

# Multimodal Transportation Assessment

## 750 23<sup>rd</sup> Street S

Arlington, Virginia

June 20, 2024

*Revised August 29, 2024*

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## Executive Summary

The following report is a Multimodal Transportation Assessment (MMTA) for the 750 23<sup>rd</sup> Street S development in the Aurora Highlands area of Arlington, Virginia.

### Site Location and Study Area

The proposed development site is located in the Aurora Highlands area of Arlington, Virginia. The general extents of the study area are S Hayes Street to the west, S Fern Street to the east, 23<sup>rd</sup> Street S to the north, and 24<sup>th</sup> Street S to the south.

The vehicular study area consists of five (5) intersections along 23<sup>rd</sup> Street S and S Grant Street, as vetted and approved by Arlington County.

The proposed development site currently consists of the Melwood Horticultural Training Center building. The site is currently zoned C-1: Local Commercial District and R-6: One-Family Dwelling District, and, according to Arlington County's General Land Use Plan (GLUP), this site is designated "Public." However, a request to advertise a future change the GLUP designation from "Public" to "Low-Medium" residential with an associated rezoning from C-1 and R-6 to RA8-18 was approved by the County Board on May 18, 2024. Rezoning and GLUP amendment applications consistent with the County Board's approval are filed concurrently with the Administrative Regulation 4.1 Site Plan application.

### Proposed Project

The proposed development will raze the existing 750 23<sup>rd</sup> Street S building and redevelop with a mixed-use building consisting of up to 107 residential units and 22,070 square feet of community service space.

The proposed development will provide 95 parking spaces in a below-grade parking garage located on-site. Vehicular access to the below-grade garage at the 750 23<sup>rd</sup> Street S site will be provided along the driveway accessed via 23<sup>rd</sup> Street S. Loading access will be provided along a proposed driveway via S Grant Street.

The proposed development will provide one (1) 40-foot loading berth. The number of on-site loading facilities will accommodate the practical needs of the development.

### 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 Aurora Highlands Neighborhood Conservation Plan, updated in 2008, developed a series of goals and objectives specifically for Aurora Highlands. The 750 23<sup>rd</sup> Street S development achieves several of the goals and policies of both the MTP, Neighborhood Conservation Plan, and other guiding documents for the County.

## Multi-Modal Overview

### Transit

The subject site is well-served by transit:

- The site is located 0.6 miles from the Crystal City Metro Station which is served by the Blue and Yellow lines, and 0.9 miles from VRE.
- The Crystal City Metro is served by several bus routes provided by WMATA (Metrobus), Metroway, ART, and other regional bus routes.
- There are nine (9) bus stops within a quarter-mile of the site. These stops are directly served by WMATA (Metrobus) routes.
- Metroway is a premium bus service that connects the Pentagon City, Crystal City, and Potomac Yards neighborhood (National Landing), as well as the Braddock Road neighborhood in Alexandria, VA. The nearest stop to the site is at the corner of S Clark Street and 26<sup>th</sup> Street S.
- Future planned transit improvements near the site include an extension of the transitway as part of the Transitway Extension to Pentagon City. These will further improve transit access by providing additional facilities and connectivity via Metroway.

### Bicycle

The site has access to several on- and off-street bicycle facilities, including the Mt. Vernon Trail, on-street routes on 23<sup>rd</sup> Street S, and bicycle lanes on S Eads Street and Crystal Drive. These, in turn, provide regional access to destinations within Virginia and the District.

The recently adopted Bicycle Element of the Arlington County Master Transportation Plan identifies S Clark Street as a Primary Bicycling Corridor. The plan makes the following recommendations for roadways in the vicinity of the site:

- Construct an off-street cycle track connecting the planned Army Navy Drive protected bicycle lane at 12<sup>th</sup> Street S to 18<sup>th</sup> Street S and the Crystal City Metrorail station

- Develop an enhanced bicycle facility on S Fern Street between the Pentagon reservation and 18<sup>th</sup> Street South.

The Crystal City Sector Plan makes the following recommendations for roadways in the vicinity of the site:

- Extending on-street routes along S Fern Street from 15<sup>th</sup> Street S to 12<sup>th</sup> Street S

The Crystal City Bike Network includes recommendations for new bicycle facilities, including the following in the vicinity of the site:

- Southbound protected bicycle lane on Crystal Drive between 18<sup>th</sup> Street S and 23<sup>rd</sup> Street S.
- Northbound, contraflow protected bicycle lane on S Clark Street between 23<sup>rd</sup> Street S and 20<sup>th</sup> Street S.
- Protected or buffered/partially buffered eastbound and westbound bicycle lanes on 15<sup>th</sup> Street S, 18<sup>th</sup> Street S and 23<sup>rd</sup> Street S.
- Westbound buffered bicycle lane on 26<sup>th</sup> Street connecting Crystal Drive and the contraflow bicycle lane on S Clark/Bell Street.

## Pedestrian

The site is surrounded by a well-connected pedestrian network. Pedestrian facilities around the site provide a quality walking environment. There are a number of gaps in the pedestrian infrastructure, including missing sidewalks on a side of the street along S Grant Street between 24<sup>th</sup> and 25<sup>th</sup> Street S, 22<sup>nd</sup> Street S between S Grant and S Fern Street, and S Hayes Street between 21<sup>st</sup> and 22<sup>nd</sup> Street S. This reduces the quality of the walking environment surrounding the site; however, there are no missing sidewalks along the site's frontage. Despite a few deficiencies, there is good overall connectivity and facilities.

As a result of the development, pedestrian facilities along the perimeter of the site continue to meet or exceed Arlington County and ADA standards, providing an inviting pedestrian environment.

## Vehicular

The site is accessible from several principal arterials such as Route 1, VA-27 (Washington Boulevard), VA-244 (Columbia Pike), and VA-110. The arterials create connections to I-395, I-66, George Washington Memorial Parkway, and ultimately the Capital Beltway (I-495) and I-95. These principal arterial roadways bring vehicular traffic within one (1) mile of the site, at

which point minor arterials, collectors, and local roads can be used to access the site directly.

## Existing Conditions

Intersection capacity analyses were performed for the morning and afternoon peak hours at study area intersections. Synchro version 11 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

The existing conditions analysis shows that all intersections and movements operate at an acceptable level of service during the morning and afternoon peak hours. 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 show that all intersections operate at acceptable levels of service and one (1) intersection has 95<sup>th</sup> percentile queues that exceed the available storage length in one or more peak hour in existing conditions:

- 23<sup>rd</sup> Street & S Fern Street
  - Southbound Left/Thru/Right (PM Peak Hour)

## 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 National Household Transportation Survey (NHTS) and data contained in the Crystal City Multimodal Transportation Study, the WMATA Ridership Survey, and the Arlington County Mode Share Assumptions for Crystal City.

data and carpool mode split data. The following mode splits were assumed in the analysis, as vetted and approved by Arlington County:

- Residential
  - Auto – 32%, Transit – 59%, Bike – 3% Walk – 6%
- Community Service (Existing and Proposed)
  - Auto – 30%, Transit – 54%, Bike – 6%, Walk – 10%

Weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 11<sup>th</sup> Edition.

Residential trip generation is based on the development program of up to 107 residential dwelling units. Residential trip generation was calculated based on ITE Land Use 221 (Multifamily Housing – Mid-Rise), using the setting/location of General



Urban/Suburban and Not Close to Rail Transit, splitting trips into different modes using assumptions outlined in the mode split section of this report.

Community service generation is based on the development program of up to 22,070 square feet of community service space. Community service trip generation was calculated based on ITE's baseline vehicular trips for Land Use 710 (General Office building), 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 750 23<sup>rd</sup> Street S site are expected to be complete by 2029. The full list of improvements is detailed in the report, but examples include:

- 23<sup>rd</sup> and Eads Park Renovation
- DCA South Pedestrian Access Improvements
- Crystal City to DCA Pedestrian Bridge
- 23<sup>rd</sup> Street S Realignment and Improvements as part of the 223 23<sup>rd</sup>/2250 Crystal Drive Development
- Crystal City Bicycle Facilities Improvements
- Route 1 Multimodal Improvements Study

### 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 and afternoon peak hours at study area intersections. Synchro version 11 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

Traffic projections for 2029 are based on existing volumes, plus inherent regional growth and traffic generated by approved nearby background developments to account for local 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 by the County.

### Transportation Demand Management/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 proposed development can 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 are implemented.

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

- The proposed development's proximity to the Crystal City Metro Station, Crystal City VRE Station, and multiple bus lines.
- 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.
- Limited on-site parking, which will promote the use of non-auto modes of travel to and from the proposed development.
- Transportation Demand Management/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 750 23<sup>rd</sup> Street S development in Arlington, VA.

### **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 May 9, 2024 was submitted by Gorove Slade to Arlington County and an updated version based on County comments was submitted on May 22, 2024. This scope includes discussions about the parameters of the study and relevant background information. A copy of the scoping document is included in the Technical Appendix.
- Traffic counts at the study area intersections were conducted on May 21, 2024, during the weekday morning peak period of 6:30 to 9:30 AM and the evening peak period of 4:00 to 7:00 PM.
- 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 (2029) and Future (2029) Conditions.
- Proposed site traffic volumes were generated based on the methodology outlined in [Trip Generation, 11<sup>th</sup> Edition](#) published by the Institute of Transportation Engineers (ITE).
- Intersection capacity analyses were performed using the software package Synchro, Version 11 based on the [Highway Capacity Manual](#) (HCM) methodology. Traffic analyses were performed for existing conditions (2024) and future conditions (2029) with and without development.
- Transportation Demand Management/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 Aurora Highlands neighborhood of Arlington, Virginia. Figure 1 shows the regional location of the project. The project site is bounded by a commercial property to the west, Nelly Custis Park to the south, S Grant Street to the east, and 23<sup>rd</sup> Street S to the north. The site location is shown in Figure 2.

### **Parcel Information**

The existing site is currently occupied by the Melwood Horticultural Training Center. A parcel map showing the location of the property is presented in Figure 3.

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

The site is currently zoned C-1: Local Commercial District and R-6: One-Family Dwelling District, and, according to Arlington County's General Land Use Plan (GLUP), this site is designated "Public." However, a request to advertise a future change the GLUP designation from "Public" to "Low-Medium" residential with an associated rezoning from C-1 and R-6 to RA8-18 was approved by the County Board on May 18, 2024. Rezoning and GLUP amendment applications consistent with the County Board's approval are filed concurrently with the Administrative Regulation 4.1 Site Plan application. The GLUP map for the site is shown in Figure 4 and the zoning map is shown in Figure 5.

### **Proposed Site Plan**

The proposed development site currently consists of the Melwood Horticultural Training Center building. The proposed project will redevelop the site to include a mixed-use building with approximately up to 107 residential units and up to 22,070 square feet of community service space. Approximately 95 parking spaces will be provided on-site in a below-grade parking garage. Vehicular access to the below-grade garage will be provided along a driveway accessed via 23<sup>rd</sup> Street S. Loading access will be provided along a proposed driveway accessed via S Grant Street. The proposed build-out year is 2029. The proposed site plan is shown in Figure 6.

### **Scope and Limits of the Study Area**

The study area is generally bounded by S Fern Street to the east, S Hayes Street to the west, 23<sup>rd</sup> Street S to the north, and 24<sup>th</sup> Street S to the south. The following intersections were identified for inclusion in the vehicular study area, as shown in Figure 7.

1. S Hayes Street and 23<sup>rd</sup> Street S
2. S Grant Street and 23<sup>rd</sup> Street S
3. S Fern Street and 23<sup>rd</sup> Street S
4. S Grant Street and 24<sup>th</sup> Street S
5. 23<sup>rd</sup> Street S and Site Driveway (Planned)

## 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, 11<sup>th</sup> Edition](#), Census Transportation Planning Products (CTPP), Wesley Housing, Melwood, DCS Design, Walter L. Phillips, and the office files and field reconnaissance efforts of Gorove Slade Associates, Inc.

## Contents of Study

This report contains 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 Facilities](#)  
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.

- [Safety Review](#)  
This chapter reviews the findings of a crash data analysis of adjacent intersections and frontage of the proposed project.
- [Transportation Demand Management / Transportation Management Plan](#)  
This chapter outlines the components of the proposed development's Transportation Management Plan (TMP).
- [Summary and Conclusions](#)  
This chapter presents a summary of the recommended mitigation measures by mode and presents overall findings and conclusions.

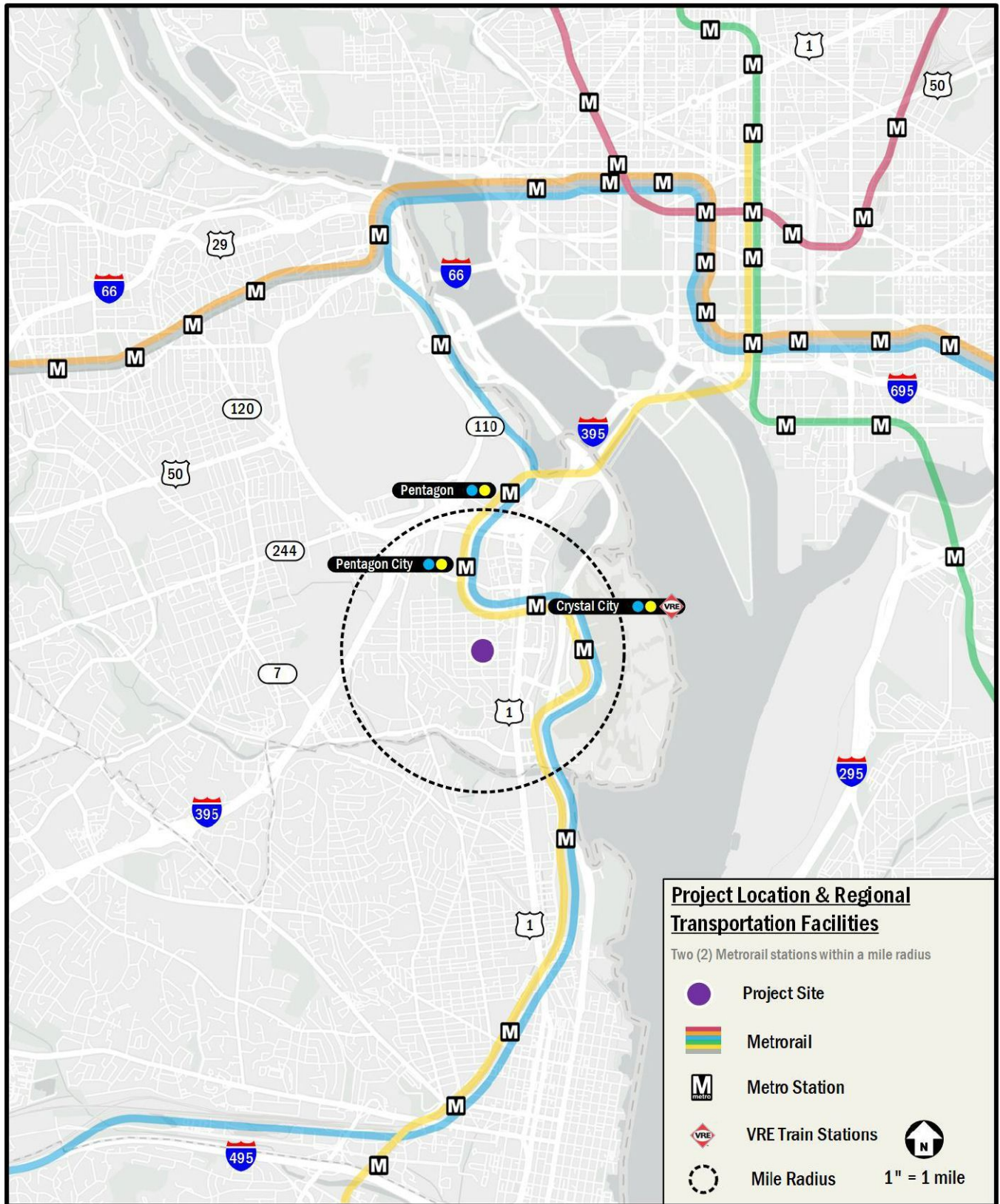


Figure 1: Major Regional Transportation Facilities

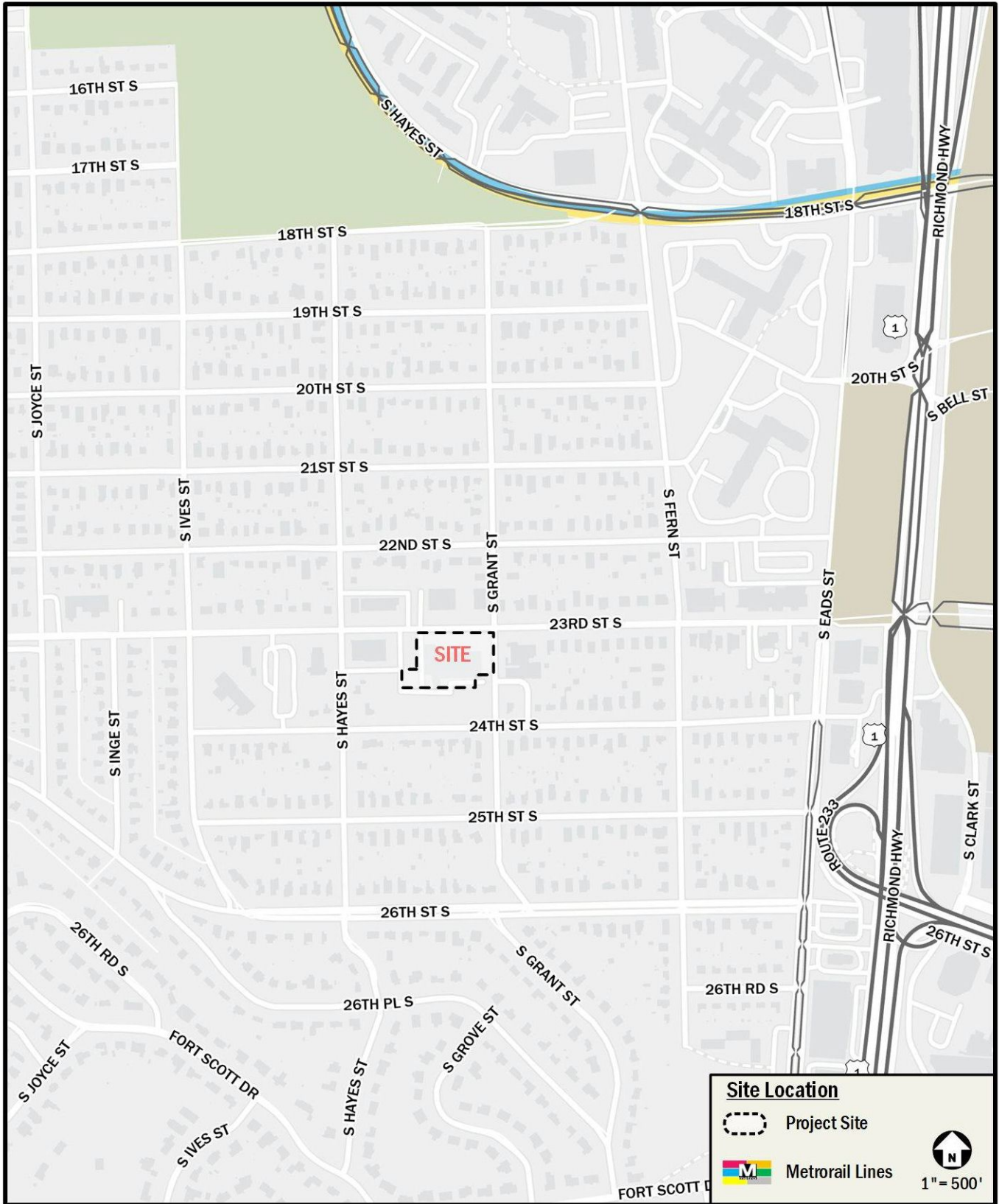


Figure 2: Site Location

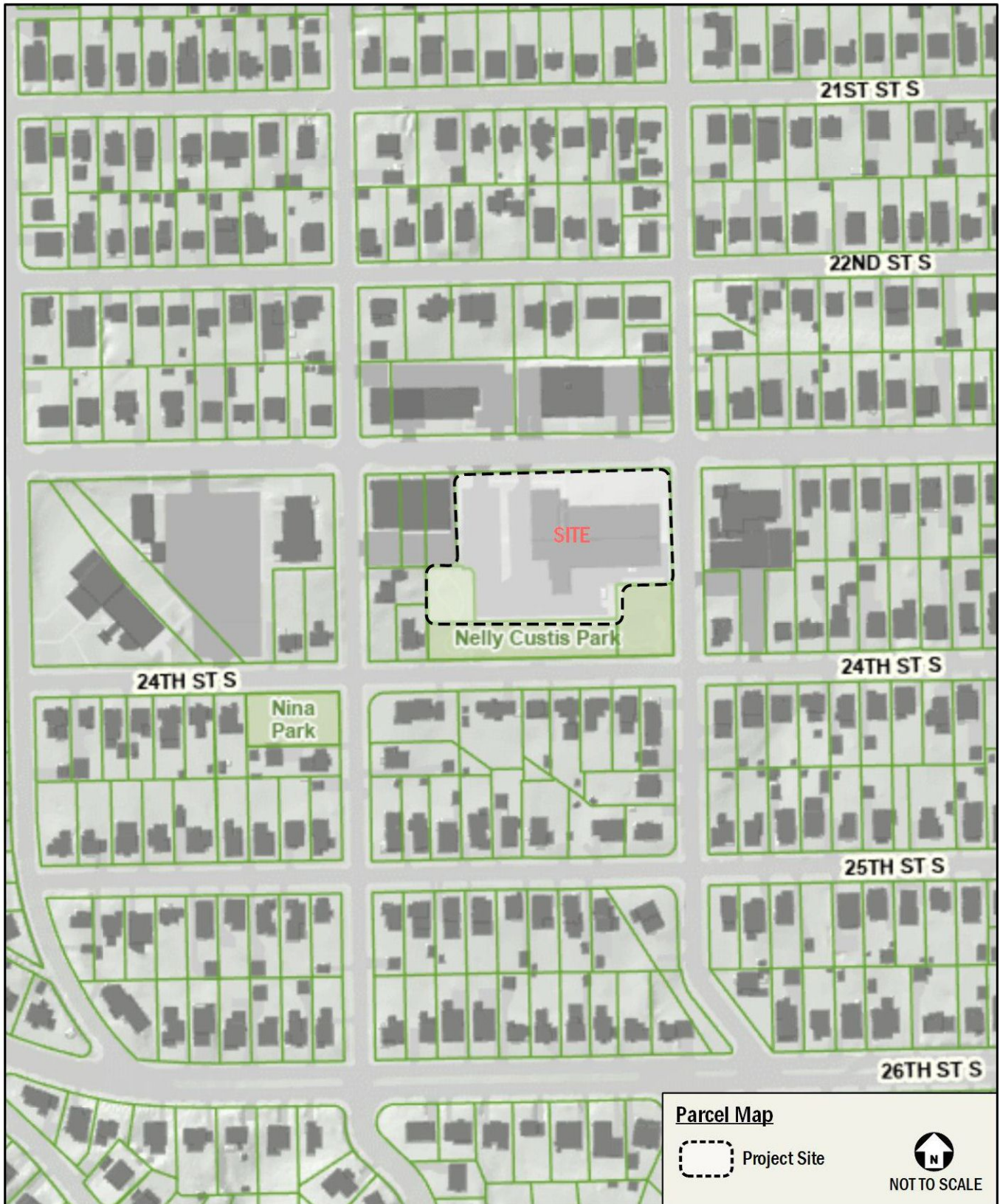


Figure 3: Parcel Map (Source: Arlington County Real Estate Map, September 2016)

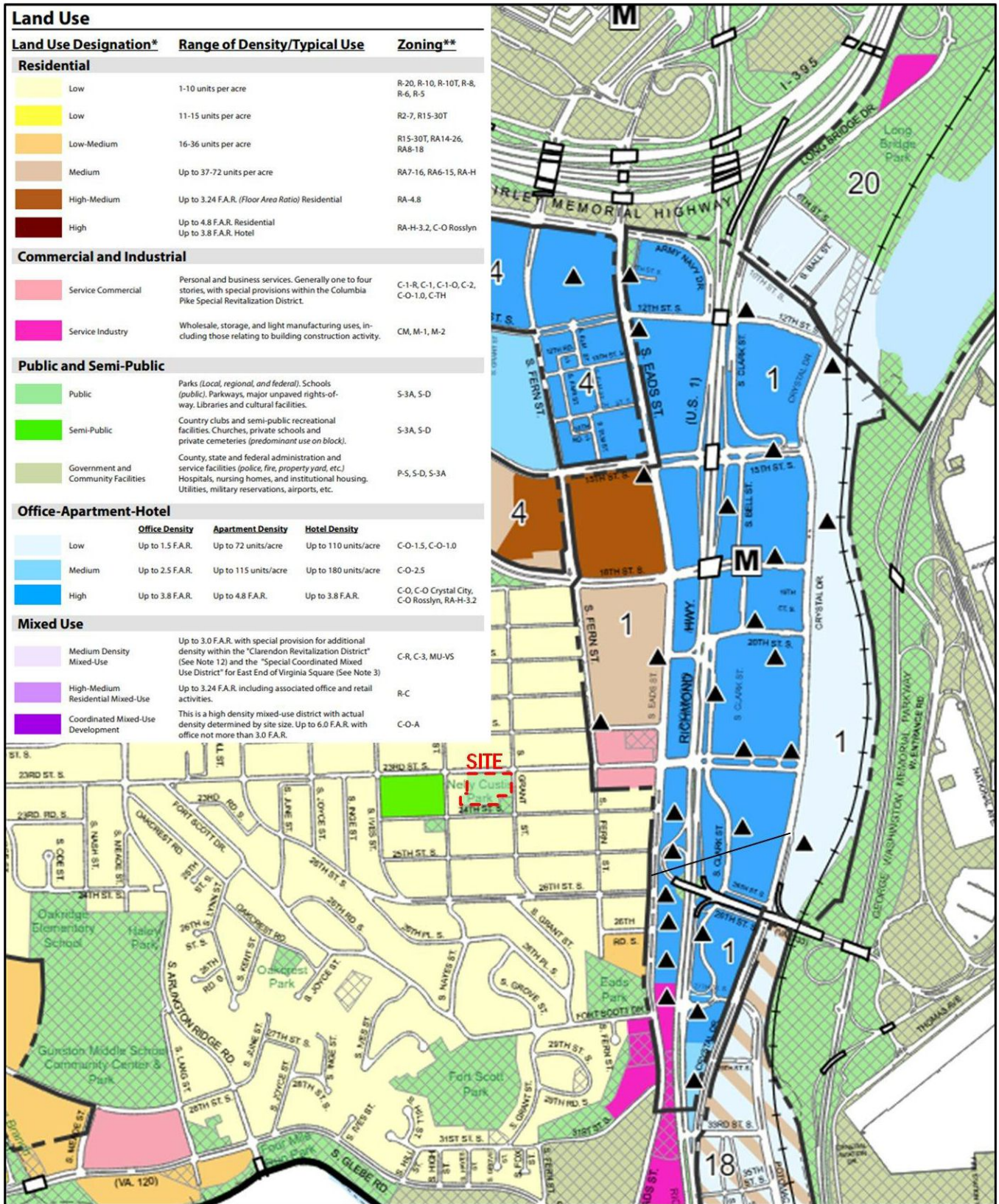


Figure 4: Planned Land Uses (Source: Arlington General Land Use Plan (GLUP), December 2023)

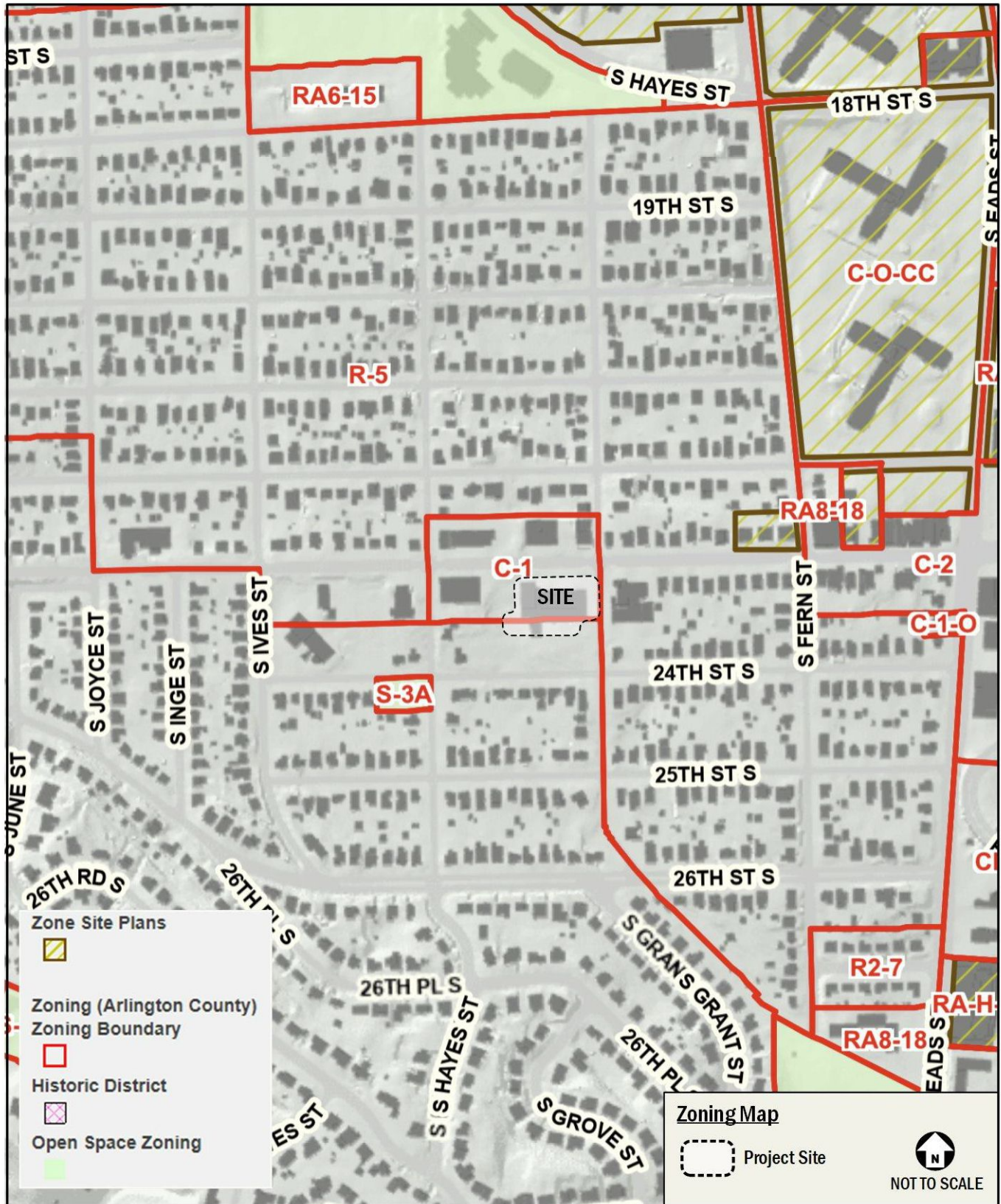


Figure 5: Zoning Map (Source: Arlington County)



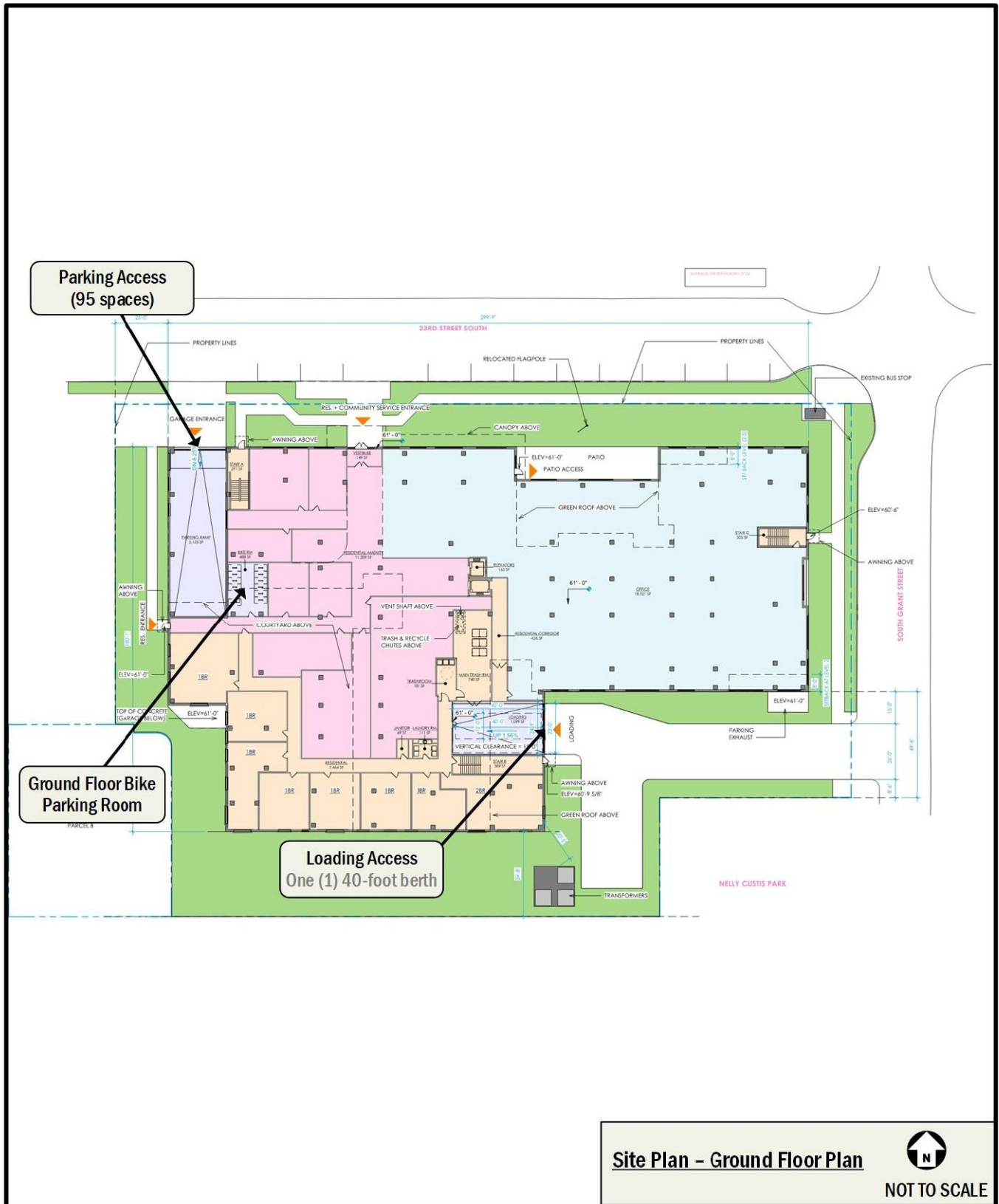


Figure 6: Site Plan

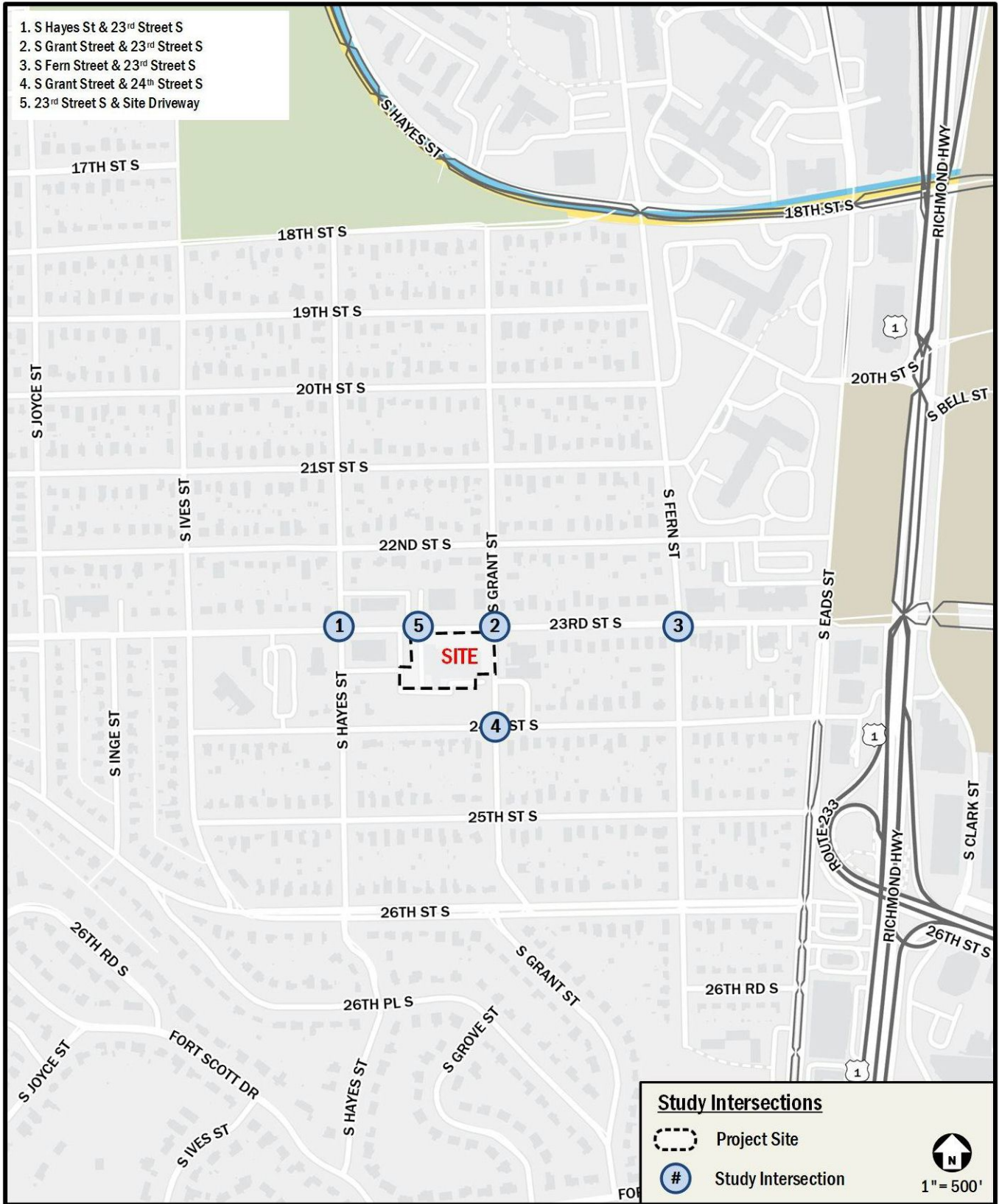


Figure 7: Study Intersections

## 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 and employees of the proposed development.
- The site is well-served by public transportation with access to the Metrorail's Blue and Yellow Lines, the VRE, 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.
- Several local initiatives will positively impact the study area, including the 23<sup>rd</sup> and Eads Park Renovation, DCA South Pedestrian Access Improvements, Crystal City to DCA Pedestrian Bridge, 23<sup>rd</sup> Street South Realignment and improvements to 23<sup>rd</sup> Street S as part of the 2250 Crystal Drive/223 23<sup>rd</sup> Street development, Crystal City Bicycle Facility Improvements, and the Route 1 Multimodal Improvements Study.

### 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 accessible from several principal arterials such as Route 1 (Richmond Highway), VA-27 (Washington Boulevard), VA-244 (Columbia Pike), and VA-110. The arterials create connections to I-395, I-66, George Washington Memorial Parkway, and ultimately the Capital Beltway (I-495) and I-95. These principal arterial roadways bring vehicular traffic within

one (1) mile of the site, at which point minor arterials, collectors, and local roads can be used to access the site directly.

The site has access to the Blue and Yellow Lines via the Crystal City Metro Station, which provide connections to areas in Virginia, the District, and Maryland. The Blue Line connects Springfield, VA with Largo, MD and the Yellow Line connects Huntington, VA with Greenbelt, MD, with both lines providing access to the District core. Both lines provide connections to the Red Line, which directly connects to Union Station, a hub for commuter rail – such as Amtrak, MARC, and VRE – in addition to all other Metrorail lines, allowing for access to much of the DC Metropolitan area. The site is located approximately 0.6 miles and 0.9 miles southwest of the Crystal City Metrorail and VRE stations, respectively.

The proposed development is located approximately 0.8 miles from the Mount Vernon Trail, an 18-mile off-street bicycle trail running along the Potomac River from George Washington's Mount Vernon estate to Theodore Roosevelt Island, just across the river from downtown Washington, DC. The Mount Vernon Trail connects to the W&OD, Four Mile Run, and Custis Trails in Arlington County, as well as the Capital Crescent Trail in Washington, DC, providing regional bicycle connectivity to Rosslyn and the District. 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 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 several principal arterials, the site is served by a local vehicular network that includes several minor arterials and collectors such as 23<sup>rd</sup> Street S, S Hayes Street, S Fern Street, S Eads Street, and S Arlington Ridge Road. In addition, there is an existing network of local roadways that provide access to the site.

Several bus systems provide local transit service in the vicinity of the site, including connections to several neighborhoods within Virginia, the District, and additional Metro stations. As shown in Figure 8, there are multiple bus routes that serve the site. A

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detailed review of existing and proposed access and infrastructure is provided in a later chapter of this report.

There are existing bicycle facilities that connect the site to areas within Arlington, Virginia, and the District, most notably the Mount Vernon Trail. A detailed review of existing and proposed bicycle access and infrastructure is provided in a later chapter 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**

Car-sharing service in Arlington is provided by Zipcar. This is a private company that provides registered users access to a variety of automobiles. Zipcar has designated spaces for their vehicles. Two (2) Zipcar locations are located within a half-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
Quimby on 23 <sup>rd</sup> (2356 S Clark Street)	1 vehicle
S Eads Street and 18 <sup>th</sup> Street S	3 vehicles
<b>Total</b>	<b>4 vehicles</b>

**E-Scooters and Dockless E-Bicycles**

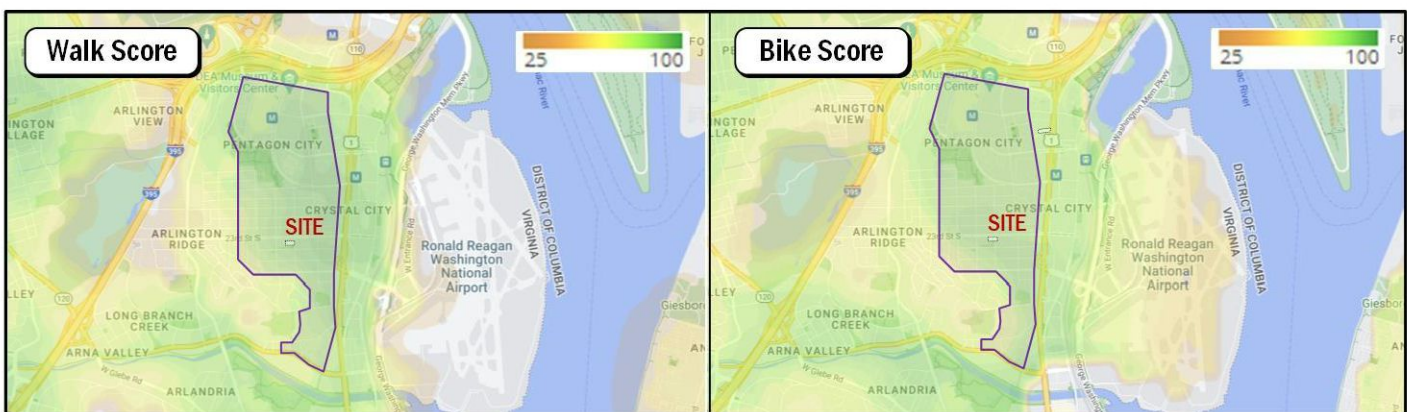
As of June 2024, three (3) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in Arlington County: Bird, Lime, and Spin. These SMDs are provided by private companies that give registered users access to a variety of e-scooter 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 other street signs, street furniture, trees, parking meters, etc. are found).

**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 site is located in an area that has a walk score of 85 (or “Very Walkable”), transit score of 72 (or “Excellent Transit”), and a bike score of 87 (or “Very Bikeable”). Figure 9 shows the neighborhood borders in relation to the site location and displays a heat map for walkability and bikeability. The following conclusions can be made based on the data obtained from Walkscore.com:

- 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 Crystal City Metro Station as well as its proximity to other bus lines.
- The site is situated in an area with a “very bikeable” bike score due to its proximity to low volume roadways, a number of bike lanes and trails, including the Mount Vernon 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 (2011)

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 750 23<sup>rd</sup> Street S 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:

- **Pedestrian:**
  - Improvements to the adjacent sidewalks.
- **Bicycle:**
  - Short-term bicycle parking will be provided along the perimeter of the site.
  - Secure, long-term bike parking will be provided in bike rooms on the P1 level of the proposed below-grade parking garage and the ground floor level.
- **Parking and Curb Space:**
  - On-site parking will be located in an off-street, 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 750 23<sup>rd</sup> Street S development:

- Transit:
  - Expansion of the Crystal City/Potomac Yard transitway into Pentagon City, currently running along S Clark Street east of the site.
- Bicycle:
  - Include a bicycle lane on the southbound direction of Crystal Drive between 26<sup>th</sup> Street S and 27<sup>th</sup> Street S.

Additionally, several recommendations are identified in Crystal City and Pentagon City near the site:

- Bi-directional, protected bicycle lanes along Army Navy Drive from S Joyce Street to 12th Street S.
- Construct an off-street cycle track connecting the planned Army Navy Drive protected bicycle lane at 12th Street S to 18th Street S and the Crystal City Metrorail station.
- Reconstruct 18th Street S between Richmond Highway (Rt. 1) and Crystal Drive to include an enhanced on-street bicycle facility and improve the connection with the Crystal City Connector Trail. Also identified in the Crystal City Sector Plan.
- Upgrade the existing bicycle lanes on S Joyce Street and 15th Street S between Army Navy Drive and S Hayes Street to include more separation from motor vehicle traffic.
- Develop an enhanced bicycle facility on S Fern Street between the Pentagon Transit Center and 18th Street S. As part of the PenPlace development, a northbound protected bike lane along the eastern side between Army Navy Drive and 12<sup>th</sup> Street S and a southbound protected bike lane along the western side between Army Navy Drive and 11th Street S will be provided.

In direct relation to the 750 23<sup>rd</sup> Street S development, these recommendations would create additional multi-modal capacity and connectivity to/from the site.

## Local Initiatives

### Aurora Highlands Neighborhood Conservation Plan (2008 Update)

The Aurora Highlands Neighborhood Conservation Plan was developed in 1970 and updated in 2008. It presents

recommendations to improve the quality of the community. The major goals of the plan include:

- Making the neighborhood center the cultural center of the community.
- Bringing infrastructure up to Arlington County standards, especially sidewalks and lighting.
- Making streets safe for pedestrians, especially children, and providing expanded services for children and families.
- Working to reverse the environmental deterioration of the neighborhood.

The 750 23<sup>rd</sup> Street S development is consistent with the outlined goals. The development includes a community service use that will serve the neighborhood residents and visitors. In addition, the sidewalks adjacent to the project site will be improved and brought up to Arlington County and ADA standards, if needed, to provide a safe pedestrian environment for the community.

### Crystal City Multimodal Transportation Study (2010)

The Crystal City Multimodal Transportation Study is a supporting document of the Crystal City Sector Plan that further evaluates the existing and future multimodal transportation network in Crystal City. The study highlights recommendations to improve accommodations for all travel modes, including a Complete Streets program, with recommendations for sidewalks, crosswalks, bicycle lanes, transit facilities, on-street parking, and left-turn lanes.

The 750 23<sup>rd</sup> Street S development is located in close proximity to Crystal City, however, in direct relation to the site, the study recommends reconstructing 23<sup>rd</sup> Street S from S Fern Street to S Eads Street near the development.

### 22202 Study (2016)

In response to community concerns regarding the development impacts in Crystal City and Pentagon City, Arlington County completed a study including transportation material, data, and plans for the 22202 Zip Code. The study presents data on past, present, and projected vehicular traffic and multimodal trends for the entire zip code. Among the data presented in the report is the Journey to Work Mode Split information by census tract, which shows a 35% auto mode split in the Crystal City area and a 28% auto mode split in the Pentagon City area, which supports the mode splits assumed in this report due to the close proximity of the project site to the Crystal City Metrorail station.



## County Planned Improvements

### 23<sup>rd</sup> and Eads Park Renovation

The 23<sup>rd</sup> and Eads Park is located at the northwest corner of the intersection of these streets. The project's goal is to provide minor improvements to the park that will complement the character of the neighborhood, enhance the visibility and aesthetics of the site, and provide a place for visitors to gather and rest. Arlington County is currently in the process of obtaining feedback on the initial concepts for the design of the park. Construction is projected to be finalized in the summer of 2026.

This project will provide a welcoming and inviting space with updated furniture and added amenities near the 750 23<sup>rd</sup> Street S site, improving the pedestrian and bicycling experience of site residents and visitors.

### DCA South Pedestrian Access Improvements

The project is exploring the feasibility of improved pedestrian access to the south side of Reagan National Airport from both US Route 1 and Crystal Drive. Potential improvements include wider sidewalks, lighting, and curb ramps along 23<sup>rd</sup> Street S, Route 1, and Crystal Drive. The project is currently in its early design phase.

In direct relation to the 750 23<sup>rd</sup> Street S development site, the potential improvements along 23<sup>rd</sup> Street south would improve pedestrian connectivity to/from the site.

### Crystal City to DCA Pedestrian Bridge (CC2DCA)

This project explores the possibility to provide a context-sensitive multimodal connection between Crystal City and Reagan National Airport for use by pedestrians, bicyclists, and people using micromobility devices. The pedestrian bridge could provide residents, visitors, and business travelers with a safe and convenient way to reach the airport from Crystal City. In May 2023, the Arlington County Board endorsed the location of the Preferred Alternative for the multimodal connection. The preferred alternative would connect to the east side of the south entrance to the future VRE Crystal City Station located at 2011 Crystal Drive and span the rail corridor and George Washington Memorial Parkway. The alignment across DCA property is yet to be defined.

An environmental impact study for the project was completed in 2023, and construction is expected to begin in late 2027.

In direct relation to the 750 23<sup>rd</sup> Street S development, the project will improve multimodal access to the site with a pedestrian/bicycle connection that will facilitate access to the airport and the Mount Vernon Trail.

### 23<sup>rd</sup> Street S Realignment and Improvements as part of the 223 23<sup>rd</sup> Street/2250 Crystal Drive Development

The 23<sup>rd</sup> Street S Realignment project is being conducted in two (2) phases: from S Eads Street to Route 1, and from Route 1 to Crystal Drive.

The first phase of this project focuses on 23<sup>rd</sup> Street S between S Eads Street and Richmond Highway. Phase 1 was completed in 2022 and consisted in widening the sidewalk and retail parking areas on the south side of 23<sup>rd</sup> Street S. The number of travel lanes was maintained but the lane widths were reduced.

Phase 2 will be initiated by the development of the 223 23<sup>rd</sup> Street/2250 Crystal Drive development. This phase will realign the roadway to eliminate the wide median island so that development sites can be built in accordance with the Crystal City Sector Plan. It will include eastbound and westbound protected bicycle lanes on both sides of 23<sup>rd</sup> Street S, a protected intersection corner at the southeast corner of the S Clark Street and 23<sup>rd</sup> Street S intersection, a protected intersection corner at the northwest corner of the Crystal Drive and 23<sup>rd</sup> Street S intersection, a bike box on the westbound approach of the S Clark Street and 23<sup>rd</sup> Street S intersection, widened sidewalks, and dedicated pick-up/drop-off areas. The project's completion is anticipated for 2026.

In direct relation to the 750 23<sup>rd</sup> Street S development, the project will improve multimodal connectivity to/from the site and promote pedestrian and bicycle safety and connectivity in the vicinity of the site.

### Crystal City Bicycle Facilities Improvements

In March 2020, Arlington County started developing a plan for improving the bicycle network in Crystal City within the next four (4) years, by the end of 2024. The area covered by the plan is bounded by Route 1 on the west and Crystal Drive on the east, from the Alexandria City limits north to Long Bridge Park. The final network alignment is a refined version of the concept proposed in 2021 and it features facilities such as protected bicycle lanes on Crystal Drive and 23<sup>rd</sup> Street, and a two-way cycle track along S Clark Street/S Bell Street

In direct relation to the 750 23<sup>rd</sup> Street S development, the project will improve bicycle connectivity to/from the site with additional protected bicycle facilities that will promote bicycle safety and connectivity in the vicinity of the site.

### **Route 1 Multimodal Improvements Study (2021)**

The Route 1 Multimodal Improvements Study (Phase 1), published by VDOT in October 2021, aims to identify opportunities for enhanced multimodal connectivity through Pentagon City and Crystal City. The study recommends that Route 1 be integrated within the urban fabric of Pentagon City and Crystal City as a multimodal, urban boulevard consistent with the context of existing and future development.

The study recommends bringing Route 1 down to grade at the existing grade-separated intersections of 15<sup>th</sup> Street S and 18<sup>th</sup> Street S. The recommended at-grade alternative for Route 1

between 12<sup>th</sup> Street S and 23<sup>rd</sup> Street S includes a total of six-lanes plus left turn lanes at 15<sup>th</sup> Street S, no left turn lanes at 18<sup>th</sup> Street S, a wide median, and a wide, urban sidewalk.

A draft report for Phase 2 of the study was released in May 2024 and includes an updated analysis of the recommended alternative, a comprehensive TDM strategy to reduce future volumes along Route 1 and mitigate future congestion, and additional exploration of feasibility.

In direct relation to the 750 23<sup>rd</sup> Street S development, the recommended changes to Route 1 would improve safety and accessibility in the vicinity of the site. Additionally, the improvements identified as part of the Route 1 Multimodal Improvements Study would enhance multimodal connectivity between the site, Pentagon City and Crystal City.

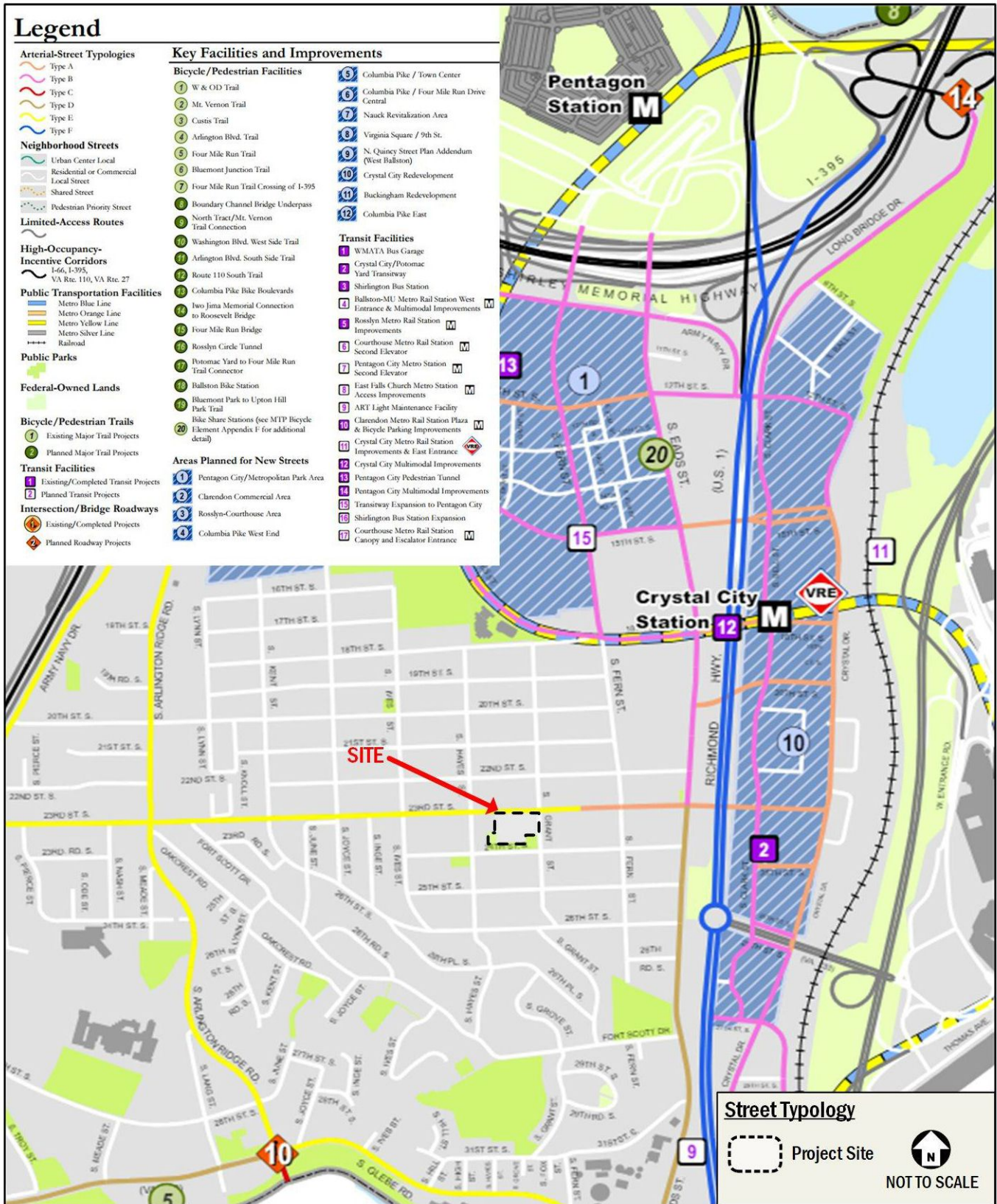


Figure 10: Street Typology (Source: Arlington Master Transportation Plan, 2022)

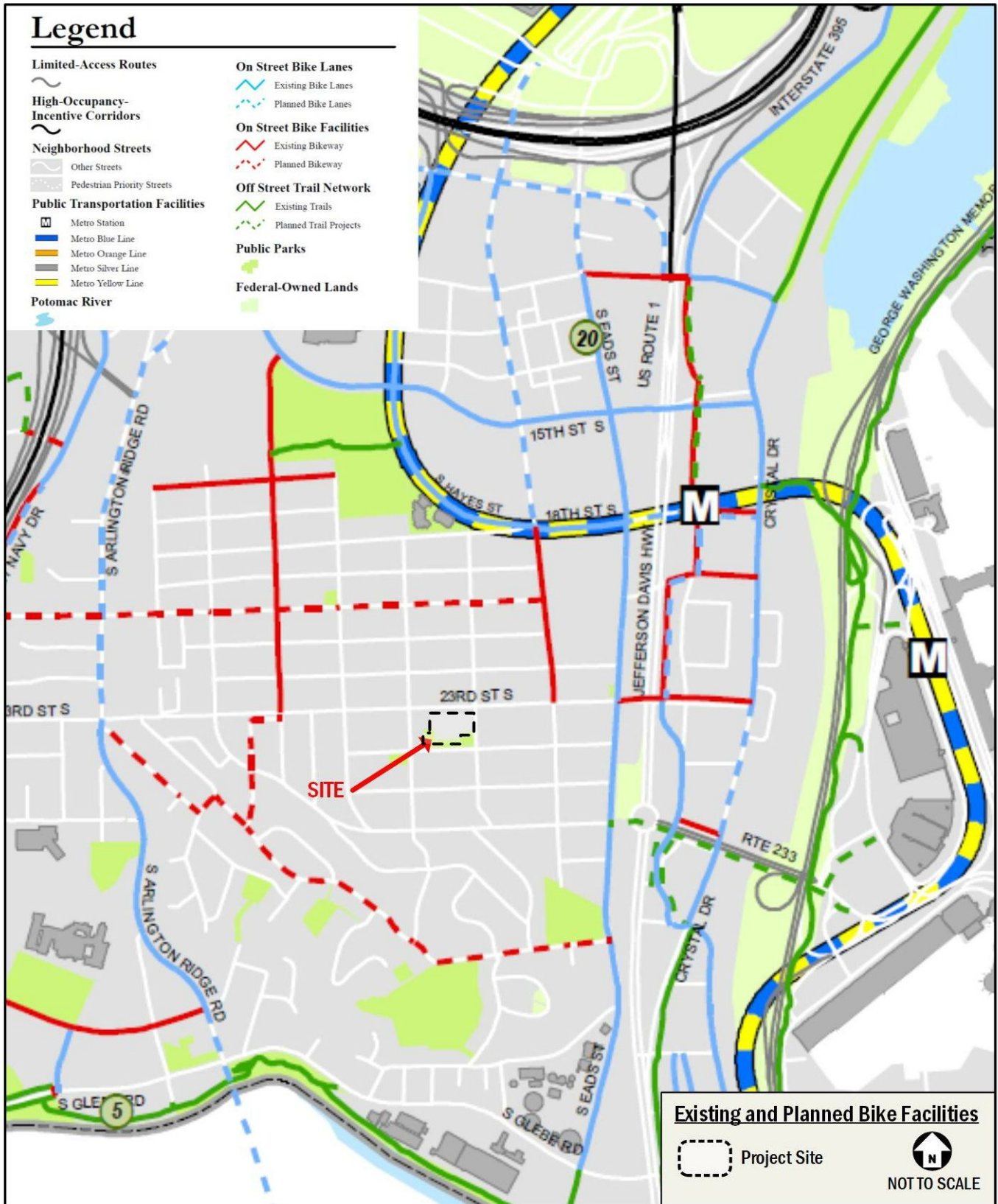


Figure 11: Existing and Planned Bike Facilities (Source: Arlington Master Transportation Plan, 2019)

## Project Design

This chapter reviews the transportation components of the 750 23<sup>rd</sup> Street S development, including the proposed site plan and access points. It includes descriptions of the site's vehicular access, loading, parking, bicycle, and pedestrian facilities.

### Site Overview

The proposed development will raze the existing building used for the Melwood Horticultural Training Center and redevelop with a mixed-use building consisting of the following:

- Up to 107 residential units
- Up to 22,070 square feet of community service space
- Approximately 95 vehicle parking spaces
- One (1) 40-foot loading berth
- At least 43 secure long-term and three (3) short-term bicycle parking spaces

The proposed site plan for the redevelopment is shown in Figure 6.

### Site Access and Circulation

#### Pedestrian Access

The primary pedestrian access to the residential and community service components are shown in Figure 12. Access to both the residential and community service components of the proposed development will occur off of 23<sup>rd</sup> Street S. A circulation plan showing expected pedestrian routes is shown in Figure 13.

#### Bicycle Access

Bicycle access to the secure long-term bicycle parking on the ground level will be accessed through doors on 23<sup>rd</sup> Street S. Alternatively, bicycles will access the secure parking on the P1 level of the below-grade garage through the parking garage entrance on 23<sup>rd</sup> Street S. Short-term bicycle parking spaces will be placed along the site frontage on 23<sup>rd</sup> Street S.

Bicycle access to the site is primarily expected to occur via 23<sup>rd</sup> Street S for all uses. A circulation plan showing expected bicycle routes is shown in Figure 13.

#### Vehicular Access

Vehicular access to the below-grade parking garage will be provided via a proposed driveway off of 23<sup>rd</sup> Street S. Access to

the loading facilities will be provided along the proposed driveway off of S Grant Street.

Access to the below-grade garage and loading facilities is shown on Figure 12. A circulation plan showing expected vehicular routes is shown in Figure 13.

### 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.
- Community Service (Office)  
Buildings with over 6,000 square feet of office space are required to provide one (1) loading space.

Per these requirements, the proposed development is required to provide one (1) loading space for residential use and one (1) loading space for community service use. The proposed development will provide one (1) 40-foot loading berth. The number of on-site loading facilities will accommodate the practical needs of the development. Figure 6 shows the locations of the loading berth and within the building.

### Vehicular Parking

The parking provided by the proposed development has been designed to meet the site's parking needs, and to satisfy the requirements of the Arlington County Zoning Ordinance, as shown in Table 2, under RA8-18, Multiple-Family Dwelling District requirements.

The proposed development will provide 76 spaces for the residential component and 20 parking spaces for the community service component as part of the proposed development. The 95 parking spaces will be provided in the on-site, below-grade parking garage.

**Table 2: Proposed Supply Calculations**

Land Use	Size	Vehicle Parking Spaces		
		Required		Proposed
		ACZO Ratio <sup>1</sup>	Supply <sup>2</sup>	
Residential (du)	Up to 107	1.125/first 200 du + 1/each additional du	121	75
Community Service (sf)	Up to 22,070	--	--	20
<b>Total</b>			<b>121</b>	<b>95</b>

<sup>1</sup> The ACZO minimum vehicle parking supply is calculated based on the requirements of §14.3.7.

<sup>2</sup> Supply is measured in *spaces*, while ratio is measured in *spaces/du* or *spaces/ksf*.

### Curbside Management

Existing curbside management was reviewed along the site frontage and is shown on Figure 14. Currently, 23<sup>rd</sup> Street S provides two-hour on-street parking and S Grant Street provides Sunday-only on-street parking along the site frontages. The proposed development will remove on-street parking on the site's frontage on S Grant Street to accommodate a fire lane, but increase the on-street parking along the 23<sup>rd</sup> Street S frontage from three (3) spaces to six (6) spaces and a 2-space passenger loading zone.. The proposed curbside management is shown on Figure 15.

### 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.

##### Long-Term Bicycle Parking

Per these requirements, the proposed development is required to provide up to 43 long-term spaces for residential use.

The proposed development will provide at least 43 long-term bicycle parking spaces for the proposed development, meeting requirements. Secure long-term bicycle parking for the development will be located in the bicycle room in the parking garage and on the ground level.

##### Short-Term Bicycle Parking

Per these requirements, the proposed development is required to provide three (3) short-term spaces for residential use.

The proposed development will provide at least three (3) short-term bicycle parking spaces for the proposed development, meeting requirements. Short-term bicycle parking spaces will be placed along the development site frontage along 23<sup>rd</sup> Street S.

##### **Bicycle Showers and Lockers**

Per the Standard Site Plan Conditions, no bicycle showers and lockers are required for the non-residential use of the development.

##### **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 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.

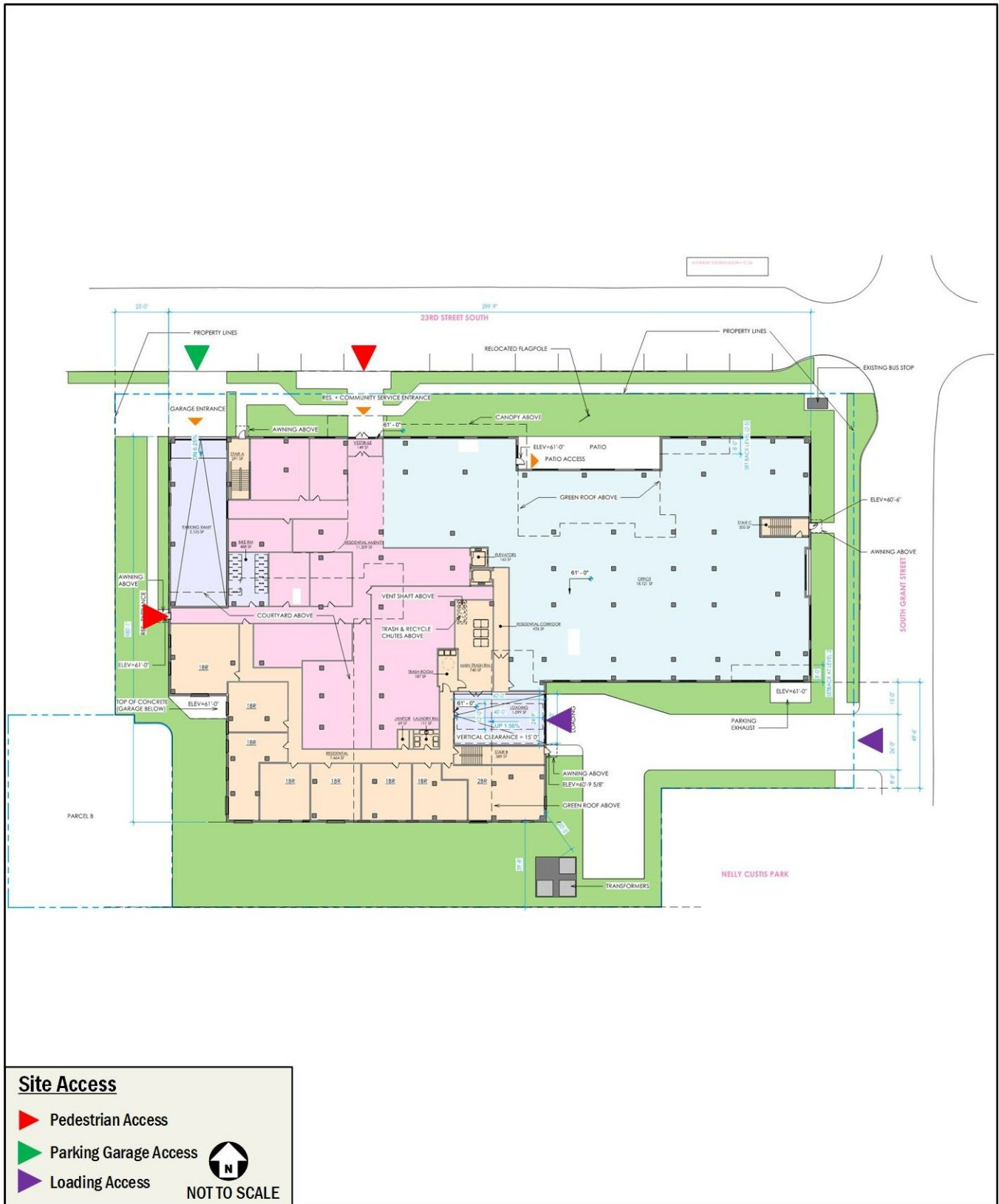


Figure 12: Site Access

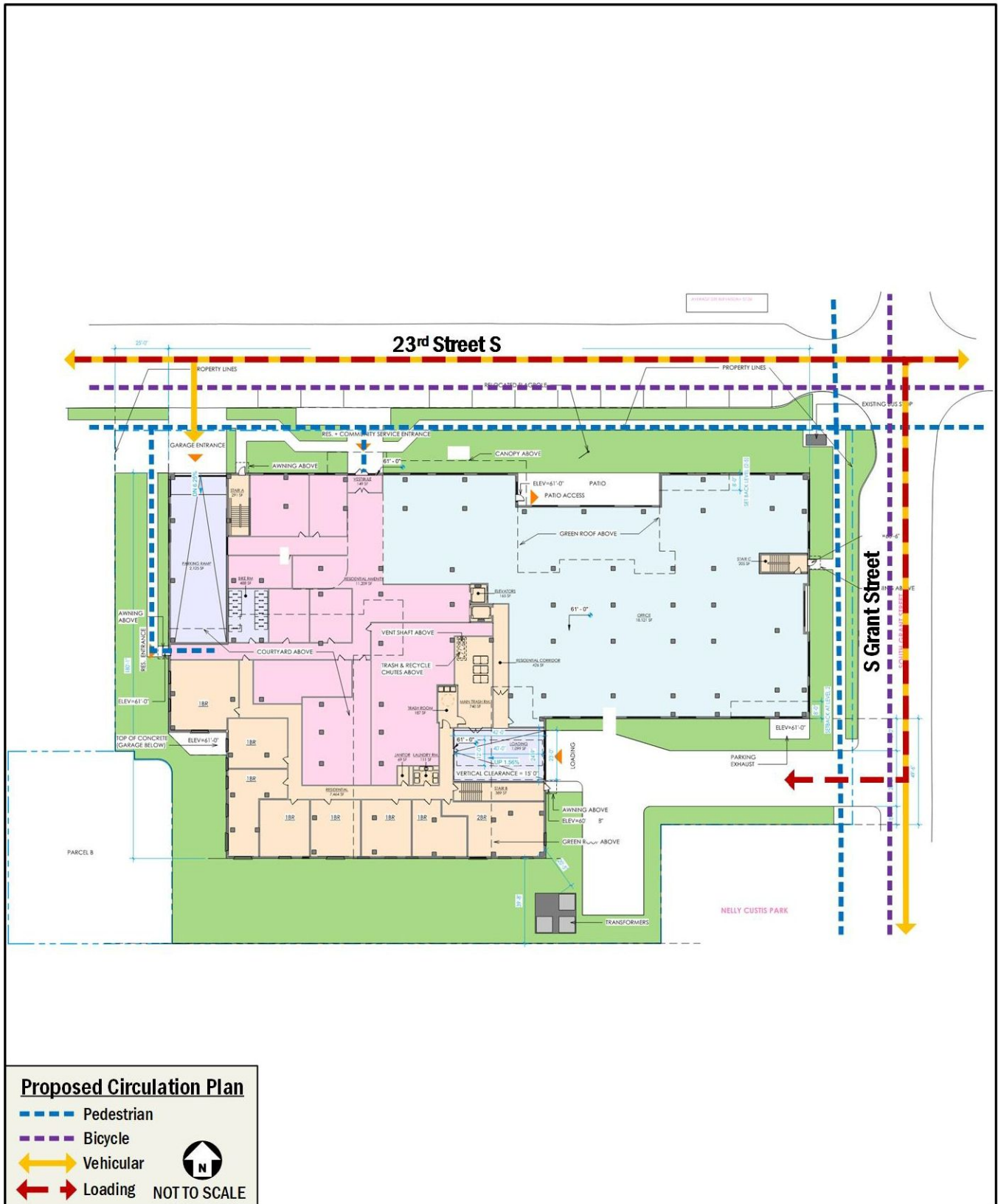


Figure 13: Proposed Circulation Plan





Figure 14: Existing Curbside Management

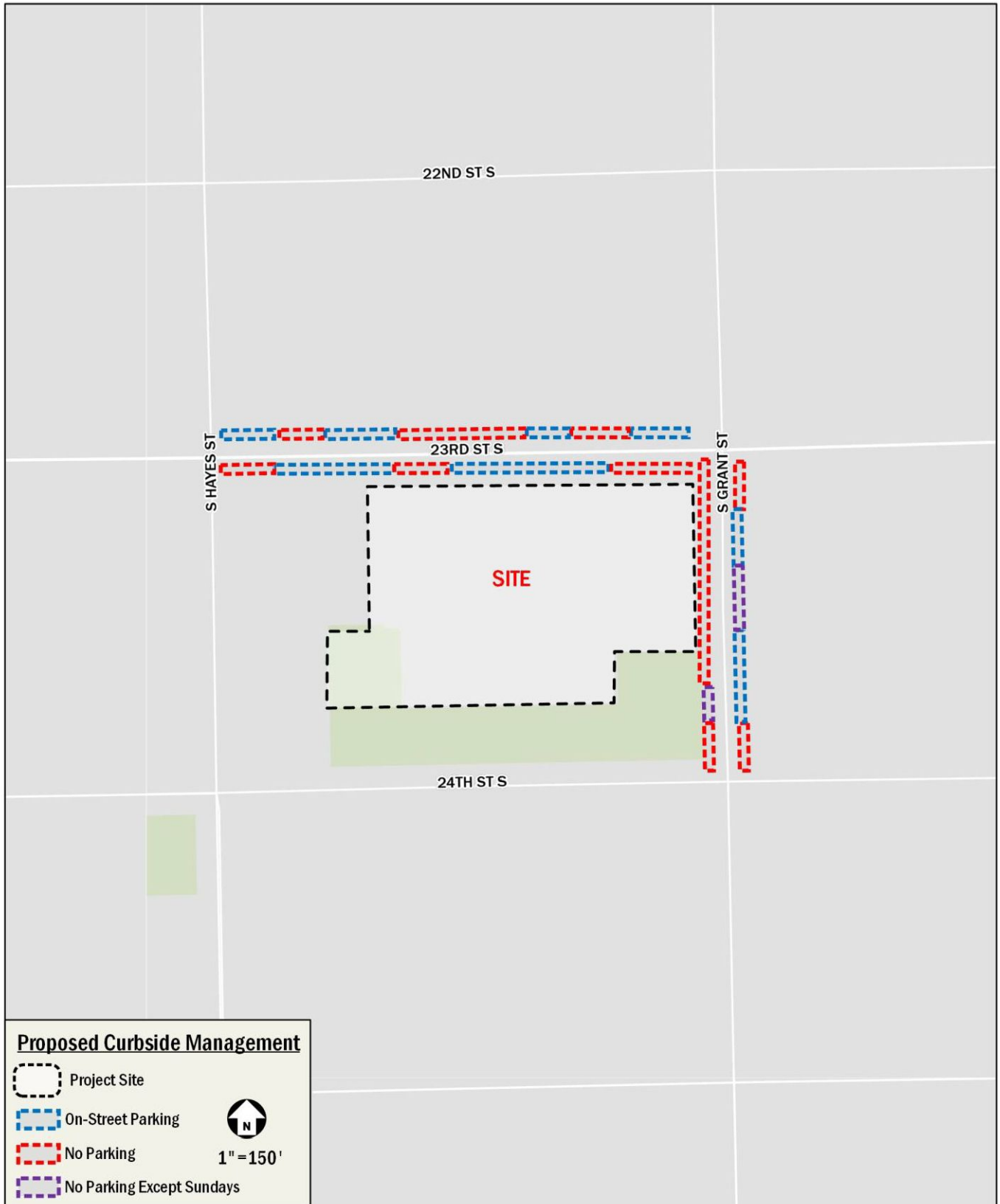


Figure 15: Proposed Curbside Management

## Transit Facilities

This chapter discusses the existing and proposed 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 development has excellent access to transit.
- The development is located 0.6 miles from the Crystal City Metro Station and 0.9 miles from VRE.
- There are nine (9) bus stops within a quarter-mile of the site. These stops are directly served by WMATA (Metrobus) routes.
- Future planned transit improvements in the vicinity of the site include an extension of the transitway as part of the Transitway Extension to Pentagon City. These will further improve transit access by providing additional facilities and connectivity via Metroway.

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 16 identifies the major transit routes, stations, and stops in the study area.

### Existing Transit Service

#### Metrorail Service

The site is located approximately 0.6 miles from the Crystal City Metro Station. The Crystal City Metro station is located northeast of the development site between 15<sup>th</sup> Street S and 18<sup>th</sup> Street S on S Bell Street.

The Crystal City Metro Station serves the Blue and Yellow Lines. The Blue Line travels north from Springfield, VA to Rosslyn then continues east to Largo, MD. The Yellow Line travels north from Huntington, VA to the Pentagon, east to the District core, and continues north to Greenbelt. Table 3 and Table 4 provide details of Metrorail information, including service hours and timetables.

#### Bus Service

A review of the existing Metrobus stops within a quarter-mile radius of the site is shown in Figure 16. There are nine (9) bus stops within one quarter-mile of the site. The site is served by several WMATA (Metrobus) routes along the 23<sup>rd</sup> Street S corridor.

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 5 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.

#### Crystal City Potomac Yard Metroway

Metroway is an enhanced bus route that provides a connection between the Crystal City Metro, Pentagon City Metro, and Braddock Road Metro, traveling through Pentagon City, Crystal City, and Potomac Yard. Arlington's section of Metroway opened in April 2016 and includes an all-day dedicated transit lane through Potomac Yard, a peak period transit lane through Crystal City, and seven new transit stations. The Potomac Yard Line provides 4.5 miles of service between the Crystal City, Pentagon City, and Braddock Road Metro stations with faster, more reliable bus service along the Route 1 corridor, with a ridership of approximately 2,400 passengers per day.

Metroway buses travel in mixed-traffic on sections of the route in Crystal City near the site. The nearest stop to the site is at the corner of S Clark Street S and 26<sup>th</sup> Street S. All buses from that stop proceed south to Potomac Yard and the Braddock Road Metro Station.

Figure 17 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 District and Northern Virginia area is accessible via transit within 30 minutes from the proposed development. Several destinations in the District, Arlington, and Alexandria are accessible within a 20-minute transit trip from the proposed development, including Ronald Reagan Washington International Airport, Downtown DC, and Metro stations served by all metro lines in the area.

#### Planned Transit Facilities

Improvements to transit facilities will be made as part of the Pentagon City Transitway Extension project. As part of the Crystal Drive segment of the Transitway Extension to Pentagon City project, improvements will initially include curbside rush hour bus-only lanes from 15<sup>th</sup> Street S to 12<sup>th</sup> Street S and Long Bridge Drive and five (5) new transitway stations, with two (2) additional stations included in later phases.

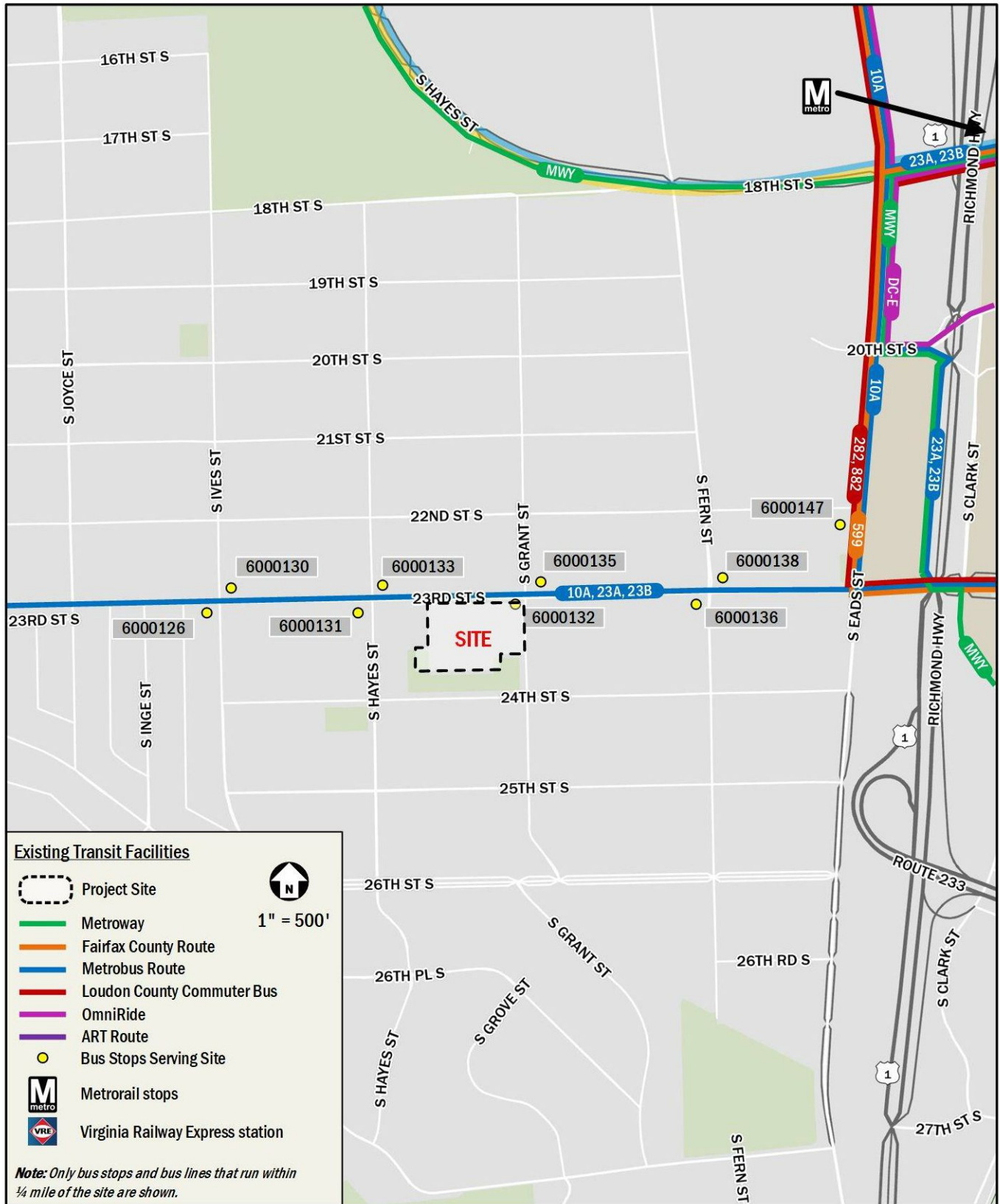


Figure 16: Existing Transit Service

**Table 3: Metrorail Service Hours**

Day	Time
Monday – Thursday	5 AM – midnight
Friday	5 AM – 1 AM
Saturday	7 AM – 1 AM
Sunday	7 AM - midnight

**Table 4: Metrorail Service Intervals (in minutes)**

Rail Line	Monday - Friday	Saturday	Sunday
Blue	5 AM – 9:30 PM: 10-12 min 9:30 PM – close: 15 min	7 AM – 9:30 PM: 12 min 9:30 PM – 1 AM: 15 min	7 AM – 9:30 PM: 12 min 9:30 PM – 12 AM: 15 min
Yellow	5 AM – 9:30 PM: 6-8 min 9:30 PM – close: 15 min	7 AM – 9:30 PM: 8 min 9:30 PM – 1 AM: 8 min	7 AM – 9:30 PM: 8 min 9:30 PM – 12 AM: 8 min

**Table 5: Bus Route Information**

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
10A	Alexandria-Pentagon Line	Weekdays: 5:00AM-2:33AM Weekend: 5:30AM-2:04AM	30-60 min	<0.1 miles, 2 minutes
23A, 23B	McLean-Crystal City Line	Weekdays: 6:22AM-2:30AM Weekend: 6:06AM-2:37AM	25-40 min	<0.1 miles, 2 minutes

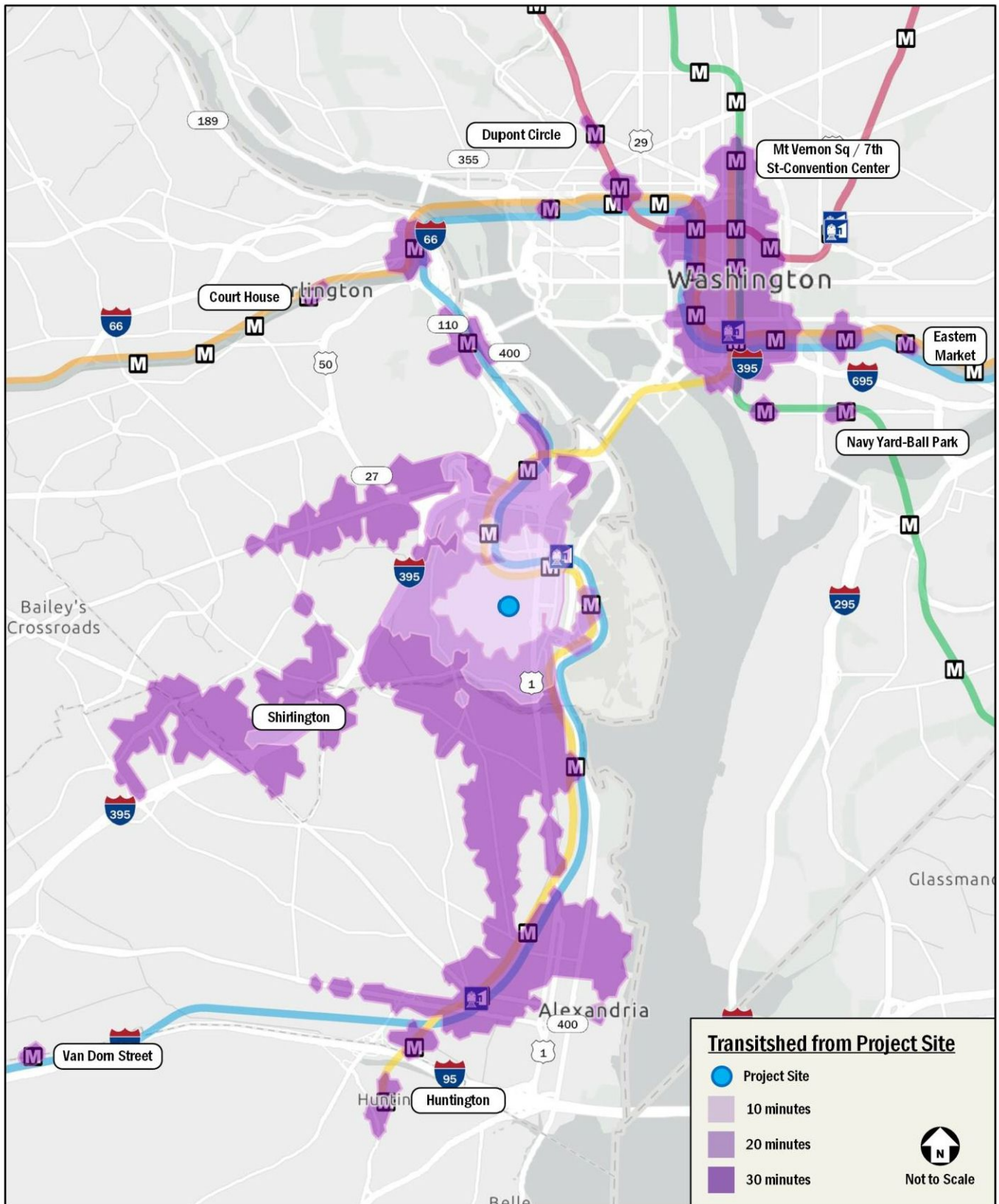


Figure 17: Approximate Transit Travel Times

## Bicycle Facilities

This chapter summarizes existing and future bicycle access, 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 on-street routes on 23<sup>rd</sup> Street S, 20<sup>th</sup> Street S, S Joyce Street, and S Fern Street, and bicycle lanes on S Eads Street and Crystal Drive which connect to the Mt. Vernon Trail to the east and Four Mile Run Trail to the south.
- Future planned projects in the vicinity of the site include on-street routes on S June Street and 26<sup>th</sup> Street S. These will further improve bicycle access and connectivity by upgrading bicycle facilities along these routes.
- As part of the proposed development, short- term bicycle parking spaces will be provided along the site frontage along 23<sup>rd</sup> Street S. Long-term bicycle parking spaces will be provided for use of residential tenants and community service patrons.

### Existing Bicycle Facilities

The site has access to several existing on- and off-street bicycle facilities, including on-street routes on 23<sup>rd</sup> Street S, 20<sup>th</sup> Street S, S Joyce Street, and S Fern Street, and bicycle lanes and protected bicycle lanes on S Eads Street and Crystal Drive.

Figure 18 shows the existing facilities within the study area. These bike facilities connect to the Mt. Vernon Trail to the east and Four Mile Run Trail to the south.

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 (2022) shows the majority of bicycle routes in the vicinity of the site rated as ‘Easy and ‘Challenging’. Adjacent to the site, 23<sup>rd</sup> Street S is rated ‘Challenging’. In addition, S Joyce Street, S Fern Street, and S Eads Street are rated ‘Easy in the vicinity of to the site.

No bicycle parking is provided along the perimeter of the site under existing conditions.

Figure 19 shows the 10-minute, 20-minute, and 30-minute bicycle travel shed for the proposed development. As shown in the bicycle travel shed, most of Arlington and Alexandria, and several destinations in the District including Downtown, and the Southwest Waterfront are accessible within 30 minutes from the proposed development.

### 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 is one (1) existing Capital Bikeshare station with 15 available bicycle docks within a quarter-mile of the site, located along S Hayes Street immediately west of the site.

### E-Scooters and Dockless E-Bicycles

As of June 2024, three (3) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in Arlington County: Bird, 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 other street signs, street furniture, trees, parking meters, etc. are found).

### Planned Bicycle Facilities

Existing bicycle facilities have been recommended by the Arlington Master Transportation Plan and the Crystal City Sector Plan to be upgraded in the future, as shown on Figure 11, including adding on-street routes on S June Street and 26<sup>th</sup> Street S west of the site. Some of these upgrades have already been implemented in the vicinity of the site such as adding on-street routes on 20<sup>th</sup> Street S and bicycle lanes on S Fern Street.

The recently adopted Bicycle Element of the Arlington County Master Transportation Plan identifies S Clark Street S (within 0.3

miles of the site) as a Primary Bicycling Corridor. The plan makes the following recommendations:

- Construct an off-street cycle track that connects the planned Army Navy Drive protected bicycle lane at 12<sup>th</sup> Street S to 18<sup>th</sup> Street and the Crystal City Metro Station.
- Develop an enhanced bicycle facility on S Fern Street between the Pentagon reservation and 18<sup>th</sup> Street South.

The Crystal City Sector Plan makes the following recommendations for roadways in the vicinity of the site:

- Extending on-street routes along S Fern Street from 15<sup>th</sup> Street S to 12<sup>th</sup> Street S;

In December 2020, County staff developed recommendations for a bicycle network that provides new north-south bicycle facilities along with improvements to east-west streets in Crystal City.

Following public input in 2021, the updated Recommended Crystal City Bike Network includes:

- Southbound protected bicycle lane on Crystal Drive between 18<sup>th</sup> Street S and 23<sup>rd</sup> Street S.
- Northbound, contraflow protected bicycle lane on S Clark Street between 23<sup>rd</sup> Street S and 20<sup>th</sup> Street S.
- Protected or buffered/partially buffered eastbound and westbound bicycle lanes on 15<sup>th</sup> Street S, 18<sup>th</sup> Street S and 23<sup>rd</sup> Street S.
- Westbound buffered bicycle lane on 26<sup>th</sup> Street connecting Crystal Drive and the contraflow bicycle lane on S Clark/Bell Street.

### ***Proposed Bicycle Improvements***

The proposed development will include both short- and long-term bicycle parking spaces, including:

- At least 43 long-term bicycle parking spaces and three (3) short-term bicycle spaces, meeting zoning requirements.

Secure long-term bicycle parking for the development will be located in a bicycle room within the parking garage and ground floor level. Short-term bicycle parking spaces will be placed along the site street frontage along 23<sup>rd</sup> Street S.



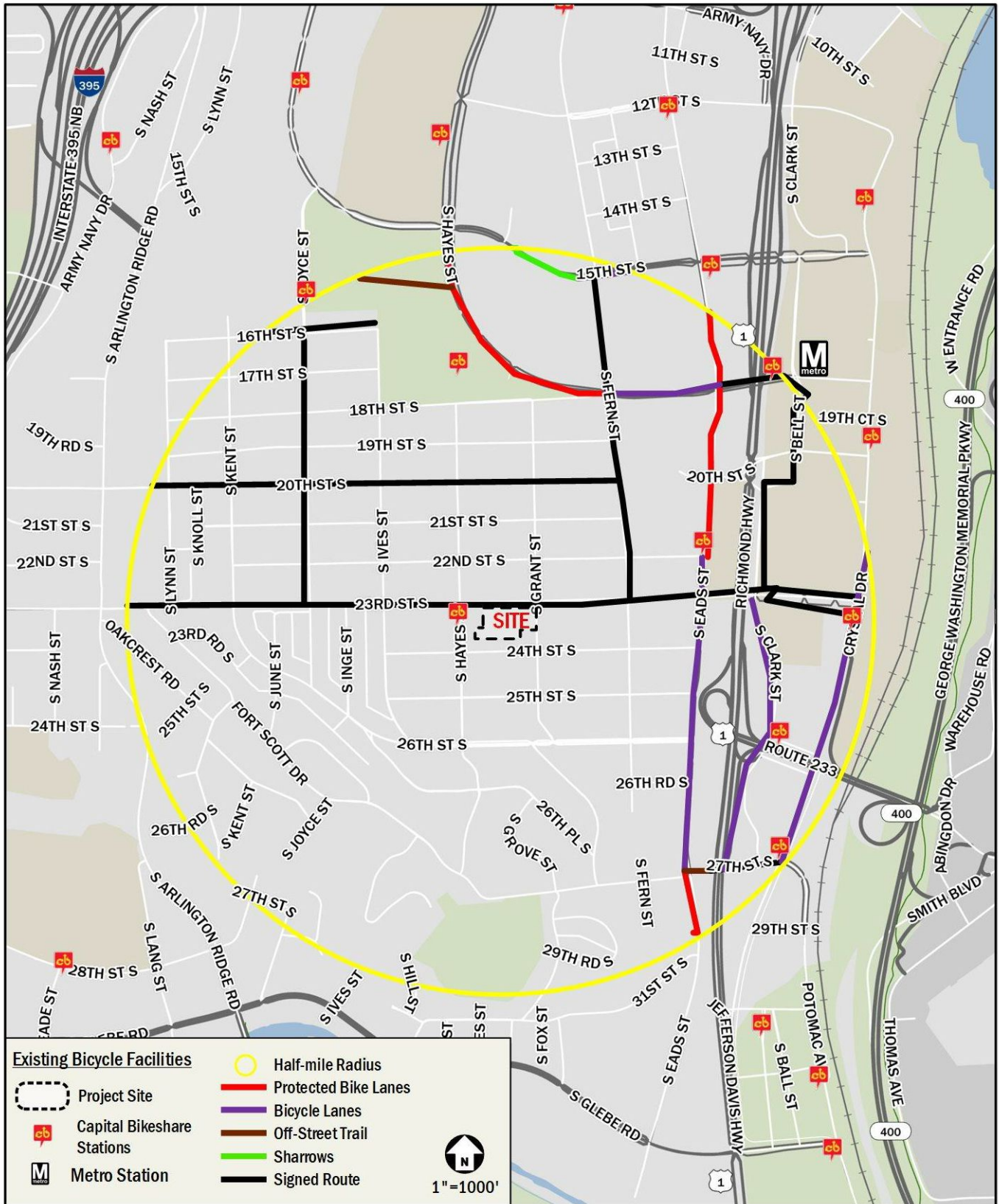


Figure 18: Existing Bicycle Facilities

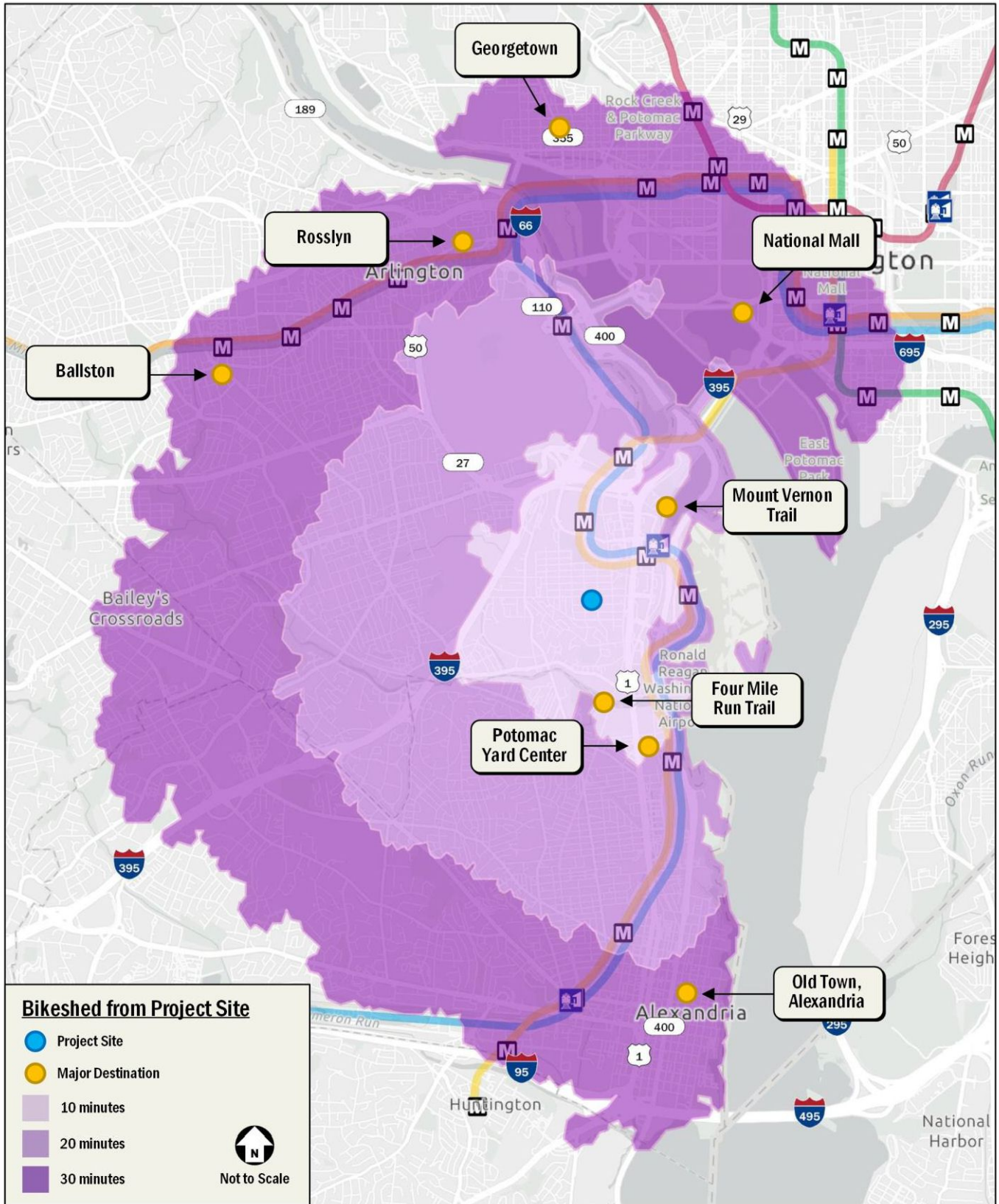


Figure 19: Approximate Bicycle Travel Times

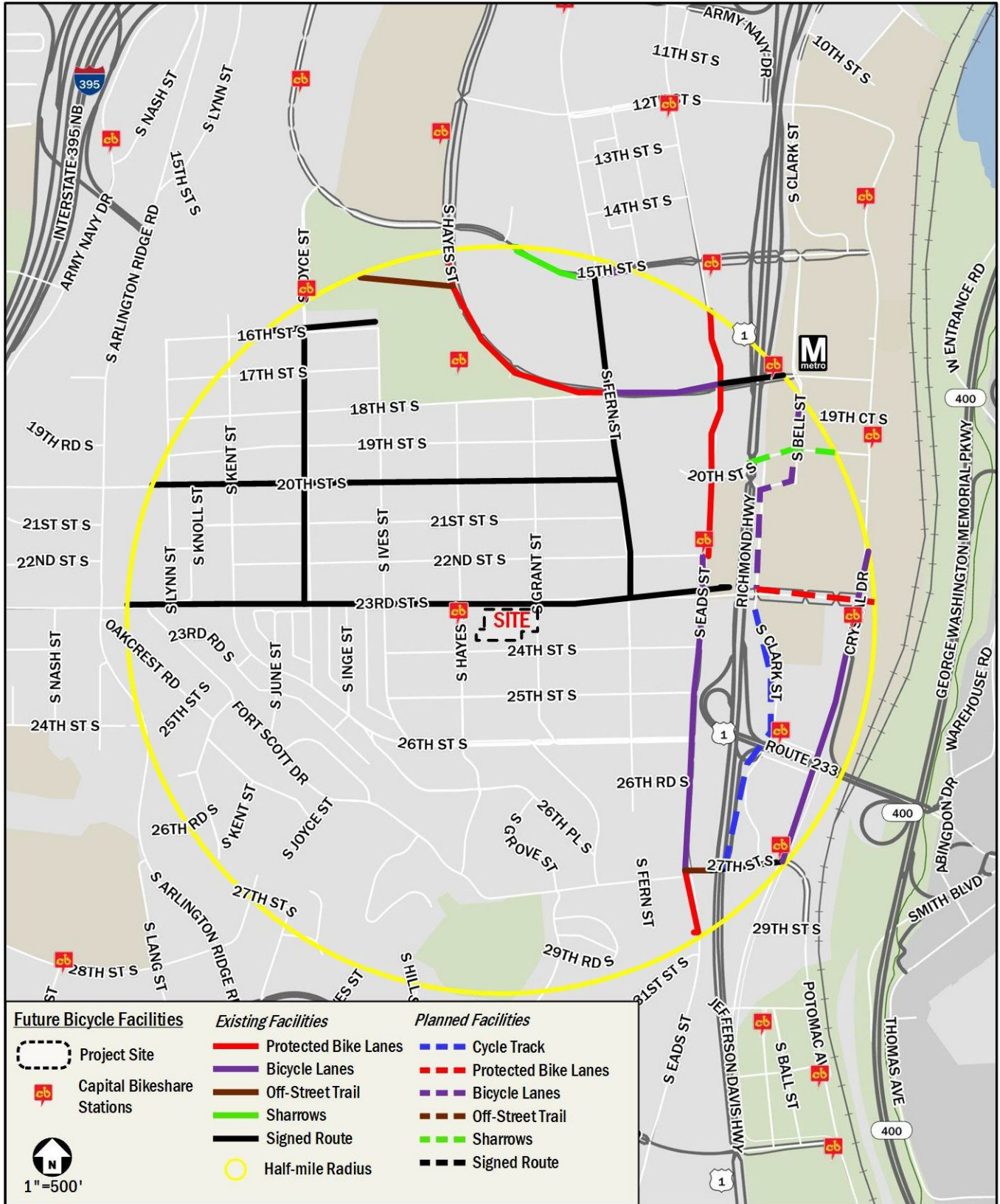


Figure 20: Future Bicycle Facilities

## 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 the majority of primary routes to pedestrian destinations with some gaps in the system.
- Planned and proposed improvements to the pedestrian infrastructure surrounding the site will improve pedestrian comfort and connectivity.
- The proposed development will provide a more inviting pedestrian environment by adding new sidewalks and streetscape features along the south side of 23<sup>rd</sup> Street S frontage that meet or exceed Arlington County requirements.

### Pedestrian Study Area

Pedestrian facilities within a two-block radius of the site were evaluated as well as the route to the Crystal City Metro Station. In general, existing pedestrian facilities surrounding the site provide comfortable walking routes to and from nearby transit options. There are some areas of concern within the study area that negatively impact the quality and attractiveness of the walking environment; however, these areas of concern are not along the site frontage. The site frontage currently has good pedestrian access and will continue to do so with the proposed development. Figure 21 shows expected pedestrian pathways and walking time and distances.

Figure 22 shows the 10-minute, 20-minute, and 30-minute walk travel shed for the proposed development. As shown in the walking travel shed, several destinations including public transportation stops, Metro stations, Capital Bikeshare stations, and other locally significant destinations are accessible within a 30-minute walk of the proposed development.

### Existing Pedestrian Infrastructure

A review of pedestrian facilities surrounding the proposed development shows that many facilities provide a quality walking environment. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by the Arlington County, and ADA standards.

## Sidewalks

Figure 23 shows a detailed inventory of the existing pedestrian infrastructure surrounding the site, with a summary of sidewalk and buffer width requirements, per the Master Transportation Plan, shown in Table 6.

**Table 6: Sidewalk and Buffer Requirements**

Street Typology	Minimum Requirement
<b>Arterials</b>	
Type A	10-16 ft sidewalk 6 ft buffer
Type B	6-12 ft sidewalk 6 ft buffer
Type C	6-8 ft sidewalk 6 ft buffer
Type D	6-8 ft sidewalk 5-6 ft buffer with breaks
Type E	5-6 ft sidewalk 4-6 ft buffer
Type F	6 ft sidewalk or 10 ft shared-use path 8+ ft buffer
<b>Non-Arterial</b>	
Urban Center Local	6-8 ft sidewalk 4-6 ft buffer
Neighborhood	4-6 ft sidewalk 2-4 ft buffer
Alley/Service	None/5 ft sidewalk with limited landscaping
Transitway	10-12 ft shared-use path on each side 6 ft buffer

It should be noted that the sidewalk widths shown in Figure 23 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.

Within the study area, the majority of roadways have existing sidewalks on both sides, with some deficiencies. Of note, portions 22<sup>nd</sup> Street S, S Grant Street, and S Hayes Street do not have sidewalks on at least one (1) side of the street: S Grant Street between 24<sup>th</sup> and 25<sup>th</sup> Street S, between 21<sup>st</sup> and 23<sup>rd</sup> Street; 22<sup>nd</sup> Street S between S Grant and S Fern Street; S Hayes Street between 21<sup>st</sup> and 22<sup>nd</sup> Street S.

### Curb Ramps

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 (2) crosswalks is not desired. As shown in Figure 23, under existing conditions many of the curb ramps do not meet ADA standards.

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 24 shows the existing pedestrian peak hour volumes at study area intersections. The most heavily-used crosswalk in the study area is across 23<sup>rd</sup> Street S on the east side of S Fern Street, most likely a result of the proximity to many developments in Crystal City.

### ***Planned Pedestrian Facilities***

As a result of the development, pedestrian facilities around the perimeter of the site will continue to meet or exceed Arlington

County and ADA standards, providing an inviting pedestrian environment.



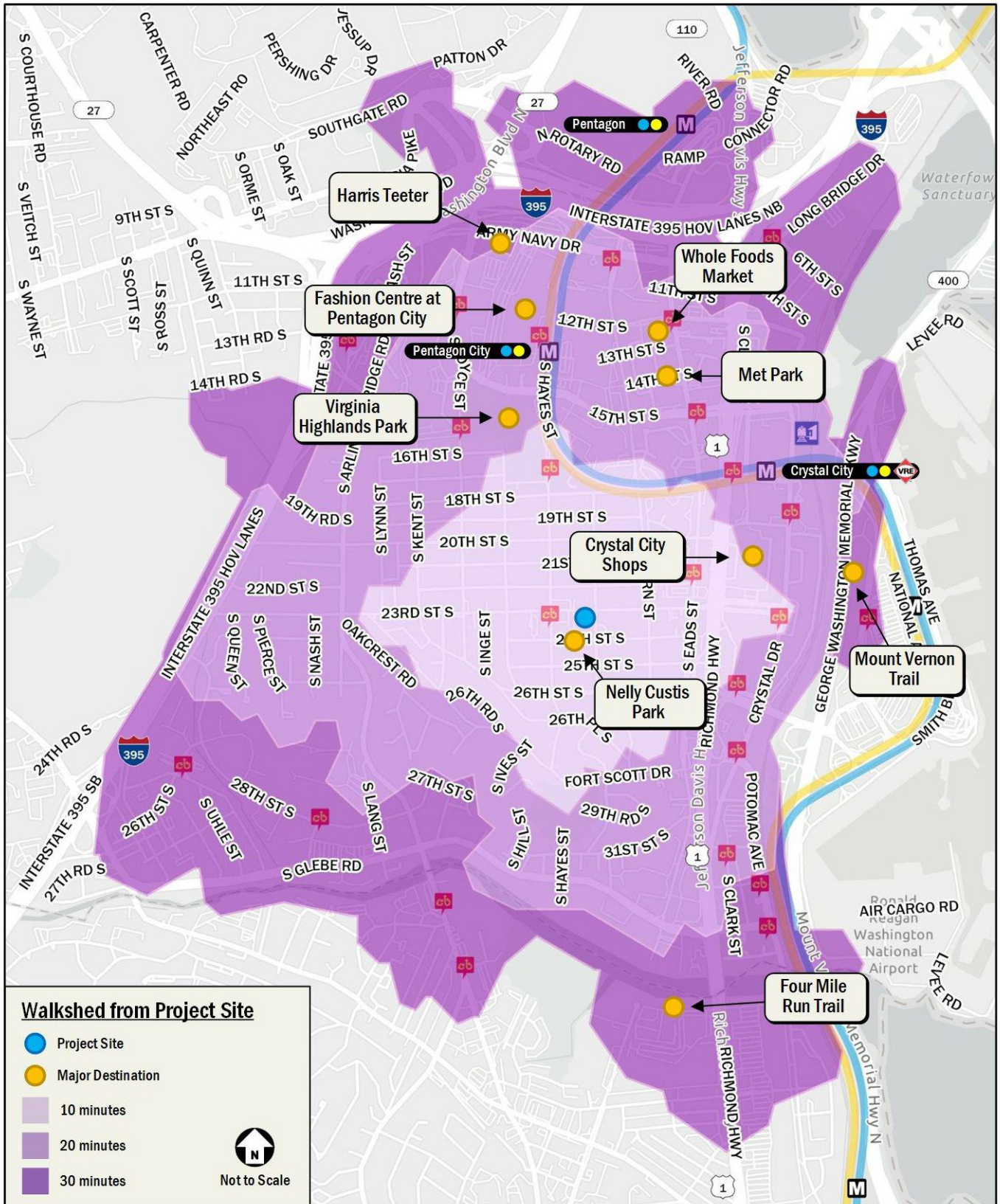


Figure 22: Approximate Pedestrian Travel Times

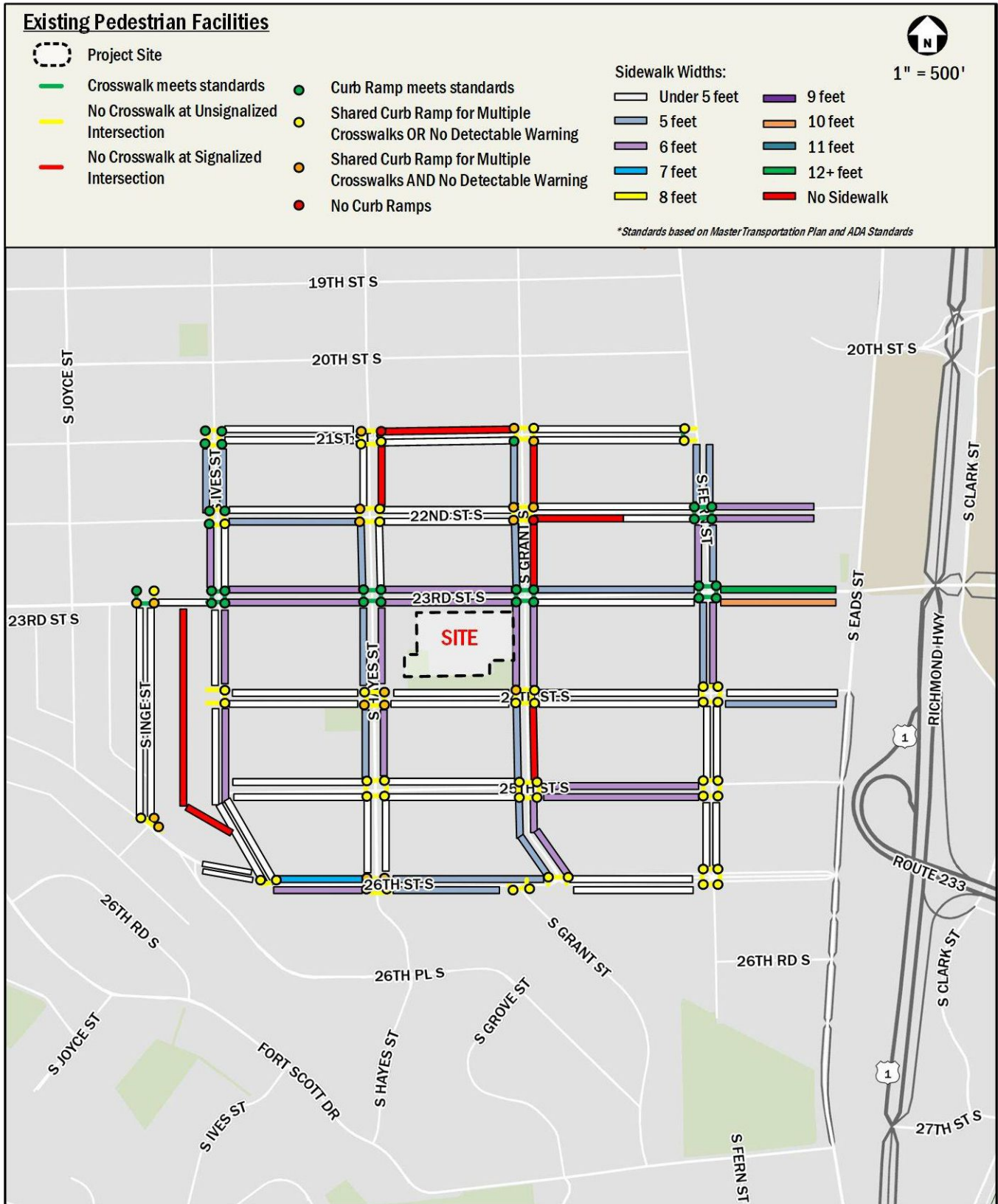


Figure 23: Existing Pedestrian Facilities



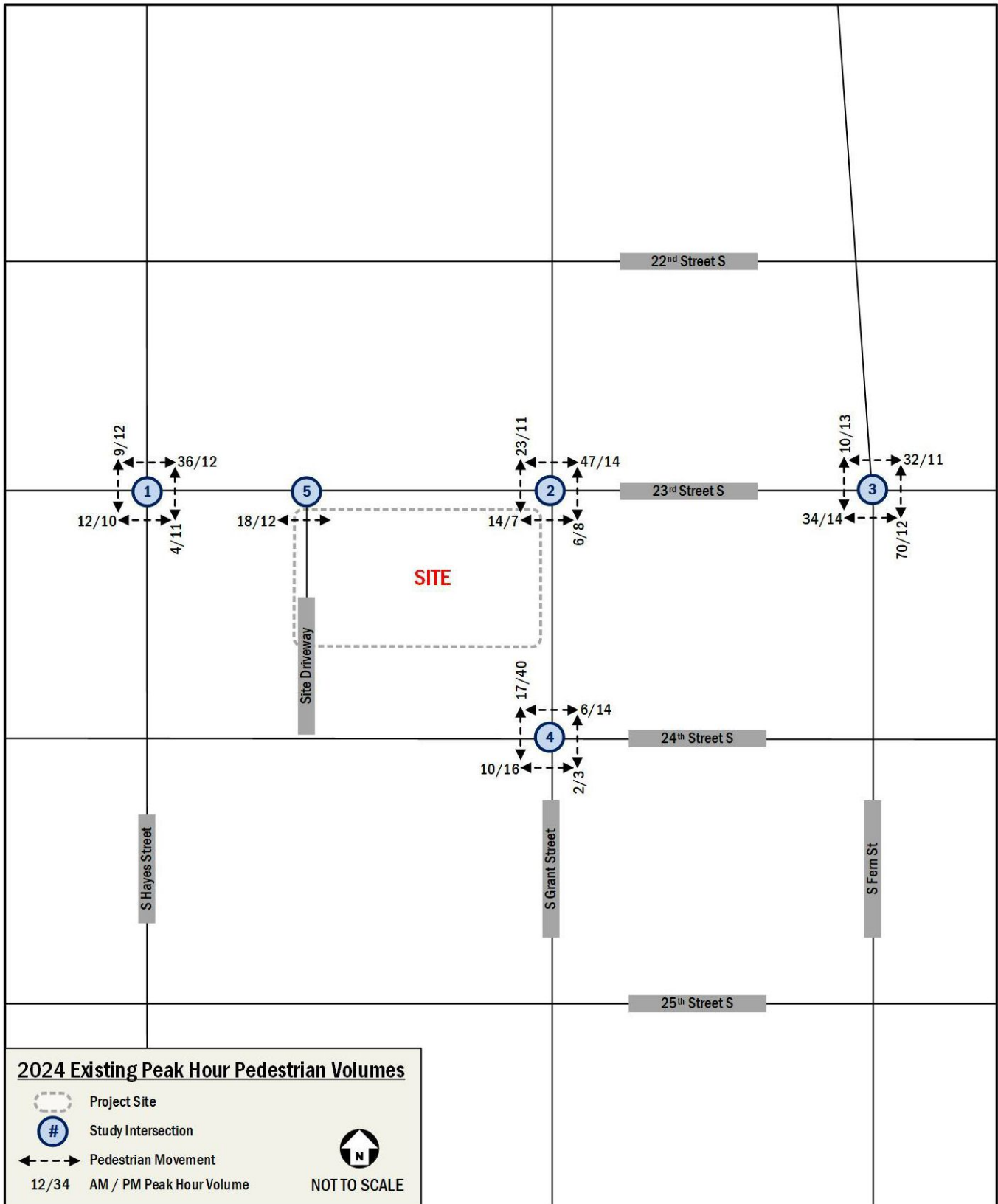


Figure 24: 2024 Existing Peak Hour Pedestrian Volumes

## Travel Demand Assumptions

This chapter outlines the transportation demand of the proposed 750 23<sup>rd</sup> Street S 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.

### 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 National Household Travel Survey data, and data contained in the Crystal City Multimodal Transportation Study, the WMATA Ridership Survey, and the Arlington County Mode Share Assumptions for Crystal City.

### Residential Mode Splits

Residential mode splits were primarily based on National Household Travel Survey (NHTS) data. Table 7 summarizes the data that was used to establish the residential mode split assumptions for this report.

**Table 7: Summary of Residential Mode Split Data**

Information Source	Mode				
	SOV	Carpool	Transit	Bike/Walk	Telecommute/Other
Census Transportation Planning Products (TAZ 21505)	18%	0%	0%	22%	60%
Census Data (Tract 1036.01)	44%	4%	21%	16%	15%
State of the Commute 2019 (of DC Residents)	60%	5%	24%	3%	8%
WMATA Ridership Survey (average for Suburban-Inside the Beltway)	39%		49%	12%	---
Arlington County Mode Share Assumptions for Crystal City (Productions)	32%		59%	9%	---

### Community Service Mode Splits

Community service mode splits were primarily based on carpool mode split data. Table 8 summarizes the data that was used to establish the community service mode split assumptions for this report.

**Table 8: Summary of Community Service Mode Split Data**

Information Source	Mode				
	SOV	Carpool	Transit	Bike/Walk	Telecommute/Other
State of the Commute 2016 (of District Employees)	38%	6%	45%	6%	5%
Crystal City Multimodal Transportation Study (Table 3.7)	39% AM / 50% PM		27%	28%	---
Crystal City Multimodal Transportation Study (Figure 3.4)	---		46% - 50%	---	---
WMATA Ridership Survey (Office Mode Share: Inside Beltway)	66%		30%	6%	---
Arlington County Mode Share Assumptions for Crystal City (Productions)	32%		59%	9%	---

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 development were determined to be 32% for the residential component and 30% for the community service component. The proposed mode splits were vetted 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	32%	59%	3%	6%
Community Service (Existing and Proposed)	30%	54%	6%	10%

### Trip Generation Methodology

Weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 11<sup>th</sup> Edition. This methodology was supplemented to account for the urban nature of the project and to generate trips for multiple modes, as vetted by Arlington County.

Trip generation was calculated based on the following:

- Existing 750 23<sup>rd</sup> Street S
  - ITE Land Use 710, General Office Building, setting/location of General Urban/Suburban

- Proposed Residential
  - ITE Land Use 221, Mid-Rise Multifamily Housing, setting/location of General Urban/Suburban and Not Close to Rail Transit
- Proposed Community Service
  - ITE Land Use 710, General Office Building, setting/location of General Urban/Suburban

The trips were then split into different modes using assumptions outlined in the mode split section of this report. Existing trip generation is provided for comparison purposes only. For purposes of the analysis, existing site trips will be removed from the network based on field-collected count data at the existing driveways.

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 and weekday afternoon peak hours. As shown in Table 10, the proposed trip generation generates less trips during the peak hour than the existing uses. 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		
			In	Out	Total	In	Out	Total
Auto	Residential	107 du	3 veh/hr	8 veh/hr	11 veh/hr	8 veh/hr	6 veh/hr	14 veh/hr
	Community Service	22,070 sf	9 veh/hr	1 veh/hr	10 veh/hr	2 veh/hr	7 veh/hr	9 veh/hr
	<b>Total Proposed</b>		<b>12 veh/hr</b>	<b>9 veh/hr</b>	<b>21 veh/hr</b>	<b>10 veh/hr</b>	<b>13 veh/hr</b>	<b>23 veh/hr</b>
	<i>Existing Office</i>	<i>28,000 sf</i>	<i>-12 veh/hr</i>	<i>-1 veh/hr</i>	<i>-13 veh/hr</i>	<i>-2 veh/hr</i>	<i>-10 veh/hr</i>	<i>-12 veh/hr</i>
	<b>Net New</b>		<b>0 veh/hr</b>	<b>8 veh/hr</b>	<b>8 veh/hr</b>	<b>8 veh/hr</b>	<b>3 veh/hr</b>	<b>11 veh/hr</b>
Transit	Residential	107 du	5 ppl/hr	19 ppl/hr	24 ppl/hr	18 ppl/hr	12 ppl/hr	30 ppl/hr
	Community Service	22,070 sf	19 ppl/hr	3 ppl/hr	22 ppl/hr	3 ppl/hr	18 ppl/hr	21 ppl/hr
	<b>Total Proposed</b>		<b>24 ppl/hr</b>	<b>22 ppl/hr</b>	<b>46 ppl/hr</b>	<b>21 ppl/hr</b>	<b>30 ppl/hr</b>	<b>51 ppl/hr</b>
	<i>Existing Office</i>	<i>28,000 sf</i>	<i>-24 ppl/hr</i>	<i>-4 ppl/hr</i>	<i>-28 ppl/hr</i>	<i>-4 ppl/hr</i>	<i>-21 ppl/hr</i>	<i>-25 ppl/hr</i>
	<b>Net New</b>		<b>0 ppl/hr</b>	<b>18 ppl/hr</b>	<b>18 ppl/hr</b>	<b>17 ppl/hr</b>	<b>9 ppl/hr</b>	<b>26 ppl/hr</b>
Bike	Residential	107 du	0 ppl/hr	1 ppl/hr	1 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr
	Community Service	22,070 sf	2 ppl/hr	0 ppl/hr	2 ppl/hr	0 ppl/hr	2 ppl/hr	2 ppl/hr
	<b>Total Proposed</b>		<b>2 ppl/hr</b>	<b>1 ppl/hr</b>	<b>3 ppl/hr</b>	<b>1 ppl/hr</b>	<b>3 ppl/hr</b>	<b>4 ppl/hr</b>
	<i>Existing Office</i>	<i>28,000 sf</i>	<i>-3 ppl/hr</i>	<i>0 ppl/hr</i>	<i>-3 ppl/hr</i>	<i>0 ppl/hr</i>	<i>-3 ppl/hr</i>	<i>-3 ppl/hr</i>
	<b>Net New</b>		<b>-1 ppl/hr</b>	<b>1 ppl/hr</b>	<b>0 ppl/hr</b>	<b>1 ppl/hr</b>	<b>0 ppl/hr</b>	<b>1 ppl/hr</b>
Walk	Residential	107 du	1 ppl/hr	2 ppl/hr	3 ppl/hr	2 ppl/hr	0 ppl/hr	2 ppl/hr
	Community Service	22,070 sf	3 ppl/hr	1 ppl/hr	4 ppl/hr	1 ppl/hr	3 ppl/hr	4 ppl/hr
	<b>Total Proposed</b>		<b>4 ppl/hr</b>	<b>3 ppl/hr</b>	<b>7 ppl/hr</b>	<b>3 ppl/hr</b>	<b>3 ppl/hr</b>	<b>6 ppl/hr</b>
	<i>Existing Office</i>	<i>28,000 sf</i>	<i>-4 ppl/hr</i>	<i>-1 ppl/hr</i>	<i>-5 ppl/hr</i>	<i>-2 ppl/hr</i>	<i>-3 ppl/hr</i>	<i>-5 ppl/hr</i>
	<b>Net New</b>		<b>0 ppl/hr</b>	<b>2 ppl/hr</b>	<b>2 ppl/hr</b>	<b>1 ppl/hr</b>	<b>0 ppl/hr</b>	<b>1 ppl/hr</b>

## Traffic Operations

This chapter provides a summary of an analysis of the existing and future roadway capacity in the study area for the 2029 analysis year. Included is an analysis of potential vehicular impacts of the 750 23<sup>rd</sup> Street S 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 determined by the existing traffic volumes in the study area.

The following conclusions are reached within this chapter:

- There are no impacts to any study intersections as a result of the proposed development.
- 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 Arlington County staff as part of the scoping process. 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. 2024 Existing Conditions
2. 2029 Future Conditions without the development (2029 Background)
3. 2029 Future Conditions with the development (2029 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 process, the following intersections were chosen for analysis:

1. S Hayes Street and 23<sup>rd</sup> Street S
2. S Grant Street and 23<sup>rd</sup> Street S
3. S Fern Street and 23<sup>rd</sup> Street S
4. S Grant Street and 24<sup>th</sup> Street S
5. 23<sup>rd</sup> Street S and Site Driveway (Planned)

Figure 7 shows the vehicular study area intersections.

## Traffic Volume Assumptions

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

### Existing Traffic Volumes

The existing traffic volumes are comprised of the following weekday turning movement count (TMC) data at all intersections and driveways:

- Volumes collected on Tuesday, May 21, 2024, from 6:30 to 9:30 AM and 4:00 to 7:00 PM

For all intersections, the system peak hours were 8:15 AM to 9:15 AM for the morning peak hour and 5:15 PM to 6:15 PM for the afternoon peak hour. The existing turning movement counts, without volume balancing, are included in the Technical Appendix. The existing peak hour traffic volumes for intersections within the vehicular study area are shown in Figure 25.

### 2029 Traffic Volumes

#### 2029 Background Traffic Volumes (without the proposed development)

Traffic projections for the 2029 Background Conditions consist of the existing volumes with the addition of growth along local roadways in the study area in 2029. This local growth is accounted for by inherent regional traffic growth, and by traffic generated by developments expected to be completed prior to 2029 (known as background developments), which is the expected buildout year for the proposed development.

#### Inherent Regional Growth

The growth rate used in this analysis were derived using VDOT's Annual Average Daily Traffic (AADT) data and guidance from Arlington County staff during the scoping process. An annual growth rate of 0.5% was added for all movements at each intersection based on guidance from Arlington County, compounded annually from 2024 to 2029 for a total growth rate of 2.53%.

#### Background Developments (2029)

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, nine (9) developments were included in the 2029 Background Conditions scenario. These developments are:

1. Century Center
2. Crystal Houses (1900 S Eads)
3. PenPlace
4. Americana Hotel Redevelopment
5. 101 12<sup>th</sup> Street S
6. 1900 Crystal Drive
7. 2000 and 2001 S Bell Street
8. 2250 Crystal Drive/223 23<sup>rd</sup> Street
9. Crystal Towers

The location of the background developments included in the 2029 Background Conditions scenario in relation to the proposed 750 23<sup>rd</sup> Street S development is shown on Figure 26.

Transportation studies were available for the majority of the background developments included in the 2029 Background Conditions. Details on each of the background developments included in the 2029 Background Conditions are presented below:

1. **Century Center:** Located in the Crystal City area at the southwest corner of the intersection of Crystal Drive and 23<sup>rd</sup> Street S, the approved Century Center development will maintain the existing parking garage and retail on site and redevelop the existing office space with a new residential tower containing approximately 300 dwelling units. The expected build out year was initially projected to occur in 2019; however, construction has not yet begun.
2. **Crystal Houses (1900 S Eads):** Located in the Pentagon City area and bounded by 18<sup>th</sup> Street S to the north, S Eads Street to the east, 22<sup>nd</sup> Street S to the south, and S Fern Street to the west, the approved Crystal House development will raze a portion of an existing parking lot and redeveloped it with 798

- residential dwelling units. The expected build-out year is 2026.
3. **PenPlace:** Located in the Pentagon City area and bounded by Army Navy Drive to the north, 12<sup>th</sup> Street S to the south, S Eads Street to the east, and S Fern Street to the west, the approved PenPlace development will include four (4) buildings with approximately 2.8 million square feet of office space, 391,800 square feet of amenity space, 14,600 square feet of daycare, 94,400 square feet of neighborhood-serving ground floor retail space, and 26,500 square feet of community space. The expected build out year is 2025.
  4. **Americana Hotel Redevelopment:** Located in the Crystal City area and bounded by S Eads Street to the west, a commercial property to the south, Richmond Highway to the east, and a hotel property to the north, the approved Americana Hotel Redevelopment will include a mixed-use building with approximately 644 residential units and 3,800 square feet of neighborhood-serving ground floor retail space. The expected build out year is 2027.
  5. **101 12<sup>th</sup> Street S:** Located in the Crystal City area and bounded by 10<sup>th</sup> Street S to the north, CSX tracks to the east, 12<sup>th</sup> Street S to the south, and a commercial property to the west, the approved 101 12<sup>th</sup> Street S development will include one (1) mixed-use building with approximately 234,500 square feet of office space and 5,200 square feet of neighborhood-serving ground floor retail space. The expected build out year is 2023.
  6. **1900 Crystal Drive:** Located in the Crystal City area and bounded by 18<sup>th</sup> Street S to the north, 20<sup>th</sup> Street S to the south, commercial properties to the west, and Crystal Drive to the east, the approved 1900 Crystal Drive development will include two (2) mixed-use buildings with approximately 790 apartment units and 40,598 square feet of ground floor retail space. The expected build out year was originally 2023 but the project has not opened as of spring 2024.
  7. **2000 and 2001 S Bell Street:** Located in the Crystal City area along 20<sup>th</sup> Street S between S Clark Street and Crystal Drive. The development will raze the existing office building and redevelop to include two buildings with approximately 786 residential dwelling units and 29,600 square feet of ground-floor retail. The expected build out year is 2025.
  8. **2250 Crystal Drive/223 23<sup>rd</sup> Street:** Located in the Crystal City area and bounded by a commercial property to the north, Crystal Drive to the east, 23<sup>rd</sup> Street S to the south, and a commercial property to the west, the approved 2250 Crystal Drive/223 23<sup>rd</sup> Street development will include two (2) mixed-use buildings with approximately 1,440 residential units and 17,438 square feet of neighborhood-serving ground floor retail space. The expected build out year is 2026.
  9. **Crystal Towers:** Located in the Crystal City area and bounded by 15<sup>th</sup> Street S to the north, S Eads Street to the east, 18<sup>th</sup> Street S to the south, and S Fern Street to the west, the approved Crystal Towers development will include a residential building and a separate retail building. The development will include a total of approximately 209 residential units and 28,000 square feet of ground floor retail space. The expected build out year is 2025.

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 2029 Background traffic volumes. Trip distribution assumptions for the background developments were based on the distributions included in their respective studies or based on those determined for the proposed development and altered where necessary based on anticipated travel patterns. The traffic volumes for the 2029 Background conditions are shown on Figure 27.

**Table 11: Traffic Generated by 2029 Background Developments**

Development	Trip Generation					
	AM Peak Hour			PM Peak Hour		
	<i>In</i>	<i>Out</i>	<i>Total</i>	<i>In</i>	<i>Out</i>	<i>Total</i>
<u>Century Center<sup>(1)</sup></u>						
Total New Vehicle-Trips	10	43	53	42	22	64
<u>Crystal Houses<sup>(2)</sup></u>						
Total New Vehicle-Trips	37	93	130	92	61	153
<u>PenPlace<sup>(3)</sup></u>						
Total New Vehicle Trips	723	144	867	173	648	821
<u>Americana Hotel<sup>(4)</sup></u>						
Total New Vehicle Trips	13	59	72	45	30	75
<u>101 12<sup>th</sup> Street S<sup>(5)</sup></u>						
Total New Vehicle Trips	66	10	76	14	65	79
<u>1900 Crystal Drive<sup>(6)</sup></u>						
Total New Vehicle Trips	31	78	109	75	62	137
<u>2000 and 2001 S Bell Street<sup>(7)</sup></u>						
Total New Vehicle Trips	2	92	94	73	25	98
<u>2250 Crystal Drive/223 23<sup>rd</sup> Street<sup>(8)</sup></u>						
Total New Vehicle Trips	62	174	236	142	107	249
<u>Crystal Towers<sup>(9)</sup></u>						
Total New Vehicle Trips	5	20	25	17	7	24
<b>Total Background Trips</b>	<b>949</b>	<b>713</b>	<b>1,662</b>	<b>673</b>	<b>1,027</b>	<b>1,700</b>

(1): Extracted from Century Center TIS (01.10.2017) prepared by Gorove Slade Associates.

(2): Extracted from Crystal House III TIA (05.24.2017) prepared by Wells + Associates.

(3): Extracted from PenPlace MMTA (02.11.2022) prepared by Gorove Slade Associates.

(4): Extracted from Americana Hotel Redevelopment MMTA (7.25.2022) prepared by Gorove Slade Associates.

(5): Extracted from 101 12<sup>th</sup> Street S MMTA (10.22.2020) prepared by Gorove Slade Associates.

(6): Extracted from 1900 Crystal Drive MMTA (3.15.2019) prepared by Gorove Slade Associates.

(7): Extracted from 2000 and 2001 S Bell Street MMTA (02.12.2021) prepared by Gorove Slade Associates.

(8): Extracted from 2250 Crystal Dr and 223 23<sup>rd</sup> Street S MMTA (8.26.2021) prepared by Gorove Slade Associates.

(9): Extracted from Crystal Towers MMTA (7.26.2022) prepared by Gorove Slade Associates.



## 2029 Future Traffic Volumes

The 2029 Future Conditions traffic volumes consist of the 2029 Background volumes with the addition of the traffic volumes generated by the proposed development (site-generated trips). Thus, the 2029 Future Conditions traffic volumes include traffic generated by: the existing volumes, inherent regional growth, background developments, and the proposed development.

Trip distribution and assignments for site-generated traffic were primarily determined using existing volumes, anticipated traffic patterns, and other recent studies conducted in the area.

Additional details for each land use are as follows:

- The origins of outbound and destinations of inbound vehicular trips were the garage access along the driveway accessed via 23<sup>rd</sup> Street S.

A summary of the inbound and outbound trip distribution assumptions is shown on Figure 28 for the proposed development. Trip distribution and assignment assumptions were vetted by Arlington County. The site-generated traffic volumes for the 2029 build-out year are shown on Figure 29. The 2029 Future Conditions traffic volumes are shown on Figure 30.

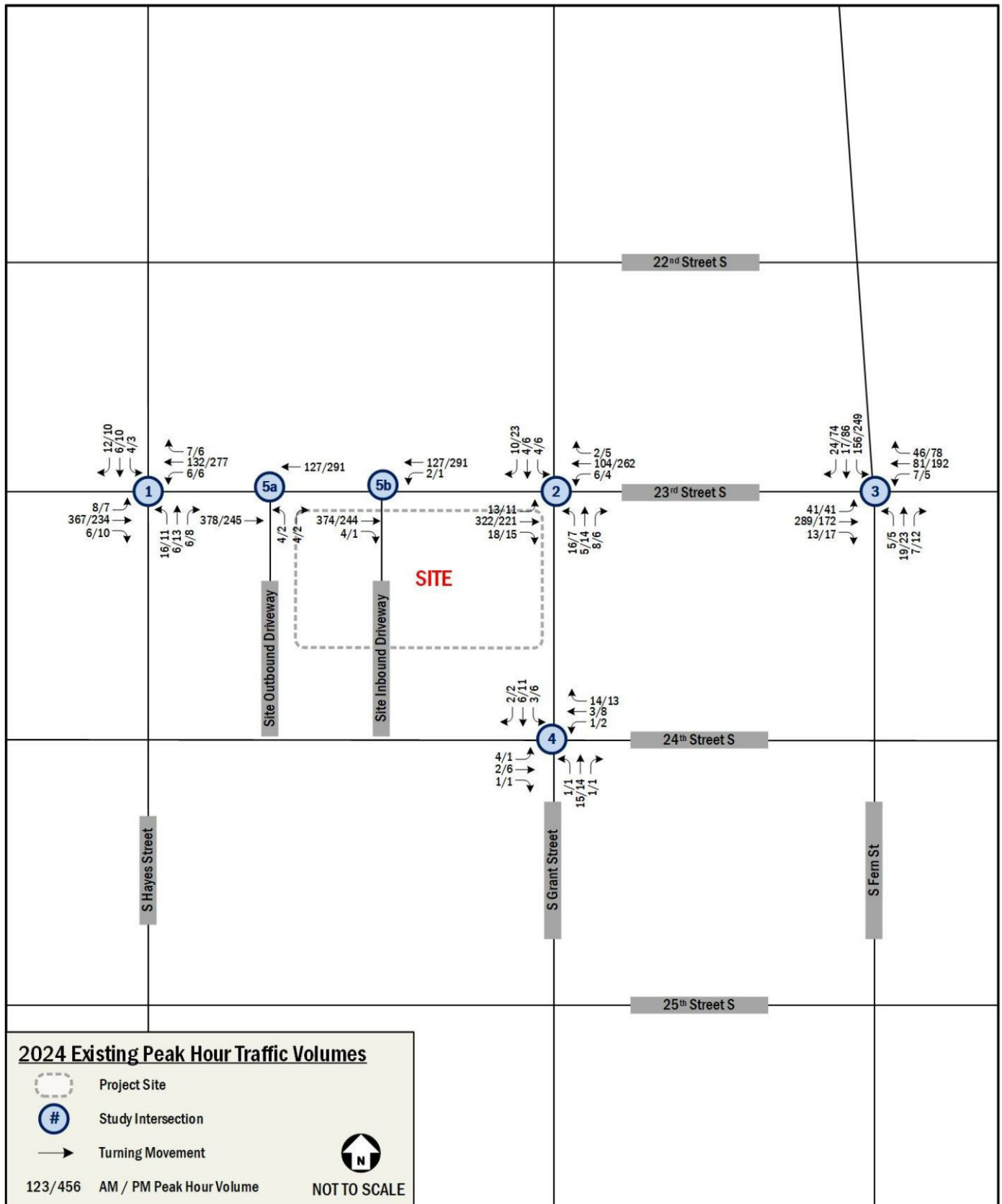


Figure 25: 2024 Existing Peak Hour Traffic Volumes



Figure 26: Future Background Developments

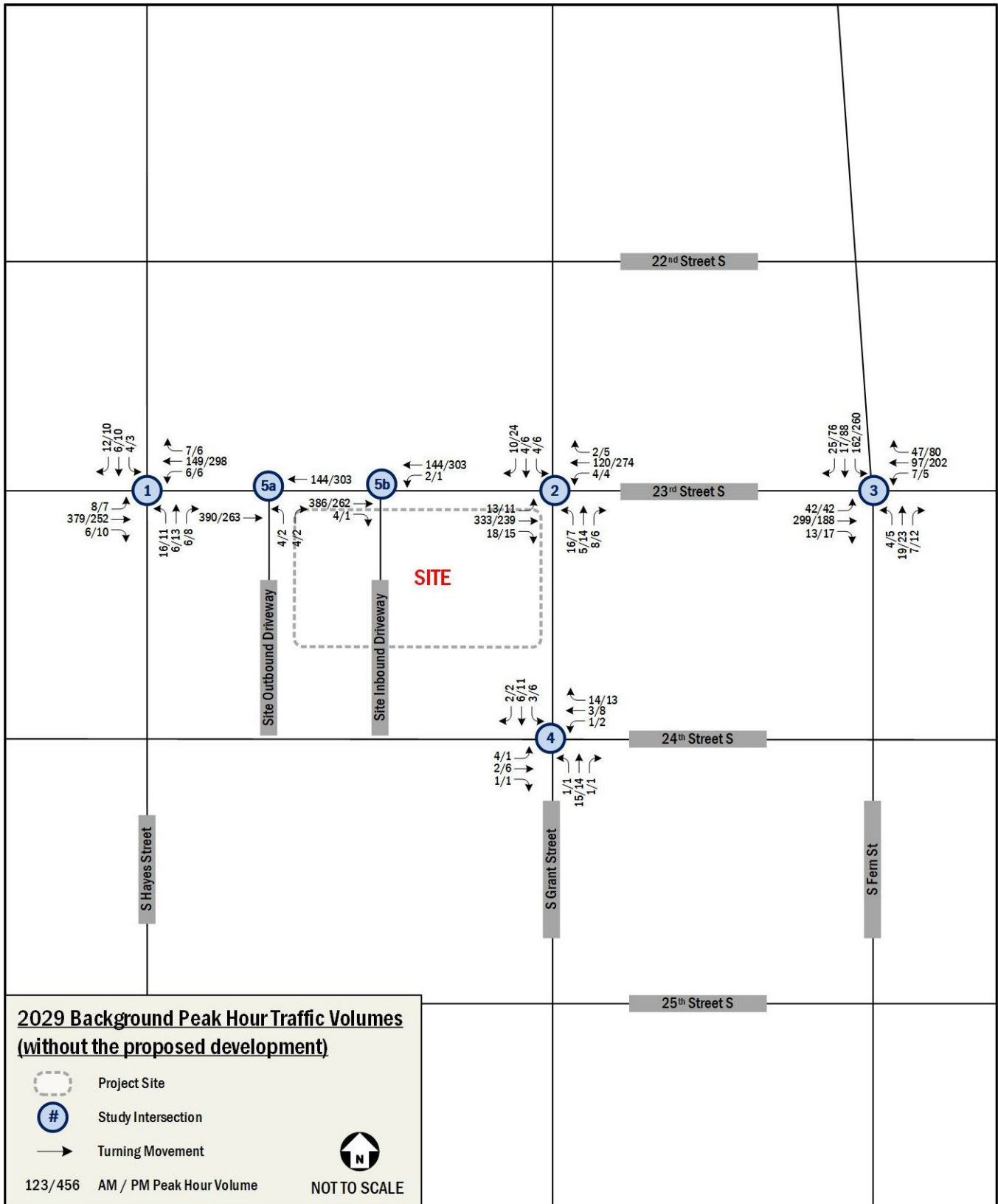


Figure 27: 2029 Background Peak Hour Traffic Volumes (without the proposed development)

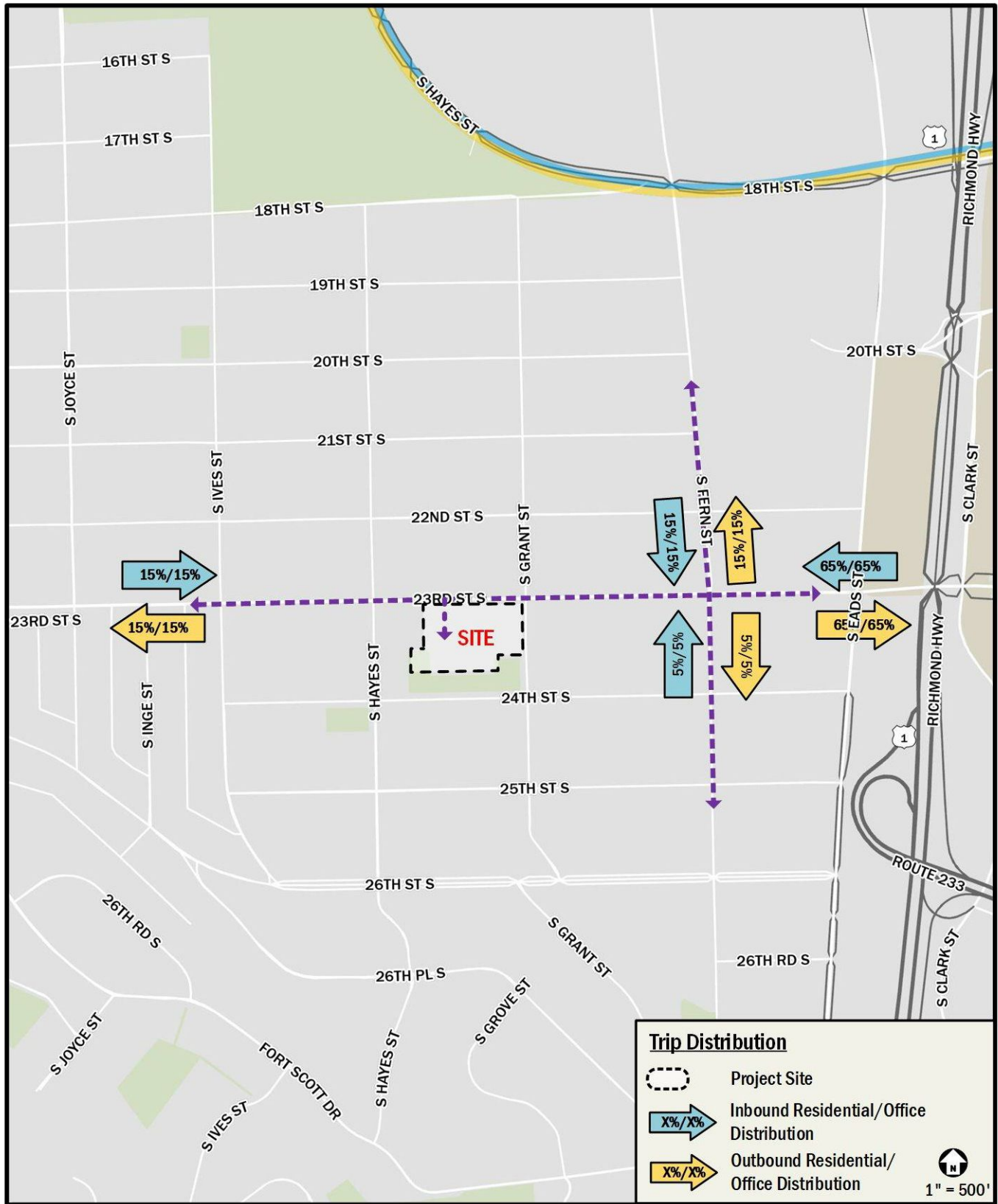


Figure 28: Inbound and Outbound Trip Distribution



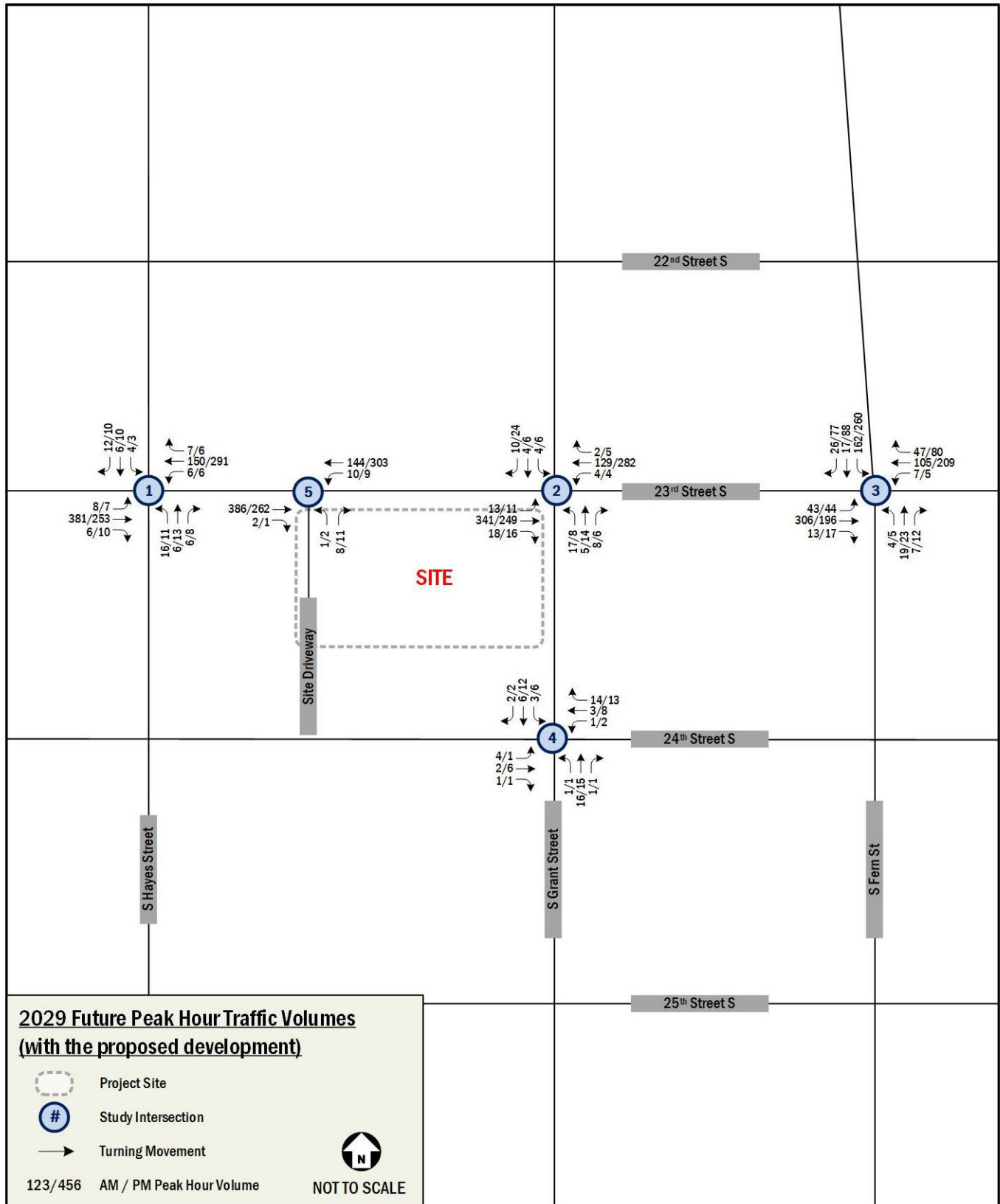


Figure 30: 2029 Future Peak Hour Traffic Volumes (with the proposed development)

### **Geometry and Operations Assumptions**

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

#### **2024 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.

The existing local roadway network including lane configurations and intersection control is detailed in and illustrated in Figure 31.

#### **2029 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, no geometry and operations improvements were included in the 2029 Background scenario within the study area. Lane configurations and traffic controls for the 2029 Background Conditions are shown in Figure 31.

#### **2029 Future Geometry and Operations Assumptions (with the proposed development)**

The configurations and traffic controls assumed in the 2029 Future Conditions are based on the 2029 Background Conditions with the addition of the proposed development.

The proposed development includes a site driveway on the north frontage of the site along 23<sup>rd</sup> Street S, at approximately the same location as the existing site driveways. The existing access on 23<sup>rd</sup> Street will be consolidated into a single curb cut to provide full access to the proposed development. Each intersection approach is configured with the following:

- The eastbound approach will include one thru/right lane.

- The westbound approach will include one left/thru lane.
- The northbound approach will include one left/right lane.

There are no proposed changes to signal timing as part of the proposed development in the 2029 Future Conditions. Lane configurations and traffic controls for the 2029 Future Conditions are shown in Figure 32.



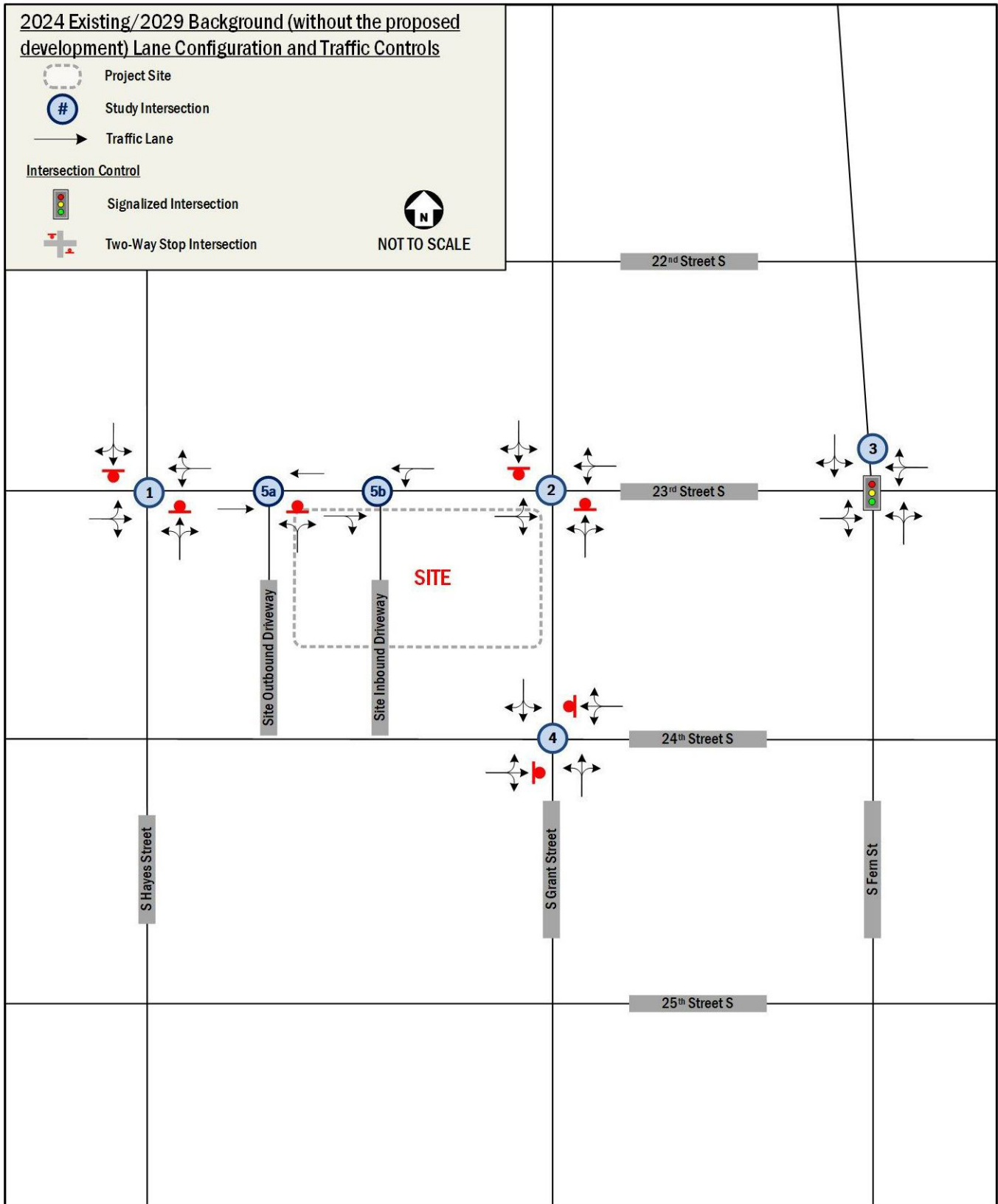


Figure 31: 2024 Existing/2029 Background (without the proposed development) Lane Configurations and Traffic Controls

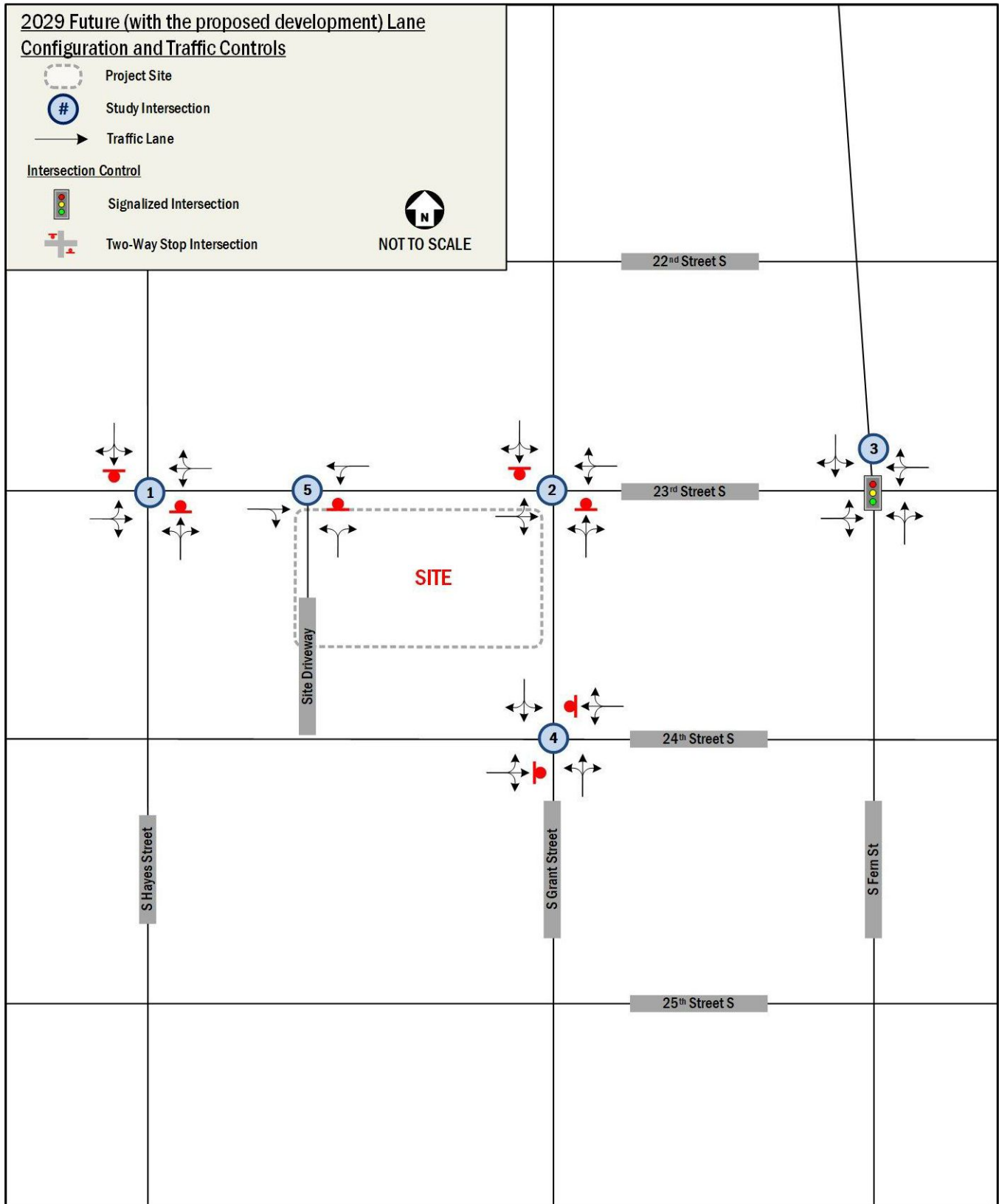


Figure 32: 2029 Future (with the proposed development) Lane Configurations and Traffic Controls

## **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 and afternoon peak hours. *Synchro*, version 11 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.

### **2024 Analysis Results**

The Existing (2024) results of the intersection capacity analyses for the AM and PM peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 12. The capacity analysis results indicate that all intersections operate at acceptable LOS under the Existing (2024) Conditions during the AM and PM peak hours.

The Existing (2024) queuing results for the AM and PM peak hours are expressed by movement are presented in Table 13.

One (1) intersection has at least one movement with 95<sup>th</sup> percentile queues that exceed the available storage length in the morning and/or afternoon peak hour:

- 23<sup>rd</sup> Street & S Fern Street
  - Southbound Left/Thru/Right (PM Peak Hour)

## 2029 Analysis Results

### 2029 Background Analysis Results (without the proposed development)

The Background (2029) results of the intersection capacity analyses for the AM and PM peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 12. The capacity analysis results indicate that all intersections operate at acceptable LOS under the Background (2029) Conditions.

The Background (2029) queuing results for the AM and PM peak hours are expressed by movement are presented in Table 13.

One (1) intersection has at least one movement with 95<sup>th</sup> percentile queues that exceed the available storage length in the morning and/or afternoon peak hour:

- 23<sup>rd</sup> Street & S Fern Street
  - Southbound Left/Thru/Right (PM Peak Hour)

### 2029 Future Analysis Results (with the proposed development)

The Future (2029) results of the intersection capacity analyses for the AM and PM peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 12. The capacity analysis results indicate that all intersections operate at acceptable LOS under the Future (2029) Conditions.

The Future (2029) queuing results for the AM and PM peak hours are expressed by movement are presented in Table 13.

One (1) intersection has at least one movement with 95<sup>th</sup> percentile queues that exceed the available storage length in the morning and/or afternoon peak hour:

- 23<sup>rd</sup> Street & S Fern Street
  - Southbound Left/Thru/Right (PM Peak Hour)

## 2029 Future Mitigations

Mitigation measures were identified based on Arlington County standards. Following these guidelines, there are no impacts to any intersections under Future (2029) Conditions, and therefore,

no mitigation measures are proposed. The Future (2029) Conditions results are shown in Table 12 and Table 13, with detailed Synchro reports included in the Technical Appendix.

**Table 12: Capacity Analysis Results**

Intersection and Movement	Existing (2024)				Background (2024)				Future (2024)				
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
<b>1. 23rd Street S &amp; S Hayes Street</b>													
Eastbound LTR	0.2	A	0.3	A	0.2	A	0.3	A	0.2	A	0.3	A	
Westbound LTR	0.4	A	0.2	A	0.3	A	0.2	A	0.3	A	0.2	A	
Northbound LTR	14.6	B	14.7	B	15.1	C	15.1	C	15.1	C	15.2	C	
Southbound LTR	12.1	B	13.7	B	12.3	B	14.0	B	12.4	B	14.0	B	
<b>2. 23rd Street S &amp; S Grant Street</b>													
Eastbound LTR	0.4	A	0.5	A	0.4	A	0.4	A	0.4	A	0.4	A	
Westbound LTR	0.4	A	0.1	A	0.3	A	0.1	A	0.3	A	0.1	A	
Northbound LTR	14.1	B	16.0	C	14.0	B	16.6	C	14.4	B	17.1	C	
Southbound LTR	12.1	B	13.9	B	11.8	B	14.2	B	12.0	B	14.4	B	
<b>3. 23rd Street S &amp; S Fern Street</b>													
<b>Overall</b>	<b>13.4</b>	<b>B</b>	<b>22.5</b>	<b>C</b>	<b>13.6</b>	<b>B</b>	<b>23.6</b>	<b>C</b>	<b>13.5</b>	<b>B</b>	<b>23.7</b>	<b>C</b>	
Eastbound LTR	6.5	A	12.6	B	6.9	A	13.5	B	7.0	A	13.7	B	
Westbound LTR	4.8	A	12.9	B	5.1	A	13.7	B	5.2	A	13.8	B	
Northbound LTR	21.4	C	11.8	B	21.0	C	11.4	B	21.0	C	11.4	B	
Southbound LTR	29.9	C	35.5	D	30.3	C	37.4	D	30.5	C	37.6	D	
<b>4. 24th Street S &amp; S Grant Street</b>													
Eastbound LTR	10.1	B	9.6	A	10.1	B	9.6	A	10.1	B	9.6	A	
Westbound LTR	9.3	A	9.2	A	9.2	A	9.2	A	9.2	A	9.2	A	
Northbound LTR	0.4	A	0.4	A	0.4	A	0.4	A	0.4	A	0.4	A	
Southbound LTR	2.4	A	2.3	A	1.9	A	2.5	A	1.9	A	2.3	A	
<b>5a. 23rd Street S &amp; Inbound Driveway</b>													
Eastbound TR	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--	
Westbound LT	0.1	A	0.0	A	0.1	A	0.0	A	--	--	--	--	
<b>5b. 23rd Street S &amp; Outbound Driveway</b>													
Eastbound T	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--	
Westbound L	8.7	A	0.0	A	0.0	A	0.0	A	--	--	--	--	
Northbound LR	13.5	B	11.5	B	11.7	B	11.4	B	--	--	--	--	
<b>5. 23rd Street S &amp; Site Driveway (Future)</b>													
Eastbound TR	--	--	--	--	--	--	--	--	0.0	A	0.0	A	
Westbound LT	--	--	--	--	--	--	--	--	0.6	A	0.3	A	
Northbound LR	--	--	--	--	--	--	--	--	11.5	B	10.5	B	

**Table 13: Queuing Results**

Intersection and Lane Group	Storage Length (ft)	Existing (2024)				Background (2029)				Future (2029)			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
<b>1. 23rd Street S &amp; S Hayes Street</b>													
Eastbound LTR	465	--	0	--	0	--	0	--	0	--	0	--	0
Westbound LTR	460	--	0	--	0	--	0	--	0	--	0	--	0
Northbound LTR	295	--	6	--	6	--	6	--	7	--	6	--	7
Southbound LTR	240	--	3	--	4	--	3	--	4	--	3	--	4
<b>2. 23rd Street S &amp; S Grant Street</b>													
Eastbound LTR	460	--	1	--	1	--	1	--	1	--	1	--	1
Westbound LTR	570	--	0	--	0	--	0	--	0	--	0	--	0
Northbound LTR	295	--	6	--	7	--	6	--	7	--	6	--	8
Southbound LTR	240	--	3	--	7	--	3	--	7	--	3	--	7
<b>3. 23rd Street S &amp; S Fern Street</b>													
Eastbound LTR	570	62	148	65	119	66	158	72	128	68	163	75	135
Westbound LTR	425	13	43	71	131	16	50	76	139	18	55	79	143
Northbound LTR	295	9	24	7	22	8	24	7	22	8	24	7	22
Southbound LTR	220	82	132	149	#317	86	136	159	#337	86	136	159	#337
<b>4. 24th Street S &amp; S Grant Street</b>													
Eastbound LTR	485	--	1	--	1	--	1	--	1	--	1	--	1
Westbound LTR	590	--	2	--	2	--	2	--	2	--	2	--	2
Northbound LTR	275	--	0	--	0	--	0	--	0	--	0	--	0
Southbound LTR	280	--	0	--	0	--	0	--	0	--	0	--	0
<b>5a. 23rd Street S &amp; Inbound Driveway</b>													
Eastbound TR	140	--	0	--	0	--	0	--	0	--	--	--	--
Westbound LT	260	--	0	--	0	--	0	--	0	--	--	--	--
<b>5b. 23rd Street S &amp; Outbound Driveway</b>													
Eastbound T	140	--	0	--	0	--	0	--	0	--	--	--	--
Westbound T	260	--	11	--	0	--	0	--	0	--	--	--	--
Northbound LR	50	--	2	--	1	--	1	--	1	--	--	--	--
<b>5. 23rd Street S &amp; Site Driveway (Future)</b>													
Eastbound TR	140	--	--	--	--	--	--	--	--	--	0	--	0
Westbound LT	260	--	--	--	--	--	--	--	--	--	1	--	1
Northbound LR	50	--	--	--	--	--	--	--	--	--	1	--	2

# 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.

## Crash Data 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 2019 to 2023 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 in the segment of 23<sup>rd</sup> Street S adjacent to the site. The crash data used in the analysis is included in the Technical Appendix.

Based on the historical crash data, a total of six (6) crashes occurred at study area intersections and in the segment of 23<sup>rd</sup> Street S adjacent to the site between 2019 and 2023. The years 2019, 2020, and 2022 all had two (2) crashes per year, while 2021 and 2023 had no crashes. Figure 33 shows the number of crashes per year in the study area over the last five years. The data obtained from VDOT shows that the number of reported crashes generally varies from year to year but is low.

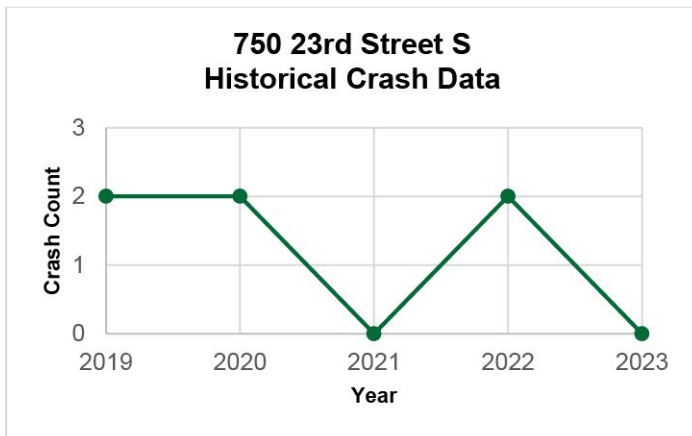


Figure 33: Historical Crash Data

### 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 2019 to 2023, 67% were classified as O (Property Damage Only) and 33% were classified as B (Suspected Minor Injury). No reported crashes involved fatal injury, and no reported crashes involved suspected serious injuries. Table 14 shows the number of crashes according to its severity.

Table 14: Crash Count by Severity (2019-2023)

Crash Severity	Count	%
K	0	0%
A	0	0%
B	2	33%
C	0	0%
O	4	67%
<b>Total</b>	<b>6</b>	<b>100%</b>

### Collision Type

The most common type of collision found in the study area was angle collisions, with 67% of crashes occurring in this manner. Table 15 summarizes the collision type for all analyzed crashes.

Table 15: Crash County by Collision Type

Collision Type	Count	%
Rear End	1	17%
Angle	4	67%
Sideswipe - Same Direction	1	17%
<b>Total</b>	<b>6</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, 50% of

the crashes occurred during daylight, and 17% of the crashes occurred during darkness with a lighted road. This information suggests that, in the majority of crashes, lighting conditions might not have been the primary cause for the crash. Table 16 summarizes the light conditions for crashes in the vicinity of the 750 23rd Street S site.

**Table 16: Crash Count by Light Condition**

Light Condition	Count	%
Daylight	3	50%
Darkness - road lighted	1	17%
Darkness - unknown road lightning	1	17%
Darkness - road not lighted	1	17%
<b>Total</b>	<b>6</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 17, a distracted driver was reported in 17% of the analyzed crashes and speeding was also involved in 17% of the analyzed crashes. Alcohol involvement was not reported in any 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 17: Crash Count by Driver Behavior Factors**

Driver Behavior Factors	Count	%
<i>Distracted Driver?</i>		
Yes	1	17%
No	5	83%
<i>Speeding?</i>		
Yes	1	17%
No	5	83%
<i>Alcohol Involved?</i>		
Yes	0	0%
No	6	100%
<b>Total</b>	<b>6</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 750 23rd Street S site. As shown in Table 18, no crashes involving large trucks or bicyclists have been reported in the past five (5) years, while one (1) crash has been reported to involve a motorcyclist. In terms of transportation modes other than motorized vehicles, no crashes involving a pedestrian were reported.

**Table 18: Crash Count by Vehicle Characteristics**

Vehicle Characteristics Factors	Count	%
<i>Large Truck Involved</i>		
Yes	0	0%
No	6	100%
<i>Motorcycle Involved</i>		
Yes	1	17%
No	5	83%
<i>Bike Involved</i>		
Yes	0	0%
No	6	100%
<i>Pedestrian Involved</i>		
Yes	0	0%
No	6	100%
<b>Total</b>	<b>6</b>	<b>100%</b>

### Findings

According to the VDOT historical crash data for the study area, the location with the greatest number of reported crashes was the intersection of 23<sup>rd</sup> Street S and S Hayes Street, with two (2) of the six (6) (or 33%) reported crashes occurring at or near the 750 23rd Street S development study area intersections. The two (2) most severe crashes reported in the study area between 2019 and 2023 were classified as B (suspected minor injury) and occurred at the intersection of 23<sup>rd</sup> Street S and S Hayes Street. These were angle type collisions, as shown in Figure 33. No crashes were classified as K (fatal injury) or A (suspected serious injury), and no crashes involved pedestrians or bicyclists.

As part of the proposed development, new pedestrian facilities that meet or exceed Arlington County requirements will be provided along the street frontage of the site and bicycle parking will be provided on-site. 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. The project does not propose changes to nearby intersections or the roadway network, except for pedestrian improvements along the site frontage. The proposed driveway on 23<sup>rd</sup> Street S will be located in approximately the same location as the existing vehicular access, consistent with existing driver expectations. As such, no change is anticipated to the crash rates in the vicinity of the site.





Figure 34: Historical Crash Data (2019-2023)

## Transportation Demand Management / 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 750 23rd Street S 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 Crystal City 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), and a Bicycle Facilities Management Plan.

### **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 community service 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 community service 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.

### ***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.
- (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.

## 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 are implemented.

The 750 23rd Street S 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 that create connections to I-395, I-66, George Washington Memorial Parkway, and ultimately the Capital Beltway (I-495) and I-95.

The proposed development will consist of a mixed-use building with up to 107 residential units and 22,070 square feet of community service space.

The proposed development will provide approximately 95 parking spaces in a below-grade parking garage located on-site. Vehicular access to the below-grade garage will be provided along the driveway accessed via 23<sup>rd</sup> Street S. Loading access will be provided from a proposed driveway via S Grant Street.

A number of planned transportation improvements in the vicinity of the 750 23<sup>rd</sup> Street S development are expected to be complete by 2029. The full list of improvements is detailed in the report, but projects include:

- 23<sup>rd</sup> and Eads Park Renovation
- DCA South Pedestrian Access Improvements
- Crystal City to DCA Pedestrian Bridge
- 23<sup>rd</sup> Street S Realignment and Improvements as part of the 223 23<sup>rd</sup>/2250 Crystal Drive Development
- Crystal City Bicycle Facilities Improvements
- Route 1 Multimodal Improvements Study

A capacity analysis was developed to compare the future roadway network with and without the proposed development. Traffic projections for 2029 are based on existing volumes, plus traffic generated by approved nearby background developments, and traffic generated by the proposed 750 23rd Street S development.

Mitigation measures were identified based on Arlington County standards. 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 not

recommended as the project does not have an impact on any study area intersections.

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

- The proposed development's proximity to the Crystal City Metro Station, Crystal City VRE Station, and multiple bus lines.
- 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.
- Limited on-site parking, which will promote the use of non-auto modes of travel to and from the proposed development.
- Transportation Demand Management 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 are implemented.