses were performed for the morning and afternoon peak hours at study area intersections. Synchro version 10 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

The existing conditions analysis shows that many intersections and movements operate at an acceptable level of service during the morning, afternoon, and Saturday peak hours. However, of the eight (8) intersections in the study area, two (2) intersections have one or more movements that operate at levels beyond Level of Service (LOS) E or better in one or more peak hour. LOS E is typically used as the acceptable LOS threshold in the County; although LOS F is generally accepted in urbanized areas if vehicular improvements would be a detriment to safety or to non-auto modes of transportation. The capacity analysis results also show that three (3) intersections have 95<sup>th</sup> percentile queues that exceed the available storage length in one or more peak hour in existing conditions.

### Travel Demand Assumptions

Mode split (also called mode share) is the percentage of travelers using a particular type (or mode) of transportation when traveling. The main source of mode split information for this report was based on Census data using Transportation Analysis Districts (TADs) and data contained in the 2016 State of the Commute, the WMATA Ridership Survey, the Arlington County Mode Share Assumptions for Ballston, and other approved transportation studies in the vicinity of the site. The following mode splits were assumed in the analysis, as vetted and approved by Arlington County:

- Residential
  - Auto – 35%, Transit – 56%, Bike – 3%, Walk – 6%
- Grocer
  - Auto – 50%, Transit – 10%, Bike – 5%, Walk – 35%

- Existing Office
  - Auto – 45%, Transit – 50%, Bike – 2%, Walk – 3%
- Existing Retail
  - Auto – 50%, Transit – 10%, Bike – 6%, Walk – 35%

Weekday and Saturday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 10<sup>th</sup> Edition.

Trip generation for the existing Ballston Point office building (4300 Wilson Boulevard) is based on the development of 240,000 square feet of office and 20,000 square feet of retail. Office trip generation was calculated using Land Use 710 (General Office Building) and retail trip generation was calculated using Land Use 820 (Shopping Center). Trip generation was calculated based on ITE's baseline vehicle trips using the setting/location of General Urban/Suburban for both uses.

The existing Macy's makes up approximately 30% of the total Ballston Quarter (507,745 square feet). As such, 30% of the inbound and outbound trips to the existing site were removed from the network. This approach is preferred to using ITE rates, as the number of vehicular trips calculated for the existing Macy's based on ITE rates removes a significant number of vehicular trips from the network than expected, and this approach results in a more conservative analysis.

The new residential trip generation is based on the development program of 555 residential dwelling units. Residential trip generation was calculated based on ITE Land Use 222 (Multifamily Housing – High-Rise), using the setting/location of General Urban/Suburban, splitting trips into different modes using assumptions outlined in the mode split section of this report.

The new grocer trip generation is based on the development program of 44,000 square feet of grocery space. Grocer trip generation was calculated based on ITE's baseline vehicular trips for Land Use 850 (Supermarket), using the setting/location of General Urban/Suburban, splitting trips into different modes using assumptions outlined in the mode split section of this report.

### Future Improvements

A number of planned transportation improvements in the vicinity of the proposed Ballston Macy's redevelopment are expected to

be complete by 2026. The full list of improvements is detailed in the report, but projects include:

- Ballston-MU Metrorail Station Multimodal Improvements
- Quincy Street Repaving and Multimodal Improvements
- Ballston-MU Metro Station West Entrance

### Future Traffic Operations

A capacity analysis was developed to compare the future roadway network without the proposed development to the future roadway network with the proposed development. Intersection capacity analyses were performed for the morning, afternoon, and Saturday peak hours at study area intersections. Synchro version 10 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

Traffic projections for 2026 are based on existing volumes, plus traffic generated by approved nearby background developments to account for local growth, regional growth, and traffic generated by the proposed development. The methodology of using background development trips to account for local growth is consistent with other MMTAs in Arlington County and has been vetted and approved by the County.

### Mitigations

Mitigation measures were identified based on Arlington County standards and as outlined in the approved scoping document (contained in the Technical Appendix). The proposed development is considered to have an impact at an intersection if any of the following conditions are met:

- The overall intersection or any movement operates at LOS F in the future conditions with the proposed development where it operates at LOS E or better in the background conditions without the proposed development;
- The overall intersection or any movement operates at LOS F during the background condition and the delay increases by more than 10% in the future conditions with the proposed development; or
- If any 95<sup>th</sup> percentile queue length (or maximum queue length, where applicable) in the future condition exceeds the available capacity and increases by more than 150 feet compared to background conditions.

Following these guidelines, mitigation measures were explored and included the following recommendation(s):

- Adjustments to signal timings at three (3) intersections: Wilson Boulevard & N Glebe Road (Int. 1), N Glebe Road & N Carlin Springs Road (Int. 7), and N Glebe Road & N Randolph Street (Int. 8).

With these mitigations in place, the analysis shows that traffic operations with the proposed development will improve or are consistent with the Background scenario at many intersections.

### Transportation Management Plan

A Transportation Management Plan (TMP) will be provided for the project based on the County's requirements, and a framework for a TMP is included in this report. This TMP will include typical components such as the establishment of a TMP coordinator, the distribution of transit literature, the establishment of ride-sharing programs, and the on-site sale of discounted fare media. Management measures taken by the Ballston Macy's redevelopment project will be monitored and adjusted as needed to continually create opportunities to reduce the amount of vehicular traffic generated by the site.

### Summary and Recommendations

This report concludes that the proposed development will not have a detrimental impact to the surrounding transportation and roadway network, assuming that all planned site design elements and recommended mitigation measures are implemented.

- The development has many positive elements contained within its design that minimize potential transportation impacts, including:
- The proposed development's close proximity to the Ballston-MU Metro Station and multiple bus lines.
- Improvements to the pedestrian facilities adjacent to the site that meet or exceed Arlington County and ADA requirements.
- The inclusion of secure-long-term bicycle parking exceeding zoning requirements.
- The installation of short-term bicycle parking spaces around the perimeter of the site that meet zoning requirements.
- The inclusion of shower and locker facilities within the building that meet zoning requirements.
- A Transportation Management Plan (TMP) that aims to reduce the demand of single-occupancy, private vehicles to/from the proposed development during peak

period travel times or shifts single-occupancy vehicular demand to off-peak periods.

## Introduction

This report presents the findings of a Multimodal Transportation Assessment (MMTA) conducted for the proposed redevelopment of the Macy's store along N Glebe Road and Wilson Boulevard in the Ballston area of Arlington, VA.

The development site currently consists of a Macy's department store and an office building above the store. The proposed mixed-use development will replace the existing 148,353 sf department store with a 44,000 sf grocery store anchored high-rise 555 du residential building. The proposed project build-out year is 2026.

The site is currently zoned C-O-2.5 and is shown as a medium office-apartment-hotel land use in the General Land Use Plan (GLUP). The site is also subject to the Ballston Sector Plan, which recommends general commercial uses and revitalization of the former Parkington Shopping Center (which includes the project is a part of.)

### **Purpose of Study**

The purpose of this study is to evaluate the transportation network in the vicinity of the site and identify any potential transportation impacts that may result from the proposed redevelopment. Elements of this report include a description of the proposed development, an evaluation of the existing multimodal transportation network, and evaluations of the future transportation network with and without the proposed development.

### **Study Tasks**

The following tasks were completed as part of this study:

- A scoping form dated September 9, 2021, was submitted by Gorove Slade to Arlington County and accepted on September 16, 2021. This scope includes discussions about the parameters of the study and relevant background information. A copy of the signed scoping document is included in the Technical Appendix.
- Field reconnaissance in the vicinity of the site was performed to collect information related to the existing traffic controls, signal timings, roadway geometry, traffic flow characteristics, sidewalk conditions, bicycle facilities, and transit stop amenities. Notes related to the site visit are included in the Technical Appendix.
- Traffic volume and turning movement data collection was not possible under existing condition as traffic

volumes were not representative of typical traffic conditions due to the COVID-19 pandemic. Available traffic counts/volumes from different resources were used to establish baseline conditions, including historical TMCs and StreetLight data as described in following sections.

- As outlined in the scoping document, a number of proposed developments in the vicinity of the site were assumed to be in place for the Background (2026) and Future (2026) Conditions.
- Proposed site traffic volumes were generated based on the methodology outlined in Trip Generation, 10<sup>th</sup> Edition published by the Institute of Transportation Engineers (ITE).
- Intersection capacity analyses were performed using the software package Synchro, Version 10 based on the Highway Capacity Manual (HCM) methodology. Traffic analyses were performed for existing conditions (2021) and future conditions (2026) with and without development. At the request of the County, SimTraffic maximum queue length results are reported for Background (2026) and Future (2026) scenarios at movements where Synchro HCM 2000 results indicate that queues are metered by an upstream signal (denoted with an "m").
- A Transportation Management Plan framework was developed as a TMP will be necessary to meet County requirements.

## **Project Summary**

### **Site Location**

The project site is located in the Ballston area of Arlington, Virginia. Figure 1 shows the regional location of the project. The project site is bounded by Wilson Boulevard to the north, N Glebe Road to the west and south, and Ballston Quarter Shopping Mall to the east. The site location is shown in Figure 2.

### **Parcel Information**

The existing site is currently occupied by a 148,353 square-foot Macy's department store. A parcel map showing the location of the property is presented in Figure 3.

### **General Land Use Plan Recommendations**

According to Arlington County's General Land Use Plan (GLUP), this site is listed as a medium office-apartment-hotel land use. The GLUP map for the site is shown in Figure 4. The site is

currently zoned C-O-2.5, Commercial Office Building, Hotel and Apartment District. The zoning map is shown in Figure 5.

### Proposed Site Plan

The existing site is generally comprised of the existing Macy's department store with a vacant office building above the store, as well as an approximately 21,445-square foot private drive aisle (the "Private Alley") which runs between the department store/office building and the Ballston Point office building located west of the property.

The proposed project will redevelop the Macy's department store and vacant office space to include an approximately 44,000 sf grocery store and approximately 555 residential dwelling units.

As part of the proposed development, existing sidewalk facilities along Wilson Boulevard and N Glebe Road will be upgraded. Additionally, the Applicant proposed to transform the Private Alley from an underutilized, "back of house" alley into a more inviting, safe, curbless shared space for pedestrians, bicyclists, and vehicles. The revitalized Private Alley will help stitch together this area of Ballston and provide greater connectivity between N. Glebe Road and Wilson Boulevard.

The Private Alley will provide vehicular access into to the new building as well as the existing Ballston Point office building, and will feature high-quality masonry pavers, landscaping and hardscape treatments, wayfinding signage, public art, pedestrian-scale lighting, and bollards.

The proposed building will be served by 388 onsite parking spaces, 240 of which will be provided for the residential units in a below-grade garage at a ratio of 0.43 spaces per dwelling unit. Ten of the residential spaces (approximately 4.1 percent) are compact parking spaces, which is within the 15 percent threshold established by § 14.3.3.F of the Zoning Ordinance. The proposed residential parking ratio accords with recent County policies supporting significant parking reductions for residential development in close proximity to transit.

The Applicant is also constructing 148 parking spaces on the Property which will be reserved for the proposed grocery store. The grocery store's required parking will be satisfied via these spaces with overflow parking being accommodated within the County-owned Ballston Public Parking Garage, which the Applicant enjoys access to through an existing private party agreement.

The below-grade portions of the Applicant's new parking garage will be connected to the existing Ballston Point parking garage located west of the Property. In terms of circulation, vehicular access for the grocer will be located in a new garage entry along the east side of the Private Alley; vehicular access for residential units will be located via the Ballston Point garage entrance along the west side of the Private Alley.

Loading facilities for the Phase 1 residential component will be provided via the existing mall loading area for the Macy's store, accessible from N Randolph Street. Loading facilities for the proposed grocer and Phase 2 residential component will be located on the southern portion of the site, with access from the Private Alley. Inbound access for grocery trucks will be provided via N Glebe Road. Loading facilities for the existing Ballston Point office building will continue to be provided off of the western side of the Private Alley.

The proposed site plan is shown in Figure 6.

### Scope and Limits of the Study Area

The study area is generally bounded by Wilson Boulevard to the north, N Glebe Street to the west and south, and N Randolph Street to the east. The following intersections were identified for inclusion in the vehicular study area, as shown in Figure 7.

1. Wilson Boulevard & N Glebe Road
2. Wilson Boulevard & N Taylor Street
3. Wilson Boulevard & 7<sup>th</sup> Street N/Private Alley
4. Wilson Boulevard & N Stuart Street
5. Wilson Boulevard & N Randolph Street
6. N Glebe Road & 7<sup>th</sup> Street N/Private Alley
7. N Glebe Road & N Carlin Springs Road/Ballston Parking
8. N Glebe Road & N Randolph Street

### Data Sources

Sources of data for this study include Arlington County, the Virginia Department of Transportation (VDOT), the Institute of Transportation Engineers (ITE) Trip Generation, 10<sup>th</sup> Edition, Census Transportation Planning Products (CTPP), StreetLight Data, Insight Property Group, VIKA, MV+A Architects, SK+I Architecture, and the office files and field reconnaissance efforts of Gorove Slade.

### Contents of Study

This report contains ten (10) chapters as follows:

- Study Area Overview

This chapter reviews the area near and adjacent to the project and includes an overview of the site location.

- Transit

This chapter summarizes the existing and future transit service adjacent to the site, reviews how the project's transit demand will be accommodated, outlines impacts, and presents recommendations as needed.

- Pedestrian Facilities

This chapter summarizes existing and future pedestrian access to the site, reviews walking routes to and from the project site, outlines impacts, and presents recommendations as needed.

- Bicycle Facilities

This chapter summarizes existing and future bicycle access to the site, reviews the quality of cycling routes to and from the project site, outlines impacts, and presents recommendations as needed.

- Project Design

This chapter reviews the transportation components of the project, including the site plan and access.

- Travel Demand Assumptions

This chapter outlines the travel demand of the proposed project. It summarizes the expected mode splits and multimodal trip generation of the project.

- Traffic Operations

This chapter provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. It summarizes the routing assumptions used in the analysis. This chapter highlights the vehicular impacts of the project, including presenting mitigation measures for minimizing impacts as needed.

- Transportation Management Plan

This chapter outlines the components of the proposed development's Transportation Management Plan (TMP).

- Safety Analysis

This chapter reviews the findings of a safety analysis of adjacent intersections and frontage of the proposed project.

- Summary and Conclusions

This chapter presents a summary of the recommended mitigation measures by mode and presents overall findings and conclusions.

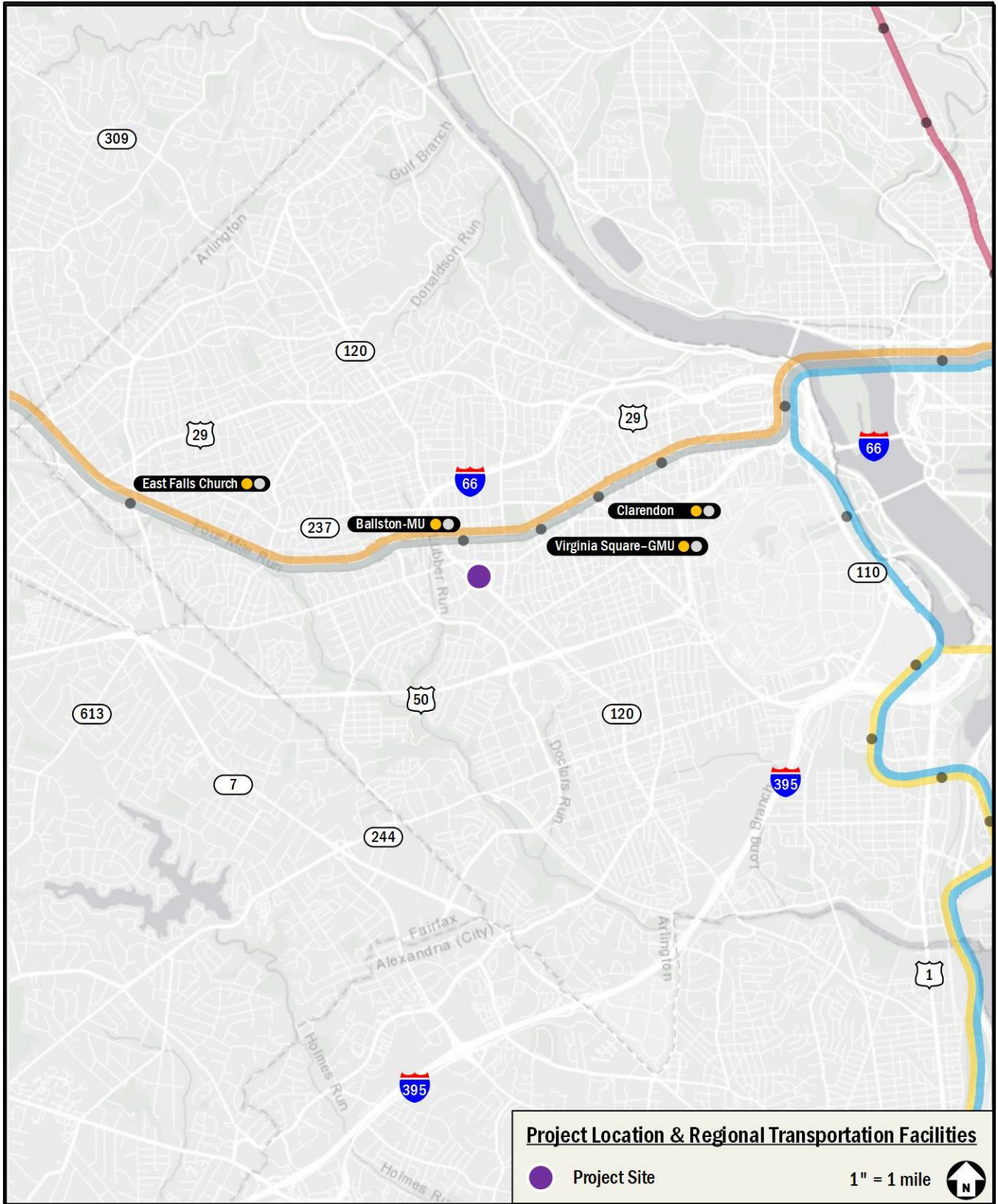


Figure 1: Major Regional Transportation Facilities

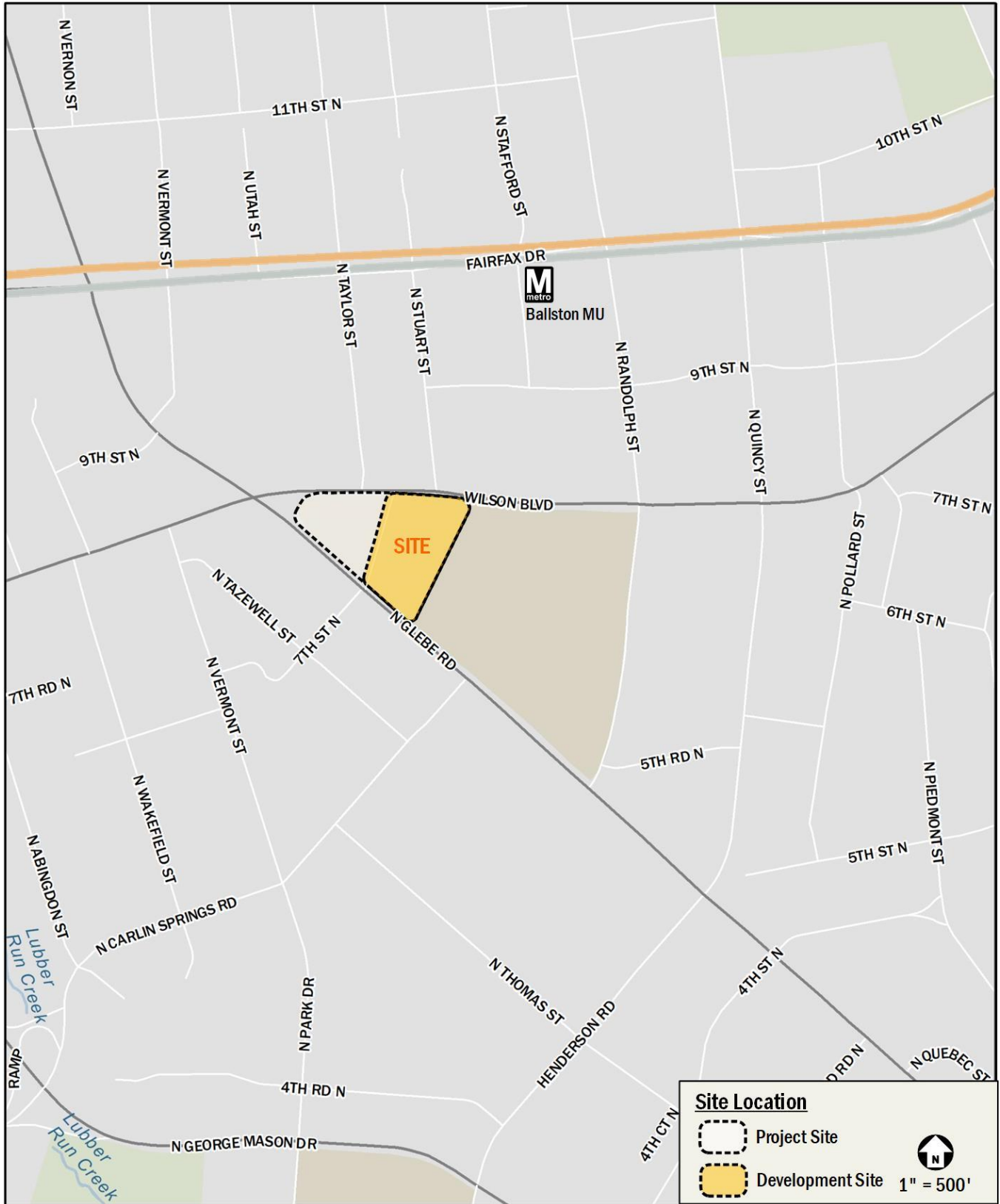


Figure 2: Site Location



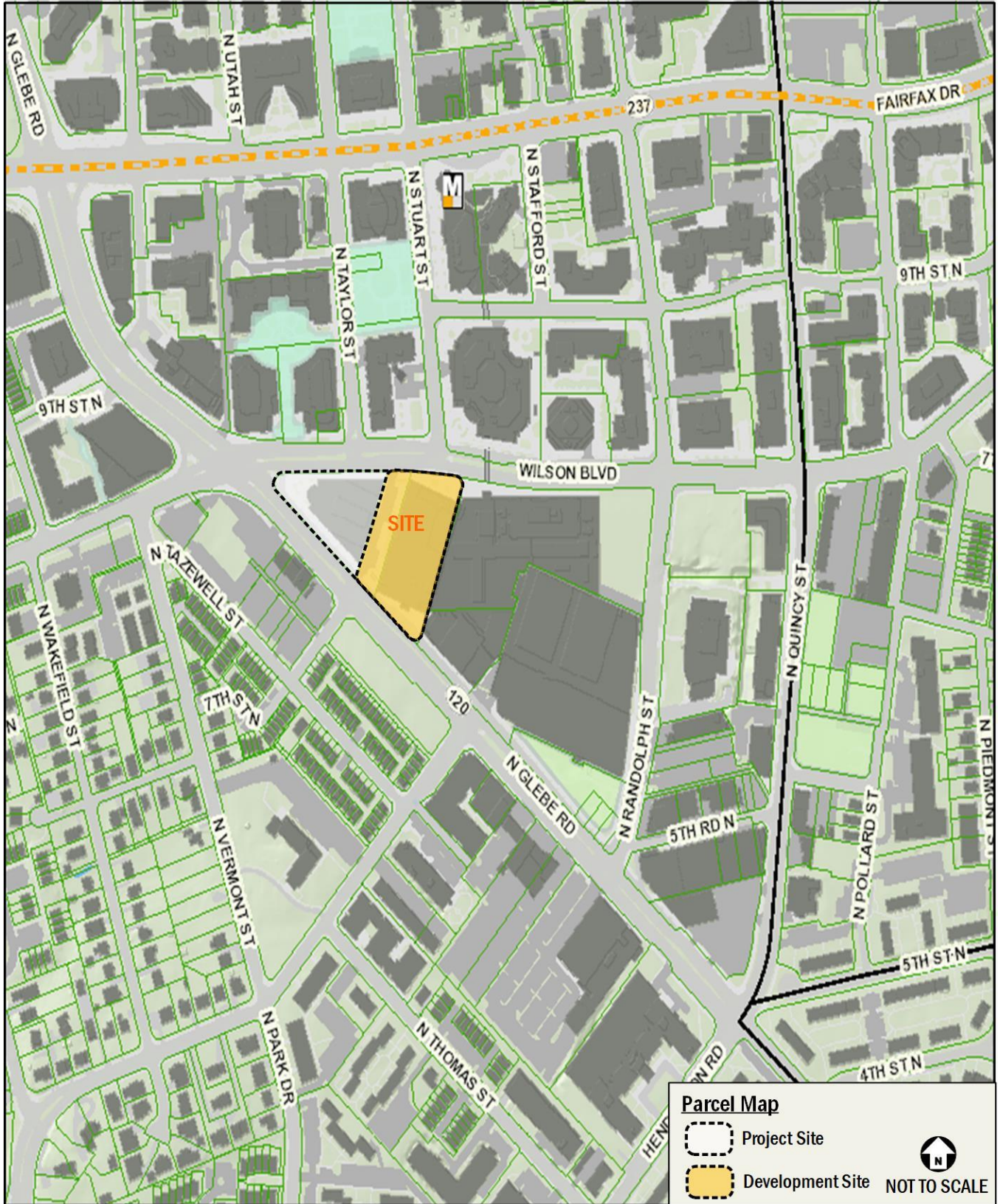


Figure 3: Parcel Map (Source: Arlington County Real Estate Map, September 2016)

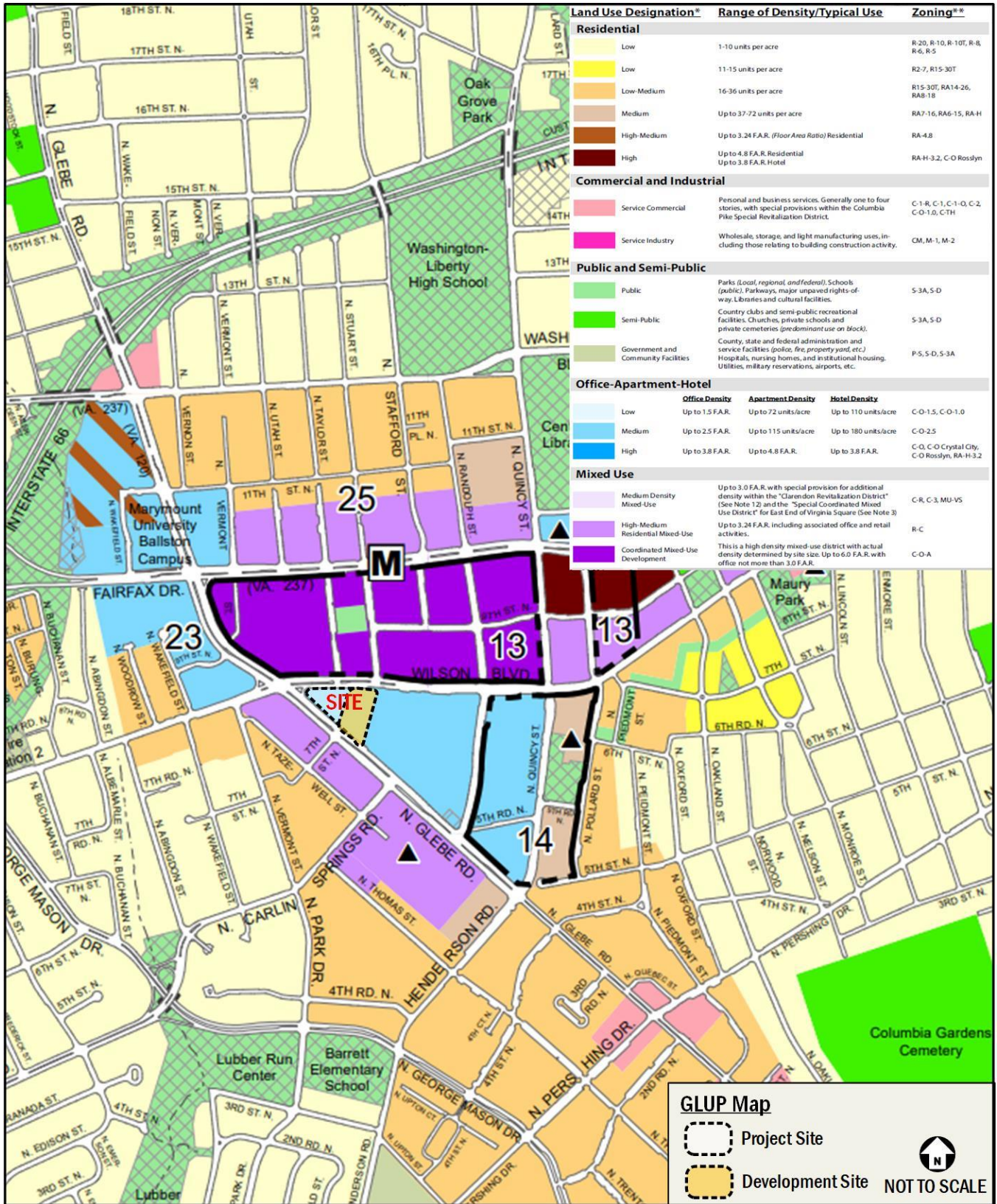


Figure 4: Planned Land Uses (Source: Arlington General Land Use Plan (GLUP), June 2017)

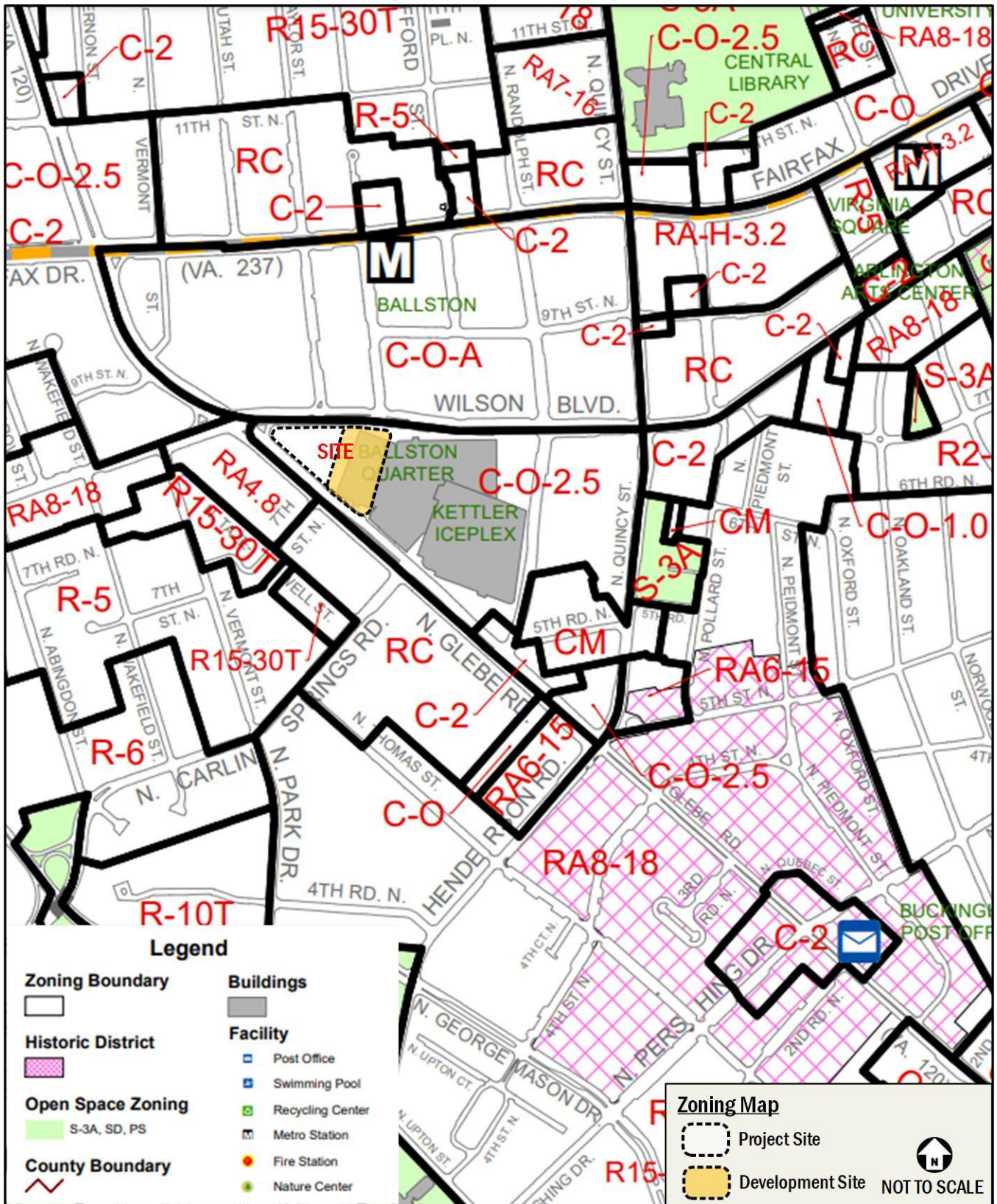


Figure 5: Zoning Map (Source: Arlington County)

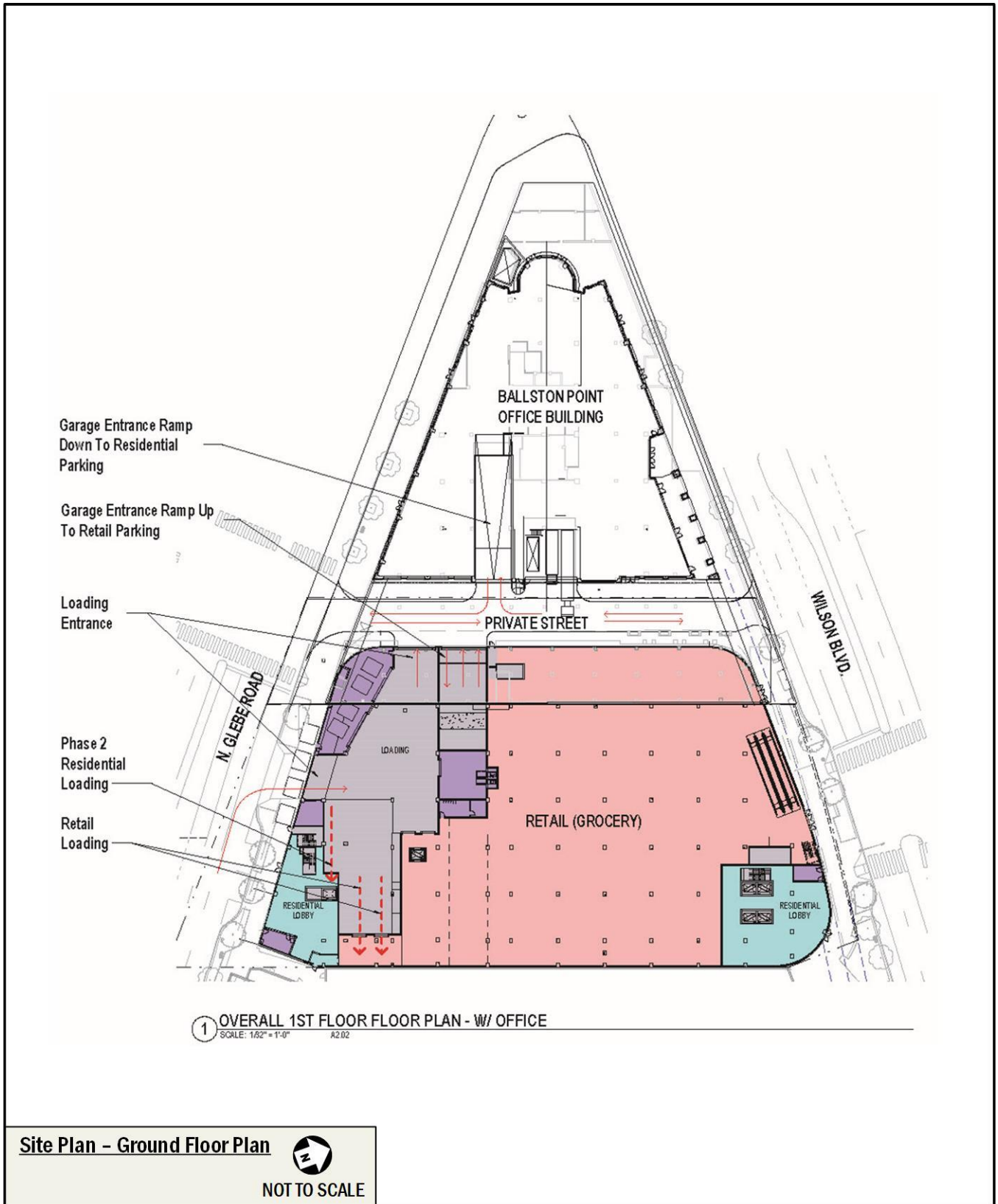


Figure 6: Site Plan



Figure 7: Study Intersections

## Study Area Overview

This chapter reviews the existing conditions of the surrounding transportation network and includes an overview of the site location, including a summary of the major transportation characteristics of the area and of future regional projects. Detailed characteristics of each mode and their subsequent study areas will be defined in the following chapters.

The following conclusions are reached within this chapter:

- The site is surrounded by an extensive regional and local transportation system that will accommodate the residents, employees, and patrons of the proposed development.
- The site is well-served by public transportation with access to the Metrorail's Orange and Silver Lines and several local and regional bus lines.
- The site is surrounded by a well-connected pedestrian environment. In the vicinity of the site, sidewalks generally meet standards recommended by the Arlington County Master Transportation Plan with some gaps in the system.
- The site has access to several on- and off-street bicycle facilities, including protected bike lane on N Quincy Street and bicycle lanes along N Carlin Springs Road and Fairfax Drive which connect to the Custis Trail and Bluemont Junction Trail.

### **Major Transportation Features**

#### **Overview of Regional Access**

Under existing conditions, the proposed development site has ample access to regional vehicular and transit-based transportation options, as shown in Figure 1, that connect the site to destinations within Virginia, the District, and Maryland.

The site is primarily accessible from two principal arterials; Wilson Boulevard and N Glebe Road. The arterials create connections to I-395, I-66, VA-50 (Arlington Boulevard) and ultimately the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs as well as regional access to I-95. The proposed development has access points along Wilson Boulevard and N Glebe Road. There are also other minor arterials, collectors, and local roads which can be used to access the site directly.

The site has access to the Orange and Silver Lines via the Ballston-MU Metro station, which provide connections to areas in Virginia, the District, and Maryland. The Orange Line connects

Fairfax, VA with New Carrollton, MD and the Silver Line connects Reston, VA with Largo. Both lines provide connections to the Red Line, which provides a direct connection to Union Station, a hub for commuter rail – such as Amtrak, MARC, and VRE – in addition to all additional Metrorail lines, allowing for access to much of the DC Metropolitan area. Overall, the site has access to several regional roadways and transit options, making it convenient to travel between the site and destinations in the District, Virginia, and Maryland.

The proposed development is located approximately 0.6 miles from the Custis Trail, a hilly 4.5 miles-long shared use path which travels along Custis Memorial Parkway and provides connections to the District to the east and to the W&OD Trail and City of Falls Church to the west. The site is also located approximately 0.2 miles from Bluemont Junction Trail, a 1.2-mile paved shared-use trail running along the Bluemont Drive and connects the Ballston area to the W&OD Trail. A detailed review of existing bicycle infrastructure is provided in a later chapter of this report.

Overall, the site has access to several regional roadways, transit, and bicycle options, making it convenient to travel between the site and destinations in the Virginia, the District, and Maryland.

#### **Overview of Local Access**

There are several local transportation options near the site that serve vehicular, transit, walking, and cycling trips under existing conditions, as shown on Figure 8.

In addition to two principal arterials; N Glebe Road and Wilson Boulevard, the site is served by a local vehicular network that includes several minor arterials and collectors such as N Carlin Springs Road, N Quincy Street, N George Mason Drive, Fairfax Drive, N Randolph Street and N Henderson Road. In addition, there is an existing network of local roadways that provide access to the site.

Several bus routes provide local transit service in the vicinity of the site, including connections to several neighborhoods within Virginia, the District, and additional Metrorail stations. In the vicinity of the site the majority of routes travel along N Glebe Road and Wilson Boulevard. A detailed review of existing proposed transit facilities is provided in a later section of this report.

There are existing bicycle facilities that connect the site to areas within Arlington, Virginia, and the District, most notably the

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Custis Trail which travels along Custis Memorial Parkway and provides connections to the District to the east and to the W&OD Trail and City of Falls Church to the west. There is a protected bicycle lane on N Quincy Street and bicycle lanes along N Carlin Springs Road and Fairfax Drive. A detailed review of existing and proposed bicycle facilities and connectivity is provided in a later section of this report.

In the vicinity of the site, most sidewalks meet Americans with Disabilities Act (ADA) standards and standards recommended by the Arlington Master Transportation Plan. Anticipated pedestrian

routes, such as those to public transportation stops, retail zones, nearby residential areas, and community amenities, provide well-connected pedestrian facilities. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later chapter of this report.

Overall, the site is surrounded by an extensive local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

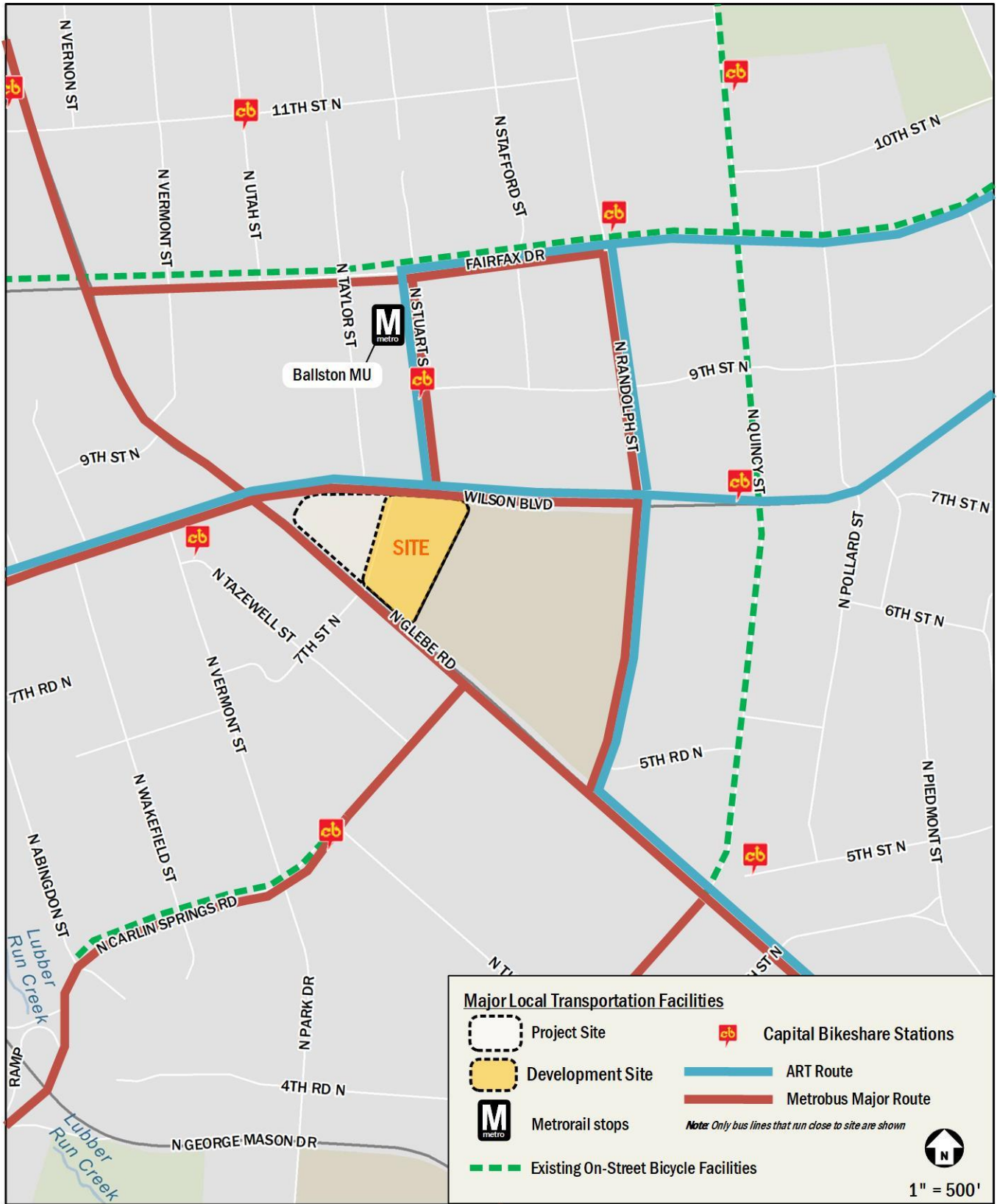


Figure 8: Major Local Transportation Facilities



## Car-sharing

Two car-sharing companies provide service in Arlington: Zipcar and Free2Move. These services are private companies that provide registered users access to a variety of automobiles. Zipcar has designated spaces for their vehicles, and three Zipcar locations are located within a quarter-mile of the site. These locations and the number of available vehicles are listed in Table 1.

**Table 1: Carshare Locations**

Zipcar Carshare Location	Number of Vehicles
Vermont & Fairfax Drive	2 vehicles
Stafford Street & 9th Street	3 vehicles
N Pollard & 9th Street	2 vehicles

Car-sharing is also provided by Free2Move, which provides point-to-point car sharing. Unlike Zipcar, which requires two-way trips, Free2Move can be used for one-way rentals. Free2Move currently has a fleet of vehicles located throughout Arlington County and the District. Free2Move vehicles may park in any non-restricted metered curbside parking space or Residential Permit Parking (RPP) location in any zone throughout the defined "Home Area". Members do not have to pay meters or pay stations. Free2Move does not have permanent designated spaces for their vehicles; however, availability is tracked through their website and mobile phone application, which provides an additional option for car-sharing patrons.

## E-Scooters and Dockless E-Bicycles

Four (4) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in Arlington County: Bird, Helbiz, Lime, and Spin. These SMDs are provided by private companies that give registered users access to a variety of e-scooter and e-bike options. These devices are used through each company-specific mobile phone application. Many SMDs do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; instead, many SMDs are parked in public space, most commonly in the "furniture zone" (the portion of sidewalk between where people walk and the curb, often where you'll find other street signs, street furniture, trees, parking meters, etc.). At this time, SMD pilot/demonstration programs are underway in Arlington County, the District, Fairfax County, the City of Alexandria, and Montgomery County.

## Walk Score and Bike Score

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions for an area. This project location has a walk score of 84 (or "Very Walkable"), transit score of 73 (or "Excellent Transit"), and a bike score of 90 (or "Biker's Paradise"). Figure 19 shows how the Ballston neighborhood borders in relation to the site location and displays a heat map for walkability and bikeability.

The site is situated in an area with a "Very Walkable" walk score because of the abundance of neighborhood serving retail locations, where daily errands can be completed by walking.

The proposed development is located in an area with an "Excellent Transit" transit score because of its proximity to the Ballston-Mu, Virginia Square-GMU and the Clarendon Metro Stations as well as its proximity to other bus lines.

The site is situated in an area with a "Biker's Paradise" bike score due to its proximity to low volume roadways, a number of bike lanes, and the Custis Trail, and flat topography.

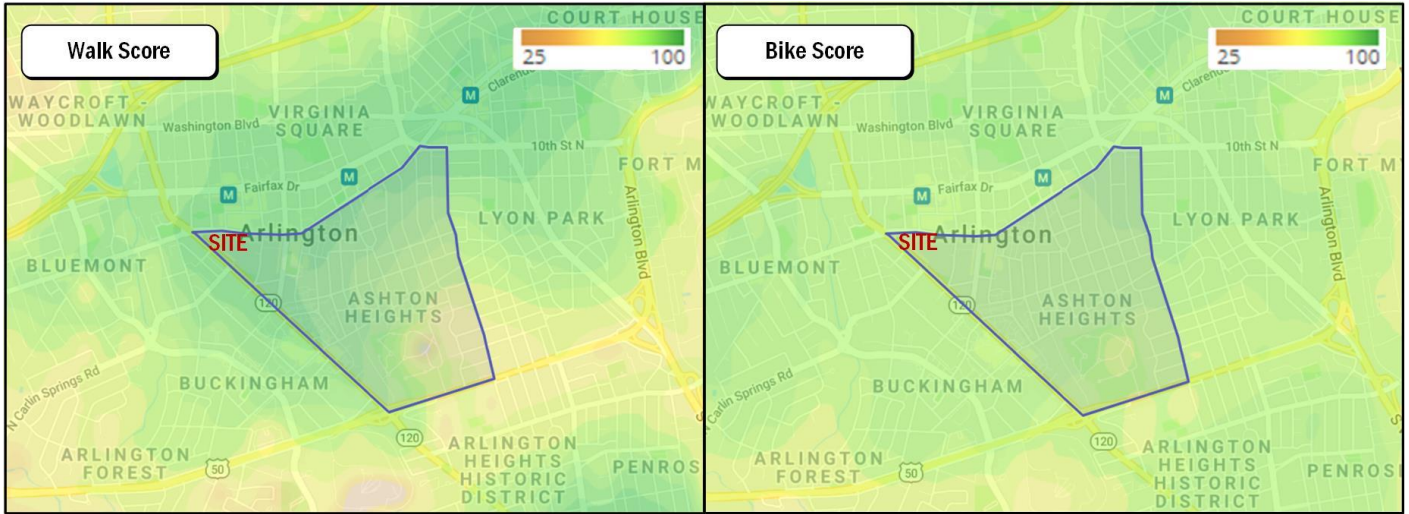


Figure 9: Summary of Walkscore and Bikescore

## Future Projects

There are several County-wide initiatives, local initiatives, and planned improvements located in the vicinity of the site. These planned projects are summarized below.

### County-wide Initiatives

#### Arlington Master Transportation Plan (2019)

The Arlington County Master Transportation Plan (MTP), adopted in 2011 and updated in 2019, outlines goals to improve various modes of transportation throughout the County. The MTP identifies goals and objectives for each mode to improve safety and access for all users, particularly for pedestrians, bicyclists, and transit users. The Arlington Master Transportation Plan's recommended policies for transportation in the County that apply to the Macy's Ballston development are outlined as follows:

**Streets (2016)** – The County will address the street system and enhance the transportation network by: (1) Utilizing the plan's street typology to guide street planning and ensure each street type supports the general policies of complete streets and adjacent land uses; (2) Including appropriate facilities to meet and balance the needs of all modes; (3) Constructing/converting some local streets to a pedestrian priority or a shared street; (4) Accommodating travel growth through shifts to non-auto modes; (5) Designing streets to favor lower vehicular speeds; and (6) Maintaining a grid-style network to enhance connectivity. The planned improvements included in the MTP in the vicinity of the site are shown in Figure 10.

**Transit (2016)** – The County will address the transit system by: (1) Developing a Premium Transit Network of high-frequency service connecting major destinations; (2) Operating a Secondary Transit Network of fixed route services that improves access to destinations across Arlington; (3) Making transit more accessible and convenient to all through enhanced facilities and transit-oriented land use policies; (4) Improving Metrorail services and stations; and (5) Expanding pedestrian access to transit facilities.

**Pedestrian (2011)** – The County will address the pedestrian system by: (1) Completing the walkway network with appropriate facilities on both sides of arterial streets and at least one side of neighborhood streets; (2) Upgrading existing pedestrian facilities to comply with current standards; (3) Implementing measures aimed at changing motorist behavior to manage vehicular speed

and minimize vehicle/pedestrian conflicts; and (4) Developing strategies to encourage more people to walk.

**Bicycle (2019)** – The County will address the bicycle system by: (1) Making existing streets safer and more comfortable for bicycling by all users; (2) Expanding travel safety education programs; (3) Providing a network of low-traffic-stress bicycle routes that connect all land uses; (4) Accommodating bicycle infrastructure as part of all street improvement projects; (5) Establishing bicycles as a mainstream travel mode; and (6) Encouraging bicycle facilities, including parking, showers, and lockers. The improvements planned for the bicycle facilities surrounding the site as part of the Plan are shown in Figure 11.

**Parking and Curb Space (2009)** – The County will address the parking system by: (1) Prioritizing the use of curb space, matching the various types of uses to the most appropriate locations; (2) Promoting on-street parking within residential neighborhoods and on commercial streets to calm traffic; (3) Ensuring the minimum parking needs are met and limit excessive parking; (4) Discouraging off-street surface parking; and (5) Allowing reduced parking space requirements for new developments in close proximity to frequent transit service and requiring enhanced TDM measures.

**Transportation Demand Management (2008)** – The County will address transportation demand management by: (1) Incorporating comprehensive TDM plans for all site plans to minimize vehicular trips and maximize the use of other modes; (2) Exploring strategies and incentives to achieve TDM measures in existing private buildings; and (3) Applying TDM programs to non-work travel, as well as commuting, through marketing strategies.

A number of elements in the proposed development are consistent with these policies:

- **Streets:**
  - The Private Alley is envisioned to be an urban street that provides a safe pedestrian environment, accommodates multiple modes, and is raised in certain sections to provide a curbless environment.
- **Pedestrian:**
  - Improvements to the adjacent sidewalks.
- **Bicycle:**

- Short-term bicycle parking will be provided along the perimeter of the site.
- Bike rooms and bike parking will be provided in the below-grade parking garage on-site, to include secure, long-term parking, showers, and lockers.
- Parking and Curb Space:
  - On-site parking will be located off-street, on the first floor and below-grade parking garage.
- Transportation Demand Management:
  - A TMP will be implemented for the development to discourage auto travel and encourage the travel by other modes.

The MTP also identifies the following recommendations in the vicinity of the Macy's Ballston redevelopment:

- Transit:
  - Ballston -MU Metro Rail Station West Entrance & Multimodal Improvement
- Bicycle:
  - Developing an enhanced bicycle facility between N. Quincy Street/Henderson Road and N. Woodstock Street.
  - Providing a connection to the Custis Trail and Waycroft-Woodlawn neighborhood via an enhanced bicycle facility on Washington Boulevard between N. Glebe Road and N. Aberdeen and N. Abingdon Streets.
  - Implement an enhanced bicycle facility on N. Glebe Road between Old Glebe Road and Arlington Boulevard to provide better north-south bicycle connectivity within Arlington. The N. Glebe Road bikeway would link existing or planned bikeways on Lee Highway, Wilson Boulevard, the Custis and Arlington Boulevard trails and South Glebe Road, as well as provide direct bicycle access to commercial centers including Ballston and Buckingham
  - Develop a north-south bicycle boulevard to parallel N. Glebe Road using N. Tazewell and Thomas streets between Wilson Boulevard and Cathedral Lane. Link Tazewell and Thomas street either via an on-street facility on N. Carlin Springs Road or with a trail linkage and planned extensions of Tazewell and Randolph streets

In direct relation to the Macy's Ballston redevelopment, these recommendations would create additional multi-modal capacity and connectivity to/from the site.

### Local Initiatives

#### ***Ballston Station Multimodal Study (2013)***

The study began in mid-2010 with the need to improve the public space around the Ballston Station entrance and to support the future demand for transit and pedestrian activities. Arlington County requested WMATA's assistance to develop concept level alternatives that would help address these needs, while maintaining the focus on the transportation relevant issues.

The study area focuses on the curbside space of four streets in the vicinity of the Ballston Station entrance, where the different transportation modes interact, and passenger transfer activities occur. The study area includes the following edges of the roadway:

- Both sides of North Stafford Street (N. Stafford Street) from Fairfax Drive to 9th Street North (9th Street N)
- North side of 9th Street N from N. Stafford Street to North Stuart Street (N. Stuart Street)
- Both sides of N. Stuart Street from 9th Street N to Fairfax Drive
- South side of Fairfax Drive from N. Stuart Street to N. Stafford Street
- North side of Fairfax Drive from N. Stafford Street to North Taylor Street (N. Taylor Street)

#### ***Ballston-Virginia Square Neighborhood Conservation Program (1984)***

The Neighborhood Conservation Program, established in 1964, was created to improve and enhance Arlington neighborhoods. The goal of the program is to encourage residents to discuss and share ideas for improving the neighborhoods in which they reside. The program also provides funding for a variety of improvements, such as the installation of sidewalks, curbs and gutters, streetlights, and signs. Each neighborhood decides to develop a plan and when it is ready to initiate the update process; each plan typically serves a community for 10 years. The Ballston-Virginia Square Neighborhood Conversion Plan was developed in 1984 and covers the area to the north Macy's Ballston development site.

## Planned Improvements

### Wilson Boulevard Improvements - West of N Glebe Road (2015)

Arlington County began reconfiguration of Wilson Boulevard (west of N Glebe Road) in 2015 based on the recommendations made in the County's 2004 Arterial Transportation Management Study. By 2017, several short-term improvements were implemented along Wilson Boulevard (west of N Glebe Road), including re-stripping, sign installation, concrete work for curb ramps, bollards installation, etc. As a separate project, a transportation study to create a long-term vision for the physical configuration of Wilson Boulevard between North Glebe Road and the County line is partially funded through the Capital Improvement Plan.

In direct relation to the Macy's Ballston development, improvements along Wilson Boulevard will create a more comfortable multimodal environment and will improve the multimodal connectivity to the site.

### Ballston-MU Metro Station West Entrance (2023)

This project will design and construct a full entrance at the west end of the Ballston-MU Metrorail Station. A second station entrance will improve access from the Glebe Road area and growing development in the western part of Ballston. The project will also improve egress in the event of an emergency incident requiring evacuation from the station and train platforms. The new entrance will be located at the intersection of North Fairfax Drive and North Vermont Street and will include two street-level elevators and either escalators or stairs connecting to an underground passageway and new mezzanine with stairs and elevators to the train platform. The new entrance will have fare gates, fare vending machines, and a station manager kiosk. Additionally, street-level improvements will provide transit connections, allowing for greater accessibility for all of Arlington's residents.

### Ballston Metro Station Multimodal Improvements (2019)

Arlington and Metro initiated a conceptual study in 2010 to improve the Ballston-MU Metrorail plaza and the operation of

nearby streets. Although the Metro station area is active and provides many transportation options, these very conditions – in their current configuration – diminish safety and circulation. Based on the recommendations provided in the Ballston Station Multimodal Study, this project will result in safer and smoother pedestrian and transit circulation as well as improvement in the design of the plaza for all users. Work began in June 2020 and is expected to be complete in summer 2022. Planned improvements include additional bus bays, new and modern furniture and bus shelters, real-time bus information at bus stops, expanded bus customer seating, additional bike parking, expanded public space on Fairfax Drive, dedicated Kiss-and-Ride curbspace, dedicated shuttle bus curbspace and bus shelter, improved aesthetics, and improved wayfinding signage.

### Ballston-Cherrydale Multimodal Safety Improvements (2019)

As part of routine repaving work within the County, staff are looking at potential restriping options along North Quincy Street between Fairfax Drive and I-66 overpass to improve multimodal safety and connectivity along North Quincy Street. Proposed restriping options will include crosswalk improvements to increase the safety of people walking, improved on-street bike facilities, and consolidated bus stops to improve efficiency of transit service and enhance pedestrian safety. This project complements previously completed work to create a safer corridor along N Quincy Street. Improvements to this section are expected to occur in conjunction with Ballston-area redevelopment efforts in the next few years.



Figure 10: Street Typology (Source: Arlington Master Transportation Plan, 2011)



Figure 11: Existing and Planned Bike Facilities (Source: Arlington Master Transportation Plan, 2019)

## Project Design

This chapter reviews the transportation components of the Macy's Ballston development, including the proposed site plan and access points. It includes descriptions of the site's vehicular access, loading, parking, bicycle, and pedestrian facilities.

The proposed development site is located in the Ballston area of Arlington, Virginia and is bounded by Wilson Boulevard to the north and west, N Randolph Street to the east, and N Glebe Road to the south. The site location is shown in Figure 2. The proposed site plan for the redevelopment is shown in Figure 6.

The proposed development will include redeveloping an existing department store into a mixed-use development with a total of approximately 555 residential units and an approximately 44,000 -square foot grocer.

Phase I of the proposed development will include a total of approximately 345 residential units and an approximately 44,000 -square foot grocer, two (2) 67-foot loading berths, two (2) 40-foot loading berths located in the existing Ballston Quarter loading area accessible from N Randolph Street, and at least 140 secure long-term bicycle spaces.

Phase II of the proposed development will include a total of approximately 210 residential units, one (1) 40-foot loading berth, and at least 84 secure long-term bicycle spaces.

Below-grade parking with approximately 240 parking spaces will be accessible from driveways along the existing Private Alley that runs between the existing office building and the proposed development. A total of at least 12 short-term bicycle parking spaces for residential use and nine (9) short-term bicycle spaces for retail use will be located around the perimeter of the site.

### ***Adjacent and Internal Roadways***

Consistent with the Ballston Sector Plan, the proposed development will provide safe and attractive multimodal infrastructure along the adjacent and internal roadways.

#### **Wilson Boulevard**

As part of the proposed development, Wilson Boulevard is envisioned to be an approximately 115-foot wide, urban, tree-lined street that provides a safe pedestrian environment, safe and convenient curbside management, and accommodates multiple modes. Streetscape elements that contribute to this will include a raised median, street parking on both sides of Wilson

Boulevard, and wide sidewalks. Figure 12 shows the typical cross-section and design elements that can be expected along Wilson Boulevard as part of the proposed development

#### **N Glebe Road**

As part of the proposed development, N Glebe Road will be improved at the intersection with the Private Alley along the southern frontage of the development site. N Glebe Road is envisioned to be an approximately 120-foot wide, urban, tree-lined street that provides a safe pedestrian environment and accommodates multiple modes. Streetscape elements that contribute to this include a raised median, street parking on both sides of N Glebe Road, and wide sidewalks. The proposed development will provide a dedicated left-turn lane to access the site at the Private Alley from Glebe Road. It will also allow right turns in from Glebe. Presently in existing conditions, vehicular traffic cannot access the Private Alley from Glebe Road. Figure 13 shows the typical cross-section and design elements that can be expected along N Glebe Road as part of the proposed development.

#### **Private Alley**

As part of the proposed development, the Private Alley extends from N Glebe Road to Wilson Boulevard S to the north end of the site between N Taylor Street S N Stuart Street. The Private Alley is envisioned to be an approximately 40-foot wide, urban street that provides a safe pedestrian environment. The Private Alley will provide a curbless environment as a non-traditional traffic calming measure to limit vehicular speed through the use of non-traditional paving and streetscape elements. Figure 14 shows the typical cross-section and design elements that can be expected along the Private Alley proposed development.



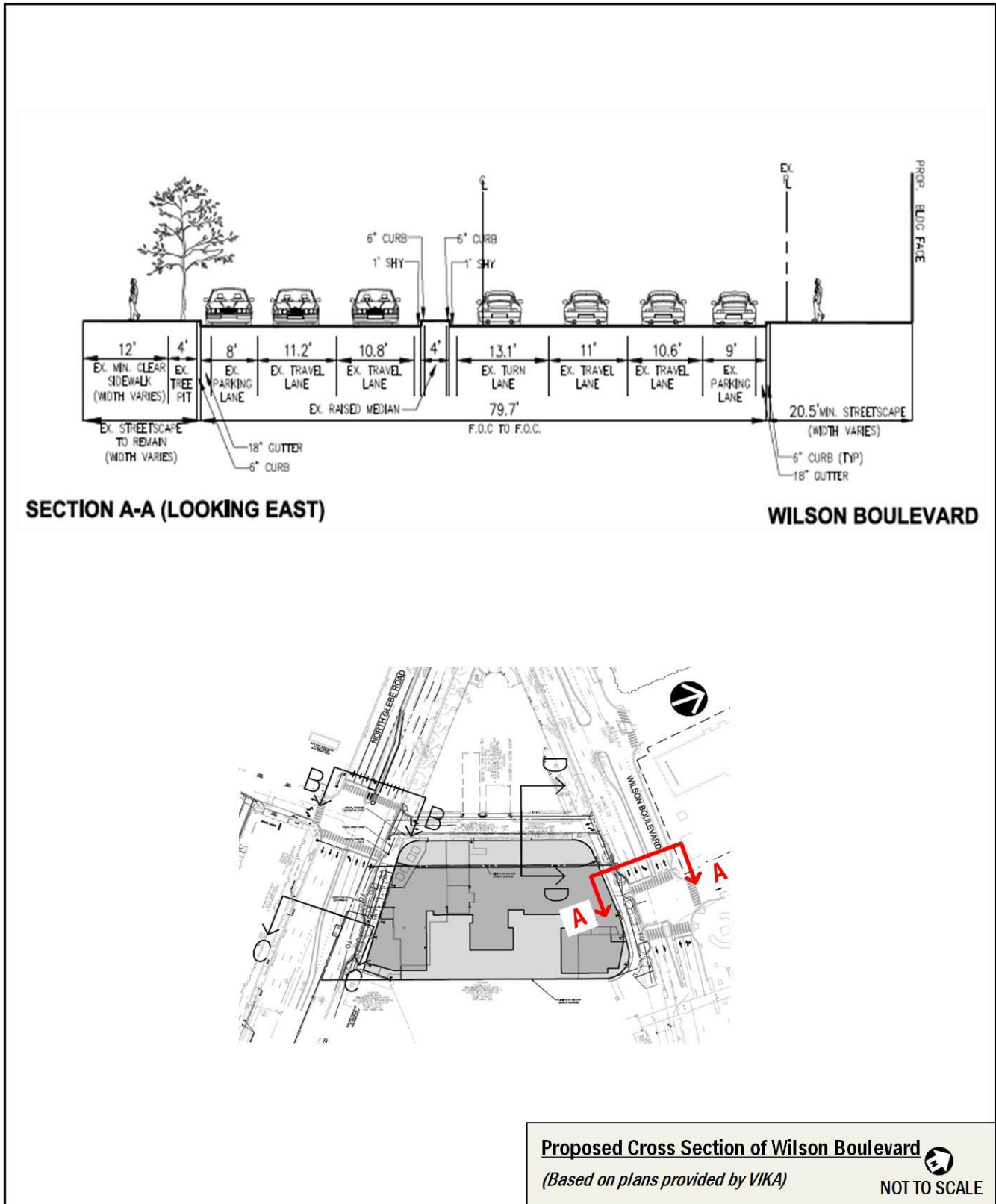


Figure 12: Proposed Cross Section of Wilson Boulevard

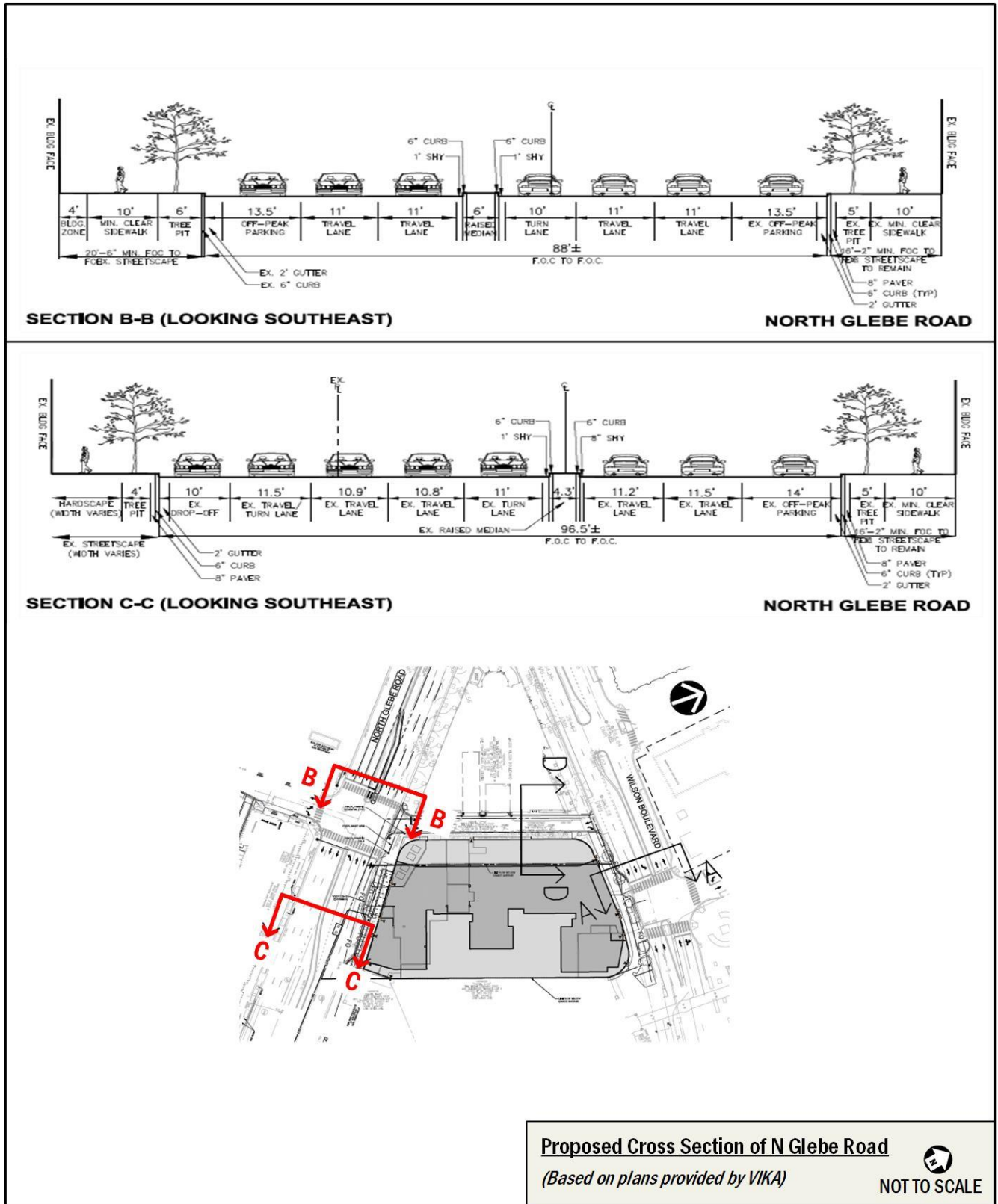


Figure 13: Proposed Cross Section of N Glebe Road

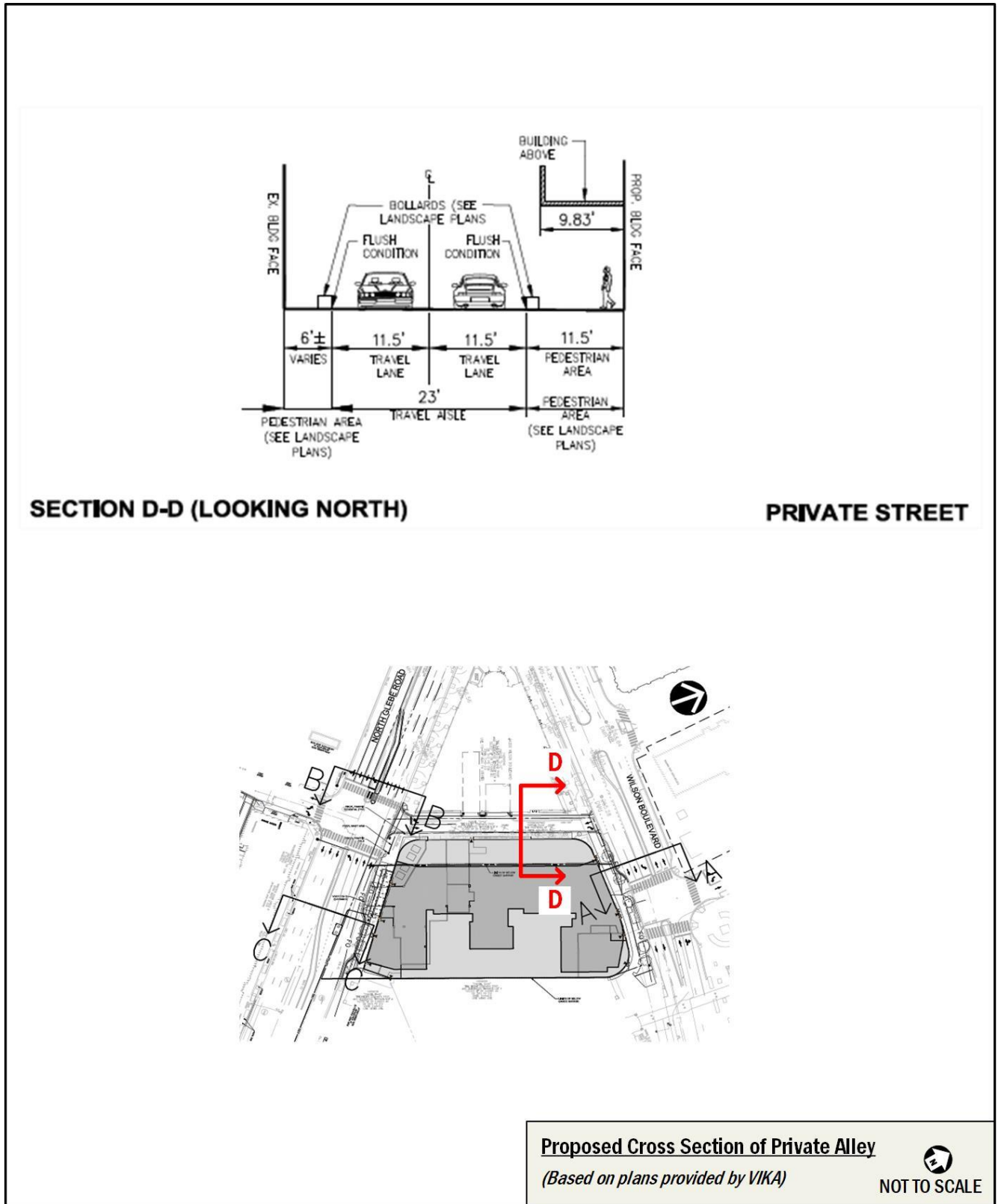


Figure 14: Proposed Cross Section of Private Alley

## Site Access and Circulation

### Pedestrian Access

The primary pedestrian access to the residential, office, and retail components are shown in Figure 15. Access to the residential component will occur primarily off of Wilson Boulevard for Phase I and N Glebe Road for Phase II. Access to the grocer component will occur primarily off of Wilson Boulevard. A circulation plan showing expected pedestrian routes is shown in Figure 17.

### Bicycle Access

Bicycle access to the secure long-term bicycle parking on the G1 and G2 levels of the garage will be from the Private Alley. Short-term bicycle parking spaces will be placed along the perimeter of the site on Wilson Boulevard and N Glebe Road. Bicycle access to the site is primarily expected to occur via Wilson Boulevard for all uses. A circulation plan showing expected bicycle routes is shown in Figure 17.

### Vehicular Access

Vehicular access for the grocer will be located in a new garage entry along the east side of the Private Alley; vehicular access for residential units will be located via the Ballston Point garage entrance along the west side of the Private Alley.

Access to the loading facilities will be provided along N Glebe Road for the grocer component of Phase I and all of Phase II, and from the existing mall loading area accessible from N Randolph Street for the residential component of Phase I. Access to the below-grade garage and loading facilities is shown on Figure 15 and Figure 16. A circulation plan showing expected vehicular routes is shown in Figure 17.

### Loading

Per the Zoning Ordinance, the following outlines the loading facility requirements for land uses of the development:

- Residential  
Multifamily uses with more than 50 dwelling units are required to provide one (1) loading space for each 200 units.
- Grocer  
Buildings with over 3,000 square feet of retail space are required to provide one (1) loading space, with one (1) additional space for more than 15,000 square feet and one (1) additional space for more than 50,000 square feet.

Per these requirements, the proposed development is required to provide two (2) loading spaces for the residential component of Phase I, two (2) loading spaces for the grocer component of Phase I, and one (1) loading space for the residential component of Phase II. The proposed development will provide two (2) 40-foot loading berths and two (2) 67-foot loading berths for Phase I, and one (1) 40-foot loading berth for Phase II.

Based on information provided by the Applicant, the existing Macy's generates 1 to 2 large format trucks per week. The proposed development is expected to generate approximately 23 truck trips per day. This includes daily trash removal services, mail and parcel delivery, produce delivery, and residential move-in or -out trips. One (1) trash removal truck, six (6) mail and parcel delivery trucks, four (4) WB67 grocery delivery trucks, ten (10) smaller format grocery delivery trucks, and approximately two (2) residential move-in or -out trucks (conservatively calculated using an average of 18 months average turnover per unit) will service the development on a daily basis. It is expected that the three to four WB67 tractor-trailer trucks arrive at off-peak hours. The loading facilities provided by the development will be sufficient to accommodate this demand.

Figure 6 shows the locations of the loading berths and service/delivery spaces within the building.

### Truck Routes and Access

Truck routing to and from the site will primarily be via N Glebe Road and Wilson Boulevard. Inbound trucks accessing the loading facilities for the grocer will enter the loading facilities via a curb cut on N Glebe Road, with existing trucks exiting towards Wilson Boulevard. Loading facilities for the Phase I residential component will be provided via the existing mall loading area, accessible from N Randolph Street. Loading facilities for the Phase 2 residential component will be located on the southern portion of the site, within the same loading area as the grocer, with access from the Private Alley. Inbound access for WB-67 trucks will be provided via N Glebe Road, accessible during non-peak hours only. The loading area has been designed to allow for head-in access from N Glebe Road and accommodate all backing maneuvers within the site. Loading facilities for the existing Ballston Point office building will continue to be provided off of the western side of the Private Alley.

## Parking

Based on the Arlington County Zoning Ordinance, the following outlines the vehicular parking requirements for the proposed development under C-O-2.5, Commercial Office Building, Hotel and Apartment District requirements:

- Residential  
One and one-eighth (1.125) spaces for the first 200 dwelling units and one (1) space for each additional dwelling unit.
- Grocer  
One (1) space per 250 square feet of floor area on the first floor of the building.

### Residential Parking

Per the Zoning Ordinance, the proposed development is required to provide 580 parking spaces for residential use. However, the County Board adopted the Off-Street Parking Guidelines for Multi-Family Residential Projects in November 2017 which reduce this parking requirement. These guidelines recognize that a lower on-site parking ratio may be appropriate for a project, among other considerations, and may range from 0.2 to 0.6 spaces per unit depending on a project site's distance to Metro. Based on the site location and per these guidelines, a minimum of 0.3 spaces per unit are required for the proposed development. These guidelines also require 0.05 visitor parking spaces for the first 200 dwelling units. Per these guidelines, the proposed development is required to provide 167 parking spaces for residential use and 10 parking spaces for residential visitor use, for a total of 177 parking spaces. Ten of the residential spaces (approximately 4.1 percent) are compact parking spaces, which is within the 15 percent threshold established by § 14.3.3.F of the Zoning Ordinance. Consistent with these guidelines, a parking ratio of 0.43 spaces per unit is proposed for the proposed development, providing a total of 240 parking spaces.

### Grocer Parking

Per the Zoning Ordinance, the first 5,000 square feet of grocer use are exempt from parking requirements due to proximity to metro. The proposed development is required to provide 145 parking spaces for grocer use. The proposed development will provide 148 parking spaces for grocer use. The grocery store's required parking will be satisfied via these spaces and/or within the County-owned Ballston Public Parking Garage, which the Applicant enjoys access to through a private party agreement.

The proposed development will provide 388 parking spaces in a below-grade parking garage located on-site, meeting County standards. A summary of the proposed parking supply is shown in Table 2.

**Table 2: Proposed Parking Allocation**

Use	Spaces Required	Spaces Provided
Residential	580 spaces	240
Grocer	145 spaces	148
<b>Total</b>	<b>725 spaces</b>	<b>388 spaces</b>

### Curbside Management

A review of the existing curbside management was conducted and is shown on Figure 18. Currently, on-street parking is provided along Wilson Boulevard, N Glebe Road and the Private Alley adjacent to the site, providing on-street parking along the northern, southern, and western frontages of the site. The on-street parking Wilson Boulevard and N Glebe Road will remain, and the on-street parking on the Private Alley will be removed as part of the proposed project. The proposed on-street parking is shown on Figure 19.

## Bicycle and Pedestrian Facilities

### Bicycle Facilities

#### Bicycle Parking

Per the Standard Site Plan Conditions, the following outlines the bicycle parking requirements for land uses of the development:

- Residential  
Provide one (1) long-term space for every 2.5 residential dwelling units; and one (1) short-term space for every 50 residential dwelling units.
- Grocer  
Provide one (1) long-term space for every 25,000 square feet of grocer space; and two (2) short-term spaces for every 10,000 square feet of the first 50,000 square feet of grocer space and one (1) additional space for every 12,500 square feet of additional space.

#### Long-Term Bicycle Parking

Per these requirements, the proposed development is required to provide:

- 138 long-term spaces for residential use for Phase I
- 84 long-term spaces for residential use for Phase II
- Two (2) long-term spaces for grocer use for Phase I

The proposed development will provide at least 138 long-term bicycle parking spaces for residential use for Phase I, at least 84 long-term bicycle parking spaces for residential use for Phase II, and at least two (2) long-term spaces for grocer employee use in for Phase I, meeting zoning requirements. Secure long-term bicycle parking for the development will be located in the bicycle/locker rooms on the G1 and G2 levels of the garage.

#### Short-Term Bicycle Parking

Per these requirements, the proposed development is required to provide 12 short-term spaces for residential use and nine (9) spaces for grocer use. The proposed development will provide at least 12 short-term bicycle parking spaces for residential use and nine (9) short-term bicycle spaces for grocer use, meeting zoning requirements. Short-term bicycle parking spaces will be placed along the perimeter of the site.

### **Bicycle Showers and Lockers**

Per the Standard Site Plan Conditions, the following outlines the bicycle shower and locker requirements for the retail uses of the development:

- Showers

- 1) Within residential buildings, retail space equal to or greater than 25,000 square feet and less than 50,000 square feet, provide a minimum of one (1) unisex shower; for retail space greater than 50,000 square feet, provide a minimum of one (1) shower per gender.

- Lockers

For every required employee bicycle parking space, either:

- 1) A minimum of one (1) clothes storage locker per gender shall be installed in gender-specific changing rooms; or
- 2) A minimum of one (1) clothes locker shall be installed adjacent to, but outside of changing rooms.

#### Bicycle Showers

Per these requirements, one (1) shower is required to be provided for the proposed development.

#### Bicycle Lockers

Per these requirements, the proposed development is required to provide two (2) lockers. The proposed development will provide at least two (2) lockers in the ground floor level of the building.

### **Pedestrian Facilities**

The existing pedestrian facilities around the site provide a quality walking environment with minimal sidewalk width deficiencies. Pedestrian facilities directly surrounding the site will be improved along the northern, southern, and western frontages of the project. These facilities will provide a more inviting pedestrian environment and comply with the improvements laid out in the Arlington Master Transportation Plan.

New pedestrian facilities are expected to meet or exceed Arlington County requirements with an emphasis on pedestrian safety and comfort. This includes sidewalks that meet or exceed the width requirements, crosswalks at all necessary locations, and curb ramps with detectable warnings.

As part of the proposed development, the Private Alley extends from N Glebe Road to Wilson Boulevard S to the north end of the site between N Taylor Street S N Stuart Street. The Private Alley is envisioned to be an approximately 40-foot wide, urban street that provides a safe pedestrian environment. The Private Alley will provide a curbless environment as a non-traditional traffic calming measure to limit vehicular speed through the use of non-traditional paving and streetscape elements.

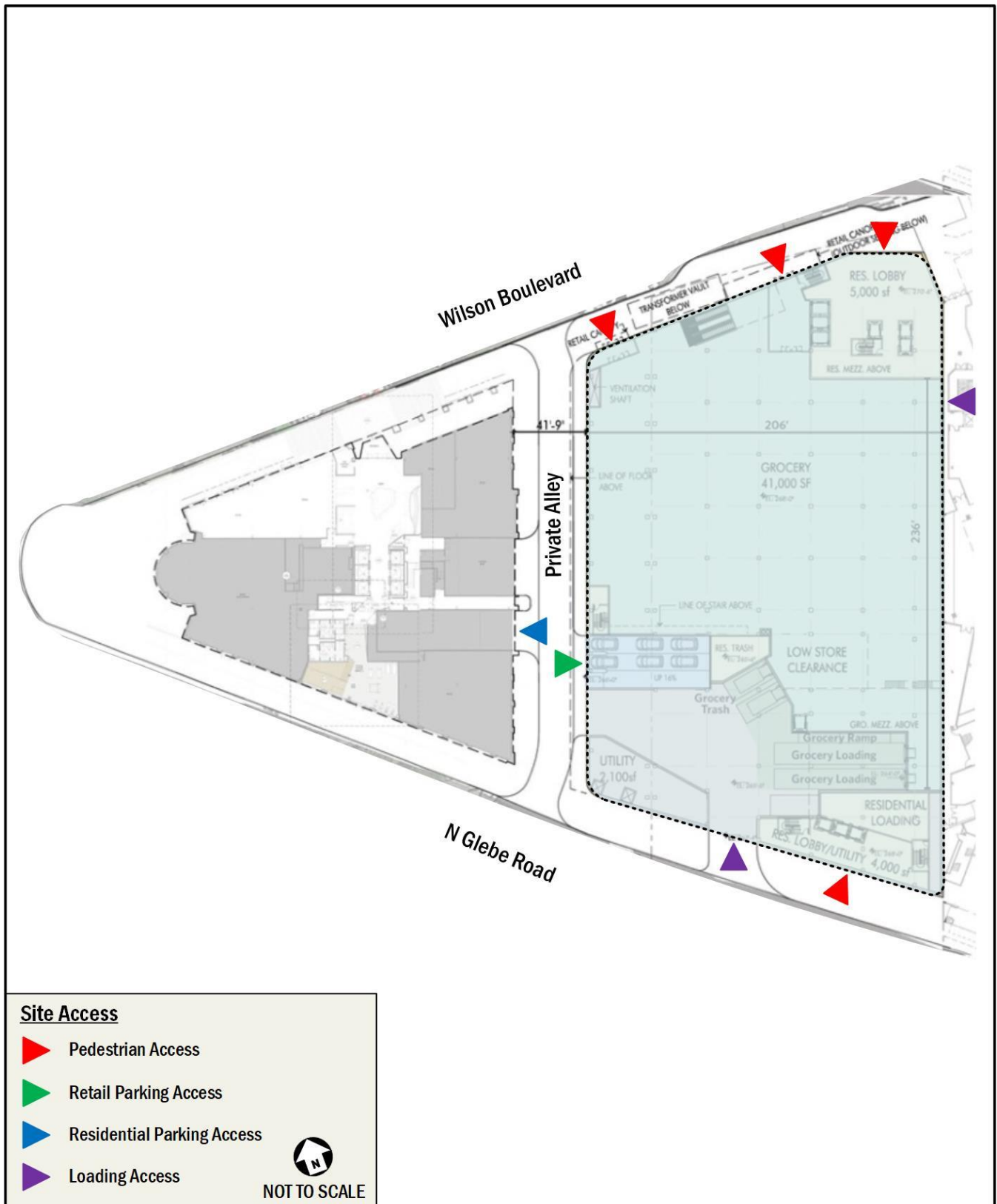


Figure 15: Site Access

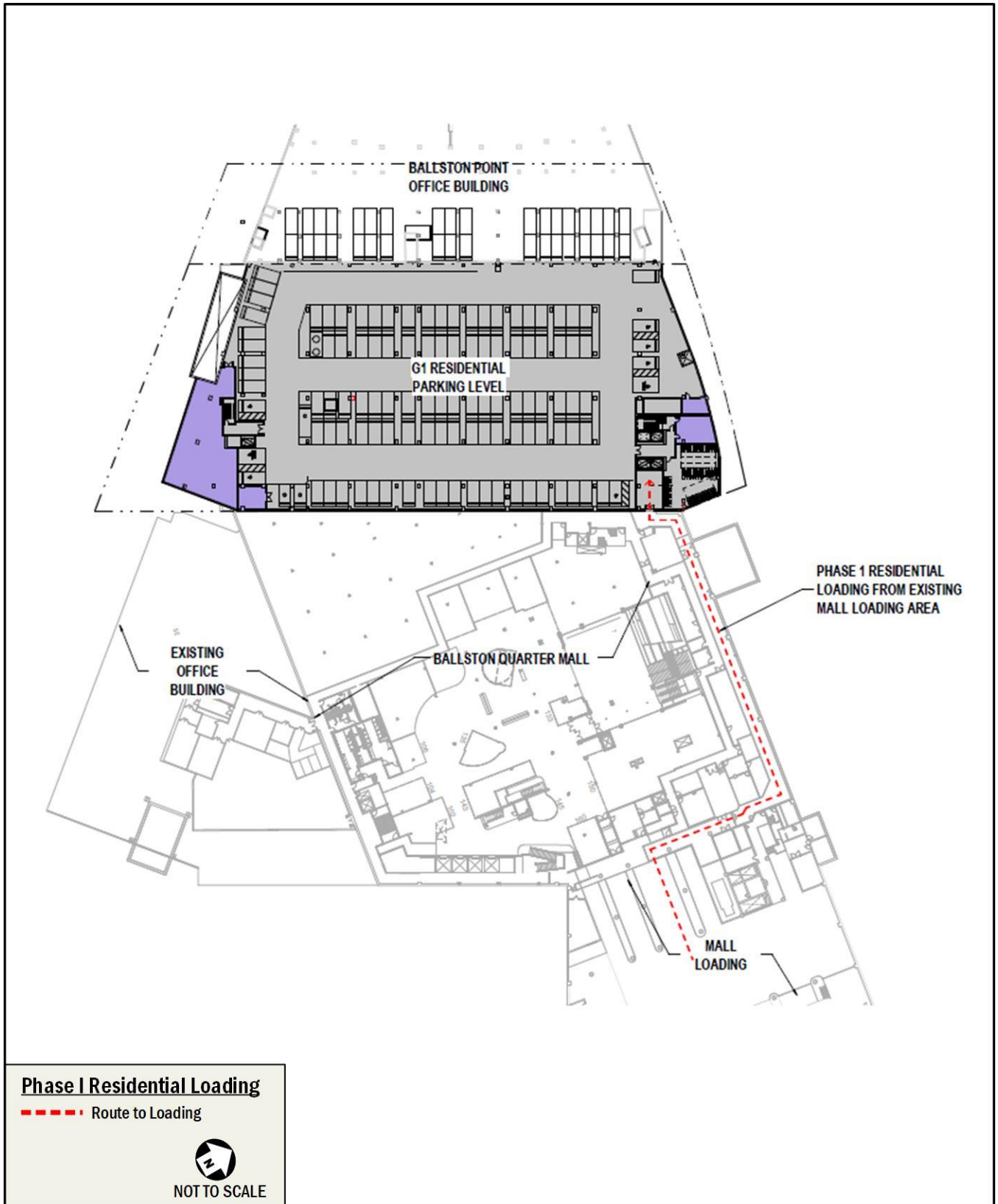
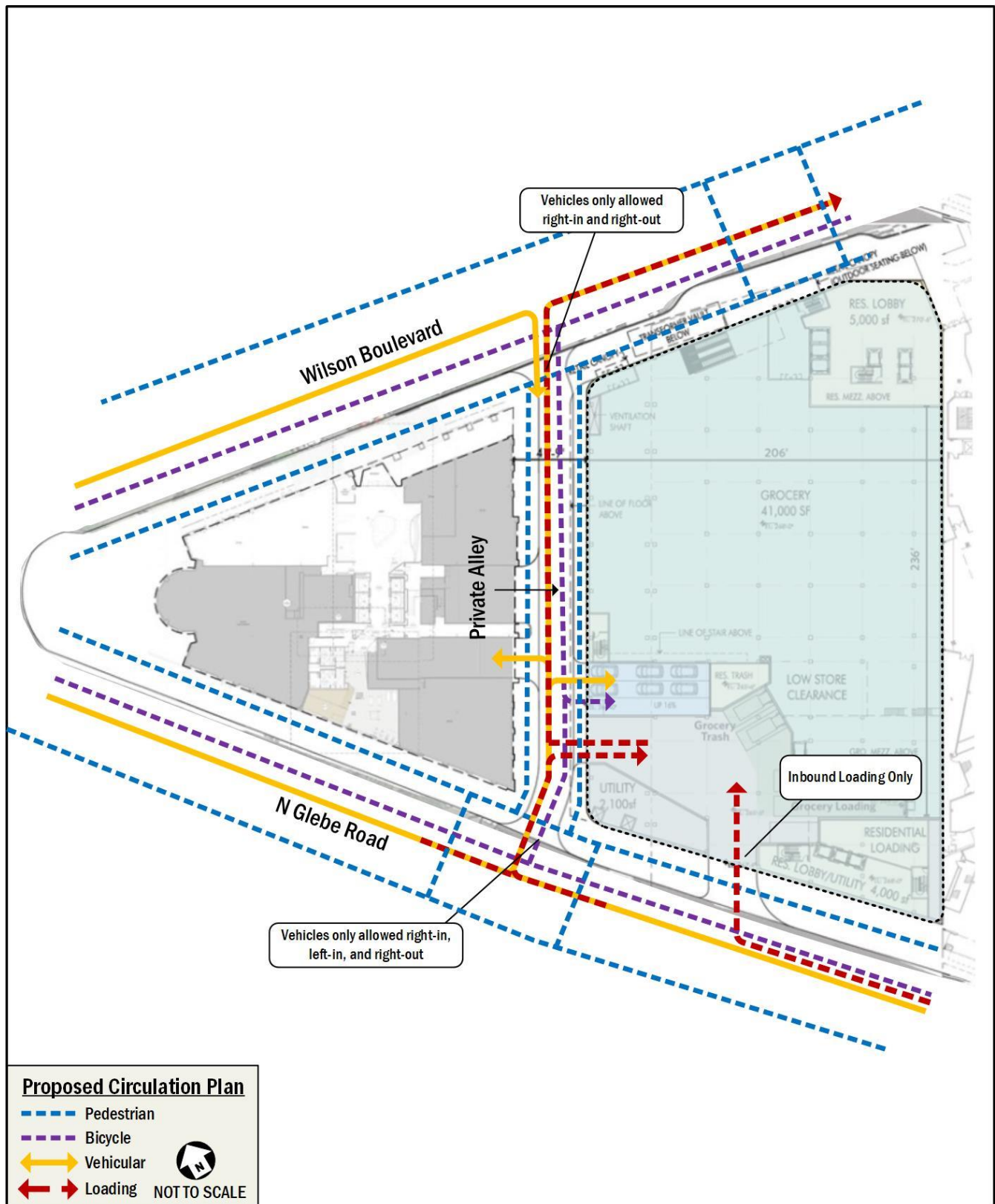


Figure 16: Phase I Residential Loading





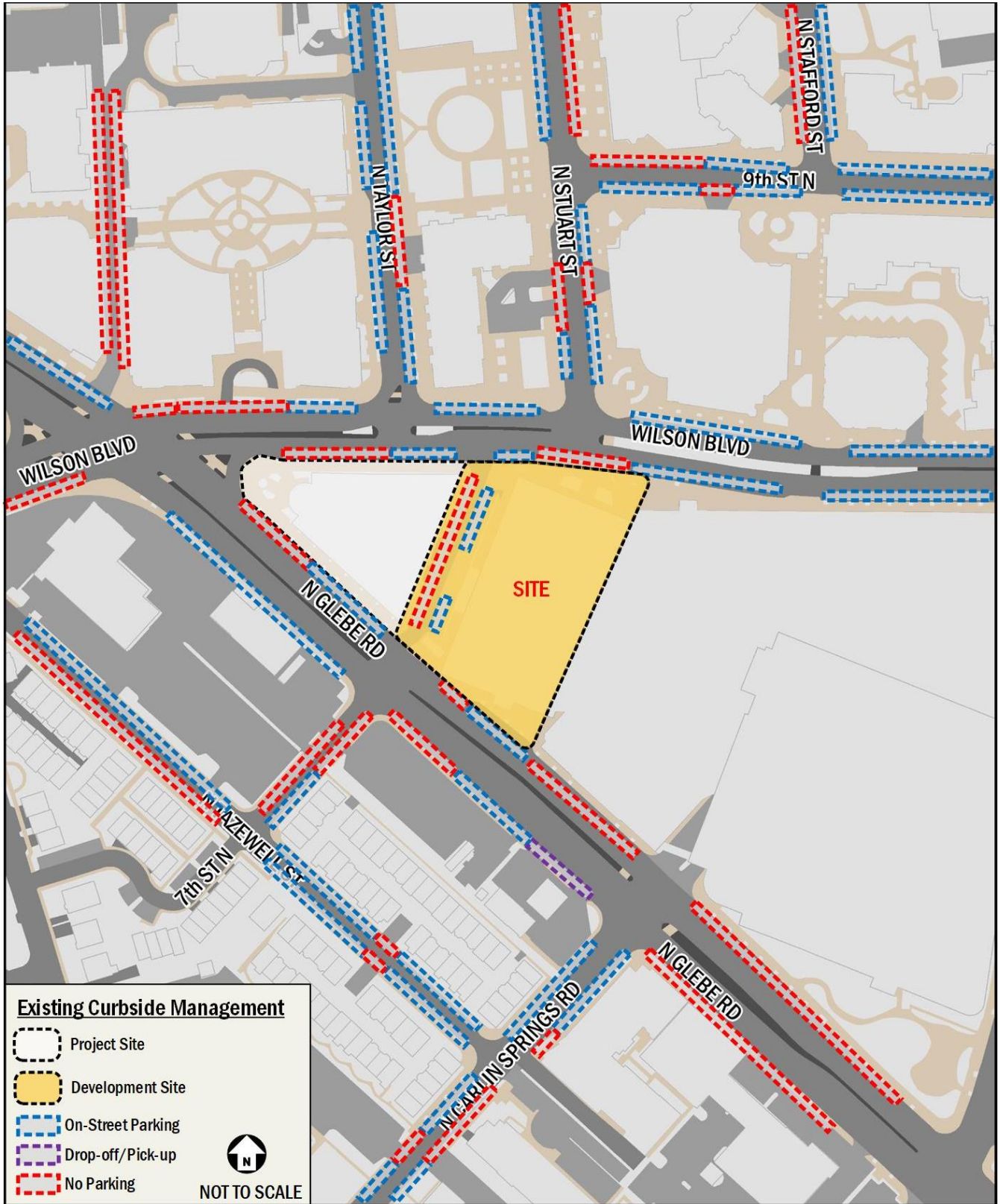


Figure 18: Existing Curbside Management

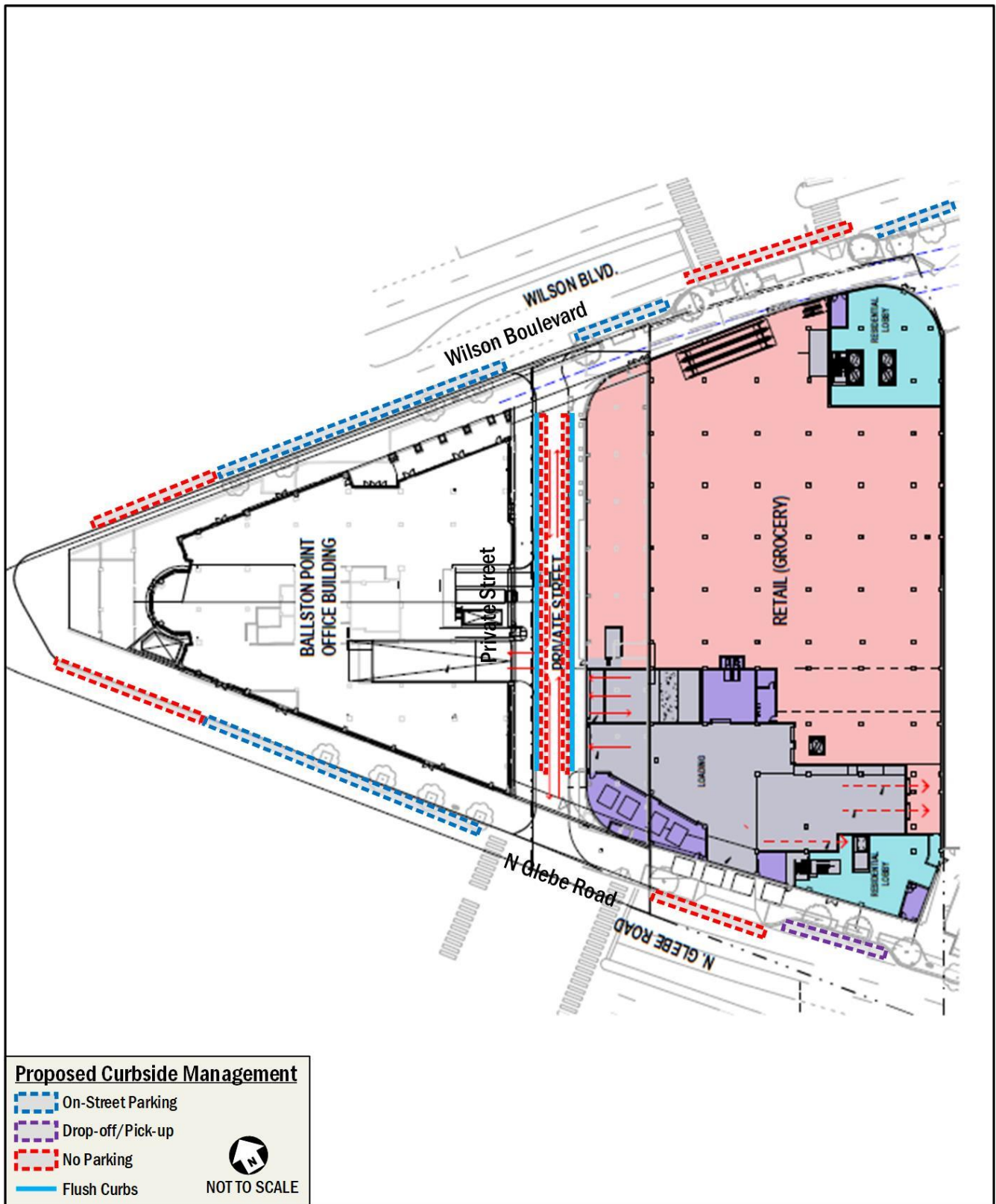


Figure 19: Proposed Curbside Management

## Transit

This chapter discusses the existing and planned transit facilities in the vicinity of the site, accessibility to transit, and evaluates the overall transit impacts of the project.

The following conclusions are reached within this chapter:

- The site is surrounded by an extensive regional and local transportation system that will accommodate the residents, employees, and patrons of the proposed development.
- The site is well-served by public transportation with access to the Metrorail's Orange and Silver lines and several local and regional bus lines.
- The site has access to several on- and off-street bicycle facilities with connections to the Custis Trail.
- The site is surrounded by a well-connected pedestrian environment. Near the site, most sidewalks meet standards recommended by the Arlington County Master Transportation Plan.

The site is well-served by numerous transit options under existing conditions. Combined, these transit services provide local, citywide, and regional transit connections and link the site with major cultural, residential, employment, and commercial destinations throughout the region. Figure 20 identifies the major transit routes, stations, and stops in the study area.

Figure 21 shows the 10-minute, 20-minute, and 30-minute transit travel shed to and from the proposed development. As shown in the transit travel shed, most of the Arlington County and some parts of District and Fairfax County are accessible via transit within 30 minutes from the proposed development. Several destinations in Arlington and District are accessible within a 20-minute transit trip from the proposed development, including Downtown DC and Metro stations served by all metro lines in the area.

### **Metrorail Service**

The site is located approximately 0.4 miles from the Ballston-MU Metro Station. The Ballston-MU Metro Station is located North of the development site between N Stuart St and N Stafford St on Fairfax Dr. It can be reached by walking north from the site on N Stuart St. There are sidewalks, curb ramps, and crosswalks along routes to the Metro stations.

The Ballston-MU Metro stations serve the Orange and Silver lines. The average daily ridership at the station in 2021 was

approximately 1,500 boardings on weekdays, according to the WMATA Ridership Data Portal. The Orange Line travels from Fairfax, VA to the District core and continues east to New Carrollton, MD. As of September 2021, trains run approximately every 12 minutes during the day and every 20 minutes on weekday evenings after 7:00 pm. They run every 15-20 minutes on weekends. The Silver Line travels east from Reston, VA to the District core and continues east to Largo, MD. As of September 2021, trains run approximately every 12 minutes during the day and every 20 minutes on weekday evenings after 7:00 pm.

Figure 22 shows the average annual weekday passenger boardings for the Ballston-MU, Virginia Square-GMU and Clarendon Metro stations, the stations surrounding the site, from 1980 to 2016. Metrorail ridership in the area is down approximately 25 percent from its peak in 2007. Ridership throughout the entire system is down five percent. The decline in boardings at the stations near the development site indicates there is available capacity at these stations. WMATA has initiated the Back2Good plan to improve safety, reduce delays, and build rider confidence in Metrorail. Since its implementation, Metrorail has reached its highest on-time performance in the last seven years.

### **Bus Service**

A review of the existing Metrobus stops within a quarter-mile radius of the site, detailing individual bus stop amenities and conditions, is shown in Table 3. There are nineteen (19) bus stops within a quarter-mile of the site: four (4) on N Glebe Road, five (5) on Wilson Boulevard, three (3) on Fairfax Drive, two (2) on N Randolph Street, and five (5) near Ballston Station. These stops are served by seven (7) WMATA Metrobus routes and six (6) Arlington Transit (ART) routes.

The site is served by several bus lines and routes along multiple primary corridors. These bus lines connect the site to many areas of Virginia and the District, including several Metrorail stations serving all of the six (6) Metrorail lines.

Table 4 shows a summary of the bus route information for the routes that serve the site, including service hours, headway, and distance to the nearest bus stop.

---

### ***Planned Transit Facilities***

Ballston Multimodal Improvements aims at improving Ballston-MU Metrorail Plaza and the operation of the nearby streets with a goal to increase traffic safety by decreasing conflict points between pedestrians and buses, improve curbside operations, enhance bus amenities, and provide sustainable infrastructure. As part of the project, improvements will include additional bus bays, new bus shelters, real-time bus information at bus stops, expanded bus customer seating, dedicated kiss-and-ride curb space, and dedicated shuttle bus curb space and bus shelters. A full new entrance will be constructed at the west end of the Ballston-MU Metrorail station to improve access from Glebe Road. This new entrance will be located at the intersection of North Fairfax Drive and North Vermont Street. Planned transit improvements are shown in Figure 23.

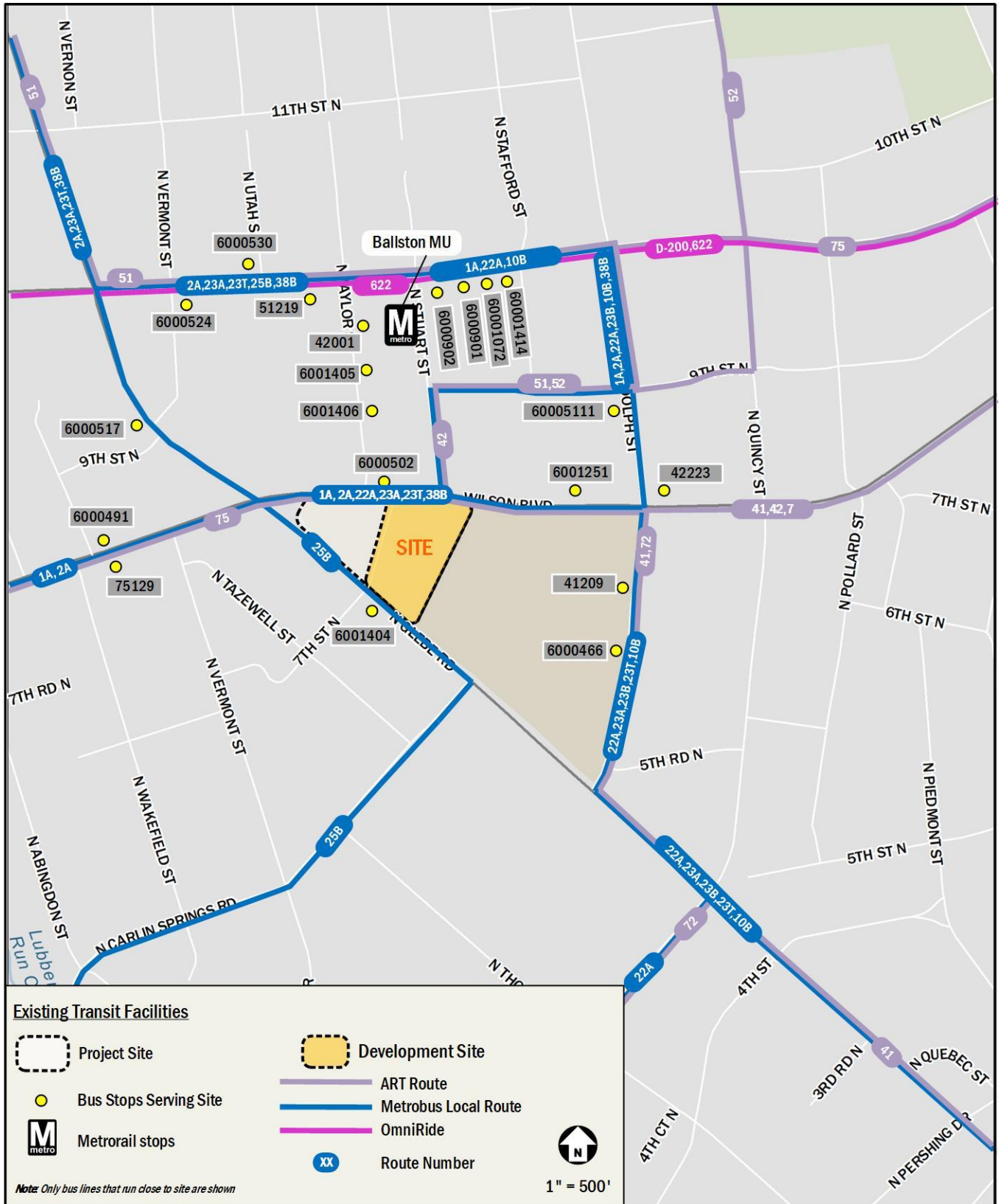


Figure 20: Existing Transit Service

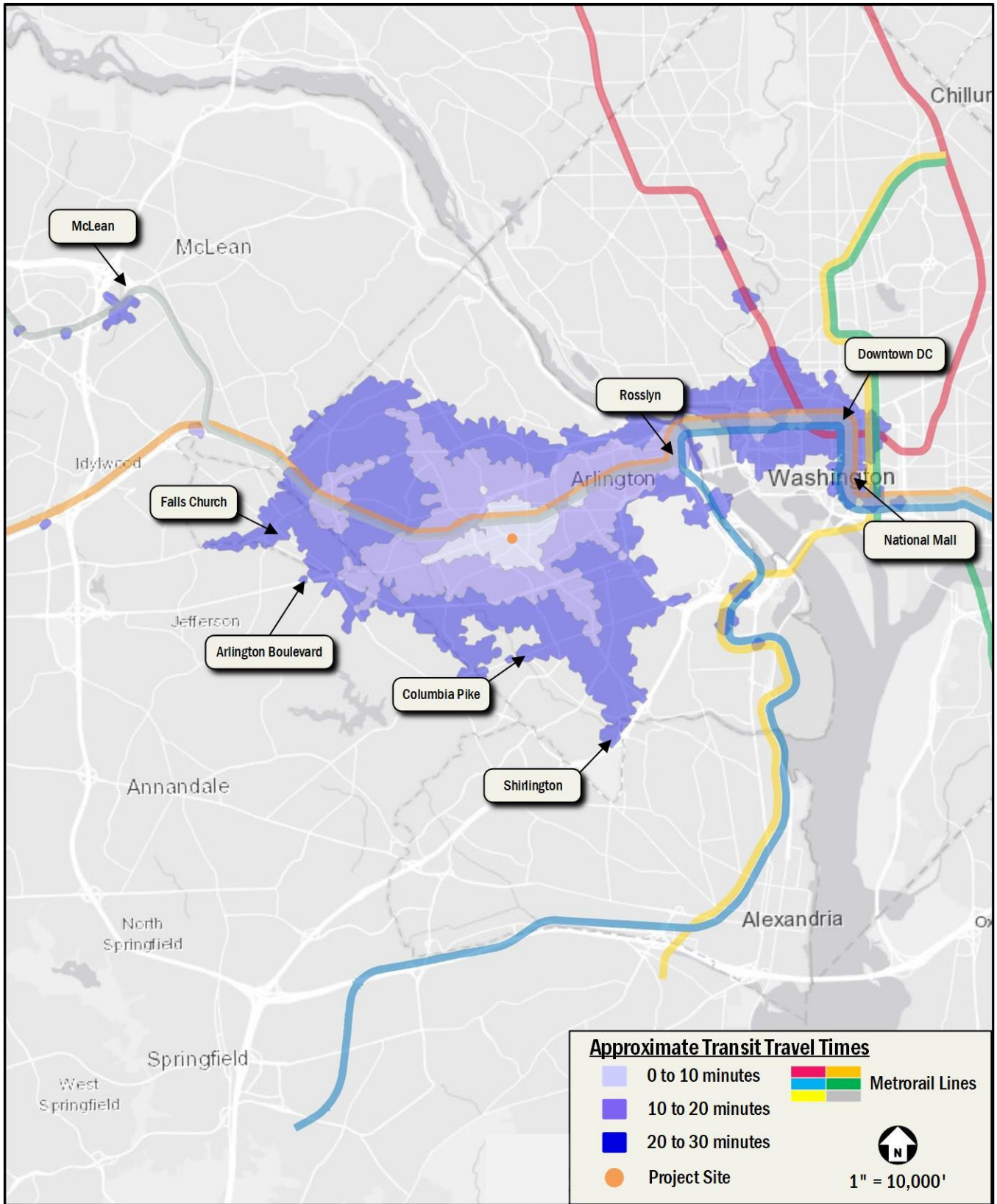


Figure 21: Approximate Transit Travel Times

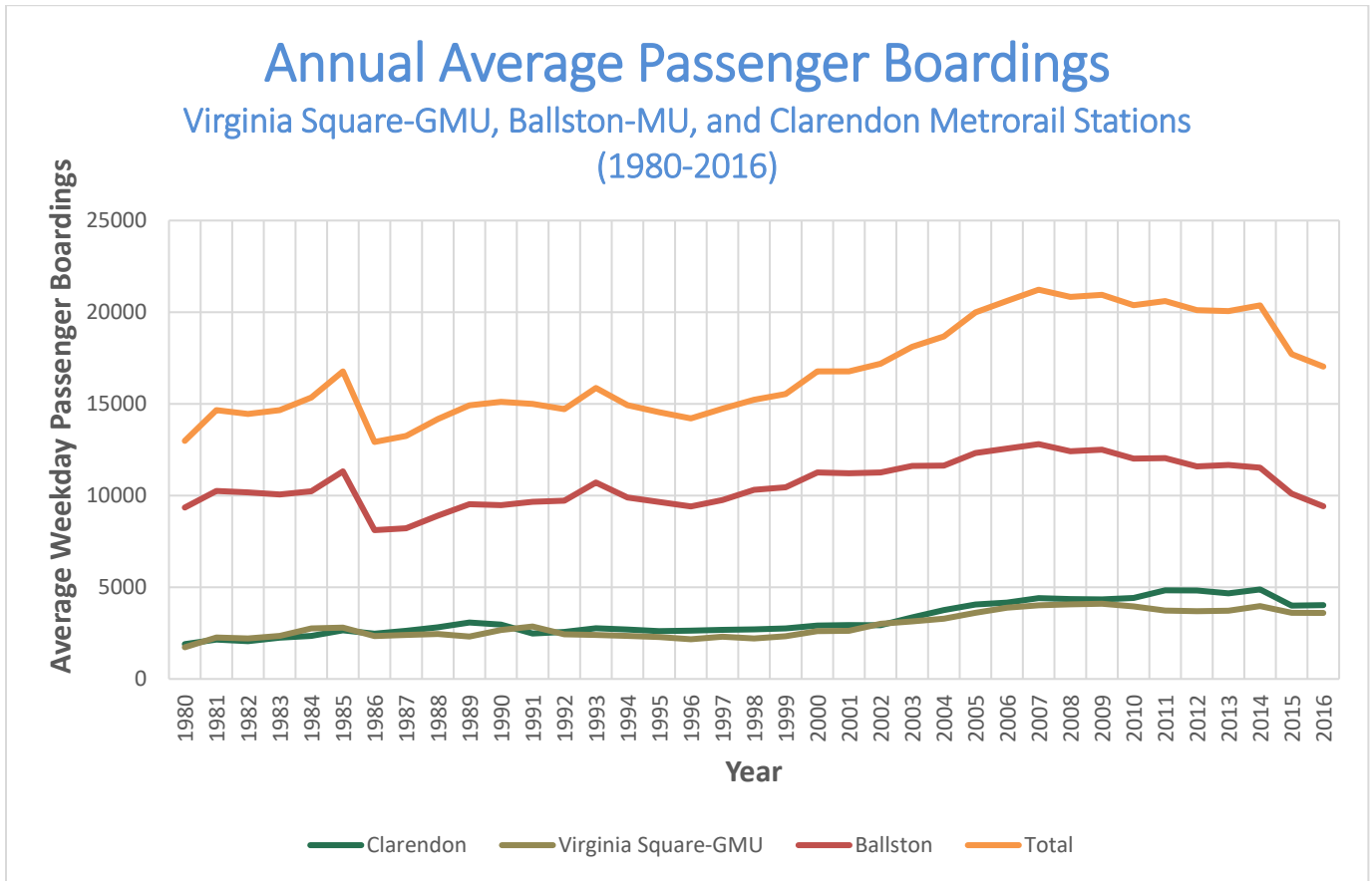


Figure 22: Annual Metro Ridership at Virginia Square-GMU, Ballston-MU, and Clarendon Metro Stations (Source: WMATA)



**Table 3: Bus Stop Inventory**

Location	Stop ID	Buses Served	Stop Condition
N Glebe Road & Fairfax Drive	6000517	2A, 25B, 38B	Sign, no ADA clearance, acceptable sidewalk clearance, street lighting, no information case, seating, shelter, trash receptacle
N Glebe Road & 7th Street	6000928	25B	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, no information case, no seating, no shelter
N Glebe Road & Quincy Street	41020	10B, 22A, 23A, 23B, 23T, 41, 72	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
N Glebe Road & Henderson Street	41210	10B, 22A, 23A, 23B, 23T, 41, 72	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
N Fairfax Drive & N Vermont Street	51218	23A, 23T, 51, 72	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, no seating, no shelter
Fairfax Drive, WB at N Utah Street	51003	2A, 23A, 23T, 25B, 38B, 51, 72	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
Fairfax Drive, EB at N Taylor Street	51219	51, D-200, 622	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, no information case, no seating, no shelter
Ballston Station & Bus Bay T3	15900	42, 51, 52, 72	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, no information case, no seating, no shelter
Ballston Station & Bus Bay C	6000901	1A, 23A, 23T	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
Ballston Station & Bus Bay B	6000926	25B, 38B	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
Ballston Station & Bus Bay T2	6001405	23A, 23B, 23T	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
Ballston Station & Bus Bay T3	6001406	10B, 22A	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
N Randolph Street & Wilson Blvd	6000511	1A, 10B, 22A, 23A, 23B, 23T	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
Wilson Blvd & N Glebe Road	75130	1A, 2A, 25B, 38B, 75	Sign, no ADA clearance, acceptable sidewalk clearance, street lighting, information case, no seating, no shelter
Wilson Blvd & N Randolph Street	6001251	23A, 23B, 23T	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, no seating, no shelter
Wilson Blvd WB at N Randolph Street	42223	42, 75	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, no seating, no shelter
Wilson Blvd + Wakefield St	75003	1A, 75	Sign, no ADA clearance, acceptable sidewalk clearance, street lighting, information case, no seating, no shelter
Wilson Blvd & Wakefield St	6000491	1A	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter
N Randolph Street, SB at Ballston Quarter	41209	41, 72	Sign, no ADA clearance, acceptable sidewalk clearance, no street lighting, information case, no seating, no shelter

**Table 4: Bus Route Information**

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
1A	Wilson Blvd	Weekdays: 5:30AM-12:19AM Weekend: 7:35AM-11:24AM	25-60 min	0.1 miles, 3 minutes
2A	Washington Blvd-Dunn Loring	Weekdays: 6:30AM-12:11AM Weekend: 6:30AM-12:13AM	30-50 min	<0.1 miles, 1 minute
22A	Barcroft-South Fairlington	Weekdays: 6:30AM-10:15PM Weekend: 8:30AM-8:15PM	30-60 min	0.3 miles, 5 minutes
23A, 23B, 23T	McClellan Crystal City	Weekdays: 5:30AM-12:15AM Weekend: 6:30AM-11:30PM	15-30 min	<0.1 miles, 2 minute
10B	Hunting Point-Ballston	Weekdays: 5:30AM-12:30AM Weekend: 6:00AM-10:38PM	30-60 min	<0.1 miles, 2 minute
25B	Landmark-Ballston	Weekdays: 6:00AM-9:06PM Weekend: 6:20AM-8:03PM	30-60 min	<0.1 miles, 1 minute
38B	Ballston-Farragut Square	Weekdays: 5:45AM-2:17AM Weekend: 5:45AM-2:15AM	15-30 min	<0.1 miles, 1 minute
ART 41	Columbia Pike-Ballston-Courthouse	Weekdays: 5:30AM-12:29AM Weekend: 7:25AM-11:57PM	15-30 min	0.2 miles, 4 minutes
ART 42	Ballston-Pentagon	Weekdays: 6:08AM-8:00PM Weekend: 7:12AM-7:42PM	15-30 min	0.1 miles, 3 minutes
ART 51	Ballston-Virginia Hospital Center	Weekdays: 6:20AM-12:18AM Weekend: 6:58AM-10:17PM	25-30 min	0.1 miles, 3 minutes
ART 52	Ballston-Virginia Hospital Center-East Falls Church	Weekdays: 5:51AM-6:20AM, 8:58PM-9:29PM	25-30 min	0.1 miles, 3 minutes
ART 72	Rock Spring-Ballston-Shirlington	Weekdays: 6:09AM-6:46AM, 7:44PM-9:33PM	29-30 min	0.2 miles, 4 minutes
ART 75	Shirlington-Wakefield H.S.- Carlin Spring Road-Ballston-Virginia Square	Weekdays: 5:30AM-6:15AM, 10:05PM-10:44PM	25-35 min	<0.1 miles, 1 minute
D-200	OmniRide Dale City- Pentagon & Rosslyn/Ballston	Weekdays: 4:55AM-9:10AM, 12:40PM-8:31PM	10-40 min	0.2 miles, 4 minutes
622	Haymarket-Rosslyn/Ballston	Weekdays: 5:24AM-8:02AM, 3:30PM-6:37PM	90-105 min	0.2 miles, 4 minutes

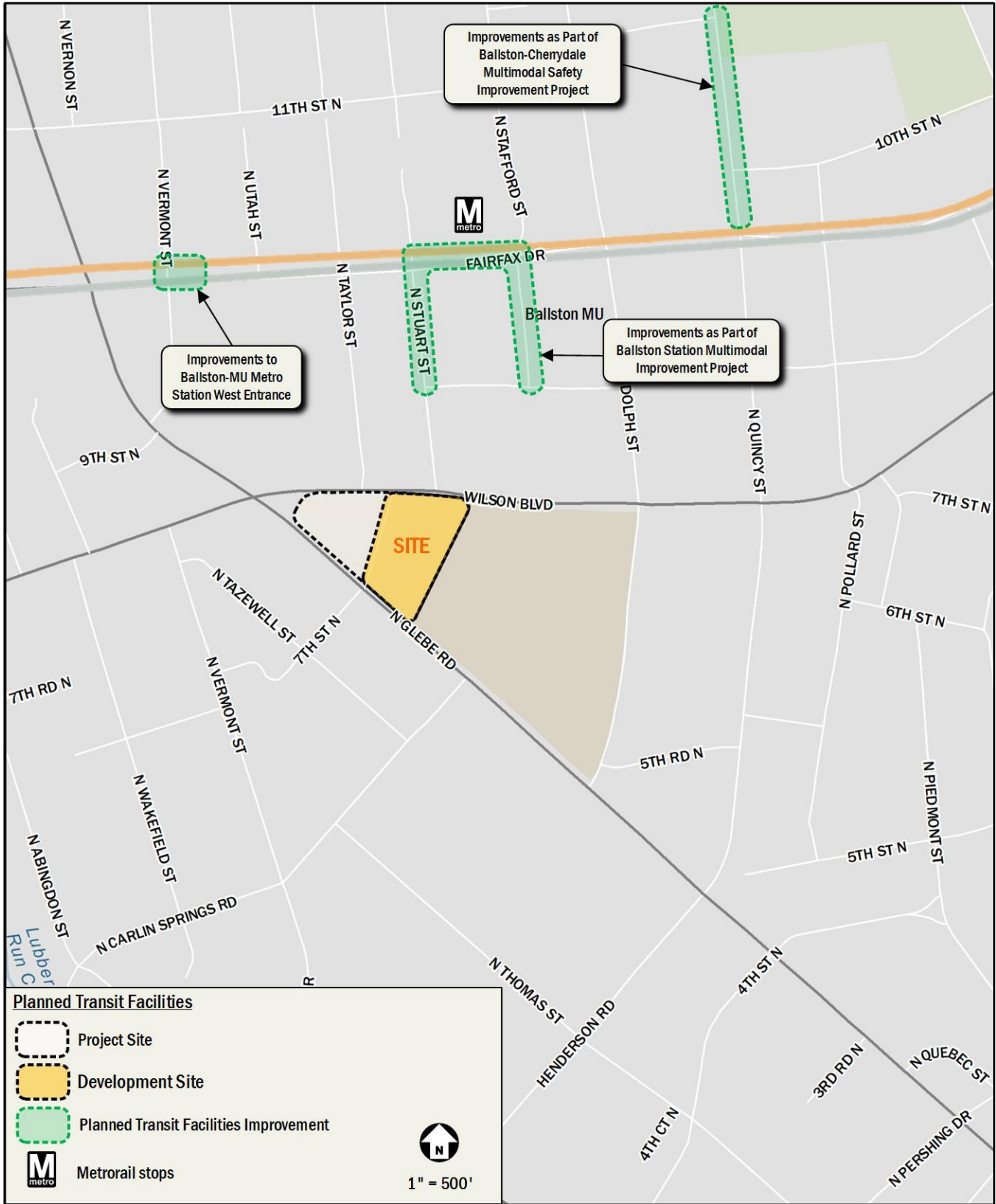


Figure 23: Planned Transit Improvements

## Pedestrian Facilities

This chapter summarizes the existing and future pedestrian access to the site and reviews walking routes to and from the site.

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the site provides a quality walking environment. There are sidewalks along most primary routes to pedestrian destinations with several curb ramps and sidewalk width deficiencies in the system.
- Planned improvements to the pedestrian infrastructure surrounding the site will improve pedestrian comfort and connectivity.

### **Pedestrian Study Area**

Pedestrian facilities within a quarter-mile of the site were evaluated as well as routes to nearby transit facilities, including routes to Ballston-MU Metro Station between N Stuart Street and N Stafford Street. The site is accessible to transit options such as the bus stop adjacent to the site on N Glebe Road. In general, existing pedestrian facilities surrounding the site provide comfortable walking routes to and from nearby transit options. However, there are some areas of concern within the study area that negatively impact the quality and attractiveness of the walking environment. This includes curb ramp and sidewalk width deficiencies.

Figure 24 shows expected pedestrian pathways, walking time and distances, and barriers or areas of concern. While slightly outside of the pedestrian pathway map, I-66 extend east to west on the northern edge of Ballston. Although I-66 is not a full pedestrian barrier, it presents challenges for pedestrians by limiting north-south connection points to approximately once every ¼ mile.

Figure 25 shows the 10-minute, 20-minute, and 30-minute walk travel shed for the proposed development. Within a 10-minute walk, the proposed development has access to several destinations including public transportation stops, Ballston- MU Metro station served by the Orange and Silver lines, Mosaic Park, retail zones, nearby residential neighborhoods, and community amenities. Within a 20-minute walk, the proposed development has access to destinations such as residential neighborhoods, retail zones, and Lubber Run Trail. Within a 30-

minute walk, the proposed development has access to destinations including Virginia Hospital Center, educational institutions, and other residential neighborhoods.

### **Existing Pedestrian Facilities**

A review of pedestrian facilities surrounding the proposed development shows that many facilities provide a quality walking environment. Figure 26 shows a detailed inventory of the existing pedestrian infrastructure surrounding the site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by the Arlington County, and ADA standards. Sidewalk and buffer widths and recommendations are shown in Table 5. It should be noted that the sidewalk widths shown in Figure 26 reflect the total sidewalk widths based on observations in the field taken from curb to building, with pinch points and locations with a clear width of less than four (4) feet noted.

ADA standards require that curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks is not desired. As shown in Figure 26, under existing conditions the majority of curb ramps meet ADA standards.

Within the study area, the majority of roadways have existing sidewalks on both sides, with some deficiencies. However, there are portions of the residential areas to the east and west of the site that are missing sidewalks. Despite some deficiencies, all primary pedestrian destinations are accessible via routes with sidewalks, most of which meet Arlington County and ADA standards.

Overall, the site is situated within an urban transportation network, with quality pedestrian access. Figure 27 shows the existing pedestrian peak hour volumes at study area intersections, where data was available.

### **Planned Pedestrian Facilities**

The North Quincy Street Plan Addendum includes plans to improve the 600 N Glebe Block by continuing N Randolph Street westward across N Glebe Road into the block, extending N Tazewell Street through the block to the Hyde Park property, and creating a new multi-use path through the block. The Ballston Station Multimodal project recommends enhancements for smoother and safer pedestrian and transit circulation by decreasing conflicts between buses and pedestrians.

As part of the proposed development, the Private Alley extends from N Glebe Road to Wilson Boulevard S to the north end of the site between N Taylor Street S N Stuart Street. The Private Alley is envisioned to be an approximately 40-foot wide, urban street that provides a safe pedestrian environment. The Private Alley will provide a curbless environment curbs as a non-traditional traffic calming measure to limit vehicular speed through the use of non-traditional paving and streetscape elements.

Planned and proposed pedestrian improvements are shown in Figure 28.

**Table 5: Sidewalk Recommendations per Arlington County Master Transportation Plan**

Street Name	Section	Minimum Sidewalk Width	Minimum Sidewalk Width Met	Sidewalk Width*	Minimum Buffer Width	Minimum Buffer Width Met	Buffer Width*
N Glebe Road	Fairfax Drive to N Quincy Street	10-12 ft	Y	10 ft	6-8 feet	Y	6 ft
Wilson Blvd	N Glebe Road to Quincy Street	10-12 ft	Y	10 ft	6-8 feet	Y	8 ft
N Carlin Springs Road	N Vermont Street to N Glebe Road	6-8 ft	Y	7 ft	4-6 feet	N	None
N Randolph Street	N Glebe Road to Fairfax Drive	6-8 ft	Y	8+ ft	4-6 feet	Y	6 ft
7 <sup>th</sup> Street N	N Glebe Road to N Tazewell Street	6-12 ft	Y	7 ft	4-6 feet	Y	7 ft
N Stuart Street	Wilson Blvd to 9 <sup>th</sup> Street N	6-12 ft	Y	12 ft	4-6 feet	Y	8 ft
Fairfax Drive	N Glebe Road to N Randolph Street	10-12 ft	Y	12+ ft	6-8 feet	Y	8 ft
N Quincy Street	N Glebe Road to Wilson Blvd	6-12 ft	Y	9 ft	6-8 feet	Y	6 ft

\* Widths based most narrow measurement along either side of roadway section

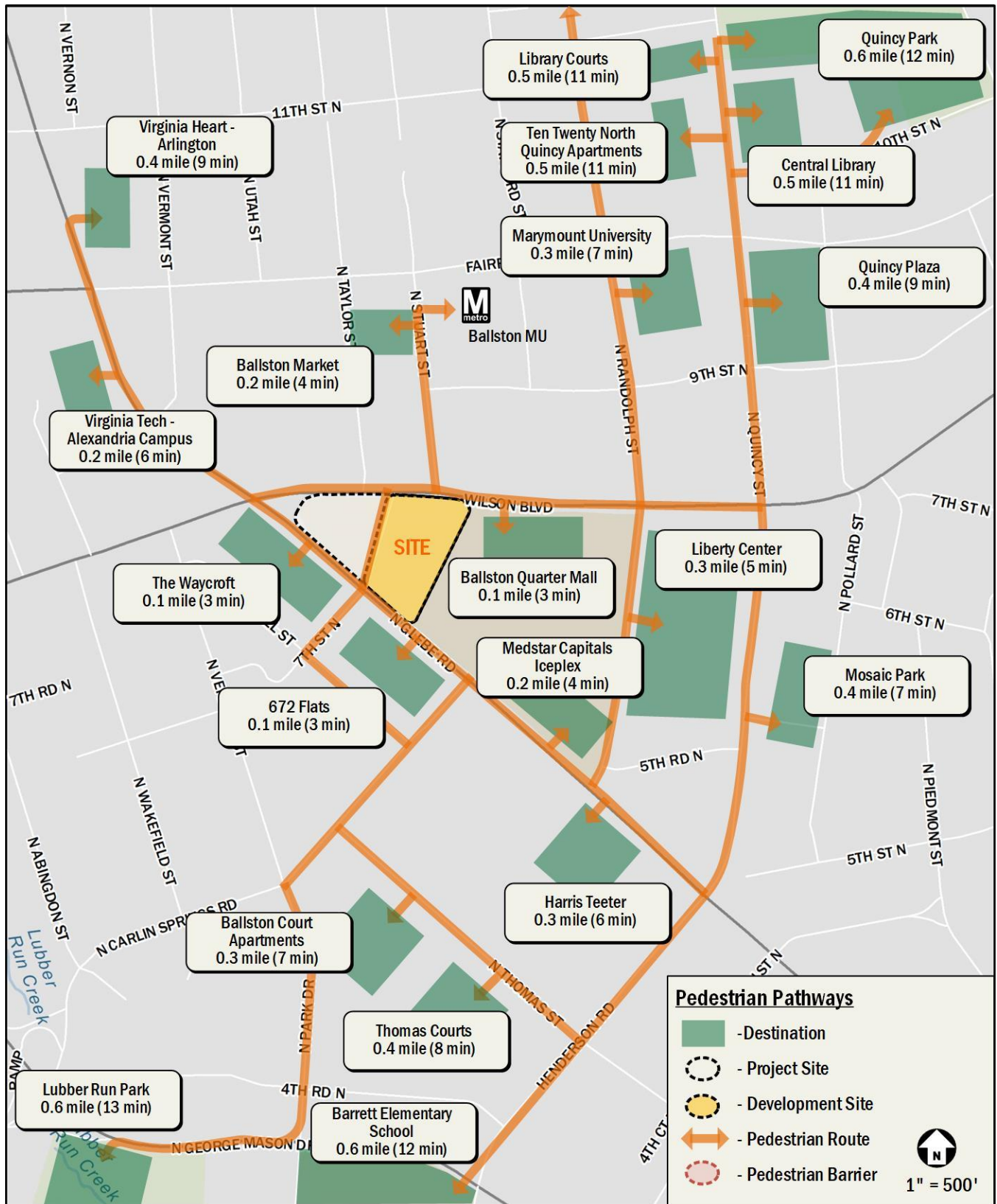


Figure 24: Pedestrian Pathways

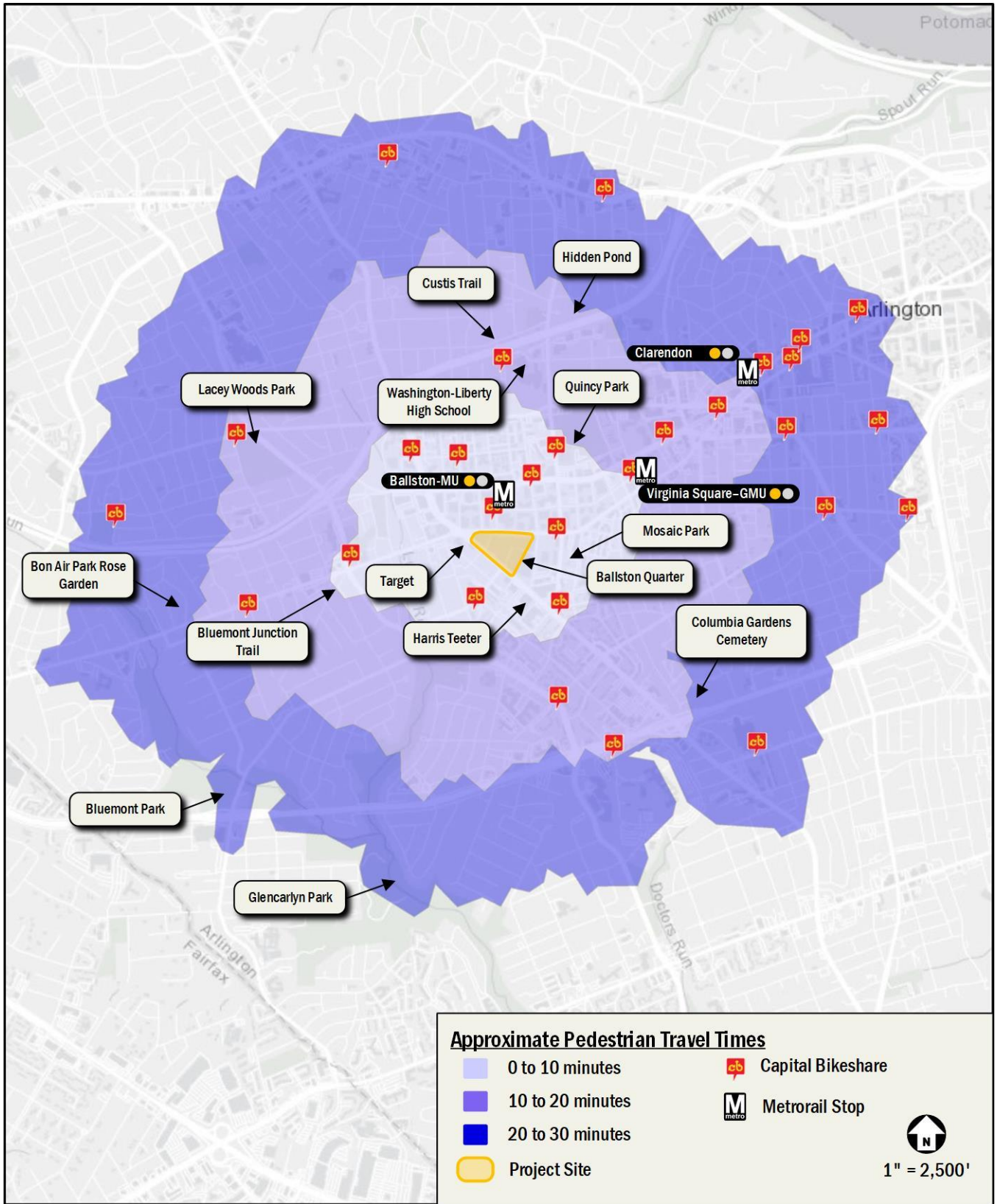


Figure 25: Approximate Pedestrian Travel Times



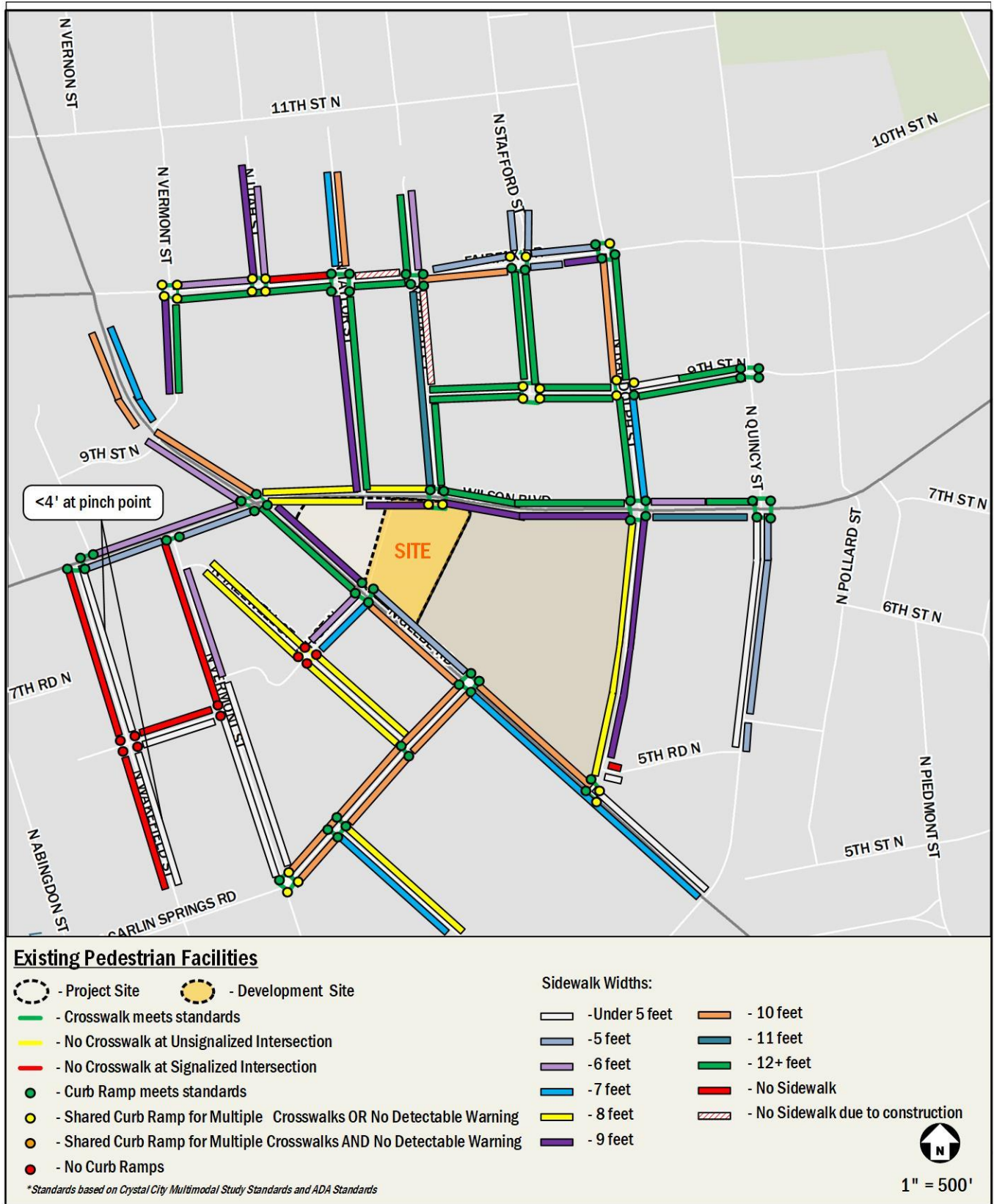


Figure 26: Existing Pedestrian Facilities

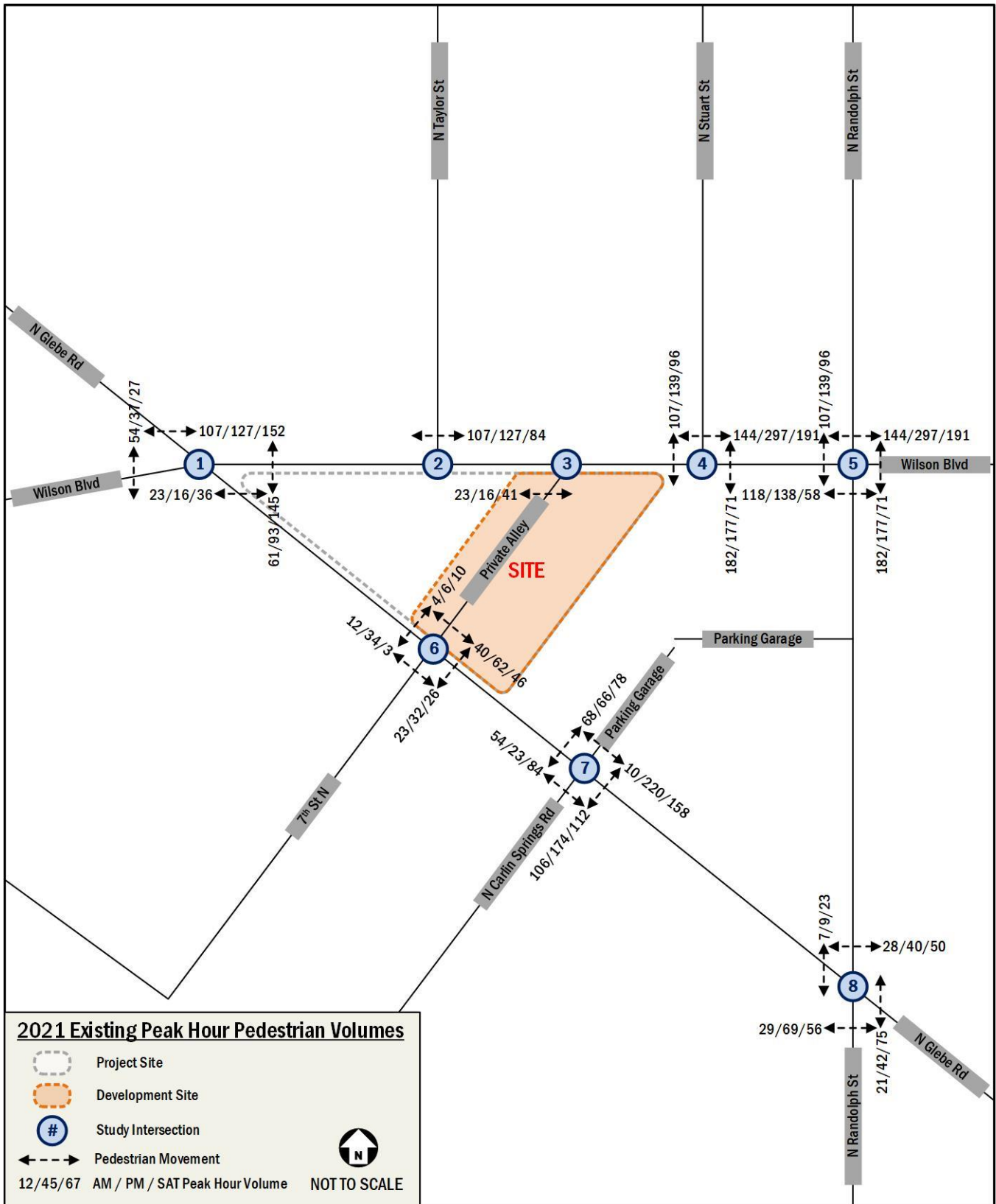


Figure 27: 2021 Existing Peak Hour Pedestrian Volumes

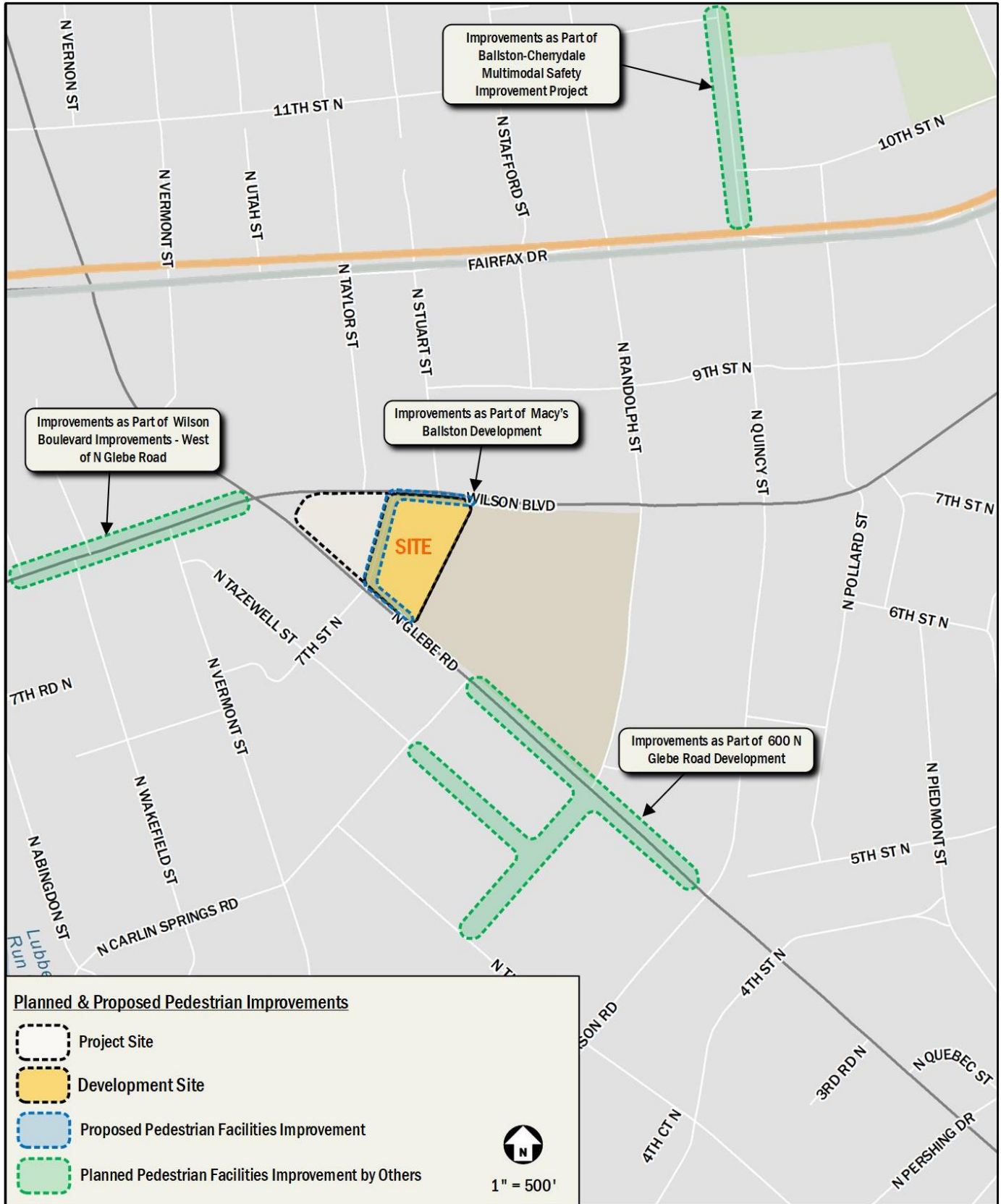


Figure 28: Planned and Proposed Pedestrian Improvements

## Bicycle Facilities

This chapter summarizes existing and future bicycle access and reviews the quality of cycling routes to and from the site.

The following conclusions are reached within this chapter:

- The site has access to several on- and off-street bicycle facilities, including buffered bicycle lanes along N Carlin Springs Rd and Fairfax Drive, and a protected bike lane along N Quincy Street which connects to the Custis Trail northeast of the site. There are also on-street routes along Vermont St, N Stuart Street and N Stafford Street.
- Future planned projects in the vicinity of the site include adding bicycle lanes along N Glebe Road, adding on street bicycle lanes along N Tazewell Street, and improving intersection between N Carlin Springs Road, N. Vermont Street and N Park Drive.

### Existing Bicycle Facilities

The site has access to several on- and off-street bicycle facilities, including buffered bicycle lanes along N Carlin Springs Rd and Fairfax Drive, and a protected bike lane along N Quincy Street which connects to the Custis Trail northeast of the site. There are also on-street routes along Vermont St, N Stuart Street and N Stafford Street. Figure 29 shows the existing facilities within the study area. Protected bicycle lanes provide physical separation such as an on-street parking lane between bicycles and motor vehicles (also known as a cycle track) and buffered bicycle lanes have the same function as standard bicycle lanes with a marked buffer on one side of the lane.

Arlington County publishes an annual Bicycle Comfort Level Map highlighting the most comfortable bicycle routes throughout Arlington County. The map uses a rating system of “perception of comfort” to show which routes are most comfortable. Routes are rated as ‘Easy’, ‘Medium’, ‘Challenging’, ‘Expert Level’, or ‘Prohibited’. The most recent publication of the map (2020) shows most bicycle routes in the vicinity of the site rated as ‘Challenging’ and ‘Expert Level’. While Wilson Boulevard and N Glebe Road are rated ‘Challenging’, there are multiple low-speed and low-traffic Roads located in the vicinity of the site which can provide appropriate level of access to bikers.

‘U’, and ‘Wave’ bicycle racks are available around the perimeter of the site. Bicycle racks are available at the Ballston-MU Metro station.

Figure 30 shows the 10-minute, 20-minute, and 30-minute bicycle travel shed for the proposed development. Within a 10-

minute bicycle ride, the proposed development has access to several destinations including the Custis Trail trailhead, Lubber Run Trail, public transportation stops, Metro stations served by the Orange and Silver lines, retail zones, residential neighborhoods, and community amenities. Within a 20-minute bicycle ride, the proposed development has access to destinations in Arlington such as Palisades Trail, Arlington National Cemetery, residential neighborhoods, and retail zones. Within a 30-minute bicycle ride, the proposed development is accessible to several destinations in Arlington and locations in the District like Theodore Roosevelt Island and Lincoln Memorial.

### Capital Bikeshare

In addition to personal bicycles, the Capital Bikeshare program provides additional cycling options for residents and patrons of the proposed development. The Bikeshare program has placed over 550 Bikeshare stations across Washington, DC, Arlington County, VA, City of Alexandria, VA, Montgomery County, MD, Fairfax County, VA, Prince George’s County MD, and most recently the City of Falls Church, VA, with over 4,500 bicycles provided. There are five (5) existing Capital Bikeshare stations that house over 65 docks within a quarter mile of the site, located along Wilson Blvd & N Vermont Street, Carlin Springs Road & N Thomas Street, N Quincy Street & Glebe Road, Wilson Blvd & N Quincy Street, and Ballston Metro. There are three (3) additional stations located within one half-mile of the site.

### E-Scooters and Dockless E-Bicycles

Four (4) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in Arlington County: Bird, Helbiz, Lime, and Spin. These SMDs are provided by private companies that give registered users access to a variety of e-scooter and e-bike options. These devices are used through each company-specific mobile phone application. Many SMDs do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; instead, many SMDs are parked in public space, most commonly in the “furniture zone” (the portion of sidewalk between where people walk and the curb, often where you’ll find other street signs, street furniture, trees, parking meters, etc.). At this time, SMD pilot/demonstration programs are underway in Arlington County, the District, Fairfax County, the City of Alexandria, and Montgomery County.

### ***Planned Bicycle Facilities***

Existing bike facilities have been recommended by the Arlington Master Transportation Plan to be upgraded in the future, as shown on Figure 11, including adding bicycle lanes along N Glebe Road and Wilson Boulevard, adding on street bicycle lanes along N Tazewell Street, and improving intersection between N Carlin Springs Road, N. Vermont Street and N Park Drive. As part of the Ballston Station Multimodal project, additional bike parking is constructed near the Metrorail station to enhance the attractiveness of transportation choices.

The proposed development will include both short- and long-term bicycle parking spaces. The proposed development will provide at least 12 short-term bicycle parking spaces for residential use

and nine (9) short-term bicycle spaces for grocery, meeting zoning requirements. The proposed development will provide at least 138 long-term bicycle parking spaces for residential use for Phase I, at least 84 long-term bicycle parking spaces for residential use for Phase II, and at least two (2) long-term spaces for grocer employee use in for Phase I, meeting zoning requirements. Secure long-term bicycle parking for the development will be located in the bicycle/locker rooms on the G1 and G2 levels of the garage. Short-term bicycle parking spaces will be placed along the perimeter of the site. The proposed development will provide at least two (2) locker in the ground floor level, meeting zoning requirements. One (1) shower will be provided as required, meeting zoning requirements.

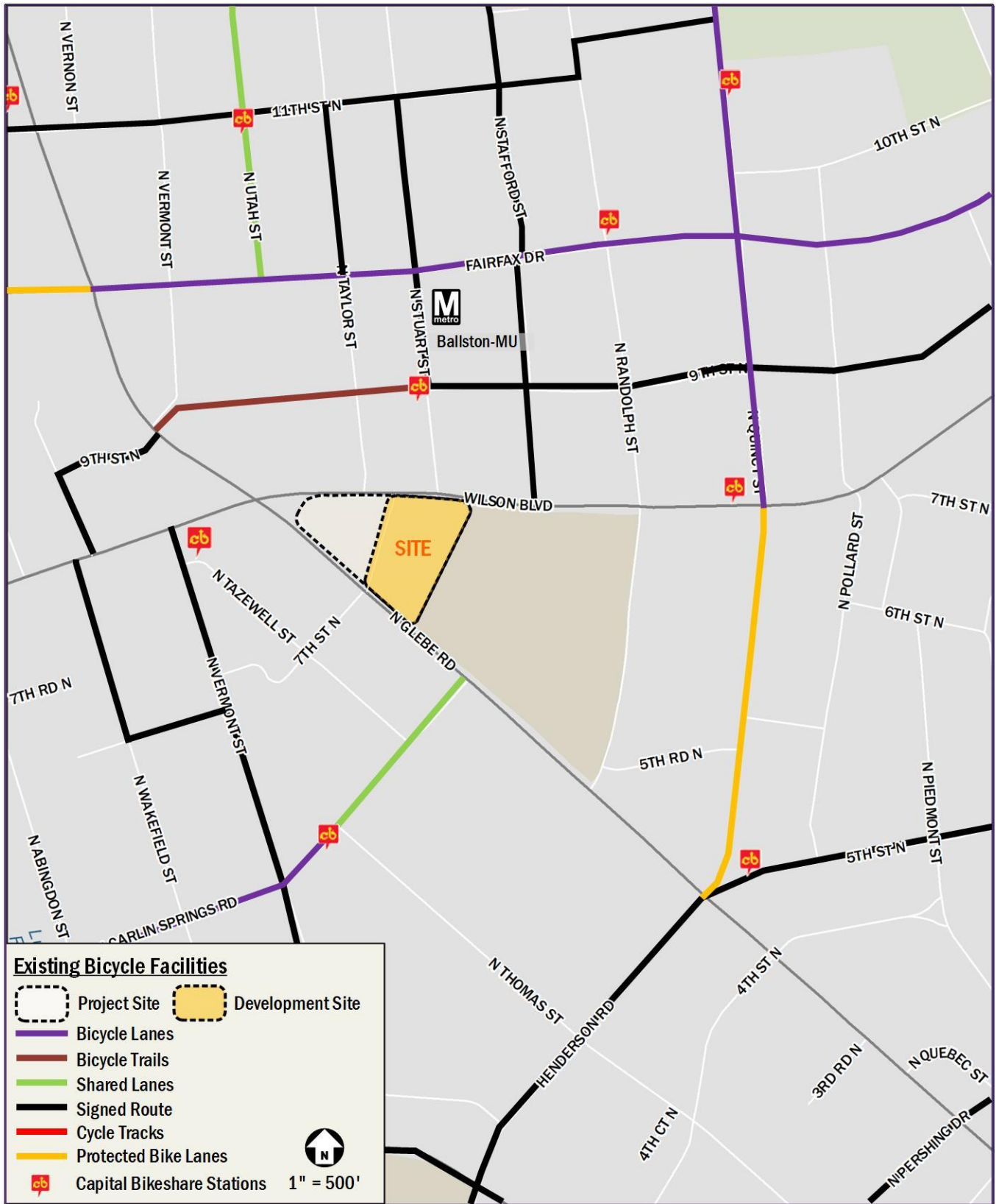


Figure 29: Existing Bicycle Facilities

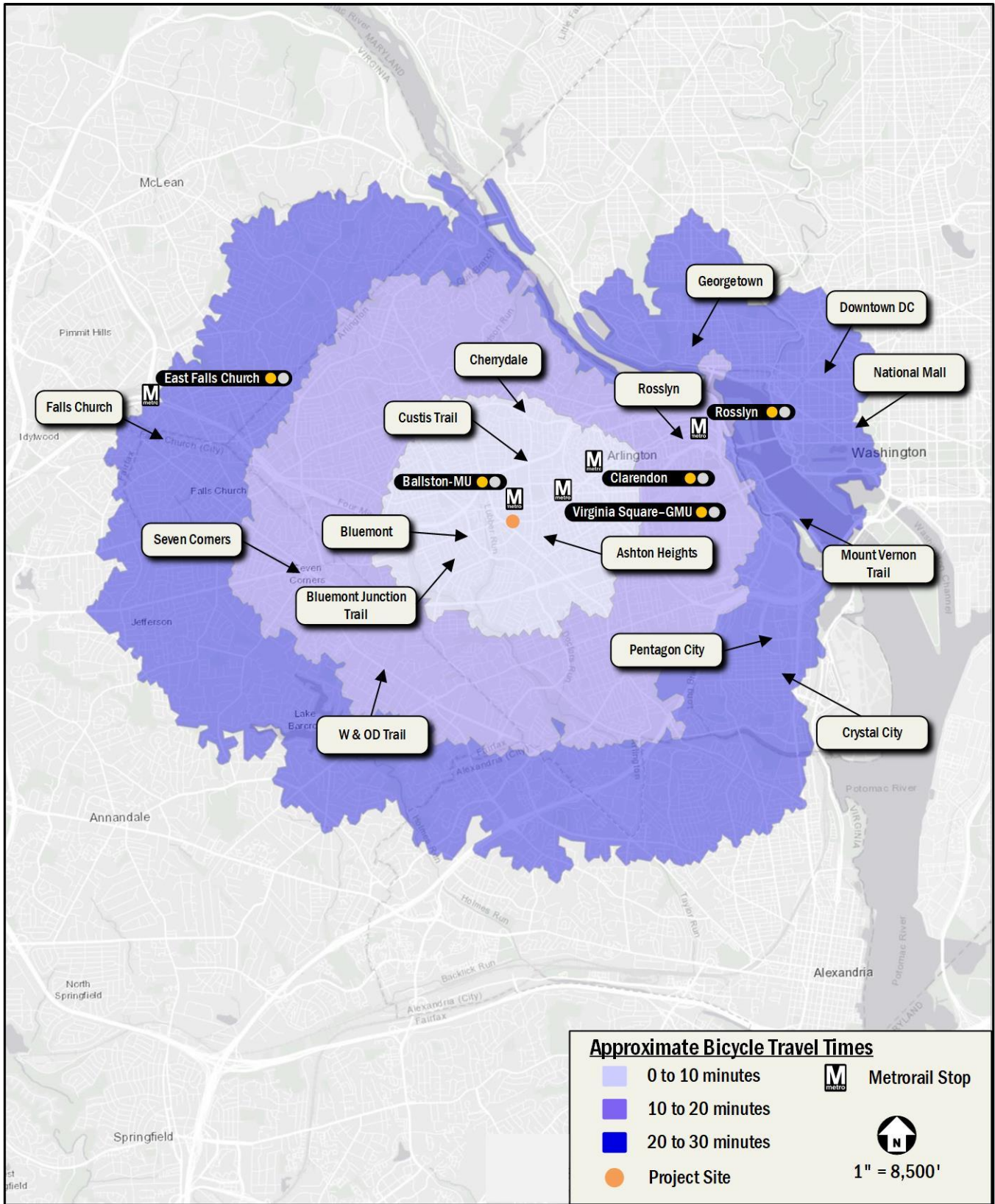


Figure 30: Approximate Bicycle Travel Times

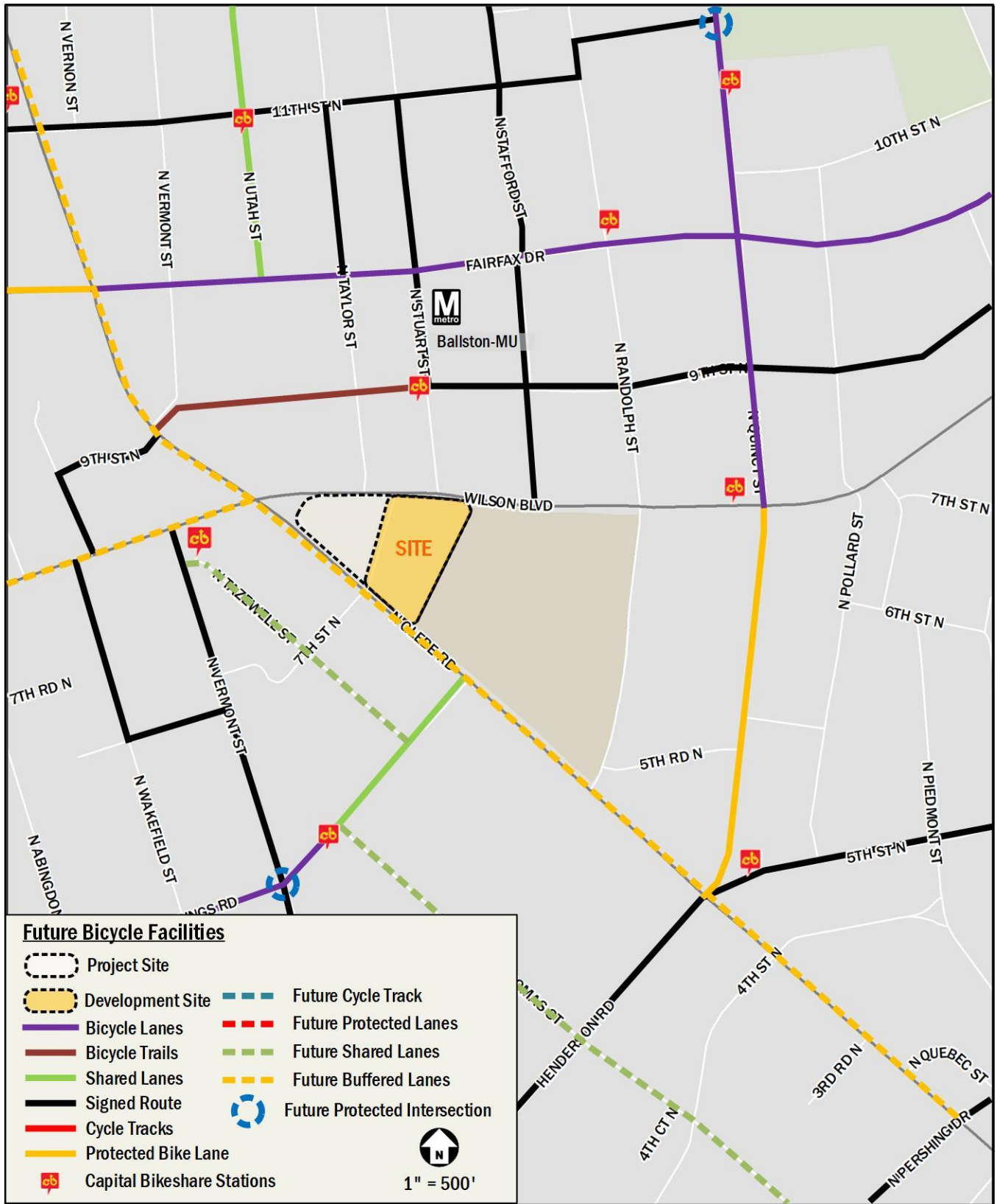


Figure 31: Future Bicycle Facilities



## Travel Demand Assumptions

This chapter outlines the transportation demand of the proposed Macy's Ballston development. It reviews the expected mode splits, multimodal trip generation, and the trip distribution and routing assumptions, which forms the basis for the chapters that follow. These assumptions were vetted and approved by Arlington County during the scoping process.

### Mode Split Methodology

Mode split (also called mode share) is the percentage of travelers using a particular type (or mode) of transportation when traveling. The main source of mode split information for this report was based on Census data using Transportation Analysis Districts (TADs) and data contained in the 2016 State of the Commute, the WMATA Ridership Survey, the Arlington County Mode Share Assumptions for Ballston, and other approved transportation studies in the vicinity of the site.

### Residential Mode Splits

Residential mode splits were primarily based on Census data at the TAD level for commuters with origins in the TAD. Figure 32 shows the TAD used in the analysis in relation to the proposed development and Figure 33 shows the destinations of driving commuters with origins in the project TAD. Table 6 summarizes the data that was used to establish the residential mode split assumptions for this report.

**Table 6: Summary of Residential Mode Split Data**

Information Source	Mode				
	SOV	Carpool	Transit	Bike/Walk	Telecommute/Other
Census Transportation Planning Products (TAD 1014)	43%	4%	36%	11%	6%
Census Data (Tract 1014.03)	39%	2%	40%	11%	8%
WMATA Ridership Survey (average for Courthouse Station Area)	47%		46%	7%	---
WMATA Ridership Survey (Suburban inside the Beltway)	39%		49%	12%	---
Arlington Resident Study 2015	44%	3%	42%	11%	1%
Arlington County Mode Share Assumption for Ballston (Productions)	35%		56%	9%	---
600 N Glebe TIS (5.21.2019)	40%		55%	5%	---

### Grocer and Retail Mode Splits

Grocer and retail mode splits were primarily based on information contained in WMATA's 2005 *Development-Related Ridership Survey*, data collected at two comparable sites in 2014, and other approved transportation studies in the vicinity of the site. Although data suggests a lower auto mode share than was assumed may be appropriate, this report assumed a higher auto mode share for the retail and grocer uses so as to be conservative in the analysis. Table 7 summarizes the data that was used to establish the grocer and retail mode split assumptions for this report.

**Table 7: Summary of Grocer and Retail Mode Split Data**

Information Source	Mode				
	SOV	Carpool	Transit	Bike/Walk	Telecommute/Other
WMATA Ridership Survey (Average for Ballston Station Area)	43%		30%	27%	---
600 N Glebe TIS (5.21.2019)	50%		35%	15%	---
Comparison for two sites in Arlington, VA, located 0.5 miles from a Metro station, that include apartments, supermarket, and retail uses (Count data from Dec. 2014)	37%		63%		

### Office Mode Splits

Office mode splits were primarily based on Census data at the TAD level for commuters with destinations in the TAD and information contained in WMATA's 2005 *Development-Related Ridership Survey*. Figure 32 shows the TAD used in the analysis in relation to the proposed development. Table 8 summarizes the data that was used to establish the office mode split assumptions for this report.

**Table 8: Summary of Office Mode Split Data**

Information Source	Mode				
	SOV	Carpool	Transit	Bike/Walk	Telecommute/Other
Census Transportation Planning Products (TAD 1014)	55%	10%	23%	8%	4%
WMATA Ridership Survey (average for Ballston Station Area)	67%		17%	16%	---
State of the Commute 2016	38%	6%	45%	6%	5%

(of District Employees)				
WMATA Ridership Survey (average for Courthouse Station Area)	65%	27%	8%	---

The site has multiple bus stops in the vicinity and one (1) Metro station near the site. It is expected that a significant portion of trips will be by Metrorail, bus, bicycle, or on foot during the morning and afternoon peak hours, rather than by personal vehicle. Based on this, the auto mode splits for the proposed development were determined to be 35% for the residential component and 50% for the grocer component, so as to reflect a conservative analysis. The proposed mode splits were vetted and approved by Arlington County during the scoping process. Table 9 shows the mode split for the development.

**Table 9: Summary of Mode Split Assumptions by Land Use**

Land Use	Mode			
	Auto	Transit	Bike	Walk
Residential	35%	56%	3%	6%
Grocer*	50%	10%	5%	35%
Existing Retail	50%	10%	5%	35%
Existing Office	45%	50%	2%	3%

\*Assumes 25% Pass-By trips

### Trip Generation Methodology

Weekday and Saturday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 10<sup>th</sup> Edition.

### Existing Trip Generation

The site is currently occupied by an existing Macy's. The existing Macy's makes up approximately 30% of the total Ballston Quarter (507,745 square feet). As such, 30% of the inbound and outbound trips to the existing site were removed from the network. This approach is preferred to using ITE rates, as the number of vehicular trips calculated for the existing Macy's based on ITE rates removes a greater number of vehicular trips from the network than appropriate, and this approach results in a more conservative analysis. A detailed comparison of this approach is provided in a later chapter of this report.

Trip generation for the existing 4300 Wilson Boulevard site is based on the development of 240,000 square feet of office and 20,000 square feet of retail. Office trip generation was calculated using Land Use 710 (General Office Building) and retail trip

generation was calculated using Land Use 820 (Shopping Center). Trip generation was calculated based on ITE's baseline vehicle trips using the setting/location of General Urban/Suburban for both uses.

### Proposed Trip Generation

Residential trip generation is based on the development program of 555 residential dwelling units. Residential trip generation was calculated based on ITE Land Use 222 (Multifamily Housing – High-Rise), using the setting/location of General Urban/Suburban, splitting trips into different modes using assumptions outlined in the mode split section of this report. It should be noted that the vehicular trip generation numbers include truck and delivery related trips to and from the residential component of the project

Grocer trip generation is based on the development program of 44,000 square feet of grocery space. Grocer trip generation was calculated based on ITE's baseline vehicular trips for Land Use 850 (Supermarket), using the setting/location of General Urban/Suburban, splitting trips into different modes using assumptions outlined in the mode split section of this report. It should be noted that the vehicular trip generation numbers include truck and delivery trips associated with the grocery component of the project.

Pass-by trips are vehicular trips that are already present on the roadway network that now deviate from their existing route due to the addition of the proposed development. A pass-by reduction of 25 percent has been applied to the weekday AM and PM peak hours, as well as the Saturday peak hour, as vetted and approved by Arlington County. These pass-by rates are available in the ITE Trip Generation Handbook, 3<sup>rd</sup> Edition, for the grocer component of the site (ITE Land Use 850).

A summary of the net new multi-modal trip generation for the proposed development as compared to the existing uses on site is shown in Table 10 for the weekday morning, weekday afternoon, and Saturday midday peak hours. Detailed trip generation calculations are included in the Technical Appendix.

**Table 10: Multi-Modal Trip Generation**

Mode	Land Use	Quantity	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
Auto	Residential	555 du	14	44	58	42	27	69	37	32	69
	Grocer	44,000 sf	40	25	65	53	58	111	63	58	121
	Grocer Pass-By (25%)	44,000 sf	14	8	22	18	19	37	21	20	41
	<b>Total Proposed</b>		<b>68</b>	<b>77</b>	<b>145</b>	<b>113</b>	<b>104</b>	<b>217</b>	<b>121</b>	<b>110</b>	<b>231</b>
	<i>Existing Retail*</i>	148,353 sf	146	23	169	43	147	190	71	125	196
	<b>Net New</b>		<b>-78</b>	<b>54</b>	<b>-24</b>	<b>70</b>	<b>-43</b>	<b>27</b>	<b>50</b>	<b>-15</b>	<b>35</b>
Transit	Residential	555 du	26	85	111	80	50	130	71	58	129
	Grocer	44,000 sf	20	12	32	26	28	54	31	28	59
	<b>Total Proposed</b>		<b>46</b>	<b>97</b>	<b>143</b>	<b>106</b>	<b>78</b>	<b>184</b>	<b>102</b>	<b>86</b>	<b>188</b>
	<i>Existing Retail</i>	148,353 sf	26	15	41	64	69	133	80	74	154
	<b>Net New</b>		<b>20</b>	<b>82</b>	<b>102</b>	<b>42</b>	<b>9</b>	<b>51</b>	<b>22</b>	<b>12</b>	<b>34</b>
Bike	Residential	555 du	1	5	6	4	3	7	0	0	0
	Grocer	44,000 sf	10	6	16	13	14	27	15	-15	0
	<b>Total Proposed</b>		<b>11</b>	<b>11</b>	<b>22</b>	<b>17</b>	<b>17</b>	<b>34</b>	<b>15</b>	<b>-15</b>	<b>0</b>
	<i>Existing Retail</i>	148,353 sf	13	8	21	32	34	66	40	37	77
	<b>Net New</b>		<b>-2</b>	<b>3</b>	<b>1</b>	<b>-15</b>	<b>-17</b>	<b>-32</b>	<b>-25</b>	<b>-52</b>	<b>-77</b>
Walk	Residential	555 du	3	9	12	9	5	14	0	0	0
	Grocer	44,000 sf	69	42	111	90	99	189	107	-107	0
	<b>Total Proposed</b>		<b>72</b>	<b>51</b>	<b>123</b>	<b>99</b>	<b>104</b>	<b>203</b>	<b>107</b>	<b>-107</b>	<b>0</b>
	<i>Existing Retail</i>	148,353 sf	89	55	144	222	242	464	280	258	538
	<b>Net New</b>		<b>-17</b>	<b>-4</b>	<b>-21</b>	<b>-123</b>	<b>-138</b>	<b>-261</b>	<b>-173</b>	<b>-365</b>	<b>-538</b>

\* Vehicle trips associated with existing Macy's calculated based on driveway volumes

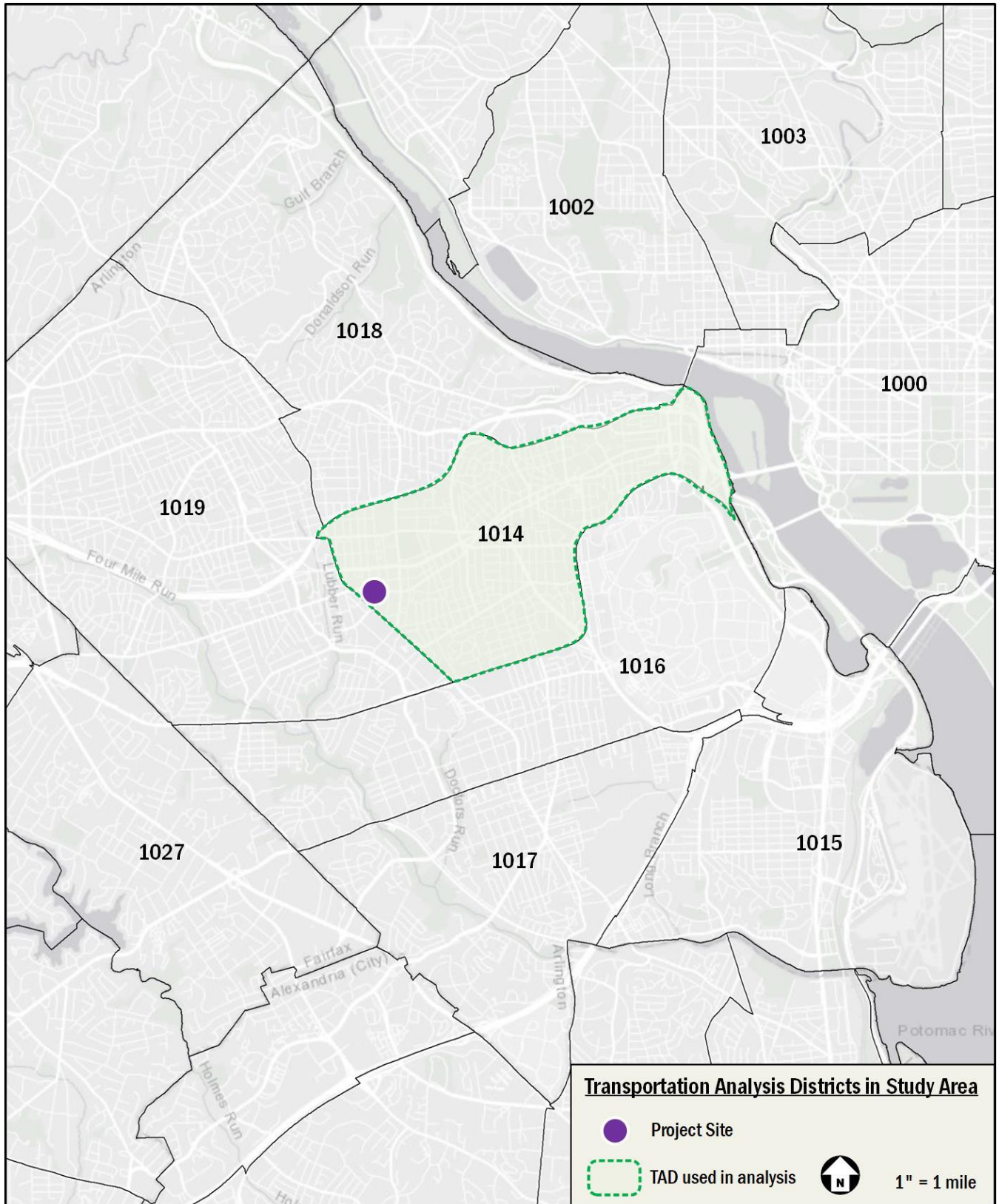


Figure 32: Transportation Analysis District (TAD) in Study Area

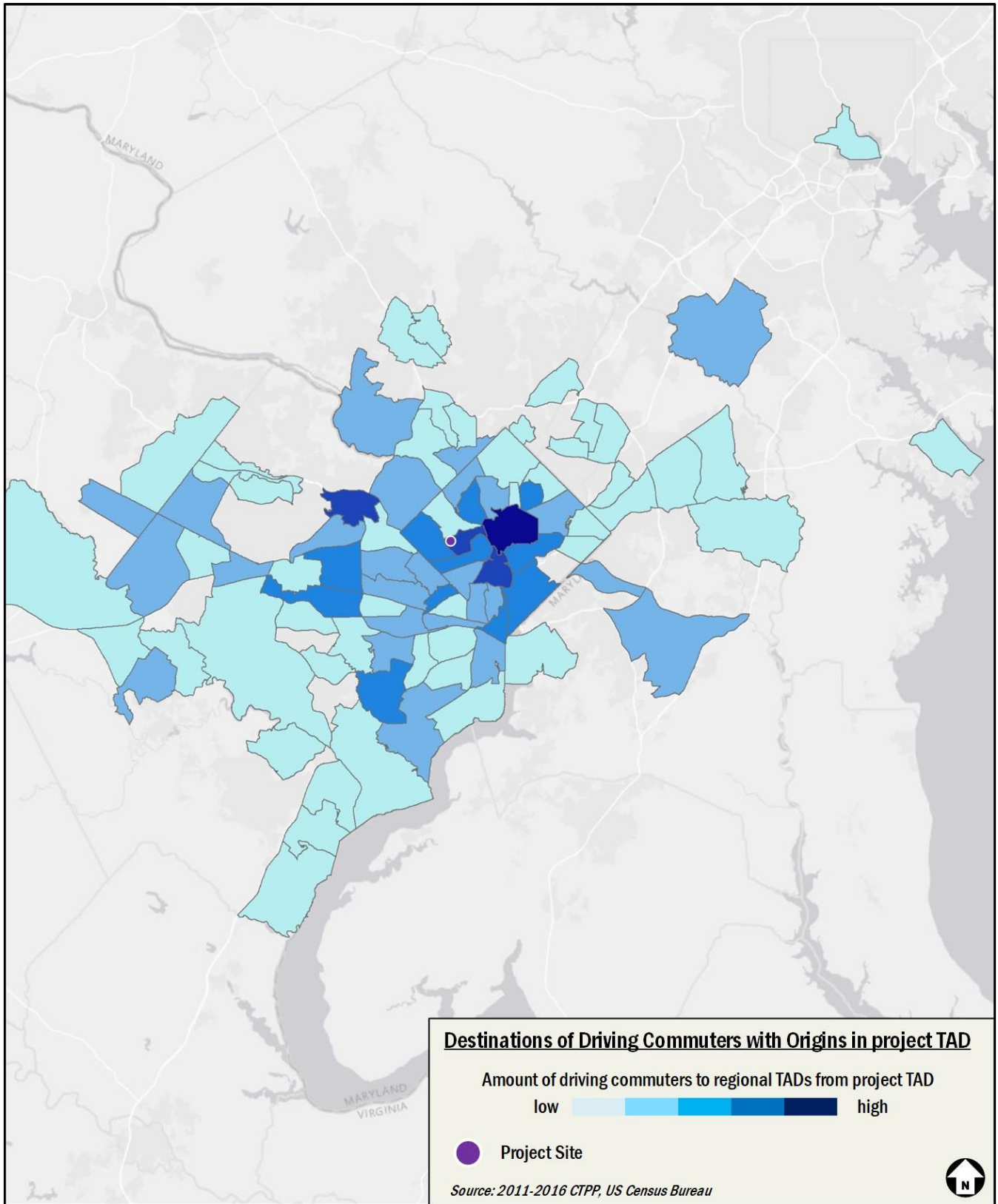


Figure 33: Destinations of Driving Commuters with Origins in project TAD

## Traffic Operations

This chapter provides a summary of an analysis of the existing and future roadway capacity in the study area for the 2026 analysis year. Included is an analysis of potential vehicular impacts of the Macy's Ballston development and a discussion of potential improvements.

The purpose of the capacity analysis is to:

- Determine the existing capacity of the study area roadways;
- Determine the overall impact of the proposed development on the study area roadways; and
- Discuss potential improvements and mitigation measures to accommodate the additional vehicular trips.

The capacity analysis focuses on the morning and afternoon commuter peak hours, as well as the Saturday midday peak hours, as determined by the existing traffic volumes in the study area.

The proposed development is considered to have an impact at an intersection within the vehicular study area if any of the following conditions are met:

- The overall intersection or any movement operates at LOS F in the future conditions with the proposed development where it operates at LOS E or better in the background conditions without the proposed development;
- The overall intersection or any movement operates at LOS F during the background condition and the delay increases by more than 10% in the future conditions with the proposed development; or
- If any 95<sup>th</sup> percentile queue length (or maximum queue length, where applicable) in the future condition exceeds the available capacity and increases by more than 150 feet compared to background conditions.

The following conclusions are reached within this chapter:

- There are impacts to three (3) study intersections as a result of the proposed development.
- Mitigation measures were analyzed and discussed at these intersections, of which feasible solutions were recommended for implementation given Arlington County approval.
- Overall, this report concludes that the project will not have a detrimental impact to the surrounding transportation network.

## Study Area, Scope, & Methodology

This section outlines the assumptions used to develop the existing and future roadway capacity analyses, including volumes, roadway geometries, and traffic operations. The scope of the analysis contained within this report was discussed with and approved by Arlington County staff. The general methodology of the analysis follows national and Arlington County guidelines on the preparation of transportation impact evaluations of site development.

### Capacity Analysis Scenarios

The vehicular capacity analyses are performed to determine if the proposed development will lead to adverse impacts on traffic operations. This is accomplished by comparing future scenarios: (1) without the proposed development (referred to as the Background conditions) and (2) with the development approved and constructed (referred to as the Future conditions).

Specifically, the roadway capacity analysis examined the following scenarios:

1. 2021 Existing Conditions
2. 2026 Future Conditions without the development (2026 Background)
3. 2026 Future Conditions with the development (2026 Future)

### Study Area

The study area of the analysis is a set of intersections where detailed capacity analyses are performed for the scenarios listed above. The set of intersections included are those intersections most likely to have potential impacts or require changes to traffic operations to accommodate the proposed development.

Based on the projected future trip generation and the location of the site access points, as agreed to in this report's scoping agreement, the following intersections were chosen for analysis:

1. Wilson Boulevard & N Glebe Road
2. Wilson Boulevard & N Taylor Street
3. Wilson Boulevard & 7th Street N/Private Alley
4. Wilson Boulevard & N Stuart Street
5. Wilson Boulevard & N Randolph Street
6. N Glebe Road & 7th Street N/Private Alley
7. N Glebe Road & N Carlin Springs Road/Ballston Parking
8. N Glebe Road & N Randolph Street

Figure 7 shows the vehicular study area intersections. Roadway characteristics, including classification, number of lanes, speed limit, the presence of on-street parking and average daily traffic volumes (ADT) are outlined in Table 11.

**Table 11: Existing Roadway Network**

Roadway	Classification*	Lanes	Speed	On-Street Parking	ADT**
N Glebe Road	Principal Arterial (VDOT) Arterial Type B (Arlington)	6	30 mph	Yes	26,000
Wilson Boulevard	Principal Arterial (VDOT) West of N Glebe Rd – Arterial Type B (Arlington) East of N Glebe Rd – Arterial Type A (Arlington) East of N Randolph St – Arterial Type B (Arlington)	4	25–30 mph	Yes	11,000
N Randolph Street	Major Collector (VDOT) Arterial Type B (Arlington)	2	25 mph	Yes	6,800
N Carlin Springs Road	Minor Collector (VDOT) Arterial Type D (Arlington)	4-6	25 mph	Yes	10,000
N Stuart Street	Local Road (VDOT) Arterial Type B (Arlington)	2	25 mph	Yes	3,600
N Taylor Street	Local Road (VDOT) Non-Arterial (Arlington)	2	25 mph	Yes	NA
7 <sup>th</sup> Street N	Local Road (VDOT) Non-Arterial (Arlington)	2	25 mph	Yes	NA

\* From VDOT and Arlington GIS

\*\* VDOT ADT Data from 2019

NA – Data unavailable

## Traffic Volume Assumptions

The following section reviews the traffic volume assumptions and methodologies used in the roadway capacity analyses.

### Existing Traffic Volumes

Data collection was not possible under the existing conditions as traffic volumes were not representative of typical traffic conditions due to the COVID-19 pandemic. Therefore, available data from different sources, including historical turning movement counts and StreetLight data were utilized to establish baseline conditions. More specifically, the baseline Existing (2021) volumes at proposed study intersections are obtained/estimated from several sources as outlined below. This approach and assumptions were vetted and approved by Arlington County during the scoping process.

### Arlington County Department of Environmental Services (DES) Volumes

Arlington County's Department of Environmental Services (DES) collected turning movement counts in the vicinity of the project site in 2017 and 2019. The following intersections are based on these volumes:

- Wilson Boulevard/N Randolph Street (2017)
- N Glebe Road/Wilson Boulevard (2019)
- N Glebe Road/N Carlin Springs Road (2019; Saturday Peak)

### Historical Volumes from Approved Transportation Studies

Historical turning movement counts were collected as part of two (2) approved transportation studies in the vicinity of the project site in 2015 and 2018. The following intersections are based on available historical volumes:

- N Glebe Road/7th Street N (750 N Glebe Road MMTA – 2015)
- N Glebe Road/Wilson Boulevard (600 N Glebe Road MMTA – 2018; AM and PM Peak)
- N Glebe Road/N Carlin Springs Road (600 N Glebe Road MMTA – 2018; AM and PM Peak)
- N Glebe Road/N Randolph Street (600 N Glebe Road MMTA – 2018)

## StreetLight Volumes

StreetLight Insight® origin and destination data was used to determine traffic patterns during pre-COVID conditions (2019) at intersections without available data. StreetLight metrics are derived from a combination of two types of data: navigation-GPS data and Location Based Services (LBS) data, including historical data, with a sample size of approximately 23% of the adult population. This data is then transformed into contextualized, aggregated, and normalized travel patterns that can be used to create origin and destination analyses. StreetLight data was used to estimate the pre-COVID turning movement ratios at intersections without available count data. Using these turning movement ratios, existing field-collected data at adjacent intersections was extrapolated to estimate the pre-COVID turning movement counts at the following intersections:

- Wilson Boulevard/N Stuart Street
- Wilson Blvd & N Taylor St
- Wilson Blvd & Private Alley

Volume extrapolation was supplemented by additional turning movement count data provided by Arlington County DES at intersections along Fairfax Drive from 2019. Consistent with the 0.0% inherent growth rate assumed for future scenarios, derived from VDOT AADT data, no growth was applied to historical turning movement count data.

Baseline conditions were established by projecting the available volumes into existing conditions using the annual growth rate determined during scoping, using StreetLight data to estimate volumes at the intersections without available count data, and balancing volumes between intersections as needed.

The existing turning movement counts are included in the Technical Appendix. The existing peak hour traffic volumes for intersections within the vehicular study area are shown in Figure 34.

## 2026 Traffic Volumes

### 2026 Background Traffic Volumes (without the proposed development)

Traffic projections for the 2026 Background Conditions consist of the existing volumes with the two additions:

Inherent growth on the roadway (representing regional traffic growth); and



Traffic generated by developments expected to be completed prior to 2026 (representing local traffic growth, known as background developments).

### **Inherent Growth**

While the background developments represent local traffic changes, regional traffic is typically accounted for using growth rates. The growth rates used in this analysis were derived using VDOT's Annual Average Daily Traffic (AADT) data and discussions with Arlington County staff during the scoping process. According to historical data, the average historical growth rate on the roadway network surrounding the study area has been negative in recent years. As such, no growth has been assumed for the 2026 scenarios.

### **Background Developments (2026)**

Following industry methodologies, a background development must meet the following criteria to be incorporated into the analysis:

- Be located in the study area, defined as having an origin or destination point within the cluster of study area intersections;
- Have entitlements; and
- Have a construction completion date prior or close to the proposed development.

Based on these criteria, seven (7) developments were included in the 2026 Background Conditions scenario. These developments are:

1. 750 N Glebe Road
2. 670 N Glebe Road (672 Flats)
3. 600 N Glebe Road
4. Ballston Common Mall – Residential Tower
5. 4040 Wilson Boulevard (Liberty Center)
6. 11th and Vermont
7. 4201 Fairfax Drive (Ballston Station)

The location of the background developments included in the 2026 Background Conditions scenario in relation to the proposed Macy's Ballston development is shown on Figure 35.

Transportation studies were available for the background developments included in the 2026 Background Conditions. Details on each of the background developments included in the 2026 Background Conditions are presented below:

1. **750 N Glebe Road:** The approved 750 N Glebe Road development is located in the Ballston area of Arlington, Virginia at the southwest corner of the Wilson Boulevard and North Glebe Road intersection. The development was completed in 2017, but was not yet complete at the time of data collection. The development replaced an 18,000 square foot car dealership, a 2,200 square foot commercial building, and a 4,800 square foot commercial building with a multifamily residential development consisting of 491 dwelling units, an approximately 42,000 square foot grocery store, and approximately 20,000 sf of ground floor retail. The 750 N Glebe Road development is expected to generate 202 weekday AM peak hour vehicle trips, 347 weekday PM peak hour vehicle trips, and 377 Saturday midday peak hour vehicle trips based on the Traffic Impact Study prepared by Gorove Slade Associates dated August 26, 2015.
2. **670 N Glebe Road (672 Flats):** The approved 670 N Glebe Road development is located in the Ballston area of Arlington, Virginia to the south of N Glebe Road, between 7th Street N and N Carlin Springs Road. The development was completed in 2018, but was not yet complete at the time of data collection. The development replaced an existing gas station, car dealership, and parking lot with 178 residential dwelling units and 4,510 square feet of retail. The 670 N Glebe development is expected to generate 52 weekday AM peak hour vehicle trips, 116 weekday PM peak hour vehicle trips, and 106 Saturday midday peak hour vehicle trips based on the Traffic Impact Study prepared by Wells & Associates dated September 29, 2014.
3. **600 N Glebe Road:** The approved 600 N Glebe Road site is located in the Ballston area of Arlington, Virginia on the west side of N Glebe Road, between N Carlin Springs Road and N Henderson Road. The 600 North Glebe site is currently occupied by a 49,500 square foot Harris Teeter grocery store, a car dealership, and surface parking lots serving both uses individually. The proposed development will include three buildings: Building One will consist of a new 70,851 square foot Harris Teeter store and 255 residential units, Building Two will consist of 234 residential units, and Building Three will consist of 10,592 square feet of retail and 243 residential units. The 600 N Glebe Road development is expected to generate approximately 140 net vehicular trips in the weekday AM peak hour, 274 net vehicular trips in the PM peak hour, and 231 net vehicular trips in the Saturday

midday peak hour based on the prepared by Gorove Slade Associates dated May 21, 2019.

4. **Ballston Common Mall – Residential Tower:** The approved Ballston Common Mall Residential Tower development is located in the Ballston area of Arlington, Virginia at the southwest quadrant of the Wilson Boulevard and N Randolph Street intersection. The development was completed in 2018, but was not yet complete at the time of data collection. The development replaced a 120,000 square foot Macy's furniture store with 405 residential dwelling units and 51,860 square feet of retail. The project is expected to generate 106 net vehicular trips in the weekday AM peak hour, 119 net vehicular trips in the weekday PM peak hour, and 136 net vehicular trips in the Saturday midday peak hour based on the Traffic Impact Study prepared by Wells + Associates dated June 8, 2015.
5. **4040 Wilson Boulevard (Liberty Center):** The approved Liberty Center development is located on the south side of Wilson Boulevard, between N Randolph Street and N Quincy Street, in the Ballston area of Arlington, Virginia. The development is currently under construction and expected to be complete prior to 2026. The development will replace the existing 426,000 square foot office building and 8,000 square foot of retail with 191,000 square feet of office, 29,000 square feet of fitness space, 4,200 square feet of restaurant space, and 244 residential dwelling units. The Liberty Center development is expected to generate approximately 695 weekday AM peak hour vehicle trips, 683 weekday PM peak hour vehicle trips, and 531 Saturday midday peak hour vehicular trips based on the Trip Generation Analysis Study prepared by Gorove Slade Associates dated April 28, 2016.
6. **11<sup>th</sup> and Vermont:** The approved 11<sup>th</sup> and Vermont development is located in the Ballston area of Arlington, Virginia at the northeast and southeast quadrants of the 11<sup>th</sup> Street N and N Vermont Street intersection. The

development is expected to be complete prior to 2026. The development will replace the existing church, school, single-family home, and surface parking with 27 townhouses and 59 multifamily residential dwelling units. The 11<sup>th</sup> and Vermont development is expected to generate approximately 104 fewer net vehicular trips in the weekday AM peak hour, 31 net vehicular trips in the weekday PM peak hour, and 36 net vehicular trips in the Saturday midday peak hour based on the Traffic Impact Study prepared by Wells + Associates dated September 16, 2016 and 10<sup>th</sup> Edition ITE Trip Generation rates.

7. **4201 Fairfax Drive (Ballston Station):** The approved Ballston Station development is located in the Ballston area of Arlington, Virginia at the northwest quadrant of the Fairfax Drive and N Stafford Street intersection. The development is expected to be complete prior to 2026. The development will raze the existing church and redevelop the site with up to 138 residential dwelling units and a 23,030 square foot church with a pre-school. The Ballston Station development is expected to generate approximately 33 net vehicular trips in the weekday AM peak hour, 44 net vehicular trips in the weekday PM peak hour, and 54 net vehicular trips in the Saturday midday peak hour based on the Traffic Impact Study prepared by Wells + Associates dated April 1, 2016 and 10<sup>th</sup> Edition ITE Trip Generation rates.

Trips generated by the approved background developments are included in the Technical Appendix. The traffic volumes generated by background developments were added to the existing traffic volumes in order to establish the 2026 Background traffic volumes. The traffic volumes for the 2026 Background conditions are shown on Figure 36.

**Table 12: Traffic Generated by 2026 Background Developments**

Development	Trip Generation								
	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
<u>750 N Glebe Road <sup>(1)</sup></u>									
Total New Vehicle-Trips	98	104	202	186	161	347	196	181	377
<u>670 N Glebe Road (672 Glebe) <sup>(2)</sup></u>									
Total New Vehicle-Trips	11	41	52	66	50	116	56	50	106
<u>600 N Glebe Road <sup>(3)</sup></u>									
Total New Vehicle Trips	51	89	140	146	123	274	130	111	231
<u>Ballston Common Mall - Residential Tower <sup>(4)</sup></u>									
Total New Vehicle-Trips	21	85	106	77	42	119	73	63	136
<u>4040 Wilson Boulevard (Liberty Center) <sup>(5)</sup></u>									
Total New Vehicle Trips	551	144	695	188	495	683	283	248	531
<u>11<sup>th</sup> and Vermont <sup>(6)</sup></u>									
Total New Vehicle Trips	-66	-38	-104	21	10	31	19	17	36
<u>Ballston Station <sup>(7)</sup></u>									
Total New Vehicle Trips	6	27	33	28	16	44	30	24	54
<b>Total Background Trips (veh/hr)</b>	<b>672</b>	<b>452</b>	<b>1,124</b>	<b>712</b>	<b>897</b>	<b>1,614</b>	<b>787</b>	<b>694</b>	<b>1,471</b>

(1): Extracted from 750 N Glebe TIA (08.12.2016) prepared by Gorove Slade Associates.

(2): Extracted from Glebe 672 TIA (09.29.2014) prepared by Wells + Associates.

(3): Extracted from 600 N Glebe MMTA (05.21.2019) prepared by Gorove Slade Associates.

(4): Extracted from Ballston Common Mall – Residential Tower TIA (06.08.2015) prepared by Wells + Associates.

(5): Extracted from Liberty Center - Trip Generation Analysis Comparison (06.17.2016) prepared by Gorove Slade Associates.

(6): Extracted from NVR at Ballston TIA (09.16.2016) prepared by Wells + Associates. Saturday peak hour based on ITE Trip Generation, 10<sup>th</sup> Edition.

(7): Extracted from 4201 Fairfax Drive TIA (04.01.2016) prepared by Wells + Associates. Saturday peak hour based on ITE Trip Generation, 10<sup>th</sup> Edition.

**2026 Future Traffic Volumes**

The 2026 Future Conditions traffic volumes consist of the 2026 Background volumes with the addition of the traffic volumes generated by the proposed development (site-generated trips). Thus, the 2026 Future Conditions traffic volumes include traffic generated by: the existing volumes, background developments, removed existing site trips, and the proposed development.

Vehicular trips associated with the existing Macy's were removed from the network prior to the addition of the proposed residential and grocery trips in the 2026 Future Conditions. The existing Macy's makes up approximately 30% of the total Ballston Quarter (507,745 square feet). As such, 30% of the inbound and outbound trips to the existing site were removed from the network. This approach is preferred to using ITE rates, as the number of vehicular trips calculated for the existing Macy's based on ITE rates removes a significant number of vehicular trips from the network than expected, and this approach results in a more conservative analysis. A comparison of the removal of trips using ITE rates versus the removal of 30% of existing trips is shown in Table 13.

**Table 13: Comparison of ITE and Percentage Reduction in Trips**

	Peak Hour	In	Out
<b>Existing Volumes</b>	<b>AM</b>	485	77
	<b>PM</b>	142	491
	<b>Saturday</b>	235	415
<b>ITE Trip Generation for 148,353 SF Retail</b>	<b>AM</b>	70	43
	<b>PM</b>	175	189
	<b>Saturday</b>	220	203
<b>Difference from ITE</b>	<b>AM</b>	415	34
	<b>PM</b>	-33	302
	<b>Saturday</b>	-15	212
<b>Proposed 30% Reduction</b>	<b>AM</b>	146	23
	<b>PM</b>	43	147

	<b>Saturday</b>	71	125
<b>Difference from Proposed 30% Reduction</b>	<b>AM</b>	339	54
	<b>PM</b>	99	344
	<b>Saturday</b>	164	290

As parking for the existing office use located at 4300 Wilson Boulevard is accessible via the extension of 7<sup>th</sup> Street N, existing office trips originating/destined for the existing 4300 Wilson Boulevard site, consisting of 240,000 square feet of office space and 20,000 square feet of retail space, were re-distributed on the network to account for changes to access and circulation as a result of the proposed development. Retail trips will continue to access general parking via the garage entrance on N Randolph Street. Detailed trip generation calculations for the 4300 Wilson Boulevard site are included in the Technical Appendix.

Trip distribution and assignments for site-generated traffic was primarily determined using existing volumes, anticipated traffic patterns, and other recent studies conducted in the area. The origins of outbound and destinations of inbound vehicular trips were the new garage entry along the east side of the Private Alley for the grocer and the Ballston Point garage entrance along the west side of the Private Alley for residential units. A summary of the inbound and outbound trip distribution assumptions is shown on Figure 37 for the residential component of the proposed development and Figure 38 for the retail component of the proposed development.

Trip distribution and assignment assumptions were vetted and approved by Arlington County. Based on the trip distribution and assignment assumptions, site-generated trips were distributed through the study area intersections. The site-generated residential traffic volumes are shown on Figure 39, the site-generated retail traffic volumes are shown on Figure 40, and the retail pass-by traffic volumes are shown on Figure 41 for the 2026 build-out year. The 2026 Future Conditions traffic volumes, which are comprised of existing volumes, background developments, removed existing site trips, and the proposed development are shown on Figure 42.

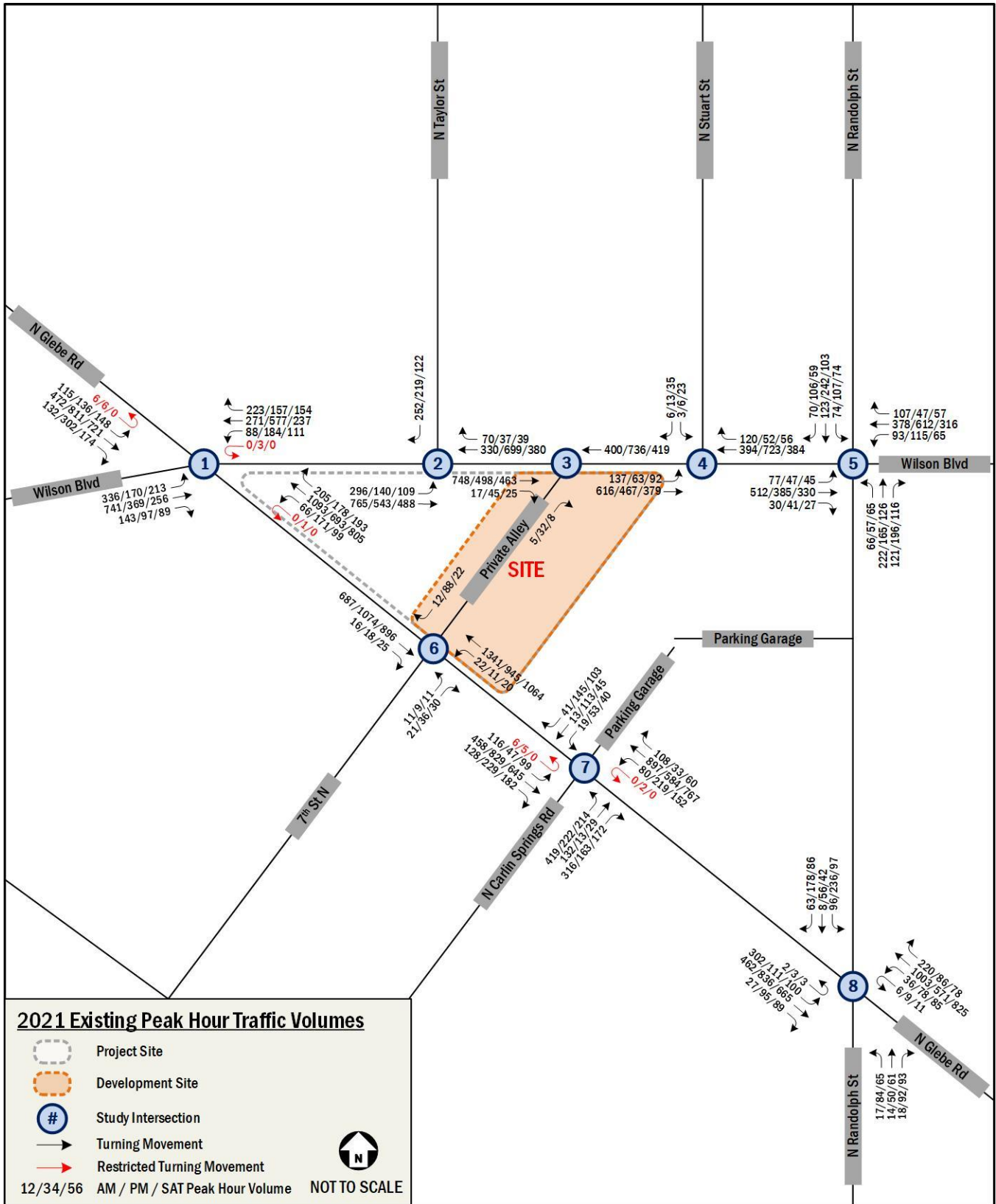


Figure 34: 2021 Existing Peak Hour Traffic Volumes

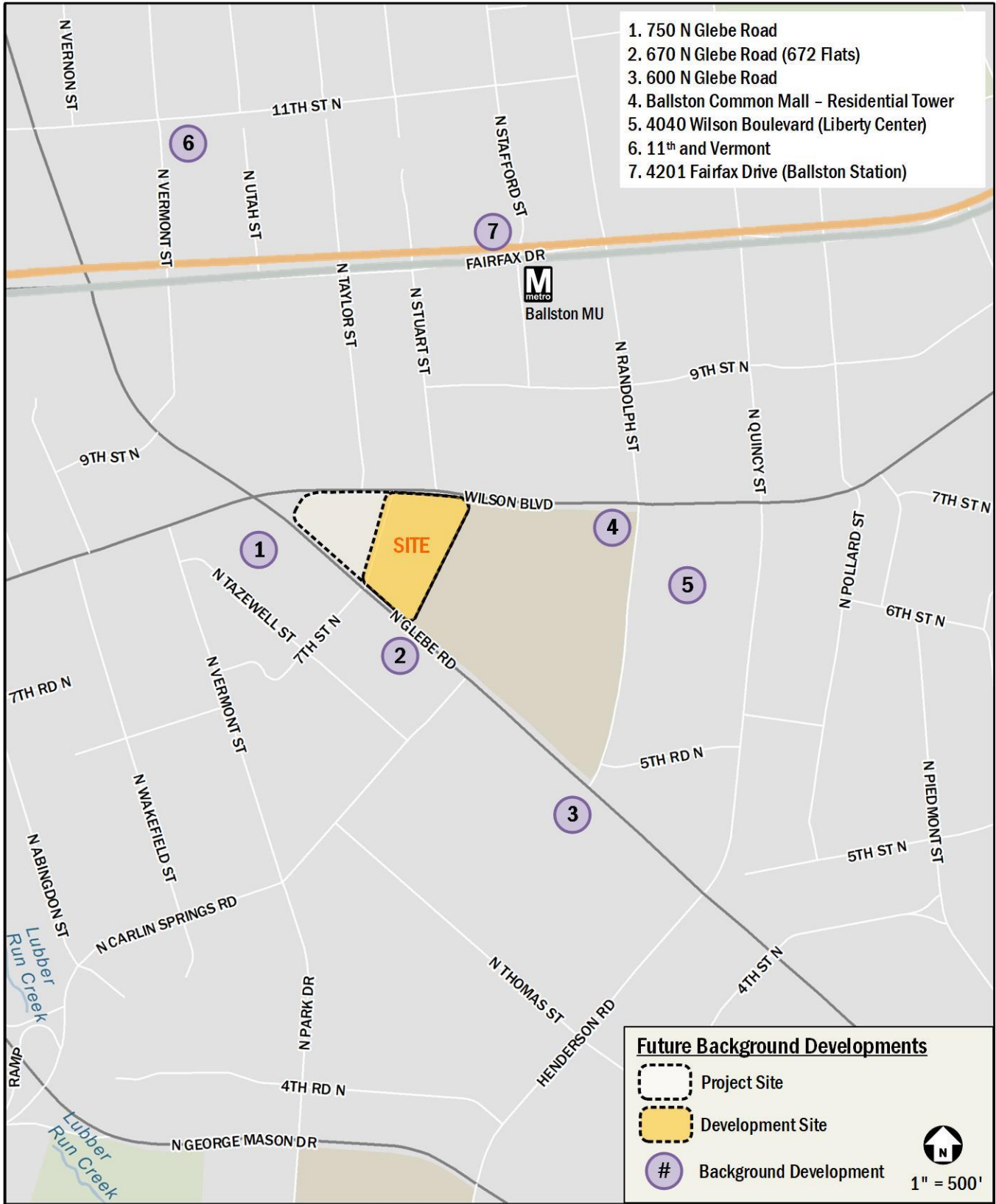


Figure 35: Future Background Developments

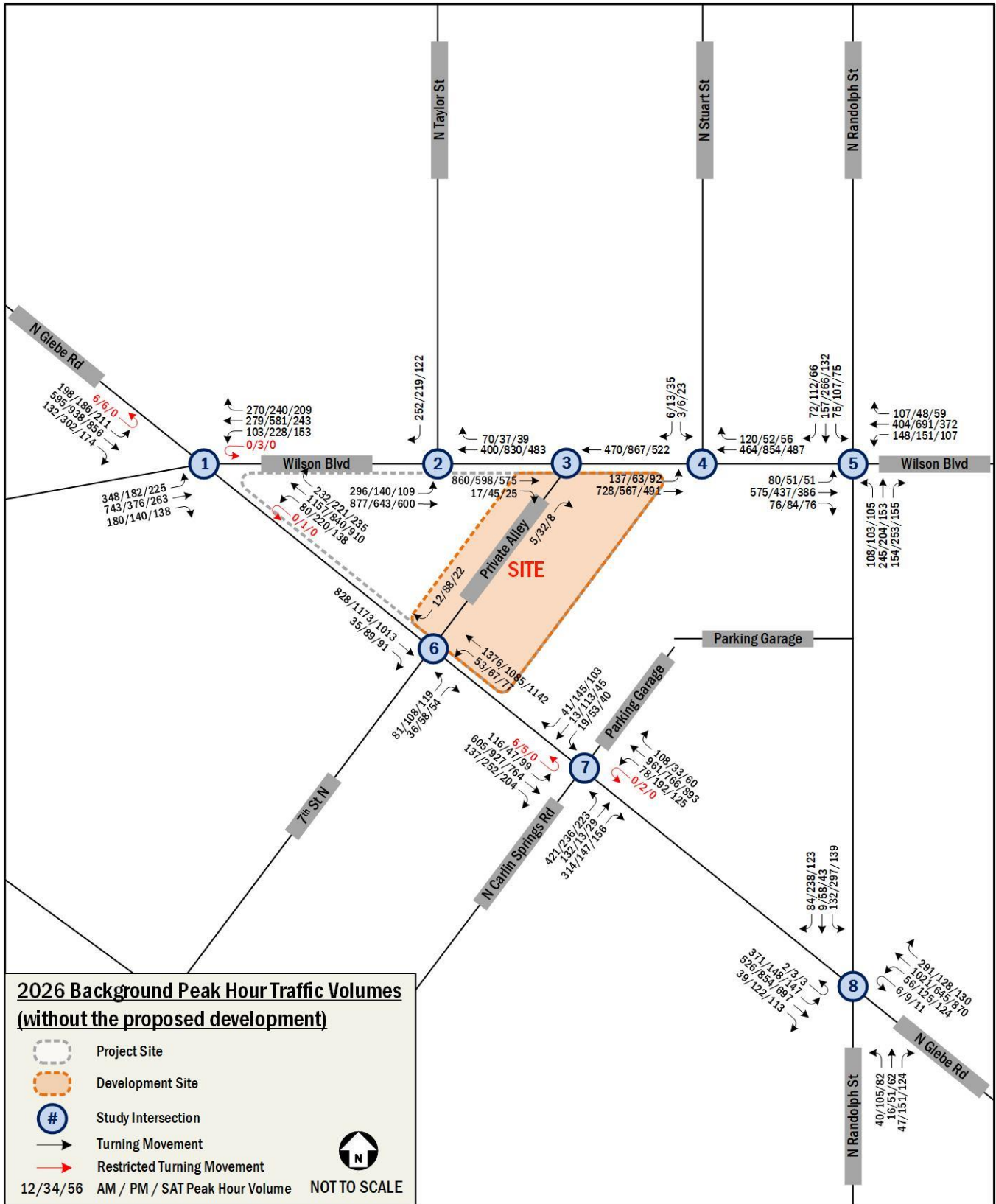


Figure 36: 2026 Background Peak Hour Traffic Volumes (without the proposed development)

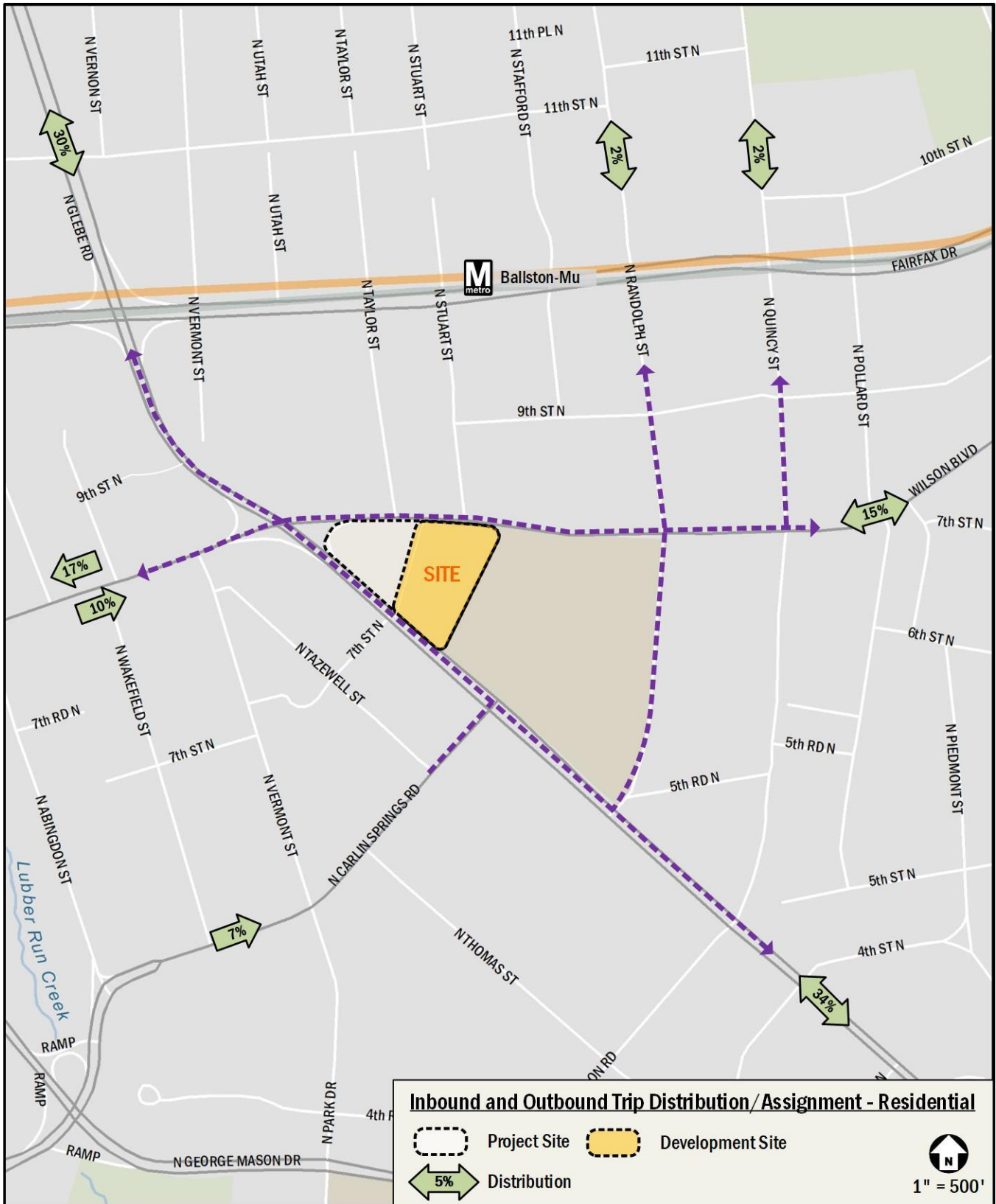


Figure 37: Inbound and Outbound Trip Distribution/Assignment - Residential



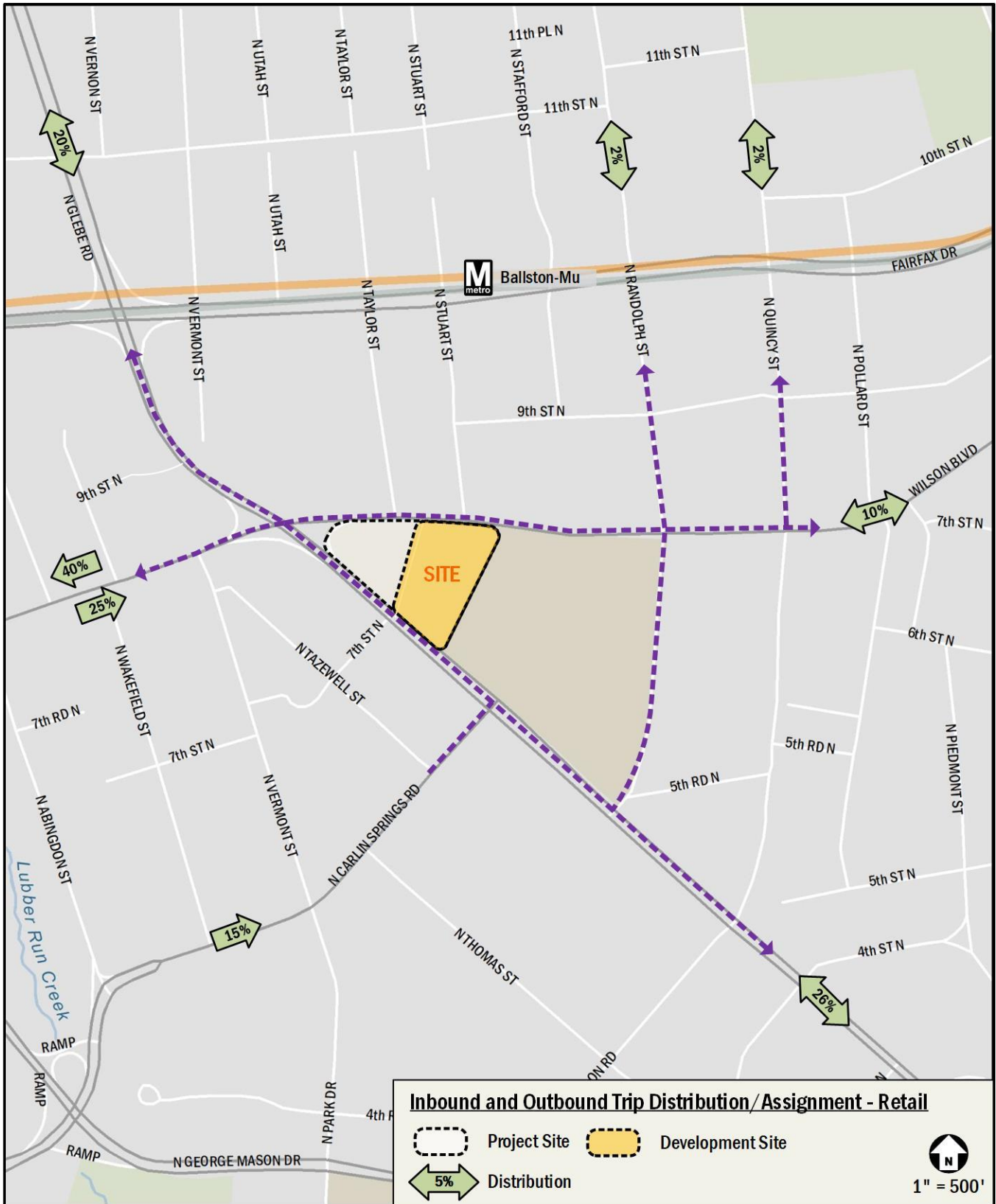


Figure 38: Inbound and Outbound Trip Distribution/Assignment - Retail

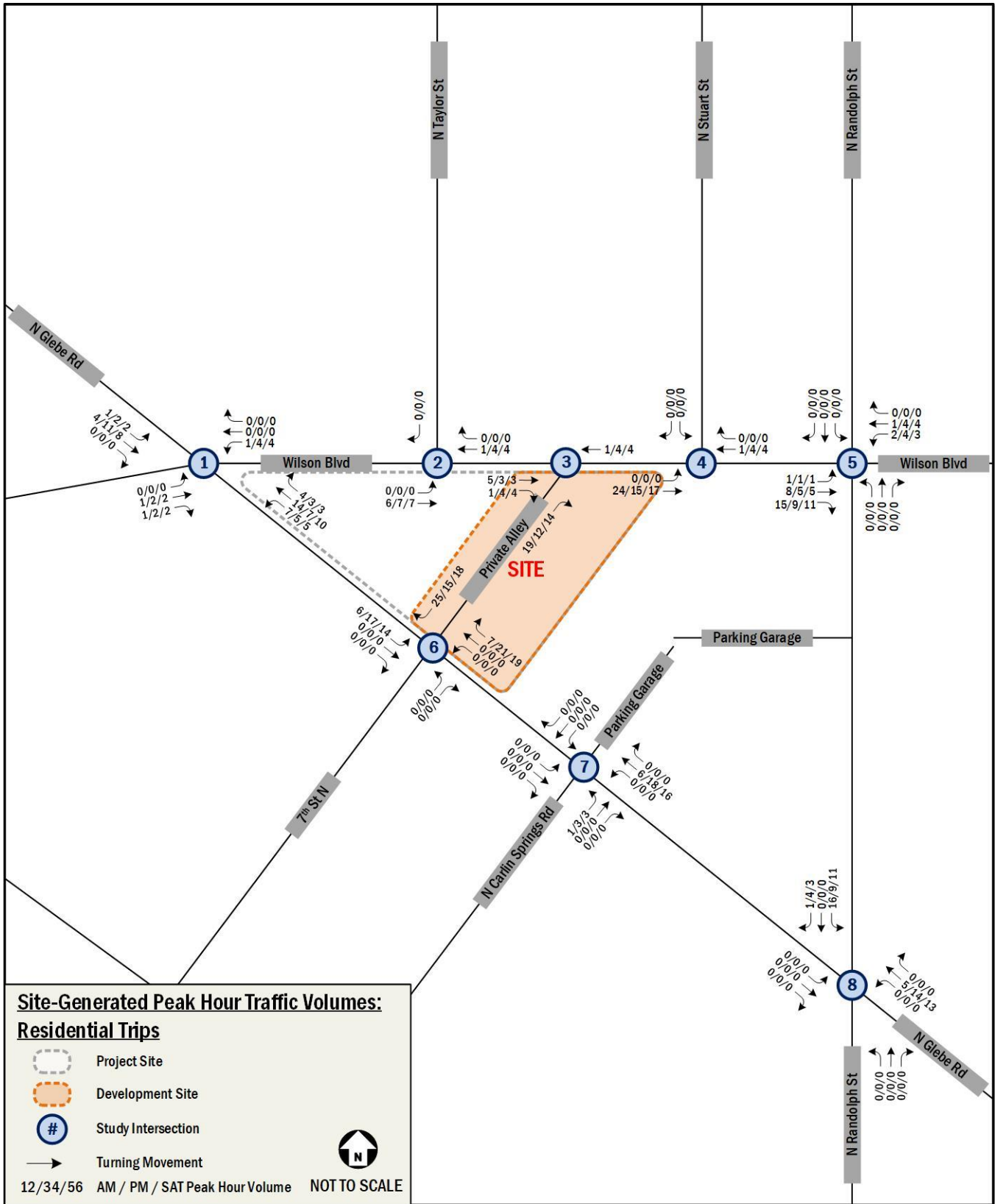


Figure 39: Site-Generated Peak Hour Traffic Volumes – Residential Trips

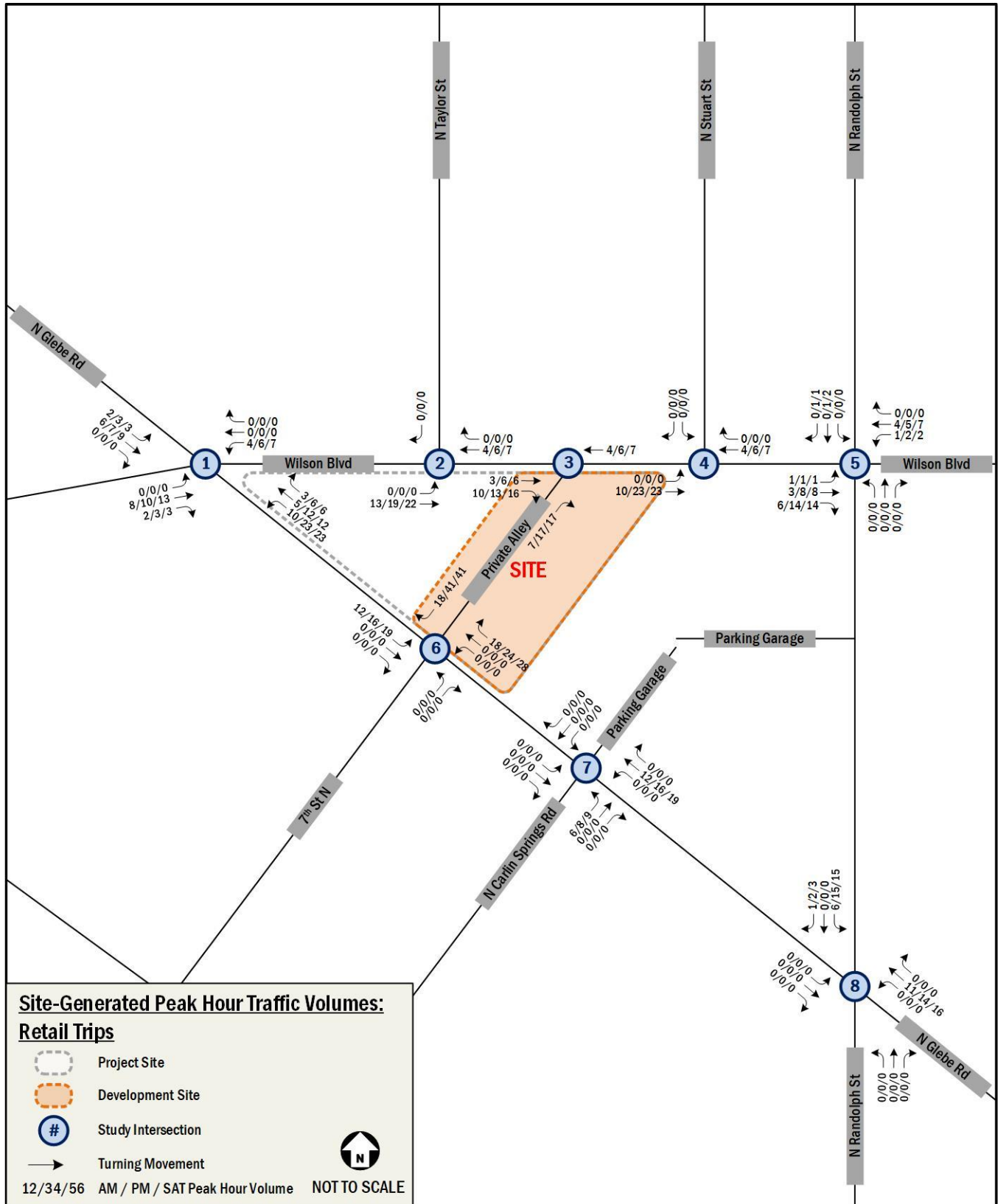


Figure 40: Site-Generated Peak Hour Traffic Volumes – Retail Trips

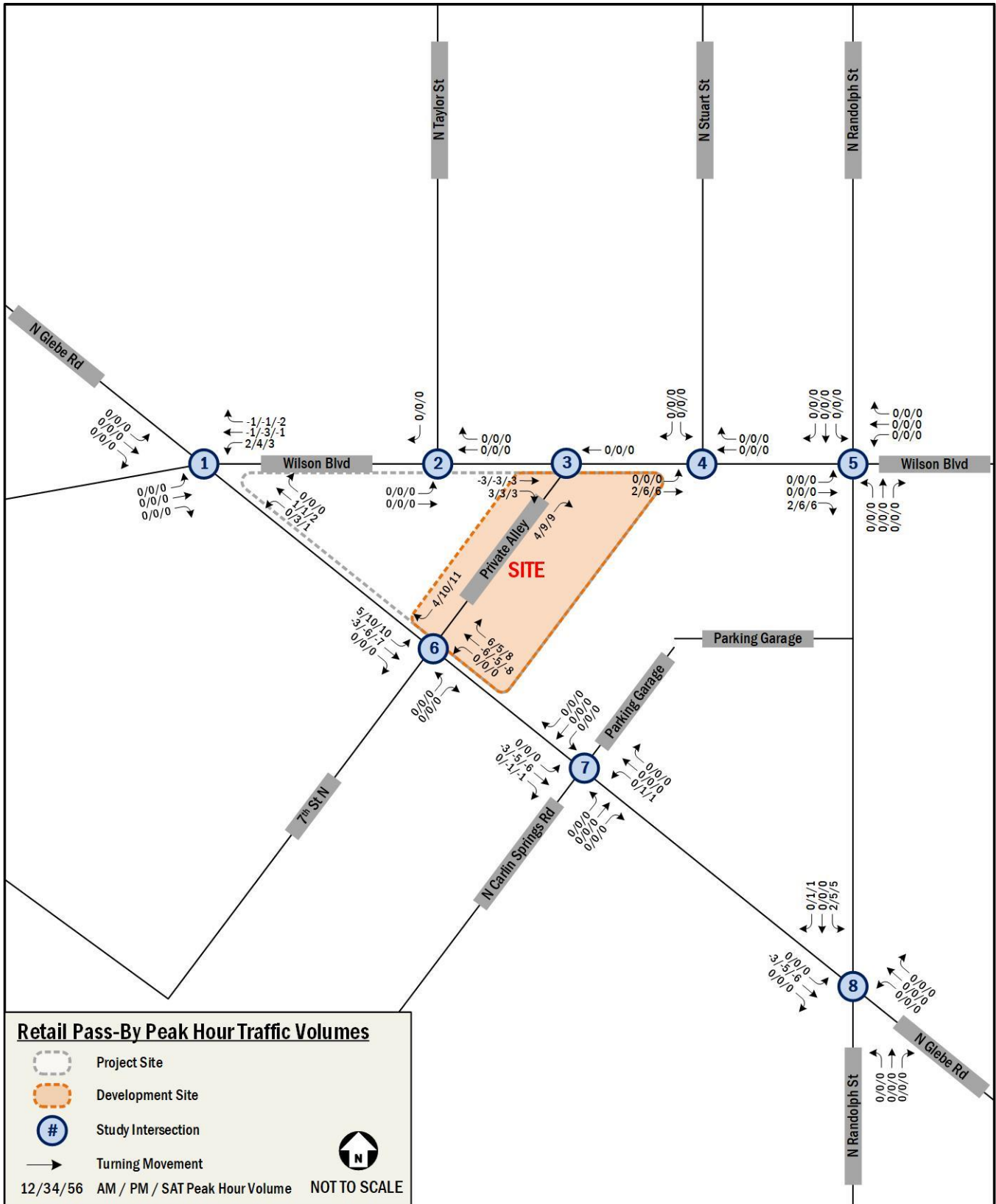


Figure 41: Retail Pass-By Peak Hour Traffic Volumes

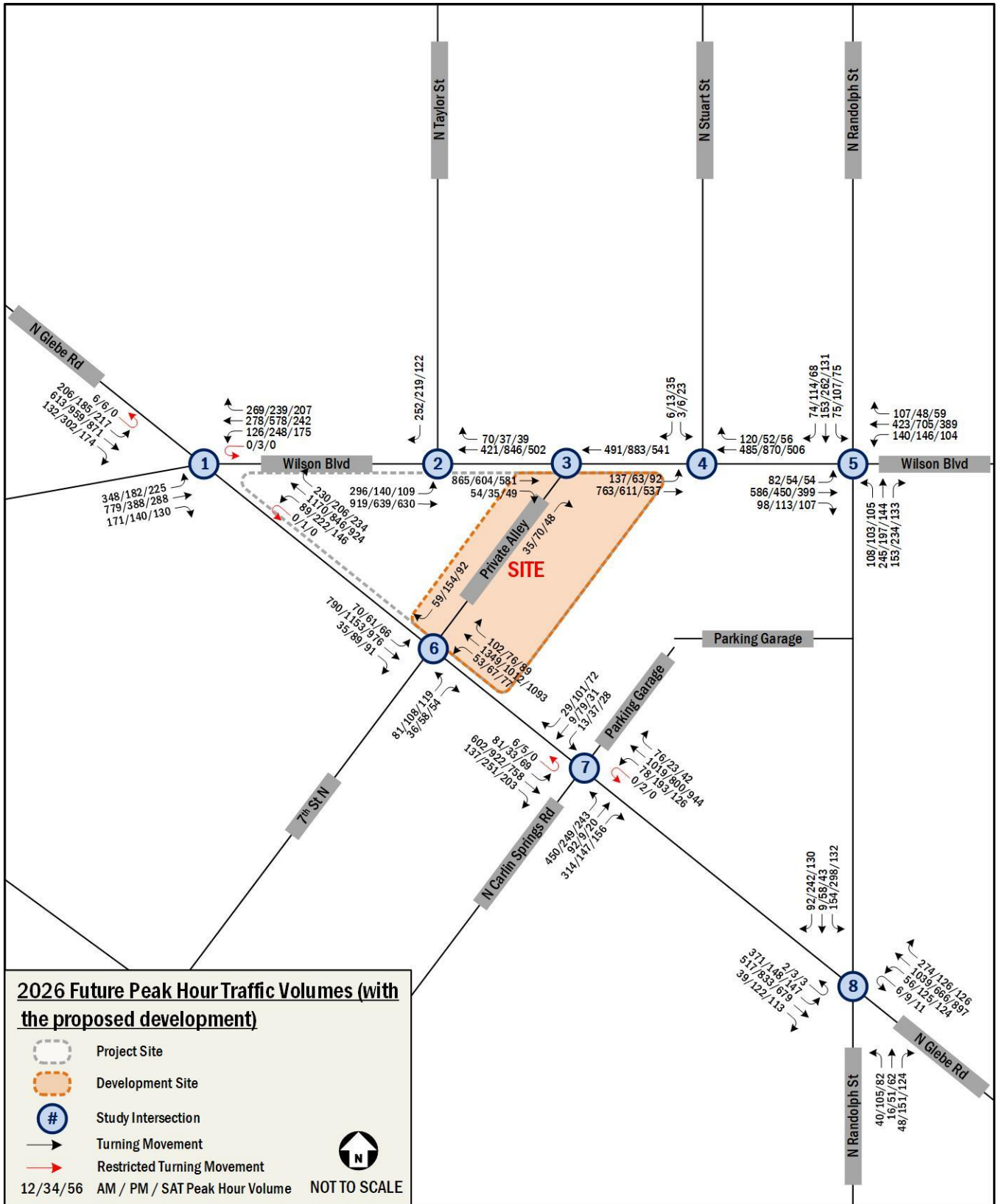


Figure 42: 2026 Future Peak Hour Traffic Volumes (with the proposed development)

## **Geometry and Operations Assumptions**

The following section reviews the roadway geometry and operations assumptions made and the methodologies used in the roadway capacity analyses.

### **2021 Existing Geometry and Operations Assumptions**

The geometry and operations assumed in the existing conditions scenario are those present when the main data collection occurred. Gorove Slade made observations and confirmed the existing lane configurations and traffic controls at the intersections within the study area. Existing signal timings and offsets were obtained from Arlington County and confirmed during field reconnaissance.

A description of the roadways within the study area is presented below in Table 11. The existing local roadway network including lane configurations and intersection control is detailed in and illustrated in Figure 43. The morning and afternoon commuter peak hour configurations reflect on-street parking restrictions along N Glebe Road. During the Saturday midday peak hour, these parking restrictions are lifted, occupying a travel lane as the on-street parking does not occur in separate curbside space.

### **2026 Background Geometry and Operations Assumptions (without the proposed development)**

Following industry standard methodologies, a background improvement must meet the following criteria to be incorporated into the analysis:

- Be funded; and
- Have a construction completion date prior or close to the proposed development.

Based on these criteria, there are no geometry improvements included in the 2026 Background scenario.

Consistent with Arlington County plans to optimize the N Glebe Road corridor in late 2021, all left-turn movements were converted to protected only phasing along N Glebe Road and all signal timings in the study area were optimized for lowest delays and queues (comparable to existing conditions, where possible).

The configurations and traffic controls for the 2026 Background Conditions were based on those for the 2021 Existing Conditions. Lane configurations and traffic controls for the 2026 Background Conditions are shown in Figure 44.

### **2026 Future Geometry and Operations Assumptions (with the proposed development)**

The configurations and traffic controls assumed in the 2026 Future Conditions are based on the 2026 Background Conditions with the addition of the proposed development. One (1) intersection/access point was modified to allow access to the proposed Macy's Ballston development.

The modifications of the roadway network as a result of the proposed development are as follows:

- (1) N Glebe Road & 7<sup>th</sup> Street N/Private Alley (Int. 6) will be reconfigured to provide left-turn access to the site's Private Alley, which provides access to the site's below-grade parking garage. Each intersection approach is configured with the following:
  - The eastbound approach will include one left-turn lane and one right-turn lane.
  - The westbound approach will include one right-turn lane.
  - The northbound approach will include one left-turn lane, two thru lanes, and one thru/right lane.
  - The southbound approach will include one left-turn lane, two thru lanes, and one thru/right lane. The left-turn movement is assumed to operate under protected phasing, consistent with the left-turn phasing at nearby intersections along N Glebe Road..

No signal timing changes were made to other existing signals. Lane configurations and traffic controls for the 2026 Future Conditions are shown in Figure 45.

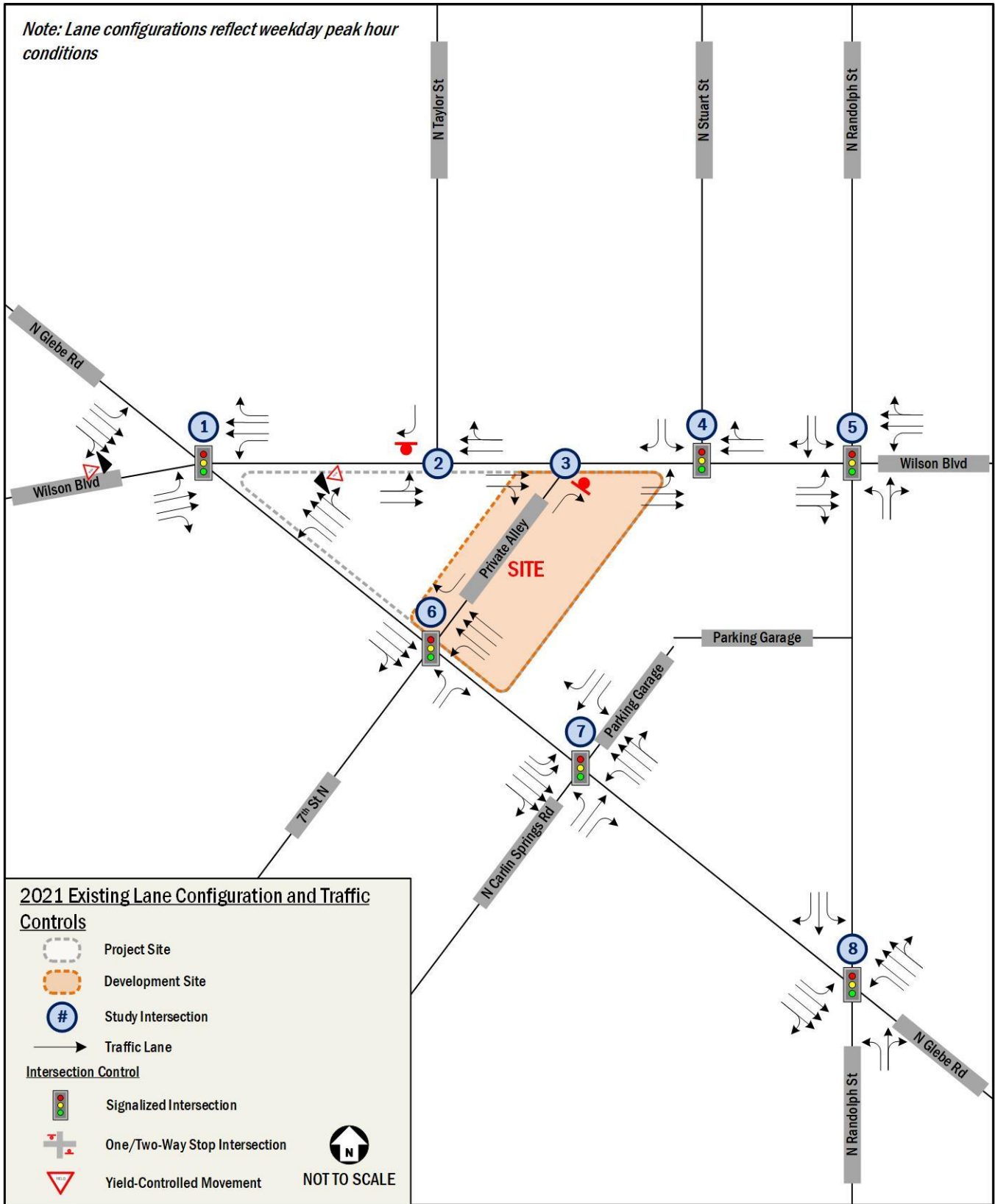


Figure 43: 2021 Existing Lane Configurations and Traffic Controls

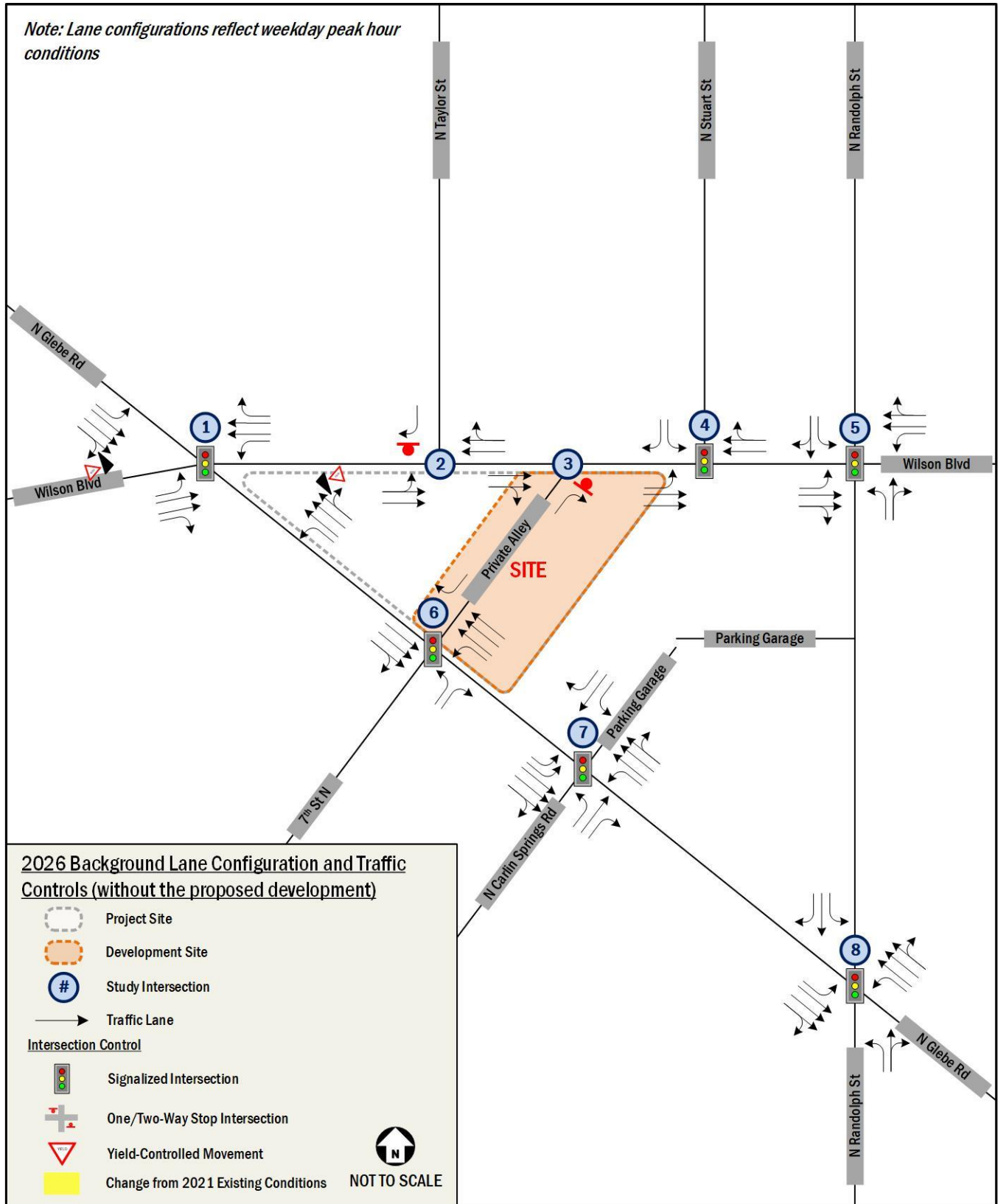


Figure 44: 2026 Background Lane Configurations and Traffic Controls (without the proposed development)



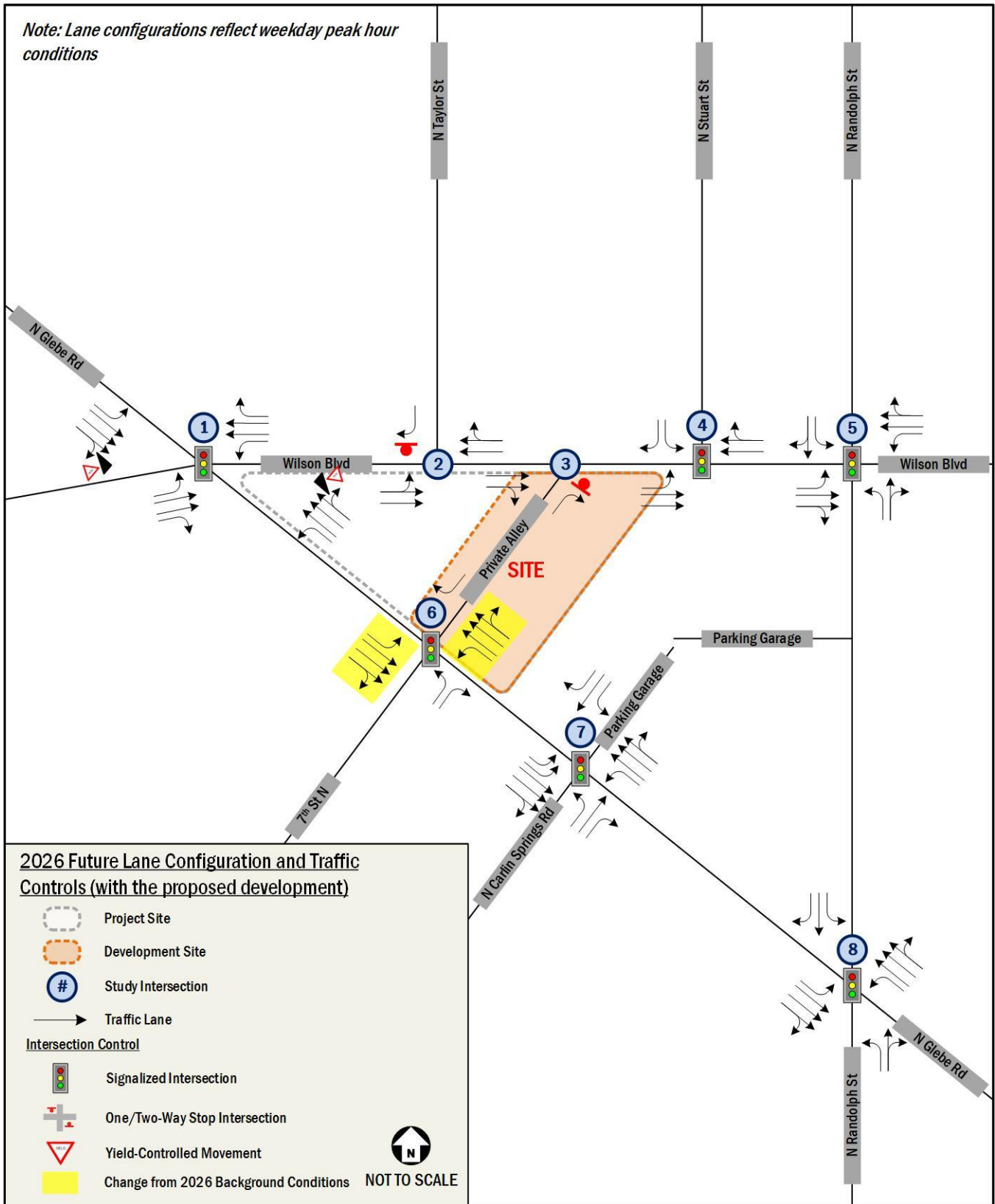


Figure 45: 2026 Future Lane Configuration and Traffic Controls (with the proposed development)

## **Vehicular Analysis Results**

### **Intersection Capacity Analysis**

Intersection capacity analyses were performed for the three scenarios outlined previously at the intersections contained within the study area during the morning, afternoon, and Saturday midday peak hours. *Synchro*, version 10 was used to analyze the study intersections based on the [Highway Capacity Manual 2000](#) (HCM) methodology and includes level of service, delay, and queue length comparisons for the turning movements analyzed. Both signalized and unsignalized intersections were evaluated using HCM 2000.

### **Peak Hour Factors**

Peak hour factors were applied in accordance with *Traffic Operations and Safety Analysis Manual 2.0* prepared by VDOT dated February 2020. As such, peak hour factors by approach between 0.85 and 1.00 were used for the existing year analysis. Where the calculated peak hour factor based on the existing turning movement counts was greater than 0.85, the calculated factor was applied. Where the calculated factor was 0.85 or less, a factor of 0.85 was applied.

Peak hour factors by approach between 0.92 and 1.00 were used for all future scenarios. Where the calculated peak hour factor based on the existing turning movement counts was greater than 0.92, the calculated factor was applied. Where the calculated factor was 0.92 or less, a factor of 0.92 was applied.

### **Heavy Vehicle Percentages**

A heavy vehicle percentage of 2% was used for existing movements unless determined to be higher from the turning movement counts, in which case the higher percentage was used. A default heavy vehicle percentage of 2% was used for any new movements.

### **Geometry and Operations**

Existing signal timings were obtained from Arlington County for signalized intersections in the vehicular study area. These timings were verified in the field by Gorove Slade and adjusted where necessary.

### **Level of Service and Delay**

The results of the capacity analyses are expressed in level of service (LOS) and delay (seconds per vehicle) for each movement. A LOS grade is a letter grade based on the average

delay (in seconds) experienced by motorists traveling through an intersection. LOS results range from "A" being the best to "F" being the worst. LOS E is typically used as the acceptable LOS threshold in Arlington County; although LOS F is sometimes accepted in urbanized areas if vehicular improvements would be a detriment to safety or non-auto modes of transportation. For the purpose of this analysis, it is desirable to achieve a level of service (LOS) of E or better for each movement at the intersections.

The LOS capacity analyses were based on: (1) the peak hour traffic volumes; (2) the lane use and traffic controls; and (3) the Highway Capacity Manual (HCM) methodologies (using the *Synchro* software). The average delay of each movement and LOS is shown for the signalized intersections in addition to the overall average delay and intersection LOS grade. The HCM does not give guidelines for calculating the average delay for a two-way stop-controlled intersection, as the approaches without stop signs would technically have no delay. Detailed LOS descriptions and the analysis worksheets are contained in the Technical Appendix.

### **Queuing Analysis**

In addition to the capacity analyses, a queuing analysis was performed at the study intersections. The queuing analysis was performed using *Synchro* software. The 50<sup>th</sup> percentile and 95<sup>th</sup> percentile queue lengths are shown for each lane group at the study area signalized intersections. The 50<sup>th</sup> percentile queue is the maximum back of queue on a median cycle. The 95<sup>th</sup> percentile queue is the maximum back of queue that is exceeded 5% of the time. For unsignalized intersections, only the 95<sup>th</sup> percentile queue is reported for each lane group (including free-flowing left turns and stop-controlled movements) based on the HCM 2000 calculations. Queuing analysis worksheets are contained in the Technical Appendix.

At the request of the County, SimTraffic maximum queue length results are reported for Background (2026) and Future (2026) scenarios at movements where Synchro HCM 2000 results indicate that queues are metered by an upstream signal (denoted with an "m"). SimTraffic analysis calibration parameters, including PHF/AntiPHF adjustments, seeding time, number of recording intervals were determined based on TOSAM Version 2. The average results for 10 simulation runs were reported. The maximum queue length results replaced these metered values and was used as the basis for mitigation at

these locations. SimTraffic analysis worksheets are contained in the Technical Appendix.

## 2021 Analysis Results

The Existing (2021) results of the intersection capacity analyses for the AM, PM, and Saturday peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 14. The capacity analysis results indicate that most intersections operate at acceptable LOS under the Existing (2021) Conditions; however, two (2) intersections have one or more movements that operate at levels beyond acceptable thresholds in one or more peak hour:

- Wilson Boulevard & N Glebe Road
  - Northbound Left (AM/PM/Saturday)
  - Southbound Left (AM)
- N Glebe Road & N Carlin Springs Road
  - Eastbound Left (AM)

The Existing (2021) queuing results for the AM, PM, and Saturday peak hours are expressed by movement and presented in Table 15. The 95<sup>th</sup> percentile queues at most lane groups at study area intersections do not exceed their available storage length in Existing Conditions; however, three (3) intersections do have at least one movement with 95<sup>th</sup> percentile queues that exceed the available storage length in the morning, afternoon, and/or Saturday peak hour:

- Wilson Boulevard & N Glebe Road
  - Eastbound Left (AM)
  - Westbound Thru (PM)
  - Westbound Right (AM)
  - Northbound Left (PM)
  - Northbound Thru/Right (AM)
  - Northbound Thru (Saturday)
  - Southbound Thru/Right (PM)
  - Southbound Thru (Saturday)
- N Glebe Road & N Carlin Springs Road
  - Eastbound Left (AM/PM/Saturday)
  - Eastbound Right (AM)
  - Westbound Left (PM/Saturday)

- Westbound Thru (PM/Saturday)
- Westbound Right (AM/PM/Saturday)
- Southbound Thru/Right (Saturday)
- N Glebe Road & N Randolph Street
  - Eastbound Thru/Right (Saturday)
  - Westbound Left (PM)
  - Northbound Thru/Right (AM)
  - Southbound Left (AM)

## 2026 Analysis Results

### 2026 Background Analysis Results (without the proposed development)

The Background (2026) results of the intersection capacity analyses for the AM, PM, and Saturday peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 16. The capacity analysis results indicate that most intersections operate at acceptable LOS under the Background (2026) Conditions; however, four (4) intersections have one or more movements that operate at levels beyond acceptable thresholds in one or more peak hour:

- Wilson Boulevard & N Glebe Road
  - Northbound Left (PM)
  - Southbound Left (AM)
- N Glebe Road & 7<sup>th</sup> Street N/Private Alley
  - Northbound Left (AM/Saturday)
- N Glebe Road & N Carlin Springs Road
  - Eastbound Left (AM)
  - Northbound Left (Saturday)
- N Glebe Road & N Randolph Street
  - Northbound Left (AM)
  - Southbound Left (AM/Saturday)

The Background (2026) queuing results for the AM, PM, and Saturday peak hours are expressed by movement and presented in Table 17. The 95<sup>th</sup> percentile queues (or maximum queue length, where applicable) at most lane groups at study area intersections do not exceed their available storage length in the Background (2026) Conditions; however, five (5) intersections have at least one movement with 95<sup>th</sup> percentile queues (or

maximum queue lengths, where applicable) that exceed the available storage length in the morning, afternoon, and/or Saturday peak hour:

- Wilson Boulevard & N Glebe Road
  - Eastbound Left (AM)
  - Westbound Thru (PM)
  - Westbound Right (AM)
  - Northbound Left (PM)
  - Northbound Thru/Right (AM)
  - Northbound Thru (Saturday)
  - Southbound Left (AM/PM/Saturday)
  - Southbound Thru/Right (PM)
  - Southbound Thru (Saturday)
- Wilson Boulevard & N Randolph Street
  - Northbound Thru/Right (AM/PM)
- N Glebe Road & 7<sup>th</sup> Street N/Private Alley
  - Southbound Right (Saturday)
- N Glebe Road & N Carlin Springs Road
  - Eastbound Left (AM/PM/Saturday)
  - Eastbound Right (AM)
  - Westbound Left (PM/Saturday)
  - Westbound Thru (PM/Saturday)
  - Westbound Right (AM/PM/Saturday)
  - Northbound Left (PM)
- N Glebe Road & N Randolph Street
  - Eastbound Thru/Right (PM/Saturday)
  - Westbound Left (AM/PM/Saturday)
  - Westbound Right (PM)
  - Northbound Left (Saturday)
  - Northbound Thru/Right (AM)
  - Southbound Left (AM/PM)

### 2026 Future Analysis Results (with the proposed development)

The Future (2026) results of the intersection capacity analyses for the AM, PM, and Saturday peak hours are expressed in level

of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 16. The capacity analysis results indicate that most intersections operate at acceptable LOS under the Future (2026) Conditions; however, four (4) intersections have one or more movements that operate at levels beyond acceptable thresholds in one or more peak hour:

- Wilson Boulevard & N Glebe Road
  - Northbound Left (PM)
  - Northbound Thru/Right (AM)
  - Southbound Left (AM)
- N Glebe Road & 7<sup>th</sup> Street N/Private Alley
  - Northbound Left (Saturday)
- N Glebe Road & N Carlin Springs Road
  - Eastbound Left (AM)
  - Northbound Left (Saturday)
- N Glebe Road & N Randolph Street
  - Northbound Left (AM)
  - Southbound Left (Saturday)

The Future (2026) queuing results for the AM, PM, and Saturday peak hours are expressed by movement are presented in Table 17. The 95<sup>th</sup> percentile queues (or maximum queue length, where applicable) at most lane groups at study area intersections do not exceed their available storage length in the Future (2026) Conditions; however, four (4) intersections have at least one movement with 95<sup>th</sup> percentile queues (or maximum queue length, where applicable) that exceed the available storage length in the morning, afternoon, and/or Saturday peak hour:

- Wilson Boulevard & N Glebe Road
  - Eastbound Left (AM)
  - Eastbound Thru (AM)
  - Westbound Left (PM)
  - Westbound Thru (PM)
  - Westbound Right (AM)
  - Northbound Left (PM)
  - Northbound Thru/Right (AM)
  - Northbound Thru (Saturday)

- Southbound Left (AM/PM/Saturday)
- Southbound Thru/Right (PM)
- Southbound Thru (Saturday)
- Wilson Boulevard & N Randolph Street
  - Northbound Thru/Right (AM/PM)
- N Glebe Road & N Carlin Springs Road
  - Eastbound Left (AM/PM/Saturday)
  - Eastbound Right (AM)
  - Westbound Thru (PM)
  - Westbound Right (PM/Saturday)
  - Northbound Left (PM)
  - Southbound Thru/Right (Saturday)
- N Glebe Road & N Randolph Street
  - Eastbound Thru/Right (PM/Saturday)
  - Westbound Left (AM/PM/Saturday)
  - Westbound Right (PM)
  - Northbound Left (Saturday)
  - Northbound Thru/Right (AM)
  - Southbound Left (AM/PM)

### 2026 Future Mitigations

Mitigation measures were identified based on Arlington County standards and as outlined in the approved scoping document. The proposed development is considered to have an impact at an intersection if any of the following conditions are met:

- The overall intersection or any movement operates at LOS F in the future conditions with the proposed development where it operates at LOS E or better in the background conditions without the proposed development;
- The overall intersection or any movement operates at LOS F during the background condition and the delay increases by more than 10 percent in the future conditions with the proposed development; or
- If any 95<sup>th</sup> percentile queue length (or maximum queue length, where applicable) in the future condition exceeds the available capacity and increases by more than 150 feet compared to background conditions.

Following these guidelines there are impacts to three (3) intersections under Future (2026) Conditions. Mitigation

measures were tested at this intersection, with results shown in Table 18 and Table 19, with detailed Synchro reports included in the Technical Appendix. The following conclusions were made:

- Wilson Boulevard & N Glebe Road (Int. 1)  
Under Future (2026) Conditions, during the morning peak hour, the 95<sup>th</sup> percentile queue length for the eastbound thru movement exceeds the storage length over the Background conditions and delay for the northbound thru movement increases to LOS F from LOS E in Background conditions. During the afternoon peak hour, the 95<sup>th</sup> percentile queue length for the westbound left movement exceeds the storage length over the Background Conditions.  
  
The increase in delay at this intersection attributable to the proposed development can be mitigated through signal timing adjustments.
- N Glebe Road & N Carlin Springs Road (Int. 7)  
Under Future (2026) Conditions, during the morning peak hour, delay for the eastbound left movement increases by more than 10 percent over the LOS F in Background Conditions. During the Saturday peak hour, the 95<sup>th</sup> percentile queue length for the southbound thru/right movement exceeds the storage length over the Background conditions.  
  
The increase in delay at this intersection attributable to the proposed development can be mitigated through signal timing adjustments.
- N Glebe Road & N Randolph Street (Int. 8)  
Under Future (2026) Conditions, during the morning peak hour, delay for the northbound left movement increases by more than 10 percent over the LOS F in Background Conditions.  
  
The increase in delay at this intersection attributable to the proposed development can be mitigated through signal timing adjustments.

**Table 14: Existing Analysis Results**

Intersection and Movement	Existing (2021)					
	AM Peak		PM Peak		Saturday Peak	
	Delay	LOS	Delay	LOS	Delay	LOS
<b>1. Wilson Boulevard &amp; N Glebe Road</b>						
<b>Overall</b>	<b>38.2</b>	<b>D</b>	<b>45.1</b>	<b>D</b>	<b>37.6</b>	<b>D</b>
Eastbound Left	62.6	E	33.4	C	29.0	C
Eastbound Thru	51.3	D	36.2	D	36.3	D
Eastbound Right	30.5	C	24.6	C	26.6	C
Westbound Left	38.1	D	32.1	C	33.2	C
Westbound Thru	43.2	D	41.3	D	40.1	D
Westbound Right	35.2	D	26.8	C	26.5	C
Northbound Left	103.2	F	182.7	F	98.0	F
Northbound TR	20.8	C	37.8	D	--	--
Northbound Thru	--	--	--	--	44.3	D
Northbound Right	--	--	--	--	24.7	C
Southbound Left	80.6	F	68.4	E	54.3	D
Southbound TR	30.8	C	40.5	D	--	--
Southbound TR	--	--	--	--	37.8	D
Southbound TR	--	--	--	--	0.2	A
<b>2. Wilson Boulevard &amp; N Taylor Street</b>						
Eastbound LT	8.1	A	6.7	A	4.5	A
Westbound TR	0.0	A	0.0	A	0.0	A
Southbound Right	14.1	B	12.4	B	10.8	B
<b>3. Wilson Boulevard &amp; Private Alley</b>						
Eastbound TR	0.0	A	0.0	A	0.0	A
Northbound Right	10.5	B	10.0	B	9.9	A
<b>4. Wilson Boulevard &amp; N Stuart Street</b>						
<b>Overall</b>	<b>7.3</b>	<b>A</b>	<b>6.6</b>	<b>A</b>	<b>7.8</b>	<b>A</b>
Eastbound Left	5.7	A	6.3	A	5.5	A
Eastbound Thru	6.0	A	5.5	A	5.7	A
Westbound TR	8.7	A	6.7	A	7.3	A
Southbound Left	30.4	C	30.5	C	30.0	C
Southbound Right	30.3	C	30.4	C	29.6	C
<b>5. Wilson Boulevard &amp; N Randolph Street</b>						
<b>Overall</b>	<b>20.4</b>	<b>C</b>	<b>23.8</b>	<b>C</b>	<b>18.8</b>	<b>B</b>
Eastbound Left	11.9	B	13.3	B	11.2	B
Eastbound TR	15.0	B	15.8	B	13.3	B
Westbound Left	13.5	B	13.1	B	11.4	B
Westbound TR	19.3	B	20.8	C	16.6	B
Northbound Left	22.2	C	24.0	C	24.4	C
Northbound TR	31.5	C	30.0	C	27.4	C
Southbound Left	24.2	C	28.9	C	24.7	C
Southbound TR	23.5	C	35.0	D	24.7	C
<b>6. N Glebe Road &amp; 7th Street N / Private Alley</b>						
<b>Overall</b>	<b>9.3</b>	<b>A</b>	<b>9.8</b>	<b>A</b>	<b>7.1</b>	<b>A</b>
Eastbound Left	41.2	D	36.4	D	38.9	D
Eastbound Right	41.7	D	37.4	D	39.6	D
Westbound Right	40.2	D	36.2	D	37.9	D
Northbound Left	7.4	A	10.8	B	4.2	A
Northbound Thru	8.3	A	10.5	B	4.4	A
Southbound TR	8.9	A	5.6	A	--	--
Southbound Thru	--	--	--	--	7.7	A

Intersection and Movement	Existing (2021)					
	AM Peak		PM Peak		Saturday Peak	
	Delay	LOS	Delay	LOS	Delay	LOS
Southbound Right	--	--	--	--	12.5	B
<b>7. N Glebe Road &amp; N Carlin Springs Road / Ballston Parking</b>						
<b>Overall</b>	<b>30.7</b>	<b>C</b>	<b>21.7</b>	<b>C</b>	<b>32.2</b>	<b>C</b>
Eastbound Left	84.5	F	47.4	D	51.0	D
Eastbound Thru	30.5	C	33.4	C	35.7	D
Eastbound Right	33.9	C	27.7	C	33.0	C
Westbound Left	28.3	C	35.1	D	36.5	D
Westbound Thru	27.9	C	35.6	D	36.1	D
Westbound Right	28.7	C	37.6	D	38.9	D
Northbound Left	4.3	A	14.8	B	23.5	C
Northbound TR	11.6	B	16.7	B	14.7	B
Southbound Left	80.7	F	66.4	E	49.2	D
Southbound TR	15.8	B	13.0	B	44.9	D
<b>8. N Glebe Road &amp; N Randolph Street</b>						
<b>Overall</b>	<b>33.0</b>	<b>C</b>	<b>31.8</b>	<b>C</b>	<b>21.3</b>	<b>C</b>
Eastbound Left	40.1	D	34.0	C	39.8	D
Eastbound TR	40.5	D	35.1	D	42.8	D
Westbound Left	45.3	D	52.8	D	44.3	D
Westbound Thru	39.6	D	32.5	C	38.3	D
Westbound Right	40.0	D	33.5	C	37.9	D
Northbound Left	21.2	C	17.6	B	12.7	B
Northbound TR	33.1	C	22.3	C	19.3	B
Southbound Left	48.8	D	20.6	C	10.9	B
Southbound TR	19.9	B	34.6	C	13.1	B

**Table 15: Existing Queuing Results**

Intersection and Lane Group	Storage Length (ft)	Existing (2021)					
		AM Peak		PM Peak		Saturday Peak	
		50th	95th	50th	95th	50th	95th
<b>1. Wilson Boulevard &amp; N Glebe Road</b>							
Eastbound Left	290	256	#438	101	157	133	200
Eastbound Thru	475	369	446	144	192	96	136
Eastbound Right	180	15	58	0	16	0	11
Westbound Left	225	56	95	108	166	68	112
Westbound Thru	250	118	162	242	307	98	137
Westbound Right	150	158	220	64	102	62	97
Northbound Left	270	69	113	-182	#339	90	136
Northbound TR	350	409	490	162	224	--	--
Northbound Thru	350	--	--	--	--	175	#417
Northbound Right	100	--	--	--	--	23	61
Southbound Left	260	114	181	117	#220	127	201
Southbound TR	320	142	190	293	347	--	--
Southbound Thru	320	--	--	--	--	283	366
Southbound Right	100	--	--	--	--	0	0
<b>2. Wilson Boulevard &amp; N Taylor Street</b>							
Eastbound LT	250	--	42	--	22	--	11
Westbound TR	190	--	0	--	0	--	0
Southbound Right	640	--	54	--	39	--	17
<b>3. Wilson Boulevard &amp; Private Alley</b>							
Eastbound TR	70	--	0	--	0	--	0
Northbound Right	125	--	0	--	0	--	0
<b>4. Wilson Boulevard &amp; N Stuart Street</b>							
Eastbound Left	120	41	68	18	36	27	48
Eastbound Thru	190	112	138	78	101	62	82
Westbound TR	275	67	84	85	98	48	61
Southbound Left	245	2	9	3	12	11	29
Southbound Right	50	0	9	0	13	0	21
<b>5. Wilson Boulevard &amp; N Randolph Street</b>							
Eastbound Left	180	19	33	13	29	14	28
Eastbound TR	315	66	80	59	82	56	72
Westbound Left	150	31	61	37	69	24	46
Westbound TR	315	112	161	163	227	94	130
Northbound Left	115	27	57	23	57	26	56
Northbound TR	250	154	244	130	227	82	149
Southbound Left	160	31	70	53	103	29	63
Southbound TR	300	63	118	172	253	50	96
<b>6. N Glebe Road &amp; 7th Street N / Private Alley</b>							
Eastbound Left	200	9	27	7	22	9	25
Eastbound Right	90	18	42	27	56	24	50
Westbound Right	220	0	0	3	41	0	0
Northbound Left	130	5	m9	2	m8	4	m4
Northbound Thru	375	125	m134	70	102	97	38
Southbound TR	380	64	84	41	68	--	--
Southbound Thru	380	--	--	--	--	73	90
Southbound Right	50	--	--	--	--	0	m0
<b>7. N Glebe Road &amp; N Carlin Springs Road / Ballston Parking</b>							
Eastbound Left	175	426	#649	179	259	192	272
Eastbound Thru	190	93	146	9	24	21	44



Intersection and Lane Group	Storage Length (ft)	Existing (2021)					
		AM Peak		PM Peak		Saturday Peak	
		50th	95th	50th	95th	50th	95th
Eastbound Right	155	220	300	91	118	116	154
Westbound Left	50	13	31	36	69	32	56
Westbound Thru	50	9	23	78	123	35	61
Westbound Right	50	28	55	105	159	86	124
Northbound Left	245	6	m11	113	153	44	103
Northbound TR	450	308	242	135	181	132	158
Southbound Left	220	68	105	24	49	51	82
Southbound TR	375	59	69	89	96	322	417
<b>8. N Glebe Road &amp; N Randolph Street</b>							
Eastbound Left	190	14	34	60	92	53	93
Eastbound TR	190	26	54	106	145	133	194
Westbound Left	170	87	140	202	272	82	142
Westbound Thru	520	6	20	38	63	32	65
Westbound Right	70	0	0	23	73	0	42
Northbound Left	185	15	30	30	70	33	57
Northbound TR	430	348	432	120	192	175	217
Southbound Left	175	222	313	71	142	25	35
Southbound TR	450	123	139	304	359	70	73

# 95th percentile volume exceeds capacity, queue may be longer.  
 m Volume for 95th percentile queue is metered by upstream signal.  
 ~ Volume exceeds capacity, queue is theoretically infinite.

**Table 16: 2026 Capacity Analysis Results**

Intersection and Movement	Background (2026)						Future (2026)					
	AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
<b>1. Wilson Boulevard &amp; N Glebe Road</b>												
<b>Overall</b>	<b>53.7</b>	<b>D</b>	<b>45.6</b>	<b>D</b>	<b>41.9</b>	<b>D</b>	<b>63.3</b>	<b>E</b>	<b>47.6</b>	<b>D</b>	<b>40.2</b>	<b>D</b>
Eastbound Left	61.5	E	35.4	D	31.5	C	61.5	E	35.1	D	31.5	C
Eastbound Thru	52.9	D	36.1	D	37.2	D	56.0	E	36.3	D	37.5	D
Eastbound Right	31.5	C	22.0	C	26.3	C	31.2	C	22.0	C	26.0	C
Westbound Left	37.7	D	37.1	D	34.2	C	47.6	D	41.8	D	34.9	C
Westbound Thru	43.5	D	41.4	D	40.1	D	43.5	D	41.3	D	40.1	D
Westbound Right	31.6	C	26.0	C	28.5	C	31.2	C	26.0	C	28.4	C
Northbound Left	47.1	D	143.7	F	79.8	E	57.5	E	149.6	F	76.8	E
Northbound TR	68.4	E	30.3	C	--	--	94.9	F	35.2	D	--	--
Northbound Thru	--	--	--	--	53.3	D	--	--	--	--	46.0	D
Northbound Right	--	--	--	--	19.5	B	--	--	--	--	11.6	B
Southbound Left	89.2	F	70.0	E	75.6	E	91.3	F	69.2	E	79.6	E
Southbound TR	33.5	C	52.4	D	--	--	34.2	C	53.7	D	--	--
Southbound TR	--	--	--	--	42.4	D	--	--	--	--	43.3	D
Southbound TR	--	--	--	--	0.2	A	--	--	--	--	0.2	A
<b>2. Wilson Boulevard &amp; N Taylor Street</b>												
Eastbound LT	7.6	A	6.4	A	4.1	A	7.6	A	6.5	A	4.1	A
Westbound TR	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Southbound Right	12.7	B	11.9	B	10.7	B	12.5	B	11.9	B	10.7	B
<b>3. Wilson Boulevard &amp; Private Alley</b>												
Eastbound TR	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Northbound Right	10.7	B	10.2	B	10.1	B	11.2	B	10.5	B	10.6	B
<b>4. Wilson Boulevard &amp; N Stuart Street</b>												
<b>Overall</b>	<b>7.4</b>	<b>A</b>	<b>6.6</b>	<b>A</b>	<b>8.2</b>	<b>A</b>	<b>7.4</b>	<b>A</b>	<b>6.6</b>	<b>A</b>	<b>8.1</b>	<b>A</b>
Eastbound Left	5.7	A	6.6	A	5.6	A	5.8	A	6.7	A	5.7	A
Eastbound Thru	6.2	A	5.7	A	5.9	A	6.3	A	5.8	A	6.0	A
Westbound TR	8.9	A	6.6	A	8.3	A	8.8	A	6.7	A	8.2	A
Southbound Left	30.4	C	30.5	C	30.0	C	30.4	C	30.5	C	30.0	C
Southbound Right	30.3	C	30.3	C	29.6	C	30.3	C	30.3	C	29.6	C
<b>5. Wilson Boulevard &amp; N Randolph Street</b>												
<b>Overall</b>	<b>22.0</b>	<b>C</b>	<b>27.6</b>	<b>C</b>	<b>19.9</b>	<b>B</b>	<b>22.5</b>	<b>C</b>	<b>26.6</b>	<b>C</b>	<b>19.3</b>	<b>B</b>
Eastbound Left	12.3	B	14.3	B	12.0	B	13.1	B	13.7	B	11.7	B
Eastbound TR	16.6	B	17.4	B	14.3	B	18.7	B	17.0	B	14.1	B
Westbound Left	14.1	B	14.2	B	12.6	B	15.1	B	13.8	B	12.4	B
Westbound TR	19.7	B	22.9	C	17.7	B	20.5	C	22.4	C	17.5	B
Northbound Left	23.6	C	31.6	C	25.2	C	23.7	C	35.6	D	25.8	C
Northbound TR	36.5	D	43.9	D	29.5	C	34.7	C	40.8	D	28.2	C
Southbound Left	25.1	C	44.7	D	24.3	C	24.2	C	39.4	D	24.5	C
Southbound TR	24.2	C	32.0	C	24.5	C	23.6	C	34.0	C	25.0	C
<b>6. N Glebe Road &amp; 7th Street N / Private Alley</b>												
<b>Overall</b>	<b>12.3</b>	<b>B</b>	<b>13.7</b>	<b>B</b>	<b>14.7</b>	<b>B</b>	<b>19.6</b>	<b>B</b>	<b>18.7</b>	<b>B</b>	<b>22.1</b>	<b>C</b>
Eastbound Left	43.3	D	39.1	D	42.0	D	43.3	D	39.1	D	42.0	D
Eastbound Right	42.1	D	38.0	D	40.3	D	42.1	D	38.0	D	40.3	D
Westbound Right	40.2	D	36.3	D	37.9	D	40.5	D	36.5	D	38.4	D
Northbound Left	84.2	F	78.8	E	83.2	F	70.5	E	79.0	E	83.3	F
Northbound Thru	6.9	A	9.2	A	4.4	A	--	--	--	--	15.6	B
Northbound TR	--	--	--	--	--	--	16.3	B	18.8	B	--	--

Intersection and Movement	Background (2026)						Future (2026)					
	AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Northbound Right	--	--	--	--	--	--	--	--	--	--	7.4	A
Southbound Left	--	--	--	--	--	--	64.2	E	41.8	D	48.3	D
Southbound TR	11.8	B	9.1	A	--	--	13.6	B	9.3	A	--	--
Southbound Thru	--	--	--	--	15.9	B	--	--	--	--	18.7	B
Southbound Right	--	--	--	--	15.1	B	--	--	--	--	23.1	C
<b>7. N Glebe Road &amp; N Carlin Springs Road / Ballston Parking</b>												
<b>Overall</b>	<b>51.1</b>	<b>D</b>	<b>34.8</b>	<b>C</b>	<b>32.1</b>	<b>C</b>	<b>52.6</b>	<b>D</b>	<b>34.6</b>	<b>C</b>	<b>31.4</b>	<b>C</b>
Eastbound Left	82.8	F	48.9	D	51.4	D	100.5	F	49.6	D	52.9	D
Eastbound Thru	31.1	C	33.0	C	35.7	D	30.2	C	32.7	C	34.6	C
Eastbound Right	31.3	C	24.3	C	28.9	C	31.3	C	24.1	C	28.1	C
Westbound Left	28.9	C	34.6	C	36.3	D	28.7	C	33.9	C	35.1	D
Westbound Thru	28.5	C	35.2	D	35.9	D	28.5	C	34.2	C	34.8	C
Westbound Right	29.3	C	37.1	D	38.5	D	29.0	C	35.5	D	36.4	D
Northbound Left	57.4	E	60.0	E	88.4	F	57.2	E	60.5	E	89.5	F
Northbound TR	59.9	E	23.0	C	11.7	B	58.9	E	23.0	C	11.7	B
Southbound Left	52.1	D	54.0	D	44.8	D	38.4	D	54.1	D	50.5	D
Southbound TR	33.7	C	36.2	D	39.2	D	28.7	C	36.1	D	37.3	D
<b>8. N Glebe Road &amp; N Randolph Street</b>												
<b>Overall</b>	<b>43.5</b>	<b>D</b>	<b>40.2</b>	<b>D</b>	<b>32.2</b>	<b>C</b>	<b>43.4</b>	<b>D</b>	<b>40.4</b>	<b>D</b>	<b>32.1</b>	<b>C</b>
Eastbound Left	40.9	D	29.3	C	39.9	D	40.8	D	29.2	C	39.9	D
Eastbound TR	41.5	D	31.3	C	43.3	D	41.5	D	31.2	C	43.3	D
Westbound Left	48.1	D	69.3	E	53.0	D	51.7	D	69.8	E	51.0	D
Westbound Thru	39.7	D	27.5	C	37.8	D	39.6	D	27.5	C	37.9	D
Westbound Right	40.1	D	29.8	C	38.0	D	40.1	D	29.8	C	38.4	D
Northbound Left	88.3	F	66.8	E	74.9	E	105.6	F	66.8	E	74.9	E
Northbound TR	43.2	D	33.3	C	25.4	C	43.3	D	33.6	C	25.6	C
Southbound Left	85.9	F	53.7	D	81.8	F	79.8	E	52.5	D	81.8	F
Southbound TR	11.3	B	37.5	D	--	--	11.0	B	37.9	D	--	--
Southbound Thru	--	--	--	--	15.6	B	--	--	--	--	15.3	B
Southbound Right	--	--	--	--	16.7	B	--	--	--	--	16.7	B

**Table 17: 2026 Queuing Results**

Intersection and Lane Group	Storage Length (ft)	Background (2026)						Future (2026)					
		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
		50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)
<b>1. Wilson Boulevard &amp; N Glebe Road</b>													
Eastbound Left	290	257	#444	107	#171	144	214	257	#444	107	#169	144	214
Eastbound Thru	475	364	446	143	192	101	141	387	#476	148	198	111	154
Eastbound Right	180	49	101	4	40	5	45	57	108	4	40	1	40
Westbound Left	225	64	108	138	206	94	148	80	#164	153	#229	109	168
Westbound Thru	250	121	166	244	310	97	138	120	166	242	308	97	137
Westbound Right	150	175	252	96	143	88	134	173	252	95	143	87	132
Northbound Left	270	67	116	~204	#377	106	#216	91	149	~207	#380	111	#235
Northbound TR	350	~547	#653	136	225	--	--	~531	#657	#657	213	--	--
Northbound Thru	350	--	--	--	--	446	#574	--	--	--	--	454	#581
Northbound Right	100	--	--	--	--	38	30	--	--	--	--	47	74
Southbound Left	260	192	#316	160	#285	190	#327	200	#336	159	#282	196	#342
Southbound TR	320	186	241	365	430	--	--	194	249	375	#445	--	--
Southbound Thru	320	--	--	--	--	366	446	--	--	--	--	374	456
Southbound Right	100	--	--	--	--	0	0	--	--	--	--	0	0
<b>2. Wilson Boulevard &amp; N Taylor Street</b>													
Eastbound LT	250	--	37	--	21	--	11	--	38	--	21	--	11
Westbound TR	190	--	0	--	0	--	0	--	0	--	0	--	0
Southbound Right	640	--	43	--	34	--	16	--	42	--	33	--	16
<b>3. Wilson Boulevard &amp; Private Alley</b>													
Eastbound TR	70	--	0	--	0	--	0	--	0	--	0	--	0
Northbound Right	125	--	0	--	0	--	0	--	0	--	0	--	0
<b>4. Wilson Boulevard &amp; N Stuart Street</b>													
Eastbound Left	120	38	68	16	36	24	48	38	68	16	36	24	48
Eastbound Thru	190	125	166	91	124	76	106	133	176	100	134	85	116
Westbound TR	275	76	98	91	110	64	83	78	100	92	113	65	84
Southbound Left	245	1	8	3	13	10	29	1	8	3	13	10	29
Southbound Right	50	0	10	0	14	0	22	0	10	0	14	0	22
<b>5. Wilson Boulevard &amp; N Randolph Street</b>													
Eastbound Left	180	18	34	15	31	15	31	18	34	15	32	15	32
Eastbound TR	315	73	93	71	92	56	84	76	96	75	97	62	89
Westbound Left	150	52	91	50	89	37	70	49	87	48	86	36	69
Westbound TR	315	121	172	190	261	103	150	127	180	194	266	108	157
Northbound Left	115	45	92	46	108	43	87	45	92	46	#114	43	87
Northbound TR	250	178	291	193	#359	112	195	178	290	176	297	98	173
Southbound Left	160	32	75	52	#138	30	67	32	75	51	#129	30	66
Southbound TR	300	83	146	173	278	68	123	82	146	172	276	67	122
<b>6. N Glebe Road &amp; 7th Street N / Private Alley</b>													
Eastbound Left	200	65	114	79	135	93	153	65	114	79	135	93	153
Eastbound Right	90	28	61	42	82	41	81	28	61	42	82	41	81
Westbound Right	220	0	0	6	51	0	0	0	0	0	13	0	0
Northbound Left	130	44	m72 (119)	44	m103 (135)	71	114 (139)	50	m79 (139)	42	m100 (134)	68	m120 (140)
Northbound Thru	375	113	m75 (290)	62	91	84	56	--	--	--	--	245	164
Northbound TR	375	--	--	--	--	--	--	219	m348 (331)	340	130	--	--

Intersection and Lane Group	Storage Length (ft)	Background (2026)						Future (2026)					
		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
		50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)
Northbound Right	175	--	--	--	--	--	--	--	--	--	0	m9 (80)	
Southbound Left	75	--	--	--	--	--	--	49	m91 (74)	55	m71 (74)	40	m71 (75)
Southbound TR	380	110	133	93	123 (165)	--	--	204	250	95	m123 (208)	--	--
Southbound Thru	380	--	--	--	--	146	248	--	--	--	--	177	276
Southbound Right	50	--	--	--	--	1	m15 (52)	--	--	--	--	1	m21 (52)
<b>7. N Glebe Road &amp; N Carlin Springs Road / Ballston Parking</b>													
Eastbound Left	175	413	#645	192	273	196	276	~485	#706	204	287	218	296
Eastbound Thru	190	90	145	9	24	21	44	61	106	6	18	14	33
Eastbound Right	155	201	282	74	104	96	122	201	282	74	104	95	117
Westbound Left	50	12	32	36	67	29	56	8	25	25	50	20	42
Westbound Thru	50	8	24	78	121	32	60	6	19	54	89	22	45
Westbound Right	50	27	56	105	156	79	123	19	43	71	112	53	88
Northbound Left	245	81	m106 (240)	171	#279	127	197	82	m105 (240)	172	#280	128	197
Northbound TR	450	342	397	205	271	104	134	352	413	212	278	111	142
Southbound Left	220	64	101	24	48 (189)	50	84	43	56	18	m37 (149)	34	64
Southbound TR	375	182	211	222	250	361	#364	241	281	221	248	323	#591
<b>8. N Glebe Road &amp; N Randolph Street</b>													
Eastbound Left	190	31	65	64	106	62	109	31	64	64	106	62	109
Eastbound TR	190	49	92	130	193	151	227	49	91	130	193	151	227
Westbound Left	170	114	190	245	#409	119	199	136	221	245	#411	112	190
Westbound Thru	520	7	22	33	62	31	63	7	22	33	62	32	64
Westbound Right	70	0	10	39	104	7	58	0	17	42	109	13	67
Northbound Left	185	61	#119	116	185	125	198	62	#119	116	185	125	198
Northbound TR	430	408	470	196	252	228	288	409	475	203	260	235	296
Southbound Left	175	~234	#568	128	196	144	m204 (168)	~201	#565	127	#197	144	m201 (168)
Southbound TR	450	47	65	332	383	--	--	46	75	325	376	--	--
Southbound Thru	450	--	--	--	--	81	182	--	--	--	--	75	178
Southbound Right	100	--	--	--	--	6	m33 (100)	--	--	--	--	5	m33 (100)

# 95th percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

~ Volume exceeds capacity, queue is theoretically infinite.

Note: At the request of the County, SimTraffic maximum queue length results are reported for Background (2026) and Future (2026) scenarios at movements where Synchro HCM 2000 results indicate that queues are metered by an upstream signal (denoted with an "m").

**Table 18: 2026 Mitigated Capacity Analysis Results**

Intersection and Movement	Background (2026)						Future (2026)						Future (2026) with Mitigations					
	AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
<b>1. Wilson Boulevard &amp; N Glebe Road</b>																		
<b>Overall</b>	<b>53.7</b>	<b>D</b>	<b>45.6</b>	<b>D</b>	<b>41.9</b>	<b>D</b>	<b>63.3</b>	<b>E</b>	<b>47.6</b>	<b>D</b>	<b>40.2</b>	<b>D</b>	<b>58.0</b>	<b>E</b>	<b>48.5</b>	<b>D</b>		
Eastbound Left	61.5	E	35.4	D	31.5	C	61.5	E	35.1	D	31.5	C	67.6	E	34.1	C		
Eastbound Thru	52.9	D	36.1	D	37.2	D	56.0	E	36.3	D	37.5	D	53.5	D	36.3	D		
Eastbound Right	31.5	C	22.0	C	26.3	C	31.2	C	22.0	C	26.0	C	30.7	C	22.0	C		
Westbound Left	37.7	D	37.1	D	34.2	C	47.6	D	41.8	D	34.9	C	59.6	E	38.1	D		
Westbound Thru	43.5	D	41.4	D	40.1	D	43.5	D	41.3	D	40.1	D	43.5	D	40.3	D		
Westbound Right	31.6	C	26.0	C	28.5	C	31.2	C	26.0	C	28.4	C	31.4	C	26.0	C		
Northbound Left	47.1	D	143.7	F	79.8	E	57.5	E	149.6	F	76.8	E	59.7	E	149.6	F	NO MITIGATIONS	
Northbound TR	68.4	E	30.3	C	--	--	94.9	F	35.2	D	--	--	76.6	E	35.2	D		
Northbound Thru	--	--	--	--	53.3	D	--	--	--	--	46.0	D	--	--	--	--		
Northbound Right	--	--	--	--	19.5	B	--	--	--	--	11.6	B	--	--	--	--		
Southbound Left	89.2	F	70.0	E	75.6	E	91.3	F	69.2	E	79.6	E	95.5	F	77.3	E		
Southbound TR	33.5	C	52.4	D	--	--	34.2	C	53.7	D	--	--	33.4	C	57.2	E		
Southbound TR	--	--	--	--	42.4	D	--	--	--	--	43.3	D	--	--	--	--		
Southbound TR	--	--	--	--	0.2	A	--	--	--	--	0.2	A	--	--	--	--		
<b>7. N Glebe Road &amp; N Carlin Springs Road / Ballston Parking</b>																		
<b>Overall</b>	<b>51.1</b>	<b>D</b>	<b>34.8</b>	<b>C</b>	<b>32.1</b>	<b>C</b>	<b>52.6</b>	<b>D</b>	<b>34.6</b>	<b>C</b>	<b>31.4</b>	<b>C</b>	<b>50.9</b>	<b>D</b>			<b>31.3</b>	<b>C</b>
Eastbound Left	82.8	F	48.9	D	51.4	D	100.5	F	49.6	D	52.9	D	87.6	F			52.9	D
Eastbound Thru	31.1	C	33.0	C	35.7	D	30.2	C	32.7	C	34.6	C	28.9	C			34.6	C
Eastbound Right	31.3	C	24.3	C	28.9	C	31.3	C	24.1	C	28.1	C	29.5	C			28.4	C
Westbound Left	28.9	C	34.6	C	36.3	D	28.7	C	33.9	C	35.1	D	27.4	C			35.1	D
Westbound Thru	28.5	C	35.2	D	35.9	D	28.5	C	34.2	C	34.8	C	27.2	C	NO MITIGATIONS		34.8	C
Westbound Right	29.3	C	37.1	D	38.5	D	29.0	C	35.5	D	36.4	D	27.7	C			36.4	D
Northbound Left	57.4	E	60.0	E	88.4	F	57.2	E	60.5	E	89.5	F	59.0	E			90.9	F
Northbound TR	59.9	E	23.0	C	11.7	B	58.9	E	23.0	C	11.7	B	60.6	E			11.7	B
Southbound Left	52.1	D	54.0	D	44.8	D	38.4	D	54.1	D	50.5	D	39.8	D			50.5	D
Southbound TR	33.7	C	36.2	D	39.2	D	28.7	C	36.1	D	37.3	D	28.2	C			36.8	D
<b>8. N Glebe Road &amp; N Randolph Street</b>																		
<b>Overall</b>	<b>43.5</b>	<b>D</b>	<b>40.2</b>	<b>D</b>	<b>32.2</b>	<b>C</b>	<b>43.4</b>	<b>D</b>	<b>40.4</b>	<b>D</b>	<b>32.1</b>	<b>C</b>	<b>43.6</b>	<b>D</b>				
Eastbound Left	40.9	D	29.3	C	39.9	D	40.8	D	29.2	C	39.9	D	40.8	D				
Eastbound TR	41.5	D	31.3	C	43.3	D	41.5	D	31.2	C	43.3	D	41.5	D	NO MITIGATIONS		NO MITIGATIONS	
Westbound Left	48.1	D	69.3	E	53.0	D	51.7	D	69.8	E	51.0	D	51.7	D				

Intersection and Movement	Background (2026)						Future (2026)						Future (2026) with Mitigations					
	AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Westbound Thru	39.7	D	27.5	C	37.8	D	39.6	D	27.5	C	37.9	D	39.6	D				
Westbound Right	40.1	D	29.8	C	38.0	D	40.1	D	29.8	C	38.4	D	40.1	D				
Northbound Left	88.3	F	66.8	E	74.9	E	105.6	F	66.8	E	74.9	E	94.3	F				
Northbound TR	43.2	D	33.3	C	25.4	C	43.3	D	33.6	C	25.6	C	43.3	D				
Southbound Left	85.9	F	53.7	D	81.8	F	79.8	E	52.5	D	81.8	F	83.5	F				
Southbound TR	11.3	B	37.5	D	--	--	11.0	B	37.9	D	--	--	10.6	B				
Southbound Thru	--	--	--	--	15.6	B	--	--	--	--	15.3	B	--	--				
Southbound Right	--	--	--	--	16.7	B	--	--	--	--	16.7	B	--	--				

**Table 19: 2026 Mitigated Queuing Analysis Results**

Intersection and Lane Group	Storage Length (ft)	Background (2026)						Future (2026)						Future (2026) with Mitigations					
		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
		50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)
<b>1. Wilson Boulevard &amp; N Glebe Road</b>																			
Eastbound Left	290	257	#444	107	#171	144	214	257	#444	107	#169	144	214	261	#464	105	162		
Eastbound Thru	475	364	446	143	192	101	141	387	#476	148	198	111	154	383	467	148	198		
Eastbound Right	180	49	101	4	40	5	45	57	108	4	40	1	40	61	111	4	40		
Westbound Left	225	64	108	138	206	94	148	80	#164	153	#229	109	168	81	#177	150	222		
Westbound Thru	250	121	166	244	310	97	138	120	166	242	308	97	137	120	166	240	305		
Westbound Right	150	175	252	96	143	88	134	173	252	95	143	87	132	175	256	95	143		
Northbound Left	270	67	116	~204	#377	106	#216	91	149	~207	#380	111	#235	90	151	~207	#380		<b>NO MITIGATIONS</b>
Northbound TR	350	~547	#653	136	225	--	--	~531	#657	#657	213	--	--	~423	#609	#609	213		
Northbound Thru	350	--	--	--	--	446	#574	--	--	--	--	454	#581	--	--	--	--		
Northbound Right	100	--	--	--	--	38	30	--	--	--	--	47	74	--	--	--	--		
Southbound Left	260	192	#316	160	#285	190	#327	200	#336	159	#282	196	#342	202	#347	161	#293		
Southbound TR	320	186	241	365	430	--	--	194	249	375	#445	--	--	192	245	379	#471		
Southbound Thru	320	--	--	--	--	366	446	--	--	--	--	374	456	--	--	--	--		
Southbound Right	100	--	--	--	--	0	0	--	--	--	--	0	0	--	--	--	--		
<b>7. N Glebe Road &amp; N Carlin Springs Road / Ballston Parking</b>																			
Eastbound Left	175	413	#645	192	273	196	276	~485	#706	204	287	218	296	~454	#688			218	296
Eastbound Thru	190	90	145	9	24	21	44	61	106	6	18	14	33	60	103			14	33
Eastbound Right	155	201	282	74	104	96	122	201	282	74	104	95	117	195	273			95	122
Westbound Left	50	12	32	36	67	29	56	8	25	25	50	20	42	8	24			20	42
Westbound Thru	50	8	24	78	121	32	60	6	19	54	89	22	45	6	18			22	45
Westbound Right	50	27	56	105	156	79	123	19	43	71	112	53	88	18	42		<b>NO MITIGATIONS</b>	53	88
Northbound Left	245	81	m106 (240)	171	#279	127	197	82	m105 (240)	172	#280	128	197	82	m105 (240)			128	198
Northbound TR	450	342	397	205	271	104	134	352	413	212	278	111	142	352	413			111	142
Southbound Left	220	64	101	24	48 (189)	50	84	43	56	18	m37 (149)	34	64	44	57			34	64
Southbound TR	375	182	211	222	250	361	#364	241	281	221	248	323	#591	241	280			323	#328
<b>8. N Glebe Road &amp; N Randolph Street</b>																			
Eastbound Left	190	31	65	64	106	62	109	31	64	64	106	62	109	31	64				
Eastbound TR	190	49	92	130	193	151	227	49	91	130	193	151	227	49	91		<b>NO MITIGATIONS</b>		<b>NO MITIGATIONS</b>
Westbound Left	170	114	190	245	#409	119	199	136	221	245	#411	112	190	136	221				



Intersection and Lane Group	Storage Length (ft)	Background (2026)						Future (2026)						Future (2026) with Mitigations					
		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak		AM Peak		PM Peak		Saturday Peak	
		50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)	50th	95th (Max)
Westbound Thru	520	7	22	33	62	31	63	7	22	33	62	32	64	7	22				
Westbound Right	70	0	10	39	104	7	58	0	17	42	109	13	67	0	17				
Northbound Left	185	61	#119	116	185	125	198	62	#119	116	185	125	198	62	112				
Northbound TR	430	408	470	196	252	228	288	409	475	203	260	235	296	409	475				
Southbound Left	175	~234	#568	128	196	144	m204 (168)	~201	#565	127	#197	144	m201 (168)	~223	#565				
Southbound TR	450	47	65	332	383	--	--	46	75	325	376	--	--	46	76				
Southbound Thru	450	--	--	--	--	81	182	--	--	--	--	75	178	--	--				
Southbound Right	100	--	--	--	--	6	m33 (100)	--	--	--	--	5	m33 (100)	--	--				

# 95th percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

~ Volume exceeds capacity, queue is theoretically infinite.

Note: At the request of the County, SimTraffic maximum queue length results are reported for Background (2026) and Future (2026) scenarios at movements where Synchro HCM 2000 results indicate that queues are metered by an upstream signal (denoted with an "m").

## Safety Review

This chapter reviews available crash data within the study area, reviews potential impacts of the proposed development on crash rates and informs future transportation improvements that work toward the County’s goals outlined in the Vision Zero Action Plan.

### VDOT Crash Data

Based on guidelines contained in the Safety Analysis Guidance (May 2021) provided by Arlington County DES, crash data from 2016 to 2020 was obtained from the VDOT Crash Analysis Tool for crashes occurring in the vicinity of the site. This data was used to conduct a review of safety at study intersections and frontage of the development site. The crash data used in the analysis is included in the Technical Appendix.

Based on the historical crash data, a total of 83 crashes occurred at study area intersection and in the vicinity of the site between 2016 and 2020. The years with the highest number of crashes were 2016 and 2017 with 20 crashes per year, while the year with the lowest number of crashes was 2018 with 13 crashes.

Figure 46 shows the number of crashes per year in in the study area over the last five years. The data obtained from VDOT shows a general downward trend in the number of crashes.

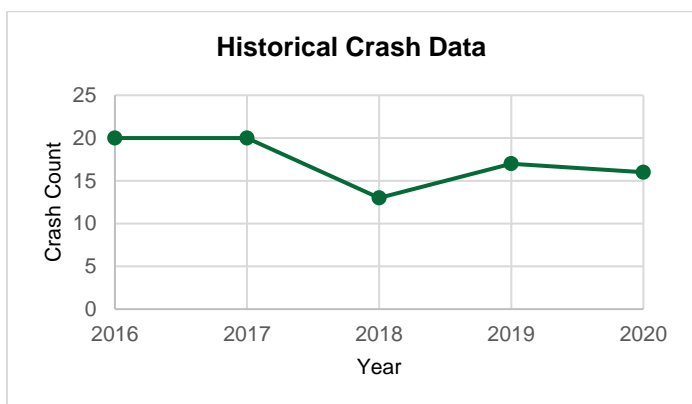


Figure 46: Historical Crash Data

### Crash Characteristics

#### Crash Severity

According to the 2017 VDOT Crash Data Manual, crash severity is measured using the KABCO scale as per the Model Minimum Uniform Crash Criteria (MMUCC) based on the most severe

injury to any person involved in the crash. The KABCO scale definitions are as follows:

- K: Fatal Injury
- A: Suspected Serious Injury
- B: Suspected Minor Injury
- C: Possible Injury
- O: Property Damage Only (No Apparent Injury)

From 2016 to 2020, 62% were classified as O (Property Damage Only) and 31% were classified as B (Suspected Minor Injury). One (1) crash involved a fatal injury, and five (5) crashes involved suspected serious injuries. Table 20 shows the number of crashes according to its severity.

Table 20: Crash Count by Severity (2016-2020)

Crash Severity	Count	%
K	1	1%
A	5	6%
B	27	31%
C	-	-
O	53	62%
<b>Total</b>	<b>86</b>	<b>100%</b>

### Collision Type

The most common type of collision found in the study area is Angle Collision with 38% of crashes occurring in this manner, followed by Pedestrian Collision with 21% of crashes. Table 21 summarizes the collision type for all analyzed crashes.

Table 21: Crash County by Collision Type

Collision Type	Count	%
Angle	33	38%
Pedestrian	18	21%
Rear end	14	16%
Sideswipe - same direction of travel	10	12%
Fixed object off road (from outside ditch)	6	7%
Head on	2	2%
Sideswipe - opposite direction of travel	1	1%
Fixed object in road	1	1%
Miscellaneous or other	1	1%
<b>Total</b>	<b>86</b>	<b>100%</b>

### Crash Factors

Several factors that contribute to crashes were reviewed as part of this safety analysis. These factors include environmental factors, driver behavior, and vehicle characteristics.

## Environmental Factors

Light conditions at the moment of the crash can contribute to the quantity and severity of crashes. For the data analyzed, more than 90% of the crashes occurred during daylight (72%) or during darkness in a lighted road (22%). This information suggests that, in the majority of crashes, light condition might not have been the primary cause for the crash. Table 22 summarizes the light conditions for crashes in the vicinity of the Macy's Ballston site.

**Table 22: Crash Count by Light Condition**

Light Condition	Count	%
Daylight	62	72%
Darkness - road lighted	19	22%
Dawn	3	3%
Darkness - road not lighted	1	1%
Dusk	1	1%
<b>Total</b>	<b>86</b>	<b>100%</b>

## Driver Behavior

The intentional or unintentional characteristics and actions that a driver performs while operating a vehicle also contribute to crashes. As shown in Table 23, a distracted driver was reported in 19% of the analyzed crashes, while alcohol and speeding were involved in 5% of the crashes. This information suggests that, in the majority of cases, driver behavior might not have been the primary cause of the crash but is a contributing cause.

**Table 23: Crash Count by Driver Behavior Factors**

Driver Behavior Factors	Count	%
<i>Distracted Driver?</i>		
Yes	16	19%
No	70	81%
<i>Speeding?</i>		
Yes	4	5%
No	82	95%
<i>Alcohol Involved?</i>		
Yes	4	5%
No	82	95%
<b>Total</b>	<b>86</b>	<b>100%</b>

## Vehicle Characteristics

Vehicle characteristics including type of vehicle and vehicle size were analyzed to determine their contribution to crashes in the vicinity of the Macy's Ballston site. As shown in Table 24, no crashes involving motorcyclists have been reported in the past five (5) years while a single crash has been reported to involve a bicyclist. In addition, 15% of the crashes reported a large truck being involved in the crash. In terms of transportation modes other than automobiles, pedestrians were the most likely to be

involved in a crash according to the data analyzed (23% of crashes involved pedestrians).

**Table 24: Crash Count by Vehicle Characteristics**

Vehicle Characteristics Factors	Count	%
<i>Large Truck Involved</i>		
Yes	13	15%
No	73	85%
<i>Motorcycle Involved</i>		
Yes	0	0%
No	86	100%
<i>Bike Involved</i>		
Yes	1	1%
No	85	99%
<i>Pedestrian Involved</i>		
Yes	20	23%
No	66	77%
<b>Total</b>	<b>86</b>	<b>100%</b>

## Findings

According to the VDOT historical crash data for the study area, all of the most severe crashes, classified as K and A, were also classified as pedestrian crashes. Of the 18 pedestrian crashes, 39% (7 crashes) occurred at the intersection of N Glebe Road and N Carling Springs Road as shown in Figure 47. Also shown in Figure 47, 33% of the total number of crashes (28 crashes) occurred at the intersection of N Glebe Road and Wilson Boulevard. However, all the crashes at this location were less severe and classified as B or O. The single crash classified as K (Fatal Injury) occurred in 2017 and involved a pedestrian at the intersection of Wilson Boulevard and N Randolph Street.

## Safety Concerns in Study Area

The majority of safety concerns in the study area are primarily due to existing lane configurations and operations and are not expected to be exacerbated by the proposed development. The proposed development includes infrastructure intended to promote safety for all modes of transportation while taking into account concerns related to capacity on major roadways. There are several elements in the project design that minimize potential safety concerns, including:

- The dispersion of vehicle traffic throughout the network through the relocation of site-bound traffic from a high-crash intersection leading into the Ballston Quarter garage (N Glebe Road & N Carlin Springs) to the Private Alley.
- The design of the Private Alley as a curbless environment which functions as a non-traditional traffic calming measure

to limit vehicular speed through the use of non-traditional paving and streetscape elements.

- New pedestrian facilities that are expected to meet or exceed Arlington County requirements with an emphasis on pedestrian safety and comfort. This includes sidewalks that meet or exceed the width requirements, crosswalks at all necessary locations, and curb ramps with detectable warnings.
- As part of the proposed development, the signal phasing for the intersection of N Glebe Road and 7th Street N will be adjusted to include a protected left turn that prioritizes pedestrian movements and the crosswalk, median, and other pedestrian facilities will meet design standards. In addition, the Applicant will continue to explore additional safety elements with County DES staff.

These improvements are consistent with several County-wide and national guidelines which prioritize shifting trips to non-auto modes, complete streets principles, and safety for all users, including the Arlington Master Transportation Plan, Vision Zero Action Plan, and NACTO Urban Streets Design Guide.

Regarding the proposed access points to the site on N Glebe Road and Wilson Boulevard, the analyzed data shows no crashes at the intersection of Wilson Boulevard and the Private Alley, and four (4) crashes at the intersection of 7<sup>th</sup> Street N and N Glebe Road. The collision type of the two (2) crashes in the northbound direction of the intersection was Sideswipe - Same Direction, and Rear End, and both crashes were classified as O (Property Damage Only). Moreover, according to the VDOT data, the report for the sideswipe crash in the northbound direction shows that even though the crash location is close to the site access, it was not related to the intersection. The collision type of the two (2) crashes in the southbound direction of the intersection was Rear End and Pedestrian, and both crashes were classified as B (Suspected Minor Injury). The rear end crash in the southbound direction on N Glebe Road was related to a work zone along N Glebe Road, and the location of the pedestrian crash on N Glebe Road suggests that the event involved a vehicle traveling in the southbound direction or a vehicle turning right from 7<sup>th</sup> Street N onto N Glebe Road.

The proposed development will include a protected southbound left-turn lane into the site at the 7<sup>th</sup> Street and N Glebe Road intersection that is required by the operational needs of the project. Based on the collision type and the potential factors contributing to historical crashes at this location, the proposed

development, and the proposed lane configuration modification are not likely to exacerbate safety concerns at this intersection. As part of the proposed development, the signal phasing for the intersection will be adjusted to include a protected left turn, and the crosswalk, median, and other pedestrian facilities will meet design standards. In addition, the Applicant will continue to explore additional safety elements with County DES staff.

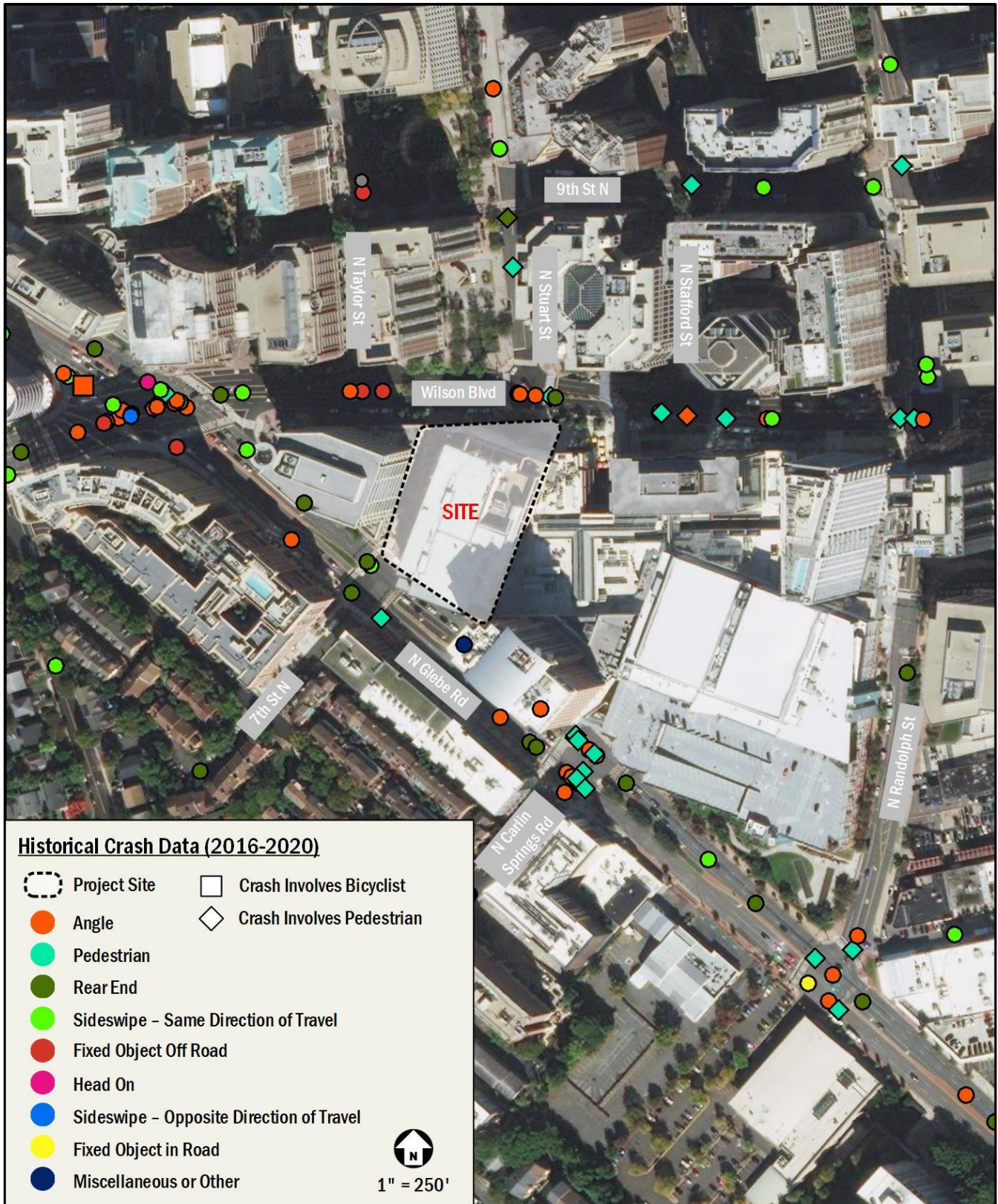


Figure 47: Historical Crash Data (2016-2020)

## Transportation Management Plan

A Transportation Management Plan (TMP) has many components that are tailored to accommodate a given facility with the goal being the reduction of automobile trips by encouraging alternative forms of transportation. A few of the typical TMP components include the establishment of a TMP coordinator, the distribution of transit literature, the establishment of ride-sharing programs, and the on-site sale of discounted fare media. Management measures taken by the proposed Macy's Ballston development can be monitored and adjusted as needed to continually create opportunities to reduce the amount of vehicular traffic generated by the site.

The TMP will include a schedule and details of implementation and continued operation of the elements in the plan. The location of the site near the Ballston-MU Metro Station allows for a TMP that may include, but not be limited to, the following:

### **Participation and Funding**

- (1) Establish and maintain an active, ongoing relationship with Arlington Transportation Partners (ATP), or successor entity, at no cost to the developer, on behalf of the property owner.
- (2) Designate and keep current a member of building management as Property Transportation Coordinator (PTC) to be primary point of contact with the County and undertake the responsibility for coordinating and completing all Transportation Management Plan (TMP) obligations. The PTC shall be trained, to the satisfaction of Arlington County Commuter Services (ACCS), to provide, transit, bike, walk, rideshare and other information provided by Arlington County intended to assist with transportation to and from the site.
- (3) Contribute annually to ACCS, or successor, to sustain direct and indirect on-site and off-site services in support of TMP activities. Payment on this commitment shall begin as a condition of issuance of the First Partial Certificate of Occupancy for Tenant Occupancy for each respective building or phase of construction. Subsequent payments shall be made annually.

### **Facilities and Improvements**

- (1) Provide in the lobby or lobbies, a transportation information display(s), the number/content/design/location of which will be approved by ACCS. The developer agrees that the required transportation information displays shall meet the Arlington County Neighborhood Transportation Information Display Standards in effect on the date of the site plan approval, or equivalent as approved by the County Manager.
- (2) Comply with requirements of the Site Plan conditions to provide bicycle parking/storage facilities, a Parking Management Plan (PMP), a Bicycle Facilities Management Plan, and construction worker parking.

### **Carpool and Vanpool Parking**

- (1) Operate a carpool/vanpool program with elements including:
  - a. Reserved, signed spaces for carpools/vanpools located near main entrances/elevators
  - b. Parking subsidy for two-person or more carpools
  - c. Free parking for vanpools (recognized by Internal Revenue Service)

### **Promotions, Services, Policies**

- (1) Prepare, reproduce and distribute, in digital or hard copy, materials provided by Arlington County, which includes site-specific transit, bike, walk, and rideshare related information, to each new residential lessee and retail, property management, or maintenance employee, from initial occupancy through the life of the site plan. These materials shall be distributed as a part of prospective tenant marketing materials, as well as communications associated with lease signing, on-boarding, or similar activities.
- (2) Provide one time, per person, to each new residential lessee and each new retail, property management, or maintenance employee, whether employed part-time or full-time, directly employed or contracted, who begins employment in the building throughout initial occupancy, the choice of one of the following:

- a. Metro fare on a SmarTrip card or successor fare medium (amount to be determined)
- b. A one year bikeshare membership
- c. A one year carshare membership

The County Manager may approve additions to, or substitution of one or more of these choices with a comparable transportation program incentive, as technology and service options change, if he/she finds that an incentive shall be designed to provide the individual with an option other than driving alone in a personal vehicle, either by removing a barrier to program entry, such as a membership cost, or by providing a similar level of subsidized access to a public or shared transportation system, program or service.

- (3) Provide, administer, or cause the provision of a sustainable commute benefit program for each on-site property management and maintenance employee, whether employed part-time or full-time, directly employed or contracted. This commute benefit program shall offer, at a minimum, a monthly pre-tax transit benefit or a monthly subsidized/direct transit benefit.
- (4) Provide, under a "transportation information" heading on the Developer and property manager's websites regarding this development:
  - a. Links to the most appropriate Arlington County Commuter Services and/or external transportation-related web page(s). Confirmation of most appropriate link will be obtained from ACCS.
  - b. A description of key transportation benefits and services provided at the building, pursuant to the TMP.

- (2) The Developer agrees to conduct and/or participate in, a transportation and parking performance monitoring study at two years, five years, and each subsequent five years (at the County's option), after issuance of the First Certificate of Occupancy for Tenant Occupancy. The County may conduct the study or ask the owner to conduct the study (in the latter case, no reimbursement payment shall be required). As part of the study, a report shall be produced as specified below by the County. The study may include building occupancy rates, average vehicle occupancy, average garage occupancy for various day of the week and times of day, parking availability by time of day, average duration of stay for short term parkers on various days of the week and times of day, pedestrian traffic, a seven-day count of site-generated vehicle traffic, a voluntary mode-split survey, and hourly, monthly, and special event parking rates.

The building owner and/or operator shall notify, assist, and encourage building occupants and visitors on site to participate in mode-split surveys which may be of an on-line or email variety.

### ***Performance and Monitoring***

- (1) During the first year of start-up of the TMP and on an annual basis thereafter, the Developer shall submit an annual report, which may be of an online, or e-mail variety, to the County Manager, describing completely and correctly, the TDM related activities of the site and changes in commercial tenants during each year.

## Summary and Conclusions

This report concludes that the proposed development will not have a detrimental impact to the surrounding transportation and roadway network assuming that all planned site design elements and recommended mitigation measures are implemented.

The Macy's Ballston site is well served by transit and is surrounded by a well-connected pedestrian and bicycle network. The site is located near several principal arterials such as N Glebe Road and Wilson Boulevard. The arterials create connections to I-395, I-66, George Washington Memorial Parkway, and ultimately the Capital Beltway (I-495) and I-95.

The proposed mixed-use development will replace the existing 148,353 sf Macy's department store with a 44,000 sf grocery store anchored high-rise 555 du residential building.

As part of the proposed development, existing sidewalk facilities along Wilson Boulevard and N Glebe Road will be upgraded. Additionally, the Applicant proposed to transform the Private Alley from an underutilized, "back of house" alley into a more inviting, safe, curbside shared space for pedestrians, bicyclists, and vehicles. The revitalized Private Alley will help stitch together this area of Ballston and provide greater connectivity between N. Glebe Road and Wilson Boulevard.

The Private Alley will provide vehicular access into to the new building as well as the existing Ballston Point office building, and will feature high-quality masonry pavers, landscaping and hardscape treatments, wayfinding signage, public art, pedestrian-scale lighting, and bollards.

The proposed building will be served by 388 onsite parking spaces, 240 of which will be provided for the residential units in a below-grade garage at a ratio of 0.43 spaces per dwelling unit. Ten of the residential spaces (approximately 4.1 percent) are compact parking spaces, which is within the 15 percent threshold established by § 14.3.3.F of the Zoning Ordinance. The proposed residential parking ratio accords with recent County policies supporting significant parking reductions for residential development in close proximity to transit.

The Applicant is also constructing 148 parking spaces on the Property which will be reserved for the proposed grocery store. The grocery store's required parking will be satisfied via these spaces and/or within the County-owned Ballston Public Parking

Garage, which the Applicant enjoys access to through a private party agreement.

The below-grade portions of the Applicant's new parking garage will be connected to the existing Ballston Point parking garage located west of the Property. In terms of circulation, vehicular access for the grocer will be located in a new garage entry along the east side of the Private Alley; vehicular access for residential units will be located via the Ballston Point garage entrance along the west side of the Private Alley.

Loading facilities for the Phase 1 residential component will be provided via the existing mall loading area, accessible from N Randolph Street. Loading facilities for the proposed grocer and Phase 2 residential component will be located on the southern portion of the site, with access from the Private Alley. Inbound access for grocery trucks will be provided via N Glebe Road, accessible during non-peak hours only. The loading area has been designed to allow for head-in access from N Glebe Road and accommodate all backing maneuvers within the site. Loading facilities for the existing Ballston Point office building will continue to be provided off of the western side of the Private Alley.

A number of planned transportation improvements in the vicinity of the project are expected to be complete by 2026. The full list of improvements is detailed in the report, but projects include:

- Ballston-MU Metrorail Station Multimodal Improvements
- Quincy Street Repaving and Multimodal Improvements
- Ballston-MU Metro Station West Entrance

A capacity analysis was developed to compare the future roadway network with and without the proposed development. Traffic projections for 2026 are based on existing volumes, plus traffic generated by approved nearby background developments, regional growth, and traffic generated by the proposed Macy's Ballston redevelopment.

Mitigation measures were identified based on Arlington County standards and as outlined in the approved scoping document. The proposed development is considered to have an impact at an intersection if any of the outlined conditions are met. Following these guidelines, mitigation measures were explored and included the following recommendation(s):

- Adjustments to signal timings at three (3) intersections: Wilson Boulevard & N Glebe Road (Int. 1), N Glebe Road &



N Carlin Springs Road (Int. 7), and N Glebe Road & N Randolph Street (Int. 8).

With these mitigations in place, the analysis shows that traffic operations with the proposed development will improve or are consistent with the Background scenario at many intersections.

The development has many positive elements contained within its design that minimize potential transportation impacts, including:

- The proposed development's close proximity to the Ballston-MU Metro Station, and multiple bus lines.
- Improvements to the pedestrian facilities adjacent to the site that meet or exceed Arlington County and ADA requirements.
- The inclusion of secure-long-term bicycle parking meeting zoning requirements.
- The installation of short-term bicycle parking spaces around the perimeter of the site that meet zoning requirements.
- The inclusion of shower and locker facilities within the building that meet zoning requirements.
- A Transportation Management Plan (TMP) that aims to reduce the demand of single-occupancy, private vehicles to/from the proposed development during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.

As noted above, this report concludes that the proposed development will not have a detrimental impact to the surrounding transportation and roadway network assuming that all planned site design elements and recommended mitigation measures are implemented.